REPORT ON

RESISTIVITY SURVEY

YUKON TERRITORY

014826

for

SILVER TITAN MINES LIMITED

by

HUNTING SURVEY CORPORATION LIMITED,

TORONTO, CANADA

August, 1963.

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ACCOMPANYING MAP — Map Pocket

Survey Results and Interpretation Map

Scale 200 feet = 1 inch

1. INTRODUCTION

Between June 11th and June 20th 1963, Hunting Survey Corporation Limited carried out a resistivity survey over a portion of a property held by Silver Titan Mines Limited. This property is located along the highway from Mayo Landing to Elsa, Yukon Territory.

The survey was carried out by Mr. W. J. Scott of Hunting Survey Corporation Limited and Mr. John Brock of Silver Titan Mines Limited.

2. SURVEY AND INSTRUMENT DATA

2.1. Grid System

The same line grid was used that had been established last year for a Turam electromagnetic survey. However the resistivity survey was confined to two separate areas of the grid system. The first area (Area No. 1) covered 4+00 W to 20+00 E from the No. 1 Base Line to 14+00 N. The second area (Area No. 2) extends from Line 24+00 E to Line 52+00 E and from 7+00 S of Base Line No. 1 to 20+00 S. A total of 3.5 line miles was covered in the first survey area, and 3.7 in the second.

2.2. Instrument

The method used is a form of early resistivity methods modified by some years of experience in the field.

In short, a known current is introduced into the ground by means of stake or screen contacts, which are separated by a distance approx-

imately equal to three times the width of the block to be surveyed and are located on a line cut through the centre of the property at right angles to the Base Line. These current contacts are spaced equidistant from the Base Line, but are on opposite sides of it. Readings are then taken at regular intervals along the picket lines by using metal probes and a sensitive vacuum tube voltmeter to read the voltage drop across successive intervals of 50 to 100 feet.

The apparent resistivity in ohm-meters is calculated from the potential reading and current strength. Values plotted and contoured on the map accompanying this report are in units of 100 $\log_{10}$ (apparent resistivity).

3. GEOLOGICAL SETTING

The following geological description is taken from a report by Dr. A. E. Aho. The general area is underlain by Precambrian formations which can be divided into three major units:

Upper Schists: quartz-mica schists with small lenses of limestone and thin layers of quartzite near its base.

Central Quartzites: hard, blue grey, grey and white, thick bedded quartzites with minor intercalations of thin bedded quartzites, graphite schists, quartz-mica schists, quartz-mica-chlorite schists and greenstones. This series covers almost the entire

survey area.

Lower Schists: thick schist-greenstone belt.

The formations strike approximately east-west and dip 20° - 40° to the south. Mineralization is mainly concentrated in the Central Quartzites and occurs mostly in northeast-trending vein-fault systems dipping moderately to steeply south. The ore tends to be localized in the most massive members, particularly where the vein-faults intersect with each other. One of the mineralized veins which occurs in the area, the Gerlitzki vein, has been explored by trenching and drilling. The encountered mineralization consists of pyrite, siderite, sphalerite and galena. The galena is rich in silver.

4. PREVIOUS WORK

The general area under consideration was covered by a resistivity survey in 1956. The results of this survey were available at the time the present survey was done, but unfortunately different grid systems were used, and a definite tie between the two systems was established so that the results could be compared.

A Turam survey was carried out over the area in the summer of 1962. This survey indicated a number of conductors, some of which have been tested by trenching and drilling. The conductors near the present resistivity survey areas appear to be primarily graphitic schists.

5. RESULTS

5.1. Area No. 1

This part of the survey covered the E group of anomalies which were located by the Turam survey in June 1962. The E group was not considered to be of major significance.

The present resistivity work outlined four conductor axes, marked on the map as A, B, C and D. It is possible that Conductor A is the extension of a conductor axis which was located during the initial resistivity survey but was not completely outlined. Of the four conductors outlined, only D appears to correspond to a Turam anomaly, in this case Conductor 4 of Group D. Conductor C may be an extension of the Turam Conductor 2 (Group E) but if so, the extension does not appear in the Turam results.

Since the resistivity method emphasizes zones that are continuous, but less conductive than those indicated by the Turam method, it is probable that the new conductors relate to graphitic zones similar to those uncovered by the Turam survey but of lower conductivity. Electrolytic conduction in shears might also account for some of the anomalies, as could mineralization stringers located in a quartzite zone.

5.2. Area No. 2

This area overlaps the B and F groups of anomalies which were located by the Turam survey in June 1962. The present survey locates four conductor axes of some length. These are marked on the

map as H, J, K and L. Some smaller axes are indicated but not lettered. L corresponds to a Turam anomaly, Conductor 6 of Group B. None of the other conductors show any significant correspondence with Turam results. Conductor H corresponds with a conducting axis located during an earlier restivity survey. This axis could be a continuation of Conductor A located in Area 1.

6. SUMMARY AND RECOMMENDATIONS

From an electrical resistivity survey carried out on some of the claims of the KPO group for Silver Titan Mines Limited, some electrical conductors have been outlined. Most of these conductors show some correlation with the results of previous work. Since the conductors in both groups are all roughly parallel, and strike in the same direction as the bedding, it is probable that they are weakly graphitic schists, somewhat wider and somewhat less graphitic than those located by the Turam. It is recommended, therefore, that no further geophysical work be undertaken over this area unless fresh evidence from geology, stripping or drilling suggests further detail work.

HUNTING SURVEY CORPORATION LIMITED,

E. B. Nicholls,

Geophysicist.

Toronto, Ontario,
August, 1963.

SILVER TITAN MINES

LEO PROPERTY

GALENA HILL, YUKON TERRITORY

RESISTIVITY SURVEY

SURVEY RESULTS AND INTERPRETATION

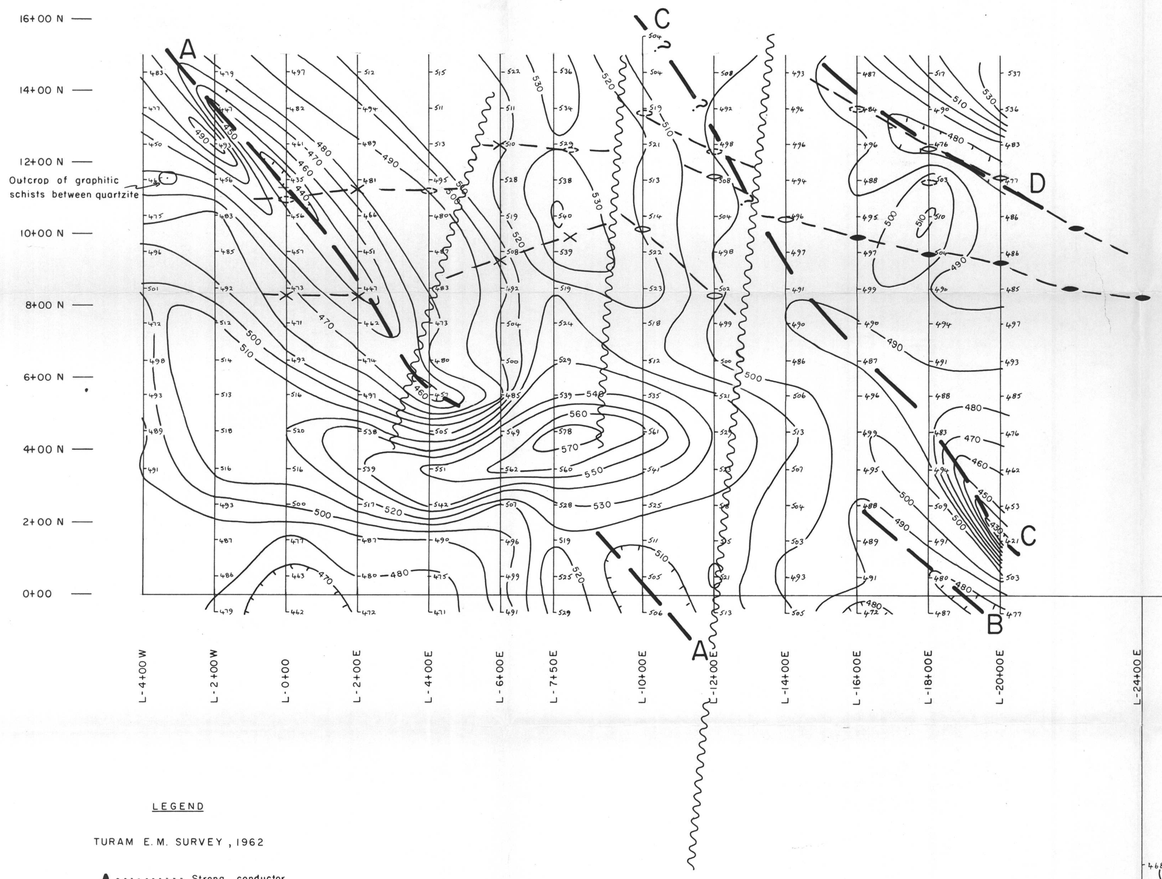
AREAS 1 & 2

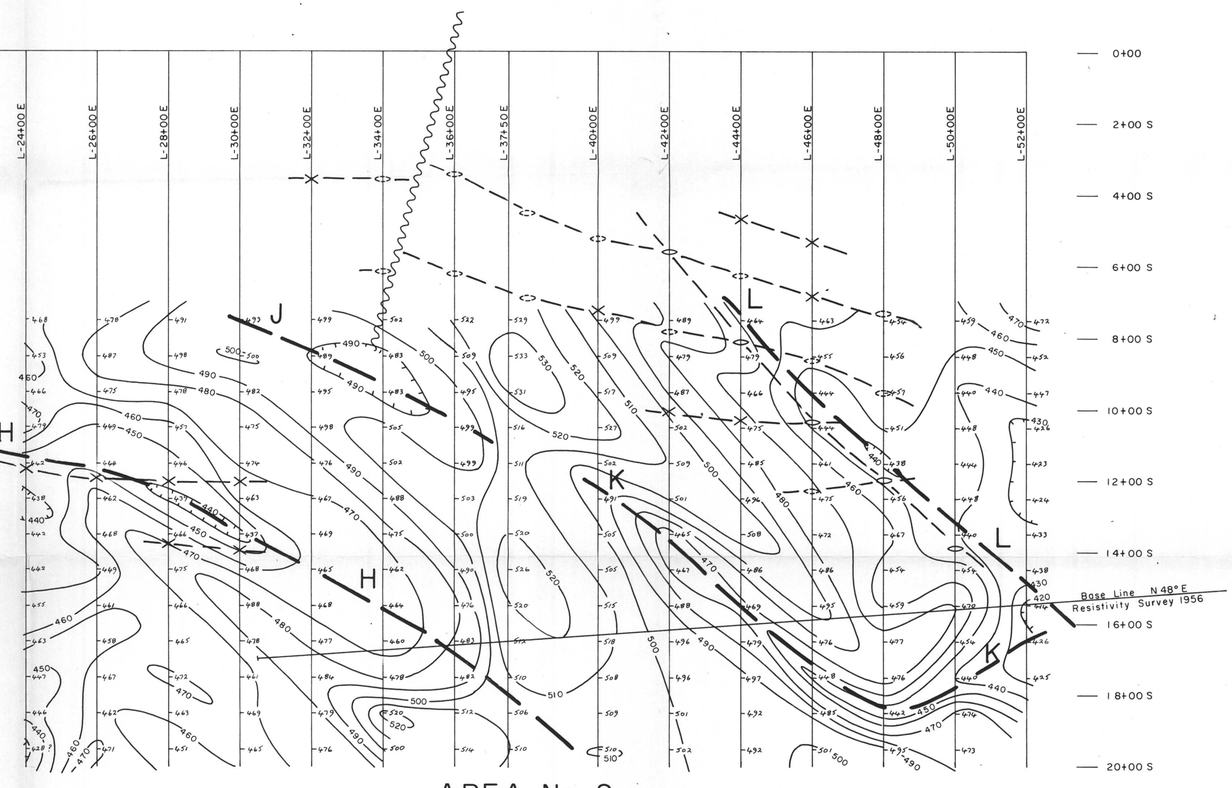
Scale: 1 inch = 200 feet

Contour Interval: 10 units

HUNTING SURVEY CORPORATION LIMITED, TORONTO, CANADA – August, 1963.

E.B. Nicholls, Geophysicist





AREA No. 2

LEGEND

TURAM E.M. SURVEY, 1962

- Strong conductor
- Medium conductor
- Weak conductor
- Indication
- Conductor axis
- Fault

RESISTIVITY SURVEY, 1963

- Conductor axis

inches 0 1 2

0 1 2 3 4 5 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

J-2526