SUMMARY

The present magnetic and electromagnetic survey has shown a further southward extension of the zone of basic intrusives which has been previously outlined in Mortimer Township, and revealed the presence of four conductor systems of possible economic interest. To examine the latter, four drill holes, totalling 1200' in length, have been recommended.

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REPORT ON A MAGNETIC AND ELECTROMAGNETIC SURVEY EDWARDS AND WESLEY TWPS., ONTARIO ON BEHALF OF GLEN LAKE SILVER MINES, LIMITED

INTRODUCTION

During October, 1964, a combined magnetic and electromagnetic survey was carried out on a group of claims located in west Edwards Township and east Wesley Township, Larder Lake Mining Division, Ontario, on behalf of Glen Lake Silver Mines, Limited. The property comprised claim nos. 82400-82428 incl. and 82393-82399 incl. The present survey is an extension of the Turam electromagnetic survey in Mortimer Township, referred to in our report of June 26th, 1964.

Traverse lines for the geophysical surveys were cut oriented approximately N40°E, at 400' centres. Magnetometer and electromagnetic observations were taken at 100' intervals and at intermediate stations in disturbed areas.

Measurements of the vertical component of the earth's magnetic field were made with a Sharpe MF-1 fluxgate magnetometer. Appropriate corrections for diurnal variations were made by checking back periodically to base stations previously established.

The electromagnetic survey was carried out with the Turam method, using inductive energization. In this procedure the primary field is created by means of closed rectangular loops, and two receiving coils connected to a compensator bridge are used to measure the field strength ratios and phase differences between consecutive stations. Sub-surface conductors give rise to secondary electromagnetic fields, causing abnormal field strength ratios and phase differences. The relative amplitudes of field strength and phase distortions are a measure of the conductivity of the conducting bodies, i.e. good conductors are characterized by field strength distortion combined with relatively little phase shifting, whereas poor conductors affect the phase, rather than the strength of the resultant field.

For an accurate grading the resistivity/thickness (r/d) ratio of the individual conductors can be derived from the calculated in-phase and out-of-phase components. These values are marked on the upper right side of the anomalies. The depth to the current axis can be determined from the shape of the distortion and is marked on the lower left side. This depth should be regarded as the maximum depth to the upper surface of the conductor.

An operating frequency of 400 c.p.s. was used throughout the survey.

In all, 32.5 miles of profile were investigated.

GEOLOGY AND TOPOGRAPHY

The geology of the property is unknown. The area has a clay cover of apparently considerable thickness. No outcrops have been noted during the present survey. The topography has moderate relief.

DISCUSSION OF RESULTS

A. Magnetometer Survey

Plate 1 presents the magnetic observations in the form of a contour map on a scale of 1" = 400'. The pattern of basic intrusives found in Mortimer Township (see Report to Glen Lake Silver Mines, Limited, 1963, by Gray S. Willson) can be seen to continue with somewhat diminishing relief, as far south as line 184S. Beyond this traverse the area is almost undisturbed, with the exception of a small anomaly on line 248S, near baseline 6. The depths calculated from the magnetic anomalies are shown on the map.

B. Electromagnetic Survey

The results of the Turam survey are shown on Plate 2 in the form of field strength ratio and phase difference profiles on vertical scales of 1" = 40% and 1" = 20° respectively. The observations have been plotted on the mid-point between coil positions, for a 100' coil separation.

Four conductor systems of interest have been located. All four are striking approximately NW-SE and show a close relation to the magnetic pattern. The r/d values of conductors "A", "B" and "D" vary

between 2 and 5 ohmcm/m, and indicate good conductivity. Zone "C" displays medium conductivity and a more complicated pattern. On lines 184S to 192S the anomalies are inverted, which suggests an abrupt change in geometry beyond the southeastern extension of the basic intrusive body.

CONCLUSIONS AND RECOMMENDATIONS

Conductors "A", "B" and "D" combine a favourable location relative to the magnetic pattern with good conductivity and appear to be of base metal interest. Conductor "C" shows much closer magnetic correlation and, as the r/d values suggest, lower conductivity. These characteristics strongly suggest the possibility that the conduction is due to serpentinization of ultrabasic rocks.

To examine these conductors the following drill holes are recommended:

	Collar	Orientation	Dip	Length
Cond. "A" D.D.H. #1	Line 108S 3+80 N of T.L. "A"	N45°E	55°	400'
Cond. "B" D.D.H. #2	Line 180S 2+00S of B.L. 1	N45°E	55°	400'
Cond. "C" D.D.H. #3	Line 180S 6+70 N of T.L. "G"	N45°E	55°	400'
Cond. "D" D.D.H. #4	Line 212S 25+40 S of B.L. 3	N45°E	55°	400'

Respectfully submitted,

Robbert A. Bosschart, Ph.D., P.Eng.

Toronto, Ontario.
December 14, 1964.

Mortimer Twp.

Aurora Twp.

Wesley Twp.

Teefy Twp.

VI

III

II

I

12 11 10 9 8 7 6 5 4 3 2 1

KEY PLAN

ANNULLED

THE TOWNSHIP OF EDWARDS

DISTRICT OF COCHRANE

LARDER LAKE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	(P)
CROWN LAND SALE	C.S.
LEASES	(L)
LOCATED LAND	Loc
LICENSE OF OCCUPATION	L.O.
ROADS	
IMPROVED ROADS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	

NOTES

Abitibi Power & Paper Co Ltd Logging Road, L.O. 5958.

Abitibi Electric Development Co. Ltd Power Line, L.O. 2553.

400' Surface rights reservation around all lakes and rivers

DATE OF ISSUE

APR 22 1965

ONTARIO DEPT. OF MINES

ONT. DEPT. OF MINES
MINING LANDS BR.
THIS MAP FOR CHECKING PURPOSES ONLY – MUST NOT BE SOLD.

PLAN NO. – M. 469

DEPARTMENT OF MINES
—ONTARIO—

LEGEND:

1465 Magnetic Values in Gammas

Contour Interval 200 Gammas

PLATE I

GLEN LAKE SILVER MINES, LTD

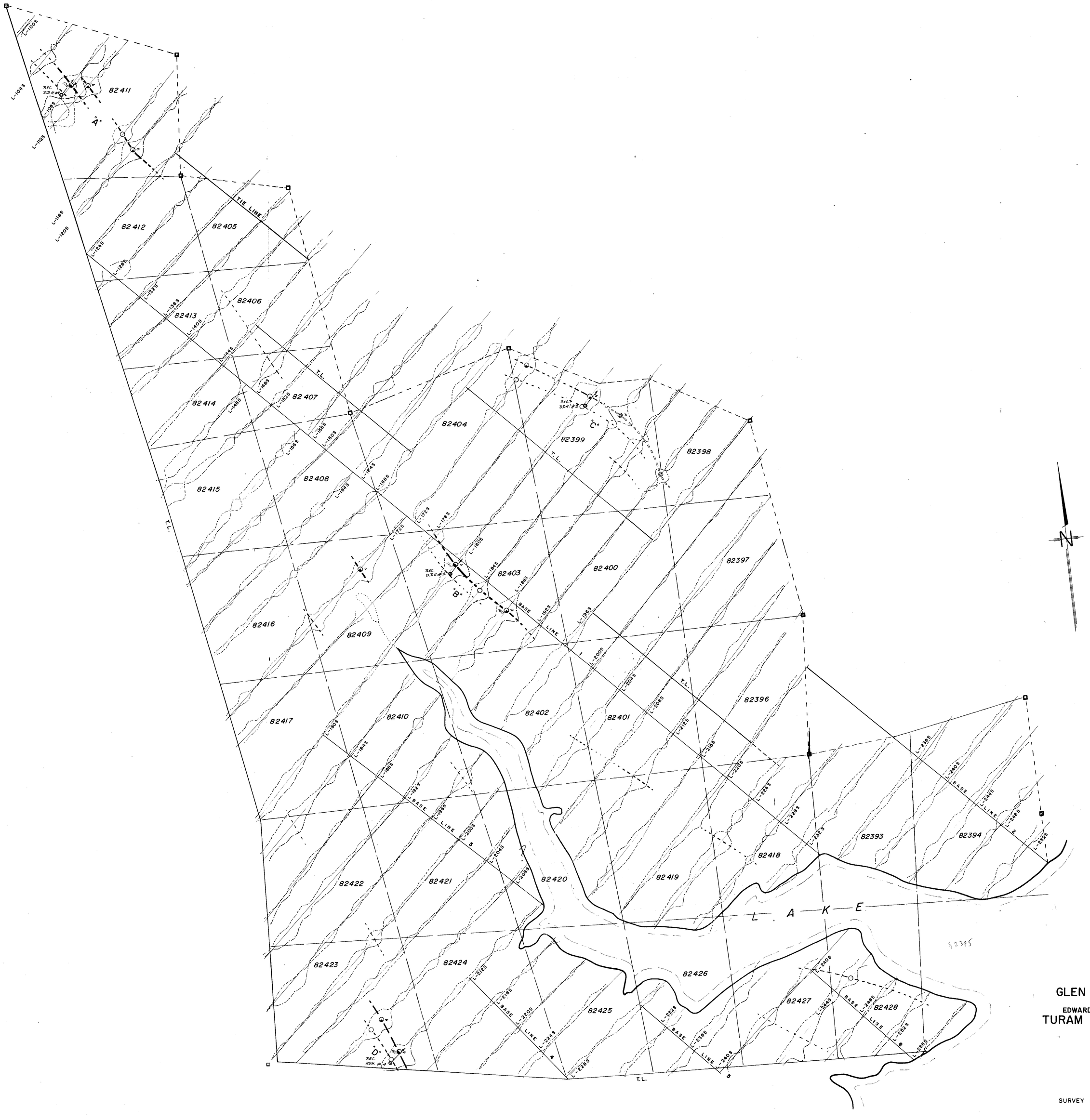
EDWARDS AND WESLEY TOWNSHIPS, ONTARIO

MAGNETOMETER SURVEY

SCALE: 1" = 400'

SURVEY BY HAROLD O. SEIGEL AND ASSOCIATES, LTD.
SEPTEMBER — OCTOBER 1964.

RECORDED PROFESSIONAL ENGINEERS MINING R. A. BOSSCHART PROVINCE OF ONTARIO



LEGEND :

−20° 0° +20° PHASE

60% 100% 140% RATIO

● STRONG E.M. ANOMALY

○ WEAK " "

◎ INVERTED "

○ 1/4 VALUE

DEPTH CURRENT AXIS

PLATE 2

GLEN LAKE SILVER MINES, LTD

EDWARDS AND WESLEY TOWNSHIPS, ONTARIO

TURAM ELECTROMAGNETIC SURVEY.

SCALE : 1" = 400'

R. A. BESCHART — REGISTERED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO

SURVEY BY HAROLD O. SEIGEL AND ASSOCIATES, LTD

SEPTEMBER — OCTOBER 1964