



41P14NW0035 2.932 SOTHMAN

010

AN ELECTROMAGNETIC SURVEY
IN
SOTHMAN TOWNSHIP

Toronto, Ontario.
July 7, 1972

R. H. Clayton, M.Sc., P. Eng.
Watts, Griffis and McQuat Limited

LOCATION AND ACCESS

The claims are situated in the northwest corner of Sothman Township. An all-weather road passes north-south about 2 miles east of the property and goes north to Timmins, east to Matachewan and south to Shin Tree. A bush road passes through the property to the Grassy River (Kapiskong Lake which is approximately the western boundary of the property. Most of Edlestone Lake is on the property.

CLAIMS SURVEYED

Eight claims were surveyed.

Sothman Township: 318550, 318551, 318552, 318553, 318554,
318555, 318556, 318557.

RECORDED HOLDER

The claims are held by D. F. Des Rosiers, 280 Wellesley Street East, Toronto, Ontario, Licence Number A 40906.

SUBMITTING PARTY

The field work and report are by Watts, Griffis and McOuat Limited, Consulting Geologists and Engineers, Suite 911, 159 Bay Street, Toronto 1, Ontario.

DATES

The survey was carried out between December 13, 1971 and March 28, 1972.

PREVIOUS WORK

63A-32 Geologic Report of Sothman Township Claims, W. E. Clarke, 1947.

This report described geologic mapping and twelve diamond drill holes on behalf of Buffalo Ankerite. The survey covers most of the present claims, but extends further south. Eleven of the holes reported are on a showing south of the present claim group.

It is reported in "Geology of Sothman Township", E. M. Abraham, Ontario Department of Mines Annual Report, Volume LXII, Part 6, 1953, that Preston East Dome Mines Limited drilled two holes 800 feet southwest of Edlestone Lake. However, it seems probable that these were actually two of the holes drilled by Buffalo Ankerite.

63-1699 Report on Magnetic and Electromagnetic Survey in Sothman Township on behalf of Consolidated Mining and Smelting of Canada Ltd., R. A. Bosschart, H. O. Seigel and Associates, 1965.

This report describes a Turam and magnetometer survey. It states: "Throughout the area geo-electrical distortion is low and of a random nature". A small anomaly is mentioned which is not in the present claim group. Also, "The electromagnetic survey has shown the area to be geo-electrically undisturbed" -- "The area shows only weak magnetic distortion of less than 600 gamma amplitude".

GEOLOGY

It appears that the claims are underlain by Keewatin volcanic rocks consisting of andesites and rhyolites in roughly equal proportions. In much of the area, these rocks are apparently overlain by flat-lying Cobalt sediments consisting mainly of conglomerate with some arkose, and, close to the southeast shore of Edlestone Lake, carbonaceous schists. The volcanic rocks are sometimes exposed in lower ground.

E. M. Abraham (Geology of Sothman Township, Ontario Department of Mines, Volume LXII, Part 6, 1953), maps the northwest shore of Edlestone Lake as hybrid granite; the only exposures seen during the present work were schists of doubtful origin.

WORK CARRIED OUT

Linecutting

Picket lines were cut east-west at 400-foot intervals, tied in with baselines north-south at 1,000-foot intervals. In addition four lines were cut at 200-foot intervals over the largest known anomalies.

Geophysics

An airborne survey with the Dighem equipment had been carried out previously and three electromagnetic anomalies had been located on the ground, southeast of Edlestone Lake. These three anomalies appeared to correspond to fifteen Dighem electromagnetic anomalies on seven flight lines.

A vertical loop electromagnetic survey was carried out over the whole of the claim group using the parallel method (moving transmitter). The instrument used was a Scintrex S. E. 250 with a frequency of 1,000 cycles per second. Dip angles from the horizontal were measured in the conventional way. Since this instrument has only one frequency, an estimate of conductivity was made by estimating the out-of-phase component insofar as the reading of the dip angle has to be made from a minimum rather than a clear null. This component is theoretically a function of the sine of the dip angle, so that there should be a clear null with zero dip angle.

The scale of measurement used is as follows:

1. Clear null
2. Null not quite clear
3. Weak but definite minimum
4. Strong minimum
5. Very strong minimum.
6. Difficult to find a minimum.

One to three could be caused by massive sulphides, four to six indicates disseminated sulphides or other medium to poor conductors. Spurious dip angles caused by orientation errors usually have a rating of one.

RESULTS AND CONCLUSIONS

There are electromagnetic anomalies throughout the area.

1. The largest anomaly is parallel to, and 800 feet southeast of Edlestone Lake. It is 2,000 feet along strike with possible extensions at both ends. It coincides with both an outcrop of carbonaceous schist and with an occurrence of pyrite in an old trench. Samples of carbonaceous schist tested, indicated a very low conductivity which would make it barely detectable by electromagnetic methods. However, there could easily be graphitic zones of better conductivity. Part of this anomaly passes off the property on to Claims 327580 and 327581.

The conductivity indicated by the ground survey is low to very low. However, the airborne survey indicated a moderate to high conductivity. The amplitude is high; the maximum dip angle recorded was 30. Taking into consideration the reconnaissance geophysical work, which is not a part of this report, the dip appears to be close to vertical, while the carbonaceous schists appear to be horizontal.

It seems probable that the high out-of-phase component in the ground survey is caused by the carbonaceous schist, while the dip angles are caused by a deeper conductor of higher conductivity.

This is corroborated by the moderate to high conductivity indicated by the airborne survey. The airborne survey, while not necessarily deeper-penetrating, is less affected by near surface conductors.

A possible explanation of the anomaly is that it results from a sulphide body, probably in Keewatin rocks, overlain by carbonaceous schists of Cobalt age.

2. A similar anomaly is parallel to No. 1, and coincides roughly with the lake shore. Conductivity is low, but slightly higher than No. 1. A similar explanation is postulated.

3. There is one short, well-defined anomaly between No. 1 and No. 2, and possibly other, less well-defined parallel anomalies. It is strongest on Line 10 N.

4. There is a large anomaly on Line 0, close to the southern end of Edlestone Lake. It has only vestigial extensions north and south. It was almost certainly drilled by Buffalo Ankerite. Pyrite and a graphitic zone were intersected.

RECOMMENDATIONS

Diamond drill holes are recommended at 1400 N, 100 W, E -50 and at 2000 N, 650 W, E -50 . They should be at least 300 feet deep.

Geologic mapping is recommended over the whole grid.

Respectfully submitted,



Toronto, Ontario.
July 7, 1972

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Watts, Griffis and McQuat Limited

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations 514 Number of Readings 514
Station interval 100 ft
Line spacing 200 ft or 400 ft
Profile scale or Contour intervals 1" = 20'
(specify for each type of survey)

MAGNETIC

Instrument
Accuracy - Scale constant
Diurnal correction method
Base station location

ELECTROMAGNETIC

Instrument SCINTREX S.E. 250
Coil configuration Vertical Loop
Coil separation 400 ft
Accuracy 10
Method: [] Fixed transmitter [] Shoot back [] In line [x] Parallel line
Frequency 1000 cycles per second
Parameters measured dip angle
(specify V.I.F. station)

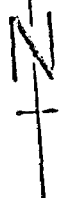
GRAVITY

Instrument
Scale constant
Corrections made
Base station value and location

Elevation accuracy

INDUCED POLARIZATION - RESISTIVITY

Instrument
Time domain Frequency domain
Frequency Range
Power
Electrode array
Electrode spacing
Type of electrode



SOTHMAN
TWP.

NURSEY
TWP.

318550

318551

318553

318552

318557

318554

327581

EDLESTONE
LAKE

318555

295996

296005

318556

327580

295999

296000

328044

295997

295998

296006

328048

KAPISKONG
LAKE

WATTS, GRIFFIS & McODAT LIMITED

DOWA MINING CO. LIMITED

MATACHEWAN PROJECT

EDLESTONE LAKE

Scale 1" = 1320'

R. J. ...

Semple Twp. - M. 1100

THE TOWNSHIP OF
OF
SOTHMAN

DISTRICT OF
SUDBURY

LARDER LAKE
MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

- PATENTED LAND Ⓟ
- CROWN LAND SALE Ⓢ
- LEASES Ⓛ
- LOCATED LAND Loc.
- LICENSE OF OCCUPATION L.O.
- MINING RIGHTS ONLY M.R.O.
- SURFACE RIGHTS ONLY S.R.O.
- ROADS —
- IMPROVED ROADS —
- KING'S HIGHWAYS —
- RAILWAYS —
- POWER LINES —
- MARSH OR MUSKEG —
- MINES Ⓜ
- CANCELLED C

NOTES

400 Surface Rights Reservation around all Lakes and Rivers.

Flooding Rights - L.O. No. 7191, File No. 1162, volume No. A.

DATE OF ISSUE
1932
ONT. DEPT. OF MINES
AND NORTHERN AFFAIRS

2.932

PLAN NO. - M-1121

ONTARIO
DEPARTMENT OF MINES
AND NORTHERN AFFAIRS

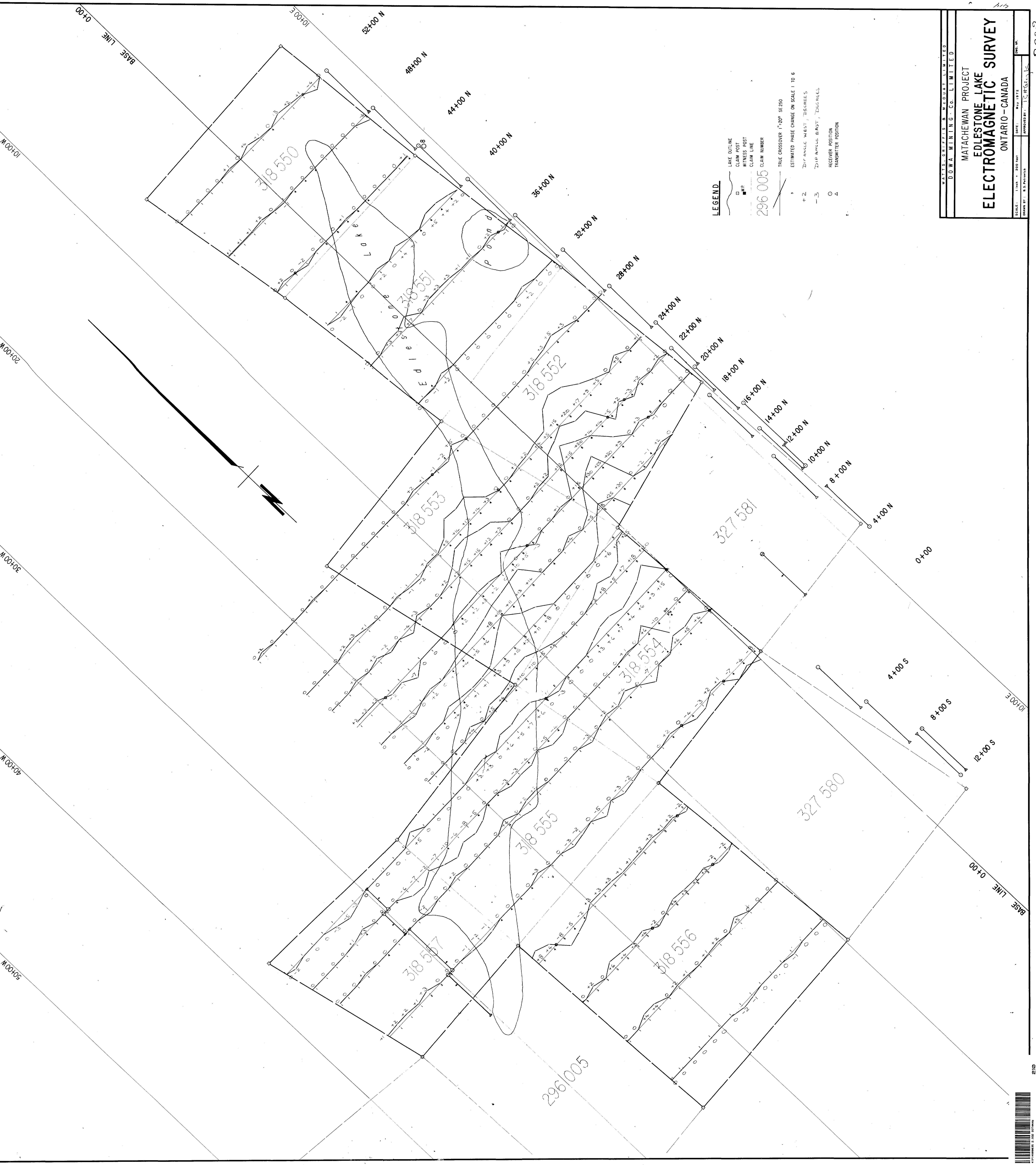
Nursey Twp. - M. 1031

Holiday Twp. - M. 910

Kemp Twp. - M. 966



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LEGEND
 LAKE OUTLINE
 CLAIM POST
 WITNESS POST
 CLAIM LINE
 CLAIM NUMBER
 TRUE CROSSOVER 1" = 20' SE 280
 ESTIMATED PHASE CHANGE ON SCALE 1 TO 6
 +2 20° ANGLE WEST, DEGREES
 -3 20° ANGLE EAST, DEGREES
 O RECEIVER POSITION
 Δ TRANSMITTER POSITION