



### SUMMARY

The property is located in Matheson Township in the Timmins area, and approximately 15 miles south-west by south of the recent copper-zinc discovery of Texas Gulf Sulphur.

There is no previous history of exploration on the property and no rock outcrops are to be found on the claim although published geological maps infer the area to be underlain by Keewatin greywacke. Published aeromagnetic data, however, does not rule out the possibility that the property is underlain by Keewatin volcanics, the host rocks for the Texas Gulf Sulphur orebody.

A ground electromagnetic-magnetic survey has indicated several conductive zones which warrant additional detailing, preparatory to drilling.

### PROPERTY AND LOCATION

The property consists of 10 contiguous unpatented mining claims near the north-west corner of Matheson Township about 16 miles directly north-east of Timmins, Ontario, in the Porcupine Mining Division, Cochrane District. The northern edge of the group lies along the common boundary between Matheson and Evelyn Townships.

The claims included in the group are numbered P-67473 to P-67482 inclusive and cover the north half of Lot 10, the north half of Lot 9, and the west half of the north half of Lot 8.

### ACCESS

An all-weather road used to service farms in the area and as a hauling route for timbering operations passes  $3/4$  of a mile east of the eastern boundary of the property. This road runs in a north-south direction and may be entered by turning north off Highway No.

610, a few hundred feet east of Dugual Siding on the Ontario Northland Railway. Three miles north of this turn-off, a winter road follows the common boundary of Matheson and Evelyn Townships.

### HISTORY

No previous surface work or drilling has been done on the property. Drilling for gold, however, has taken place in two locations, both about 4 to 5 miles from the claim group. These locations are the east-central part of Hoyle Township and the southeast portion of Matheson Township.

The area has been flown electromagnetically by private companies, and magnetically by the Dominion Gulf Company. While the former data is not available, it is presumed that the general interest in the immediate vicinity has been due to encouraging airborne results. The Aeromagnetic Map 298G of Dominion Gulf is included in the back envelope of this report.

### GEOLOGY

Reference ODM Annual Report, Vol. XLVIII, Part XII, 1939.

The area encompassing the claims is completely devoid of outcrop, the nearest being located one mile east. This outcrop has been mapped as Keewatin greywacke with vertically dipping bedding striking N75°W. "Under the microscope, the greywacke is seen to be medium-grained and to consist of angular fragments of quartz, altered feldspar, calcite, chlorite and sericite. Biotite is abundant in some outcrops." This quote is from the above reference.

The report adds that one outcrop located "in the northwest corner of Lot 2, Concession II, Matheson Township, shows neither sedimentary nor volcanic structures .... Microscopically it would be an altered volcanic rock."

A study of the aeromagnetic maps of the township indicates no uniformity within the area mapped as greywacke nor does it allow any apparent distinction between the adjacent volcanics and the sediments. It appears possible that the property is underlain by Keewatin volcanics.

#### GEOPHYSICAL SURVEY

A reconnaissance electromagnetic-magnetic survey was conducted over the property using a 400 foot grid system with station intervals of 100 feet. The instruments used in the survey were an SE-300 Electromagnetic unit and an MF-1 Fluxgate Magnetometer. Both instruments are constructed by E. J. Sharpe Instruments of Canada, Limited, whose main manufacturing plant is located in Downsview, Ontario.

The purpose of this combined survey was to use geophysical principles as an aid in outlining massive sulphide bodies of possible commercial interest and/or geologically significant structures. The duration of the survey was from June 20<sup>th</sup> to June 26<sup>th</sup>, 1964.

The magnetometer survey revealed no interesting magnetic anomalies. The maximum magnetic contrast, 200 gammas occurs on line 48W. The remainder of the lines present a generally flat magnetic picture. In an area such as this where the overburden is presumed to be deep to moderate, it is difficult to say if any of the small magnetic contrasts encountered are indicative of rocks of differing magnetic susceptibilities or variations in the depth of overburden. None of the anomalous electromagnetic zones located has any definite magnetics associated with it.

The E.M. technique employed was a vertical loop configuration used in the so-called "broadside" manner. This involves moving the transmitter and receiver along parallel lines 400 feet apart, maintaining a constant latitude relative to the baseline. Conductive zones are indicated in two ways in this particular method:

- (1) as cross-overs of the null tilt-angles analogous to the dips encountered over an anticlinal structure, and

- (2) as sudden drops in the magnitude of any anomalous unidirectional tilt-angles.

A total of 9 conductive zones were located which warrant further investigation. Interesting conductors which have been indicated by cross-overs have been numbered 1 to 7, whereas sudden dips in the anomalous angles are designated as A and B.

Conductor 1 is a cross-over of medium intensity located at 4 + 80S/4E. It is expected that E.M. detailing will show that Conductor 2 is the westward continuation of it. Conductor 2 is of weak intensity, but is of interesting strike extent. Its weakness may be due to an increase in the depth of overburden toward the west.

Conductors 3 to 5 inclusive are all of medium intensity. Although located on only one line, there appears to be little doubt that they are caused by strongly conductive material such as sulphides or graphite. Here again, E.M. detailing will probably result in strike extensions of these conductors.

Conductor 6, of weak intensity, is on strike with Conductor 4 and is a possible extension of it.

Conductor 7 is also of weak intensity, but has been located on two lines. The moderate dip angles associated with it on line 12W indicate a possible 400 foot extension to the east.

Indications A and B are flanked by angles of such magnitude, that they are undoubtedly representative of conductors. Their characteristics, however, cannot be defined without additional detailing.

A program of E.M. detailing will serve to establish the priority of these responses as drill targets as well as pin-point the conductive axes for the purpose of spotting drill holes.

#### CONCLUSIONS AND RECOMMENDATIONS

Because of the recent copper-zinc discovery by Texas Gulf

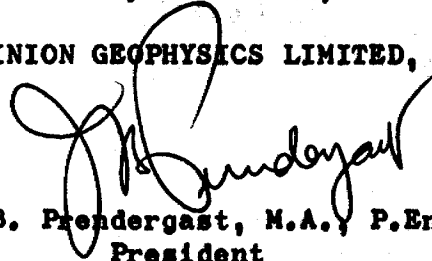
Sulphur, the entire Timmins area has become the scene of concentrated exploration. The extensive overburden in the area coupled with a favourable geophysical picture necessitates additional work on the property. Electromagnetic detailing of the anomalous zones located is recommended followed by a program of diamond drilling. As it appears from the reconnaissance survey that at least 6 conductors will warrant drilling, the drill program should include 1800 feet.

The cost of this additional work is:

5 line-miles of E.M. detailing	\$ 500.00
1800 feet of diamond drilling, including supervision and assaying @ \$6.00/ft.	<u>10,800.00</u>
Total cost	<u><u>\$11,300.00</u></u>

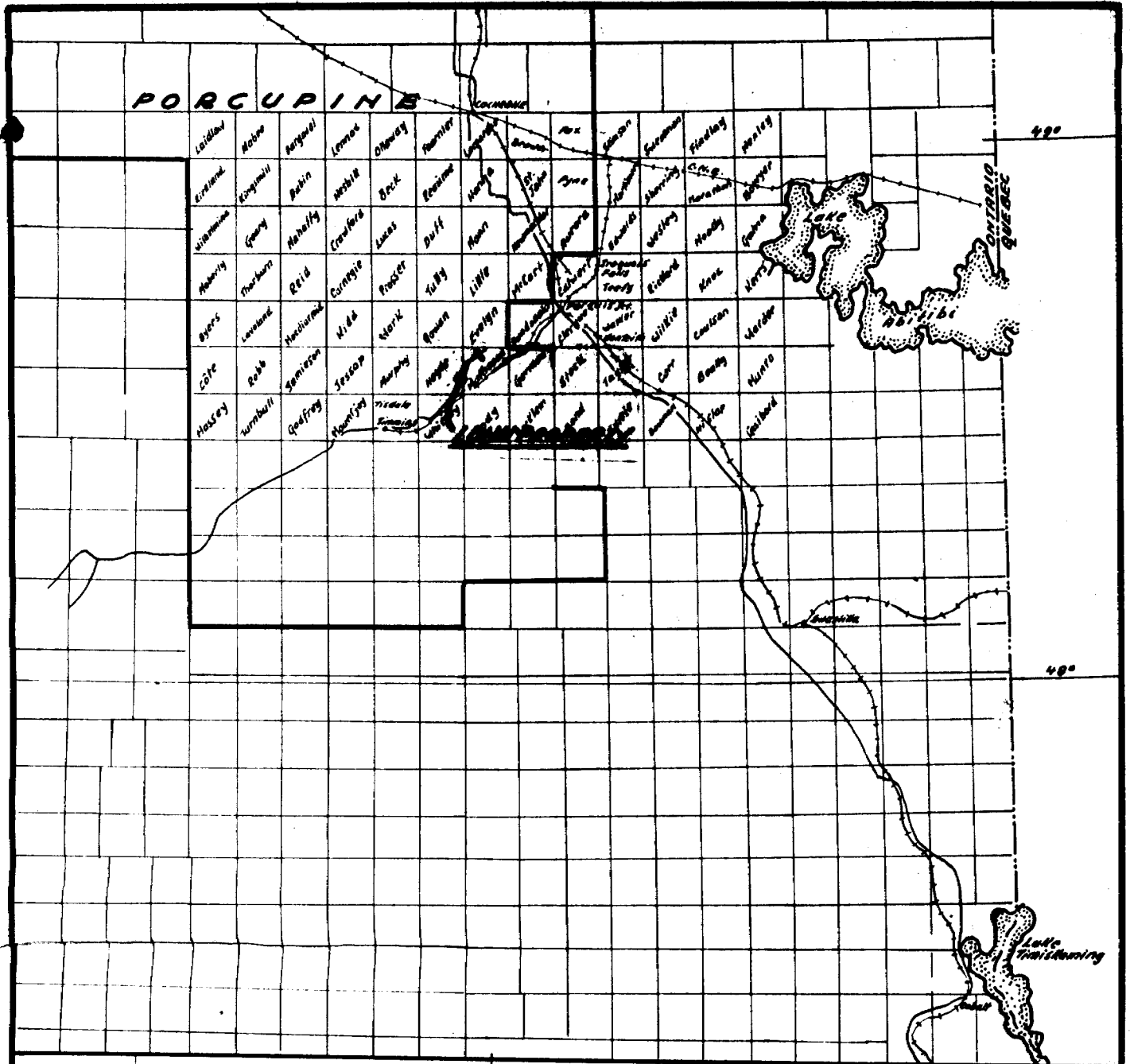
Respectfully submitted,

DOMINION GEOPHYSICS LIMITED,



J. B. Prendergast, M.A., P.Eng.  
President



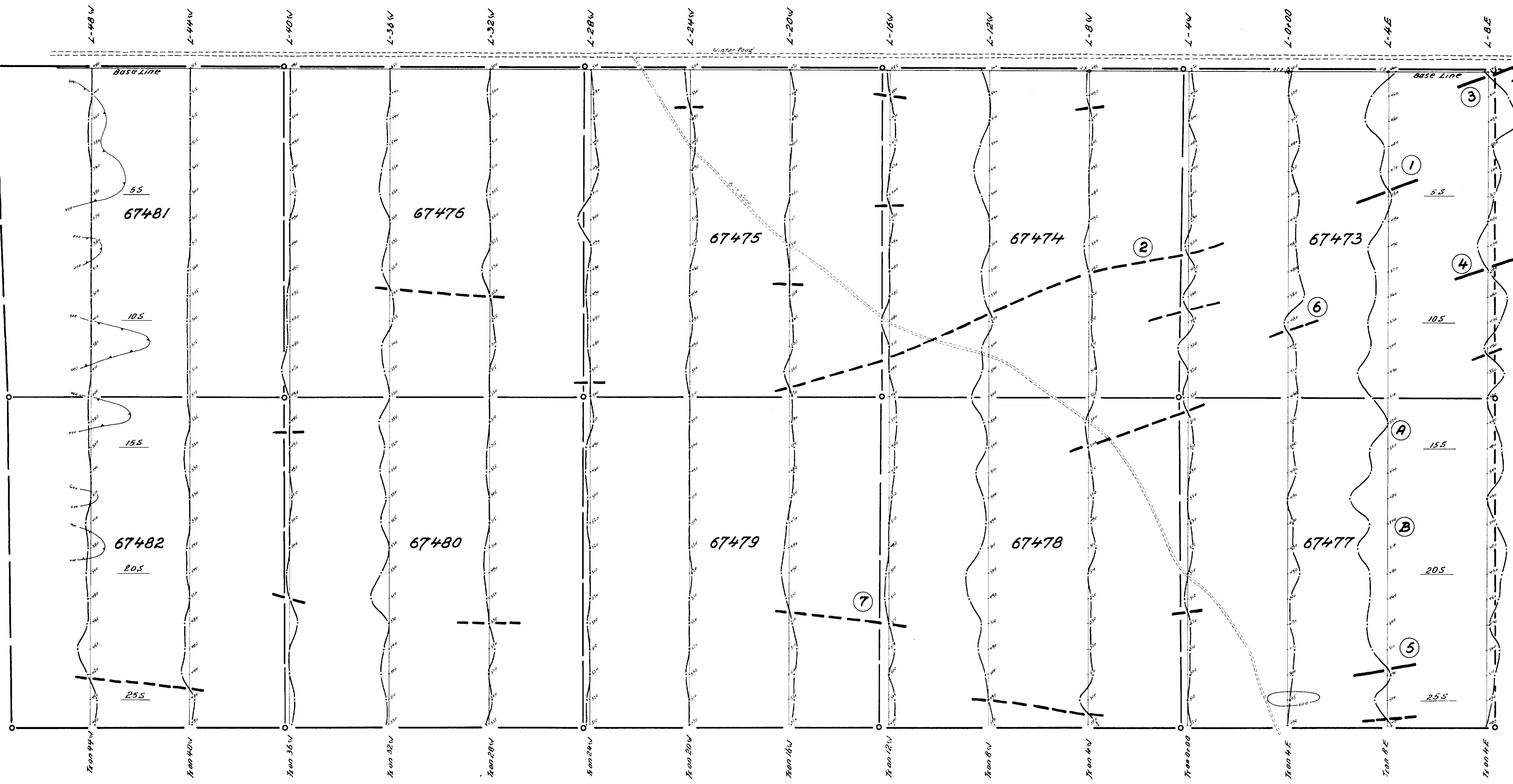


**LOCATION MAP  
LONN PROPERTY**

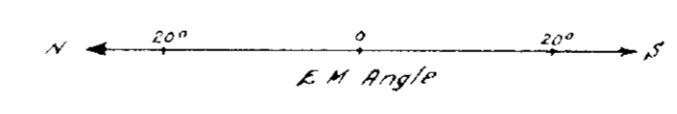
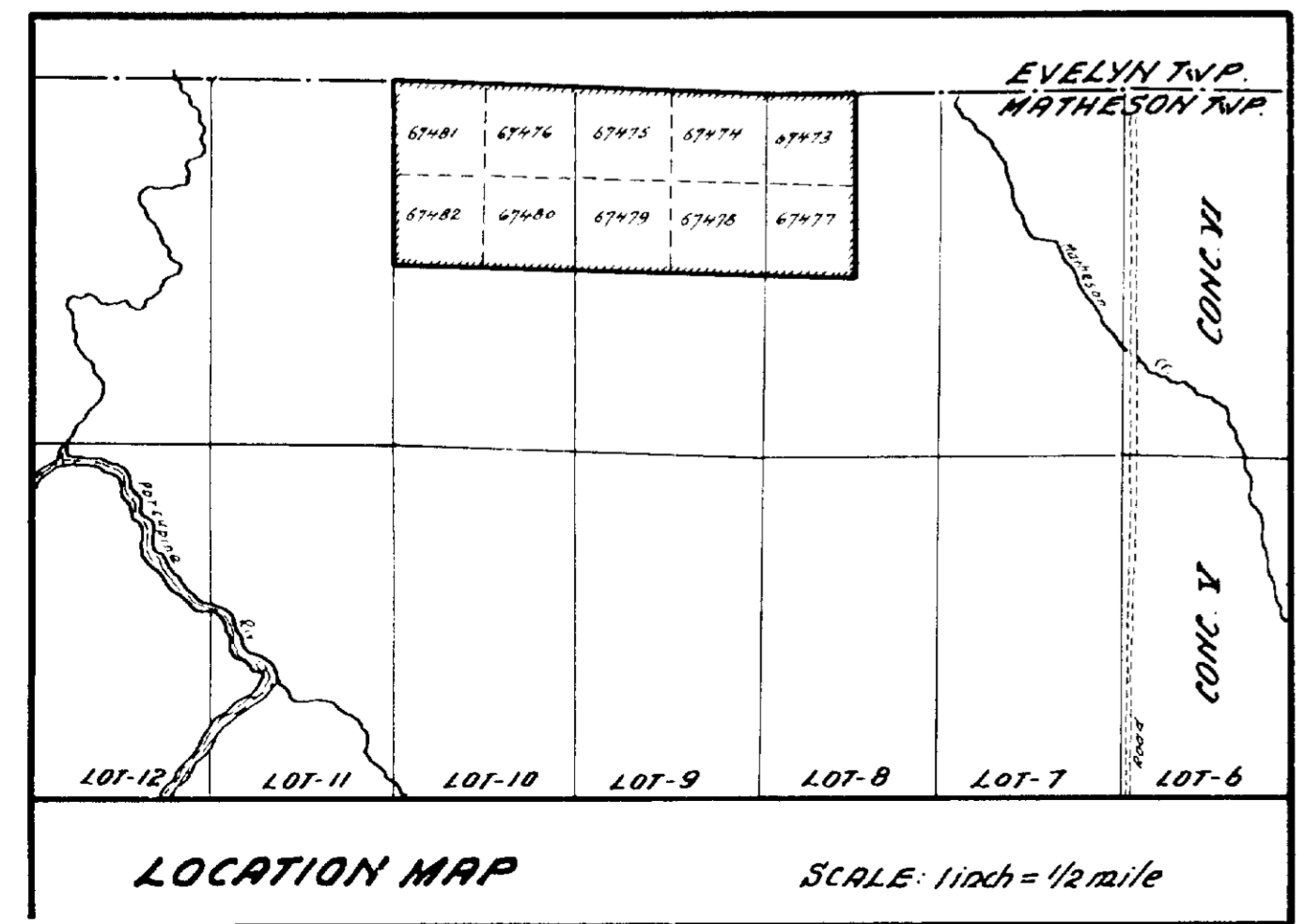
**MATHESON TOWNSHIP  
PORCUPINE MINING DIVISION  
COCHRANE DISTRICT  
ONTARIO**

**SCALE: 1" = 20 miles      DATE: August, 1964.**





EVELYN TWP.  
MATHESON TWP.



**LEGEND**

—— Medium Conductor  
 - - - - Weak Conductor  
 (2) Conductor Number  
 (A) Conductor Indication  
 Contour Interval 200 Gammas

**LONN CLAIM GROUP**

MATHESON TOWNSHIP  
 TIMMINS AREA  
 ONTARIO

**MAGNETOMETER SURVEY  
 AND  
 SE 300 EM PROFILES**

SCALE: 1" = 200'

DATE: July, 1964.

