DOMINION GULF COMPANY

GEOLOGY OF SCHOLES TOWNSHIP CLAIMS

GROUPS I AND II

TEMAGAMI AREA

PROVINCE OF ONTARIO

H. Reimer
July 5, 1952

63-349

Geology of Scholes Township Claims
Groups I and II
Temagami Area

GENERAL

The claims are located in the northeast corner of Scholes Township, about 17 air miles west of the town of Temagami. Access can be gained by air from Temagami or Sudbury.

There are 29 claims in all with 13 in the south group and 16 in the north group. An accompanying map shows the geology on a scale of 1 inch = 400 feet.

SUMMARY AND RECOMMENDATIONS

Only two rock types were found. Cobalt greywacke underlies the south group while an uninteresting diabase sill of Nipissing age covers the north group. An effort was made to determine the cause of the anomalous condition observed in the magnetics but no clues can be obtained from the known surface geology. By analogy with areas to the east and west, the anomalous condition is probably caused by Keewatin iron formation underlying the greywacke and diabase. No windows of Keewatin rocks were found. The only structure worked out was a suggestion of doming in the greywacke of the south group.

Since the anomalous mass is probably iron formation it would be less economically interesting for iron when overlain by an unknown thickness of diabase and greywacke. Gold has been discovered westward around Emerald Lake in Afton Township within the iron formation. Exploration for gold would be a costly gamble. No further work is recommended.

TOPOGRAPHY

The topography over the north group is extremely rugged. It is controlled by remnants of the diabase sill. Due to the vertical columnar jointing, precipitous cliffs are formed up to 250 feet high. The south group is more gently rolling as no diabase occurs.

DESCRIPTION OF FORMATIONS

Cobalt Greywacke

This is the oldest rock and three main phases are found: The commonest phase is a massive fine to medium grained greywacke of dark green colour. Numerous quartz eyes occur. This phase grades almost insensibly into a conglomeratic phase by addition of more and more pebbles and boulders. These vary in size from 1/4" to 2-1/2 feet. They are usually granite, greenstone, schist and gneiss with granite predominating.

A distinct phase is a well bedded greywacke which resembles varved clays in appearance. Bands vary in width from 1/8" to 2 inches. A number of bedding determinations were possible. Some slaty phases are present with oxidized pyrite cubes up to 1/8" across. Poorly developed ripple marks were also observed.

The massive and conglomeratic phases occupy most of the high ground in the northeastern portion of the claim group. The banded varieties are usually found along the lake shore and in the lower ground. This suggests that the banded phase occurs as a lower horizon than the more massive phase.

Greywacke is the only rock found on the south claim group. The only exception is a small amount of diabase in the southwest portion of the claim group.

Nipissing Diabase

The Nipissing diabase is the youngest rock in the area and was intruded as a flat lying sill. Some cliffs are 250 feet high and are formed parallel to the major jointing directions.

It is a fresh looking rock of medium to coarse grain. It is greyish in colour and exhibits a diabasic texture. It overlies the greywacke described above. The north claim group is underlain entirely by diabase.

STRUCTURAL FEATURES

The only major structural feature worked out is a dome-like structure in the greywacke in the south group. This is indicated by dips and strikes obtained from the banded greywacke.

The common joint directions are indicated on the map. These joints are common to both the diabase and the greywacke. In the diabase they exert a controlling factor on the formation of the cliff faces. The common joint systems are as follows:

N 20° E - dip vertical
N 70° E - dip 70° N and 70° S
N 20° W - dip 80° W.
E-W - dip 80° S

Narrow barren quartz veins are found filling the N 70° E joints.

ECONOMIC POSSIBILITIES

The anomalous condition indicated by the magnetics is probably due to iron formation by analogy with other areas in the vicinity. Since it is very unlikely that the iron formation would not require beneficiating, it is not an economic proposition. Gold has been found in Afton Township in the iron formation, but due to the overlying formations, exploration will be costly. No more work is recommended.

H. Reimer

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Assessment Report
on
Ground Magnetometer Survey
Scholes Township Claim Groups I and II
Scholes Township
Timagami Mining Division
Province of Ontario

INTRODUCTION

Twenty-nine claims were staked by the Dominion Gulf Company, in Scholes Township, Timagami Mining Division, Province of Ontario, in July, 1951. The claims are divided into two blocks, Scholes I consisting of 13 claims, and Scholes II half a mile to the north-west containing the remaining 16 claims. Interest in the area stemmed from a magnetic anomaly indicated by an airborne magnetometer survey of the area. Reconnaissance geological investigations on the claim groups have indicated that the western half of the area of interest is covered by a diabase sill, while the eastern portion is covered by greywacke of the Cobalt series. Keewatin rocks do not outcrop at any place in the vicinity of the claim groups.

Since the aeromagnetic anomalies could not be explained by either the diabase sill or the Cobalt sediments it was proposed to survey the claim groups with a ground magnetometer. The purpose of the survey was to delineate the structure in the underlying Keewatin rocks. In order to obtain a certain degree of continuity between the two claim groups, the surveys were carried out as a single unit, the two surveys being reduced to a common base level.

An Askania Schmidt-type magnetic balance having a sensitivity of about 25 gammas per scale division, was used in the survey. Basic coverage consisted of readings taken on picket lines 400 feet apart, using a station interval of 100 feet. Additional picket lines, and intermediate stations were read in zones of steep magnetic gradients, in an attempt to obtain a unique solution of the distribution of the magnetic field. In all, a total of 1553 stations were observed on 28.9 miles of picket line.

The magnetic data were observed and reduced by a Dominion Gulf Company magnetometer crew, and then transmitted to the Toronto office of the Dominion Gulf Company for further processing and interpretation. The basic data, together with isomagnetic contours and interpretation are presented on a map at a scale of 1 inch equals 400 feet, accompanying this report.

INTERPRETATION

The ground magnetometer survey was hindered by rugged topography. Diabase cliffs up to 250 feet high are common in the western portion of the area. Many lakes and streams dot the country. All of the coverage on the lakes was obtained during the winter season, while the land portion of the survey was conducted during the late spring.

In general, the magnetic data obtained from the survey are reflecting the structure in the Pre-Cobalt rocks of the underlying basement. Two magnetic anomaly zones, both of which strike N 45° E, are immediately evident. A third parallel band may be indicated by increasing magnetic values in the extreme southeast corner of the map area.

The northwestern anomaly zone is somewhat unique, owing to the uniformity and regularity of the contours derived from the basic magnetic data. This factor immediately suggests that the magnetic body lies at depth. If the geometry of the body

Interpretation cont'd

is presumed to be a vertical slab of finite horizontal dimensions, and infinite vertical dimensions, with a horizontal, rectangular top surface, an estimate of the depth may be made. Considering the geology of the Keewatin in this area, and the magnetic profiles across the body, it is believed that these conditions are approached, although a steep dip (about 80°) to the south may be indicated. Consequently two depth estimates were computed for the anomalous body on line 60W near the middle of claim T-31367. A depth of 370 feet was indicated on the south side of the body, while a depth of 550 feet was indicated for the north side. Correcting these calculations for elevation, a depth of 145 feet sub Cummings Lake is obtained for the south side of the anomalous body, and 420 feet sub Cummings Lake for the north side. Since the topography is much more rugged on the south side, and the magnetic profile consequently more regular on the north side, it is believed that the true depth is about 350 feet sub Cummings Lake. From the appearance of the anomalies this depth estimate would hold for all of the northwestern anomaly.

The southeastern anomaly is much more complex, being composed of a deep section which gradually becomes shallower in the central section, and abruptly becomes white shallow in the northeastern portion. A single depth determination on the southwestern portion of the anomaly i.e. on line 56W immediately south of the shoreline of Cummings Lake indicates a depth to the top surface of the anomalous body of 500 feet sub Cummings Lake. A similar calculation on the same anomaly at 1600 feet north of the main base line on line 16W indicates a depth below surface of 45 feet, on an elevation of 100 feet above Cummings Lake to the top surface of the anomalous body. East of line 16W, the anomalous body appears to remain approximately at this elevation.

In the western half of the map area sharp local anomalies appear to be superimposed on the large, broad anomaly indicative of the anomalous body at depth. These local anomalies are associated with near surface bodies and in fact may be correlated with isolated pods of magnetite in the diabase sill which covers most of the western portion of the map area. It is doubtful if they have any economic significance.

Three faults have been indicated, all three being located toward the northeastern end of the southeastern anomaly zone. Two of these faults, striking N 30° W have been interpreted from offsetting of the magnetic anomalies. The third, striking N 10° E has been interpreted from topography and from what appears to be a sharp change in elevation of the anomalous body. This fault indicates movement east side vertically up, while the two parallel faults mentioned previously indicate block faulting, the centre block moving northwest and vertically up.

From the susceptibility of the anomalous bodies, it may be concluded that the source of the magnetic anomalies is either a basic intrusive or iron formation, of which the latter is preferred. Iron formation has been mapped on strike with these formations both northeast and southwest of the map area. Whether the iron formation is of economic grade, or not, cannot be determined without a diamond drilling program.

It would appear from the results obtained, that this survey has been partially successful only. It is believed that the contacts of the anomalous bodies have been quite accurately delineated, and that the three faults indicated may have some structural significance. However, there still remains a reasonable doubt as to the source of the magnetic anomalies. Here again, it is anticipated that the anomalies are due to iron formation, but the percentage of iron present in the iron formation remains a mystery.

J. H. Ratcliffe

/dc

APPENDIX A

Based on intensity index curves compiled for several other iron formation areas in which the Dominion Gulf Company has operated, Scholes I and II rate fairly high. While the intensities obtained over the anomalies are in no way comparable to Boston II, they are superior to Ko-ko-ko, Iron Lake, Brunton, McGowan, and Ligneris anomalies. While this cannot be construed as directly indicative of the percentage of iron present due to the dependence of the intensity on form factors inherent in the geometry of the system, in addition to the iron content, it does provide a rough measure of the value of the anomalies.

It would appear that the grade of iron to be expected might be classified as marginal. It is therefore suggested that two diamond drill holes at least are justified. The purpose of the first hole would be to sample the southeastern anomaly at the point of maximum intensity, i.e. 1600 feet north on line 16W. The second hole is designed to sample the northwestern anomaly at its most promising point, near the centre of claim T-31367. Any further drilling would be dependent on the receipt of encouraging assay results from these two holes.

J. H. Ratcliffe.

/dc

900

JAN 28 1953

REGISTERED

Mr. H. C. Rickaby,
Deputy Minister of Mines,
Ontario Department of Mines,
Parliament Buildings,
Toronto, Ontario.

Dear Mr. Rickaby:

Enclosed with this letter I am forwarding to you a report in duplicate covering geological and geophysical work performed on 29 claims located in Scholes Township. These claims are divided into 2 groups as follows:

Group I - 13 claims numbered T-31382 to T-31394 inclusive.
Group II - 16 claims numbered T-31366 to T-31381 inclusive.

Our geological work on these claims is covered in the attached report and map prepared by Mr. Henry Reimer, a member of our geological staff. The geophysical work consisted of a ground magnetometer survey which is covered in a report prepared by Mr. J. H. Ratcliffe, a member of our geophysical staff. A contoured and interpreted map of the ground magnetic field data is also attached in support of the report.

A breakdown of the man-days required for the work reported herein with their assessment credit values is shown in the following schedule:

	Actual Man-days	Assessment Factor	Assessment Credit In Man-days	Distribution Grp. I Claims	Grp. II Claims
Geological Survey					
Linecutting (E. Holmblad, Chief)	107	4	428	148	280
Field Work (H. Reimer, Geologist)	50	4	200	52	148
Drafting and Report (H. Reimer, Geologist)	4	4	16	8	8
Subtotal	161		644	208	436

Mr. H. C. Rickaby,
Ontario Department of Mines,
Parliament Buildings,
Toronto, Ontario.

	Actual Man-days	Assessment Factor	Assessment Credit In Man-days	Distribution Grp. I Claims	Distribution Grp. II Claims
Ground Magnetometer Survey					
Instrument Operators and Assistants (E. Millar, Chief)	96	4	384	188	196
Drafting (M. Sturrock)	3	4	12	6	6
Interpretation and Report (J. H. Ratcliffe, Geophysicist)	3	4	12	6	6
Subtotal	102		408	200	208
Total	263		1,052	408	644

You will note that in the above schedule we have apportioned the accumulated work credit between the 2 groups of claims. The linecutting, geological field work, and ground magnetometer operators' time has been split with regard to actual number of days spent on each group of claims. Since combined maps and reports were prepared for both groups, we divided the work credit from this phase equally between the 2 groups.

The work credit has been reported to the Mining Recorder in the following amounts with regard to each claim:

Claim Number	Geological Group I	Geological Group II	Ground Magnetometer Group I	Ground Magnetometer Group II	Total Work Credit
T-31366		28		13	41
67		28		13	41
68		28		13	41
69		28		13	41
70		27		13	40
71		27		13	40
72		27		13	40
73		27		13	40
74		27		13	40
75		27		13	40
76		27		13	40
77		27		13	40
78		27		13	40
79		27		13	40
80		27		13	40
81		27		13	40

Mr. H. C. Rickaby,
Ontario Department of Mines,
Parliament Buildings,
Toronto, Ontario.

Claim Number	Geological		Ground Magnetometer		Total Work Credit
	Group I	Group II	Group I	Group II	
T-31382	16		16		32
83	16		16		32
84	16		16		32
85	16		16		32
86	16		16		32
87	16		15		31
88	16		15		31
89	16		15		31
90	16		15		31
91	16		15		31
92	16		15		31
93	16		15		31
94	16	—	15	—	31
Total	208	436	200	208	1,052

I am enclosing a copy of our Schedule A which accompanied each work report filed with the Mining Recorder. This schedule shows the complete listing of the men employed on the separate surveys and the dates during which the work was performed.

Very truly yours,

ORIGINAL SIGNED BY
E. W. Westrick
E. W. Westrick.

RSF/JV
Attachments follow in this order:

1. Schedule A showing employees engaged in work reported
2. Geological report written by Henry Reimer
3. Geological map, scale 400' to the inch
4. Ground magnetometer report written by J. H. Ratcliffe
5. Contoured and interpreted map of ground magnetic data, scale 400' to the inch

Schedule A

Group I, Claims T-31382 to T-31394

	1952						
	Jan.	Feb.	Apr.	May	June	July	Aug.
Linecutting							
R. C. Cunningham	X						
E. Holmblad	X	X					
E. Ingman	X	X					
E. Millar					X		
D. H. Peters					X		
Detailed Geology							
Field Work							
H. Reimer					X	X	
R. Gemmell					X	X	
D. K. Burke					X	X	
J. Hamlen					X	X	
Drafting							
H. Reimer						X	
Report							
H. Reimer						X	
Ground Magnetometer							
Field Work							
R. Jutras				X	X		
E. Millar				X	X		
D. H. Peters				X	X		
Drafting							
H. Rickets					X		
M. Sturrock					X		X
Interpretation and Report							
J. H. Patcliffe					X		

The address for the above personnel is

203 Bay Street, Toronto, Ontario.

Schedule A

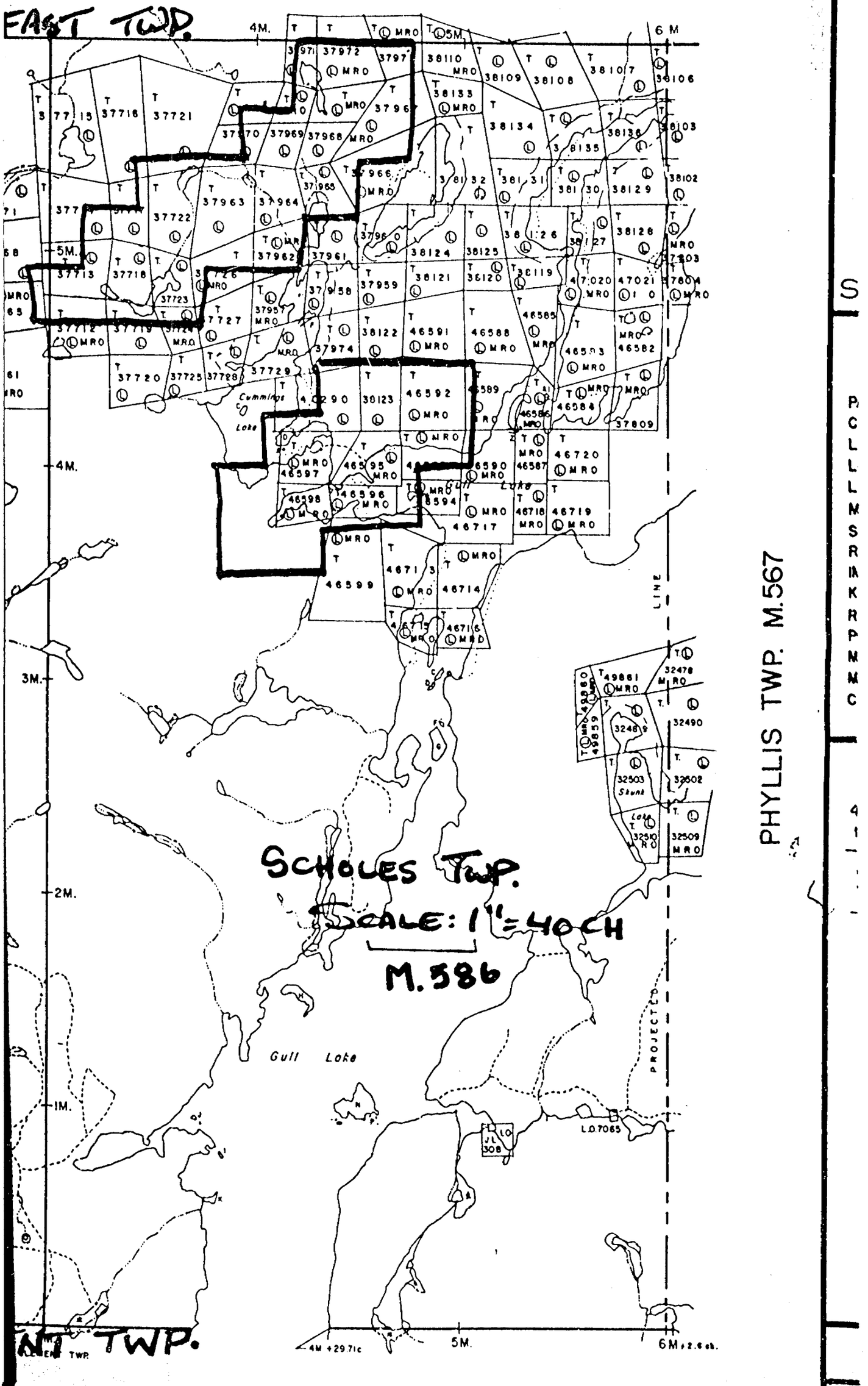
Group II, Claims T-31366 to T-31382

	1952						
	Feb.	Mar.	Apr.	May	June	July	Aug.
Linecutting							
E. Holmblad	X	X					
E. Ingman	X	X					
W. A. Herron	X	X					
O. Eliason	X	X					
D. K. Burke		X					
C. Smith		X					
R. Jutras				X			
E. Millar				X			
D. H. Peters				X			
Detailed Geology							
Field Work							
H. Reimer					X	X	
R. Gemmell					X	X	
D. K. Burke					X	X	
J. Hamlen					X	X	
Drafting							
H. Reimer						X	
Report							
H. Reimer						X	
Ground Magnetometer							
Field Work							
R. Jutras				X			
E. Millar				X			
D. H. Peters				X			
Drafting							
H. Rickets					X		
M. Sturrock					X		X
Interpretation and Report							
J. H. Ratcliffe					X		

The address for the above personnel is

203 Bay Street, Toronto, Ontario.

ST TWP. M.414

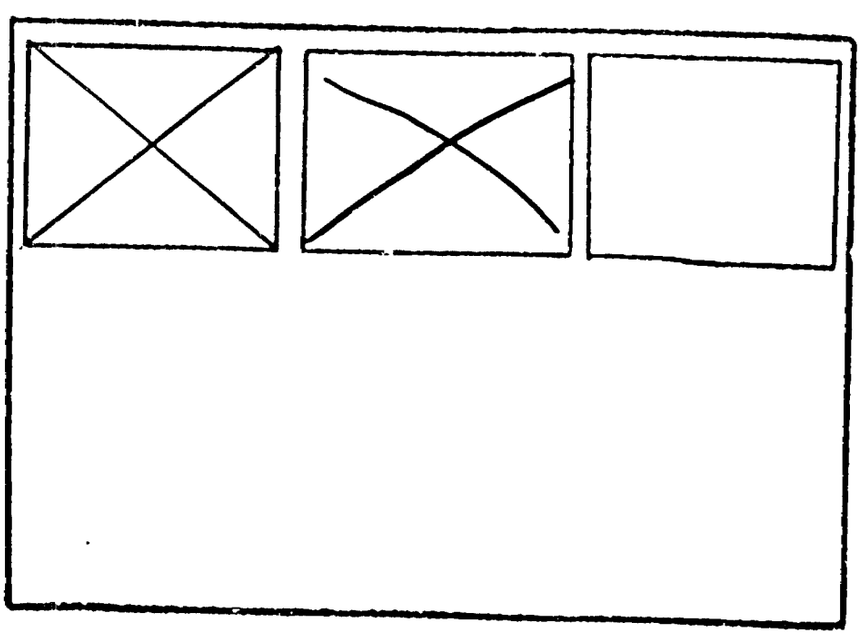

EAST TWP.
4M.
5M.
6 M
3M.
2M.
1M.
Cummings Lake
Gull Lake
Gull Lake
LINE
PROJECTED
L.O.7065
SCHOLES TWP.
SCALE: 1"=40CH
M.586
PHYLLIS TWP. M.567
NW TWP.
4M +29.71c
5M.
6M +2.6 ch.

SEE ACCOMPANYING MAP(S) IDENTIFIED AS

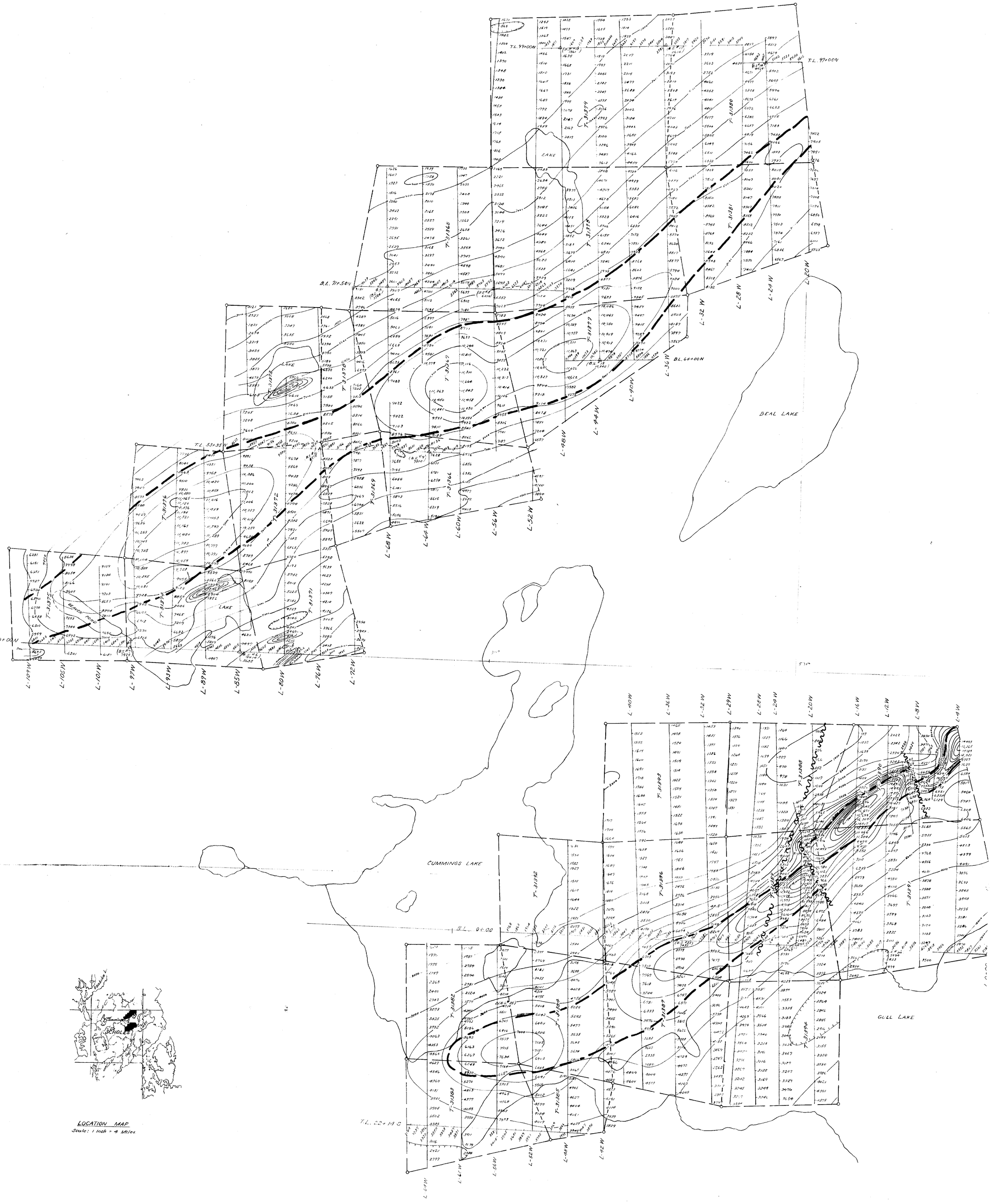
SCHOLES-0017-A1-#1

#2

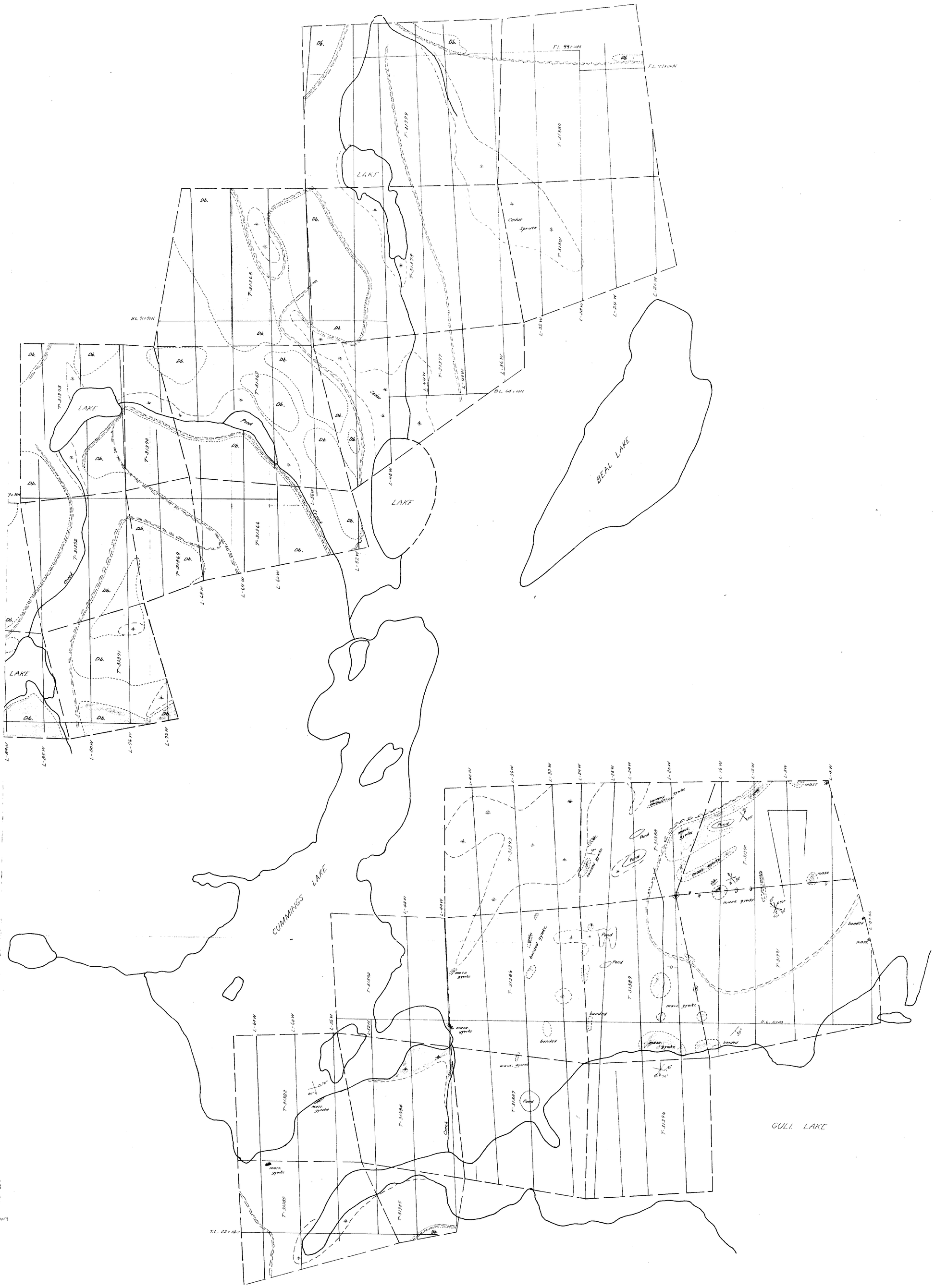
LOCATED IN THE MAP CHANNEL IN THE FOLLOWING SEQUENCE (X)



LOCATION MAP
Scale: 1 inch = 4 miles



LOCATION MAP
Scale: 1 inch = 4 Miles.



DOMINION GULF COMPANY

GEOLOGICAL PLAN

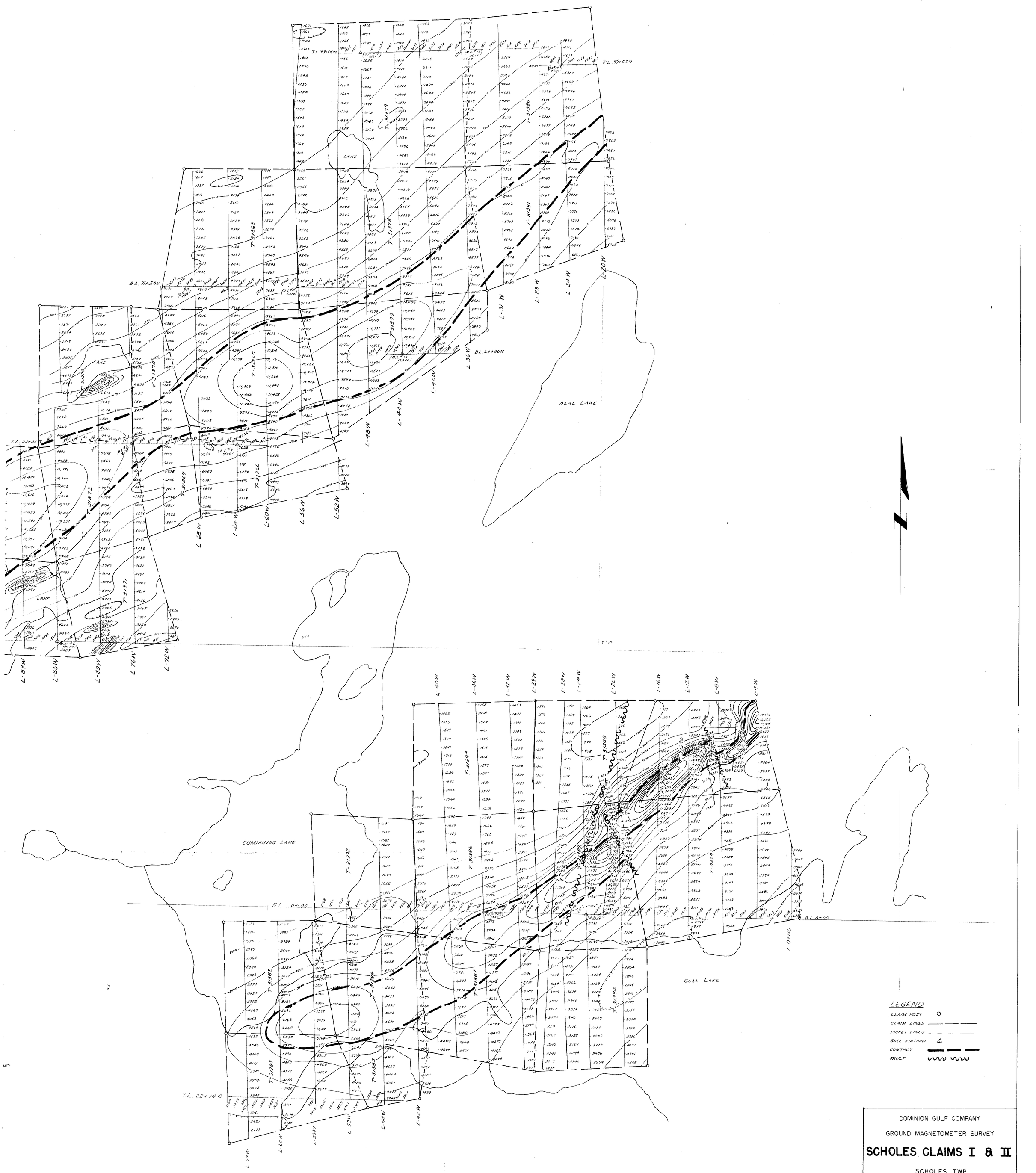
SCHOLES CLAIMS I & II

SCHOLES TWP.

PROVINCE OF ONTARIO

Scale 1" = 400' Aug. 5, 1952.

SCHOLES-52-17-A1



LEGEND

- CLAIM POST ○
- CLAIM LINES ——— ——— ———
- PICKET LINES ——— ——— ———
- BASE STATIONS △
- CONTACT ——— ——— ———
- FAULT ∿∿∿ ∿∿∿

DOMINION GULF COMPANY

GROUND MAGNETOMETER SURVEY

SCHOLES CLAIMS I & II

SCHOLES TWP.

PROVINCE OF ONTARIO

Scale 1" = 400' June 27, 1952.

Contour Interval 1000 Gammas.

SCHOLES-0017-A1-#2 [redacted]