



41P14SE0024 63A.136 SOTHMAN

010

Geological Assessment Report
Claims Group 1, Semple and Sothman Townships, Ontario

INTRODUCTION

This report deals with sixty-seven of the one hundred and twenty-nine claims forming Semple Township Claims Group 1, owned by Dominion Gulf Company in Semple and Sothman Townships. They are more specifically as follows:

S-55746, S-55748 to S-55753 inclusive, S-55755 to S-55762 inclusive, S-55764, S-55766 to S-55770 inclusive, S-55781, S-55784 to S-55787 inclusive, S-55790 to S-55796 inclusive, S-55899 to S-55902 inclusive, S-55905 to S-55909 inclusive, S-55913, S-55914, S-55919, S-55920, S-56621 to S-56633 inclusive, S-56824, S-56825 in Semple Township and S-55739 to S-55743 inclusive, S-55916 to S-55918 inclusive in Sothman Township.

The group is approximately thirty-five miles south of South Porcupine, Ontario, from which town it is readily accessible by plane using Hurting Lake at the west side of the claim group as a landing spot. It can also be reached by jeep in summer and snowmobile in winter using the Wicks Lumber Company road from the Buffalo Ankerite Mine. The road has not been sufficiently well gravelled to be passable by car except after a very favourable spell of weather.

MAPPING

The claims were mapped in the 1951 field season by W. A. Robinson, and assistants, of the Dominion Gulf Company geological staff.

Rock exposures and topographical features were tied in to chainage points on picket lines which are mainly at four hundred-foot intervals.

PROSPECTING, TRENCHING AND STRIPPING

The claims were thoroughly prospected by experienced men under Robinson's supervision.

A considerable amount of stripping and trenching was done on the rock exposures and much time was devoted to searching for shallow spots in the overburden with a sounding bar.

Numerous samples were taken.

TOPOGRAPHY

The overburden which covers all but a very small part of the area consists mainly of sand. For the most part, its surface is a gently rolling plain although locally there are small ridges up to fifty feet high. They are characterized by a gently sloping north or northwest side and a steep south or southeast side.

Scattered small clear-water lakes are quite numerous and form about ten percent of the surface area. Irregular small swampy areas are also quite numerous and occupy a slightly larger percentage of the area.

SUMMARY OF GEOLOGY

Over the greater part of the area, except in the southeast corner, rock exposures are very scarce and widely scattered. Consequently the amount of known geology is quite limited. However, a fairly good picture can be built up from the geology that can be inferred and interpolated between exposures added to the information obtained from diamond drilling and the interpretation of the ground magnetometer survey.

The largest part of the area is, without doubt, underlain by volcanic flows - mainly andesites but in part dacitic in composition.

These are intruded by numerous dikes and small irregular masses of granite and/or syenite, sill-like bodies of serpentized peridotite, and dikes and small irregular-shaped bodies of gabbro.

The largest body of peridotite is found in the northern part of the claims. This forms a tight crescent-shaped sill (?) so oriented that its open side faces the west. The strike and dip of the pillowed andesites on its north flank suggest that it occupies an anticlinal fold which plunges steeply to the east. However, there are no exposures close to the nose or southern flank of the intrusive from which structural information may be obtained either to substantiate or disprove this supposition.

As the exposures of peridotite were limited to its northern flank, its shape was outlined by a combination of diamond drilling and ground magnetometer survey results.

The peridotite is well fractured and serpentized and contains numerous veins of talc, serpentine and asbestos. However, to date, no asbestos ore bodies have been outlined by surface work or diamond drilling.

Low nickel values were obtained in one diamond drill hole.

Small exposures of peridotite were also found in the southern part of claim S-55916 at the east end of Pountney lake where a sill-like mass with a strike close to northwest is indicated by the magnetometer survey.

Granitic or syenitic intrusives composed essentially of fine-grained reddish feldspar with only small amounts of quartz are exposed south and southwest of Heash lake north of the large crescent-shaped peridotite mass. Gold was found here in a narrow quartz vein in a northeast-striking fracture paralleling the cross shear which offsets the east-west shear at the south end of the claims. This northeast direction may have considerable economic significance as numerous breaks with this strike are indicated by the magnetic survey.

Similar acid intrusives are quite numerous in the southeastern claims. In addition, the more acid dacitic flows are more abundant in this area and several other rock types are to be seen. These include a gabbro exposed on the boundary of claims S-55916 and S-55917, some amphibolites exposed on claims S-55908 and S-55755 and some highly carbonated unidentified rocks associated with a shear in claim S-55916.

STRUCTURAL FEATURES

Rock exposures are so few and so widely scattered, and observable structural features in them so often lacking, that many questions regarding the structure cannot as yet be answered.

Essentially, the area is underlain by a series of volcanic flows which have been closely folded and subsequently greatly eroded so that only the steep-dipping flanks of the folds remain.

The main feature in the northern part of the claims is a large crescent-shaped mass of serpentized peridotite which is thought to mark the position of an anticlinal fold in the volcanics plunging rather steeply to the east.

The peridotite was probably injected during, or subsequent to, folding.

The only definite evidence supporting the view that the fold is an anticline rather than a syncline is the top determination of north in the pillowed flows immediately adjacent to the north flank. However, the wide spacing of the contours of the magnetometer survey around the nose of the fold suggests a dip (here a plunge) to the east.

West-facing pillowed dacites about one and one-half claims to the east of the nose of the fold, if assumed to be representative of all the flows in that area, would suggest a syncline. This evidence is outweighed by the presence of the pillows on the north flank which are closer to the fold and in a part of it less subject to local complexities such as minor crumpling and drag-folding.

Low nickel values obtained in one diamond drill hole near an interpreted post-peridotite fault which runs northeast from Swamp Lake may be related to it. The movement on the fault appears to have been vertical causing an abrupt change in the width of the intrusive.

Acid dikes and irregular intrusive masses cut the lavas in many places and appear to constitute an appreciable part of the area.

In the southwestern part of the claims, the attitude of the flows could not be determined.

In the southeastern corner there are two greatly diverse attitudes divided by an east-west shear zone with associated highly carbonated and altered rocks.

North of it, the flows strike from north ten degrees east to northeast and the tops are northwest. South of it, they strike northwest and the tops are northeast. In both cases the dip is quite steep.

These observations suggest that this is a break of some magnitude which may have considerable economic importance. In the western part of claim S-55916, the east-west shear is offset by a northeast-striking shear.

CONCLUSIONS

The claims are favourably situated only a short distance east of the contact of a granite batholith.

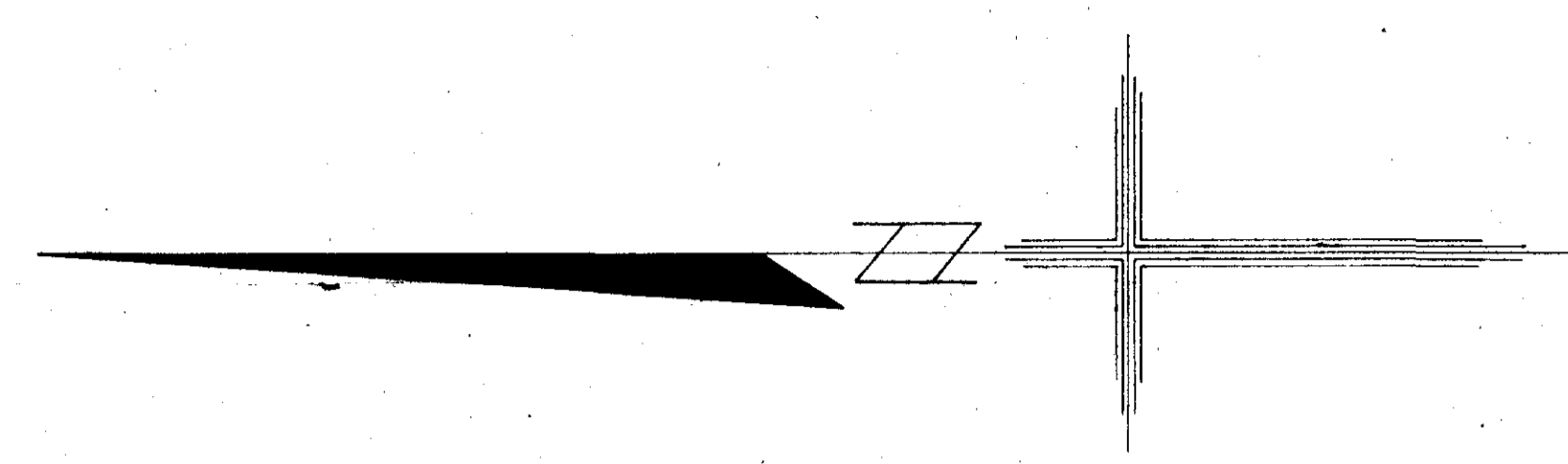
The presence of fractured peridotites, bearing nickel and asbestos minerals, with nearby granitic dikes gives the property some potential economic interest which the work to date has not eliminated.

In addition, factors which make the area good gold-prospecting ground are numerous, viz. the widespread igneous activity which resulted in both acid and basic intrusives, the folding and faulting especially the great shear or "break" in the south with its hydrothermal alteration and a possible multitude of small subsidiary parallel or branch structures, the occurrence of gold at the north end of the property and the occurrence of gold on the Sherwood Gold claims adjoining on the south.

As the trenching and stripping program has been very thorough, it is extremely doubtful if any further work of this nature is economically justified. Therefore additional geological information can probably best be obtained by additional ground geophysical surveys and by diamond drilling.

G. M. Oakley
"G. Oakley"

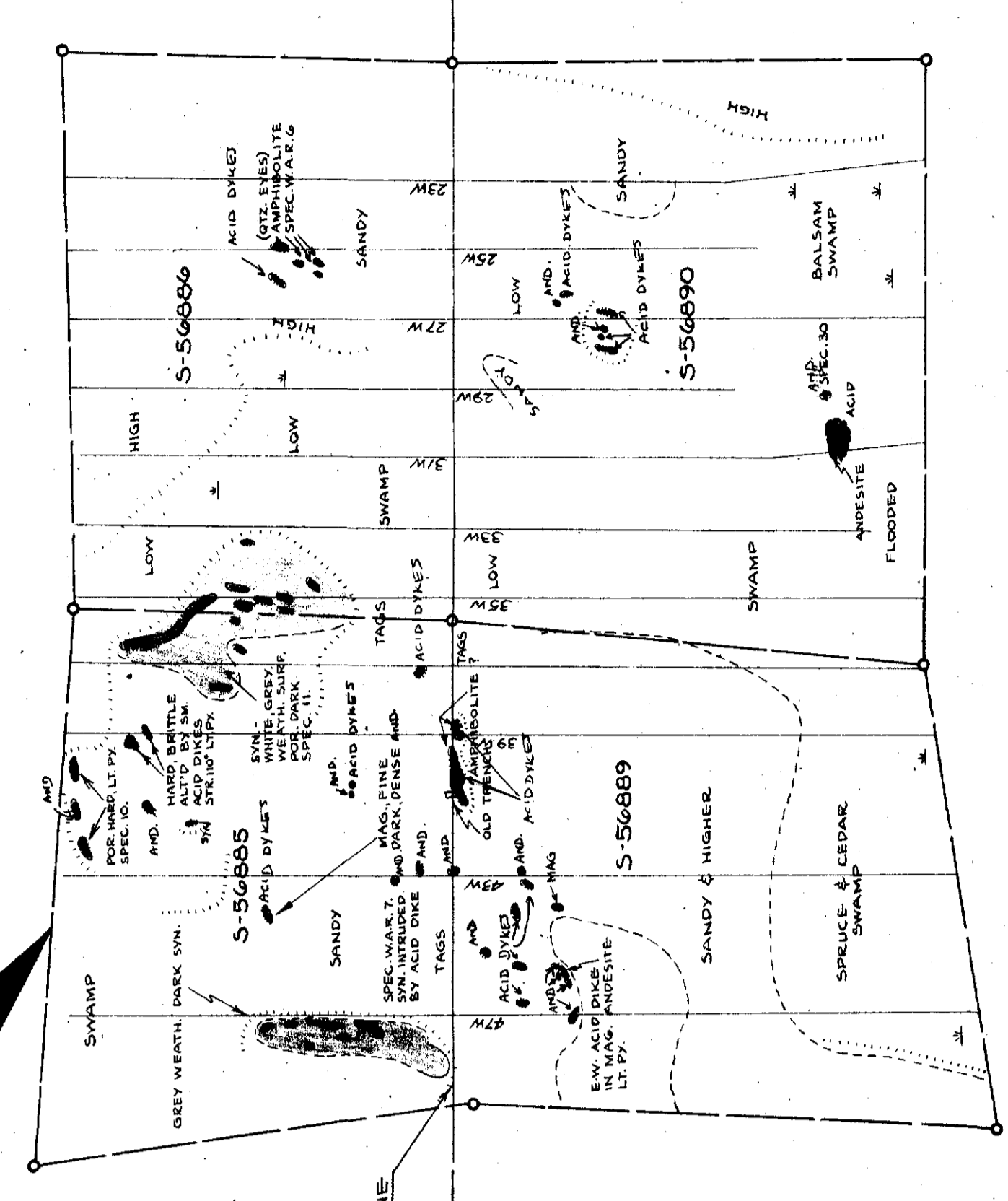
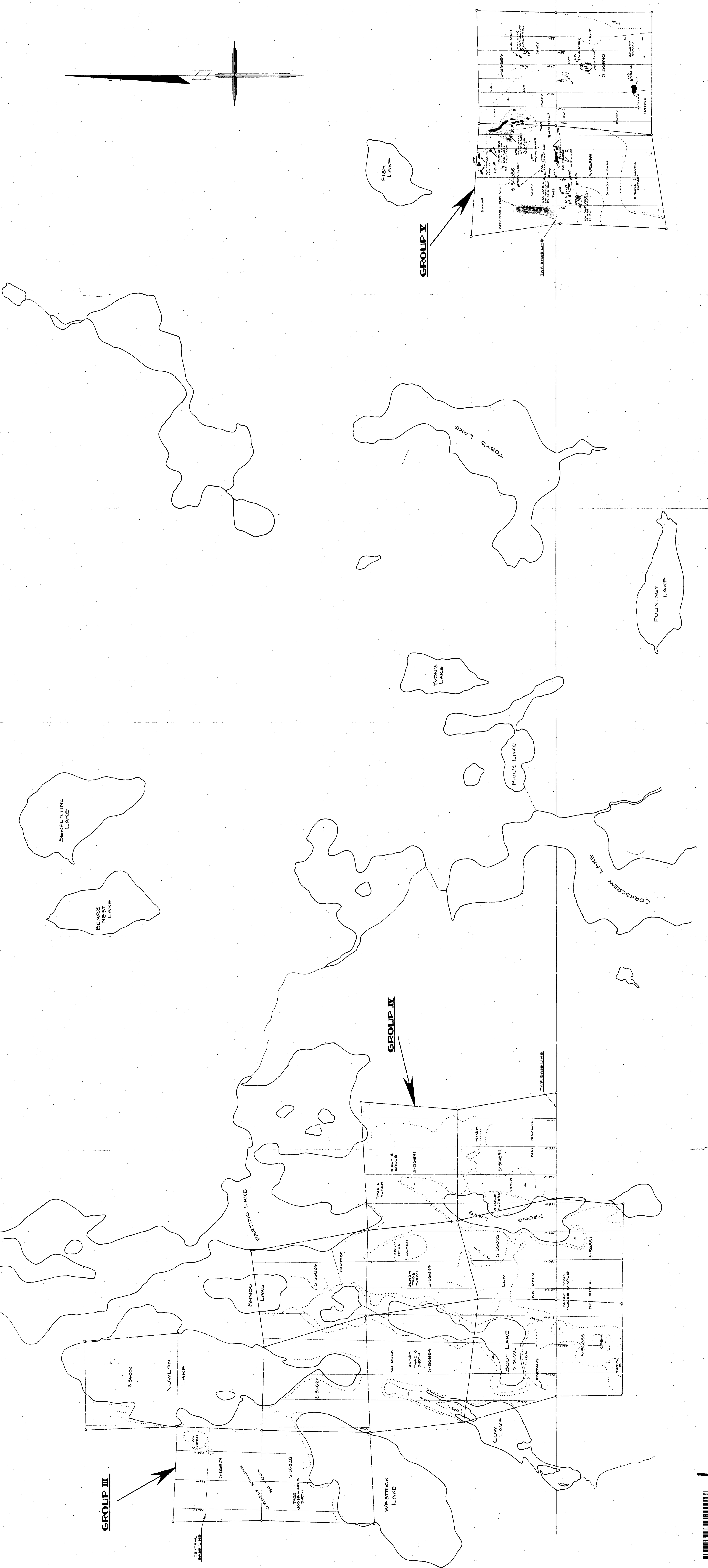
March 11, 1952



- LEGEND**
- ALGOMQUIN
 - ACID DIKES
 - SYENITE
 - KEENWATIN
 - AMPHIBOLITE
 - ANDESITE

DOMINION GULF COMPANY
GEOLOGICAL PLAN
SEMPEL TWP. CLAIMS
GROUP I
SEMPEL & SOTHMAN TOWNSHIPS - PROV. OF ONT.
NOV. 12, 1951.
SCALE: 1"=400'
W. A. ROBINSON.

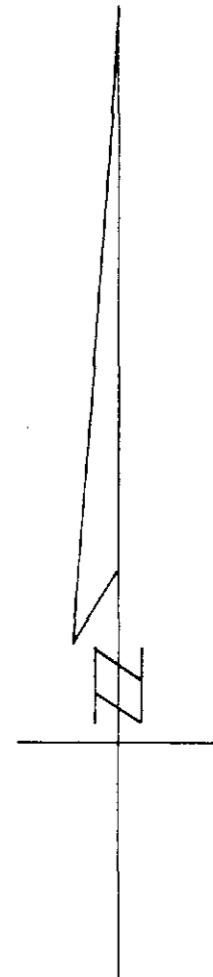
SEMPEL TWP.
SOTHMAN TWP.



26,000 N

24,000 N

22,000 N



16,000 E

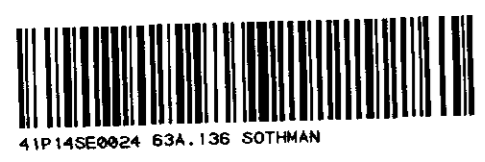
DOMINION GULF COMPANY
TOPOGRAPHY
SEMPLÉ TWP. CLAIMS - GRP. I
 SEMPLÉ TWP. PROVINCE OF ONTARIO
 SCALE : 1" = 400' FEB. 5, 1952.
 NOTE : NO OUTCROPS REPORTED IN THIS AREA.

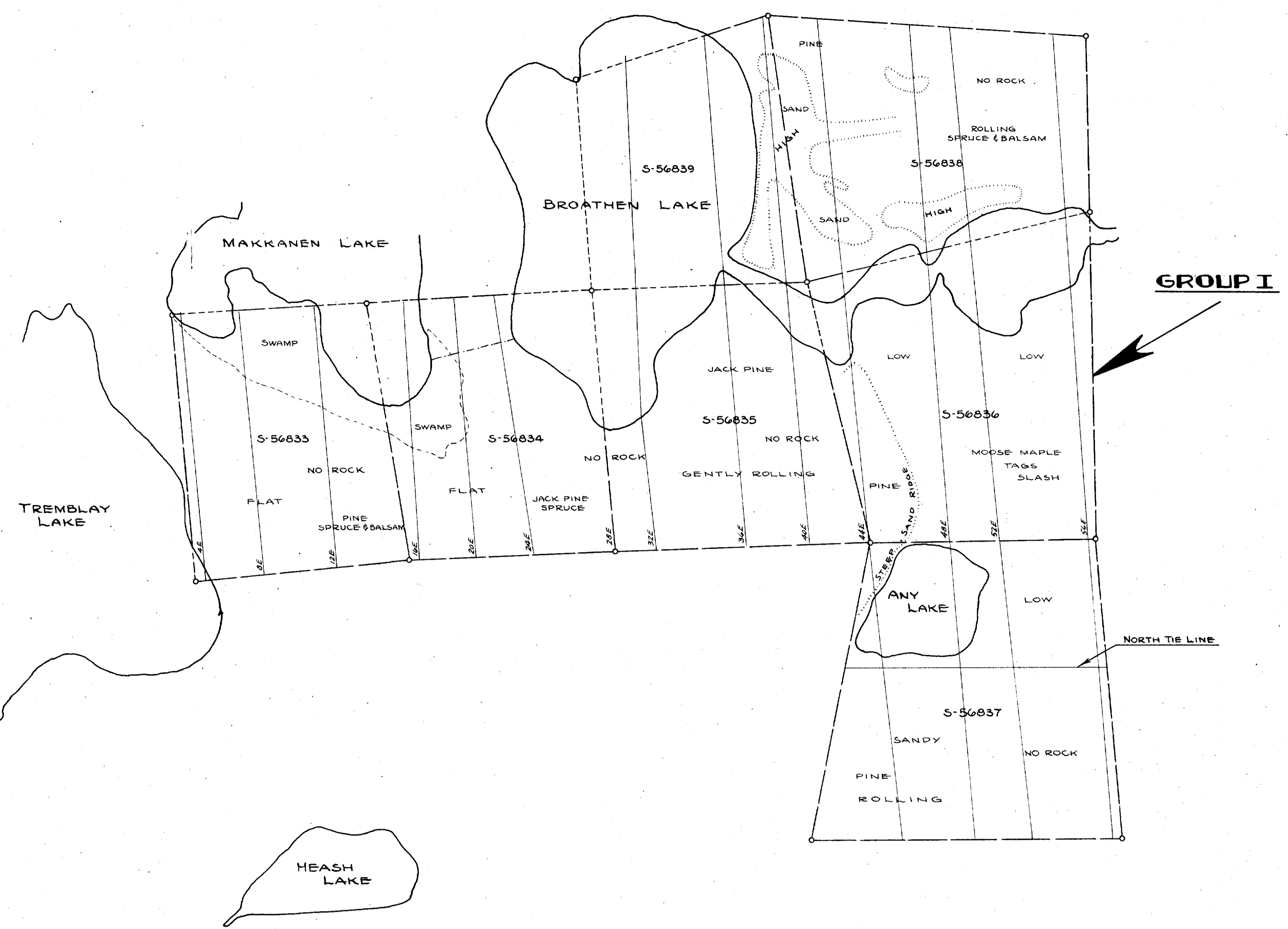
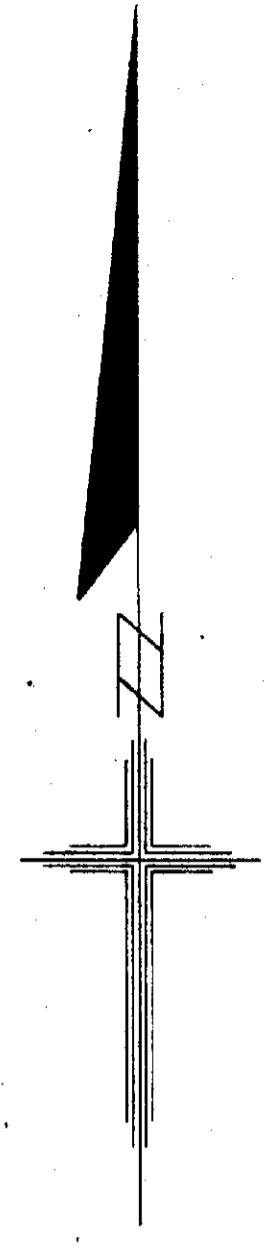
8,000 E

10,000 E

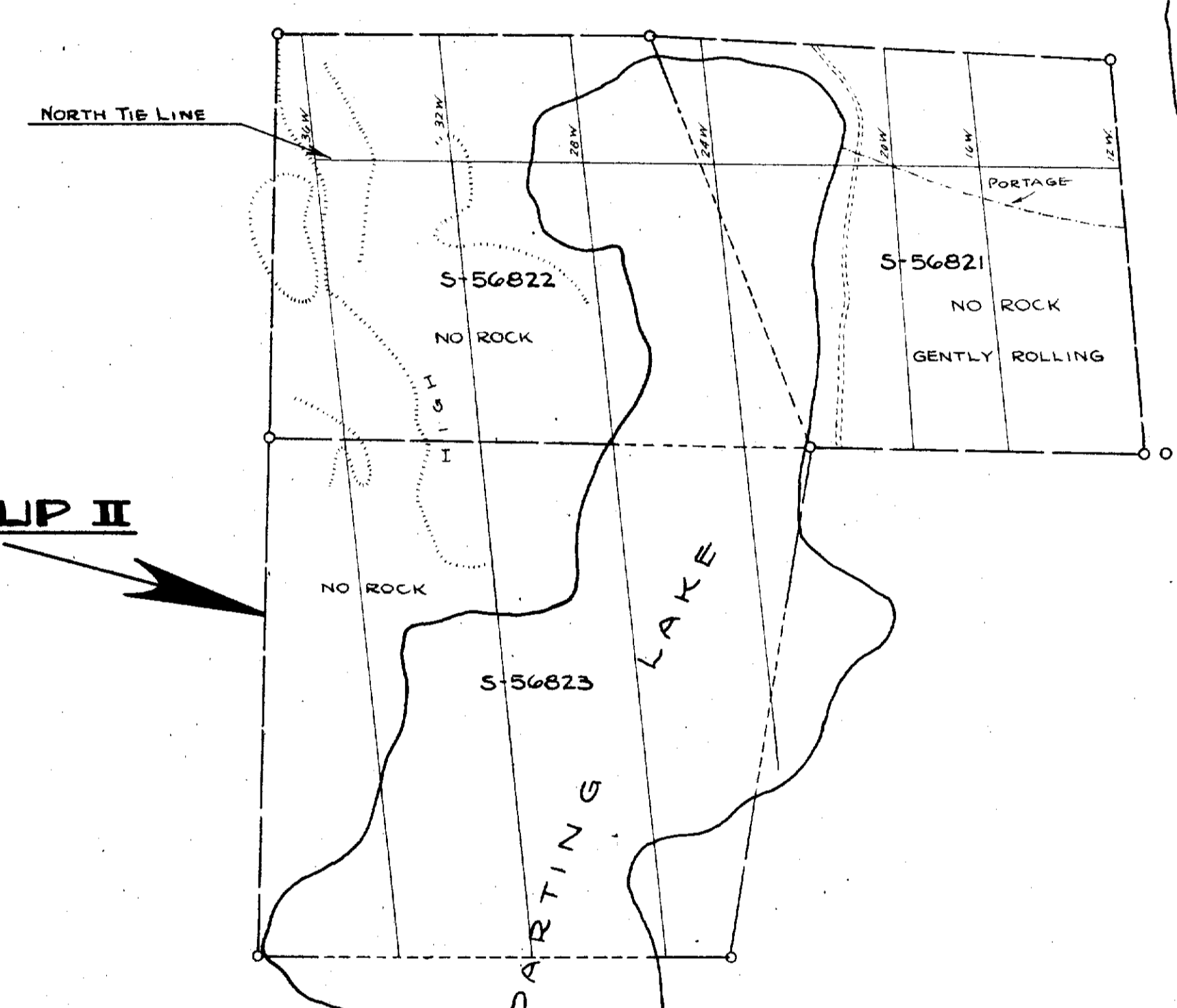
12,000 E

14,000 E

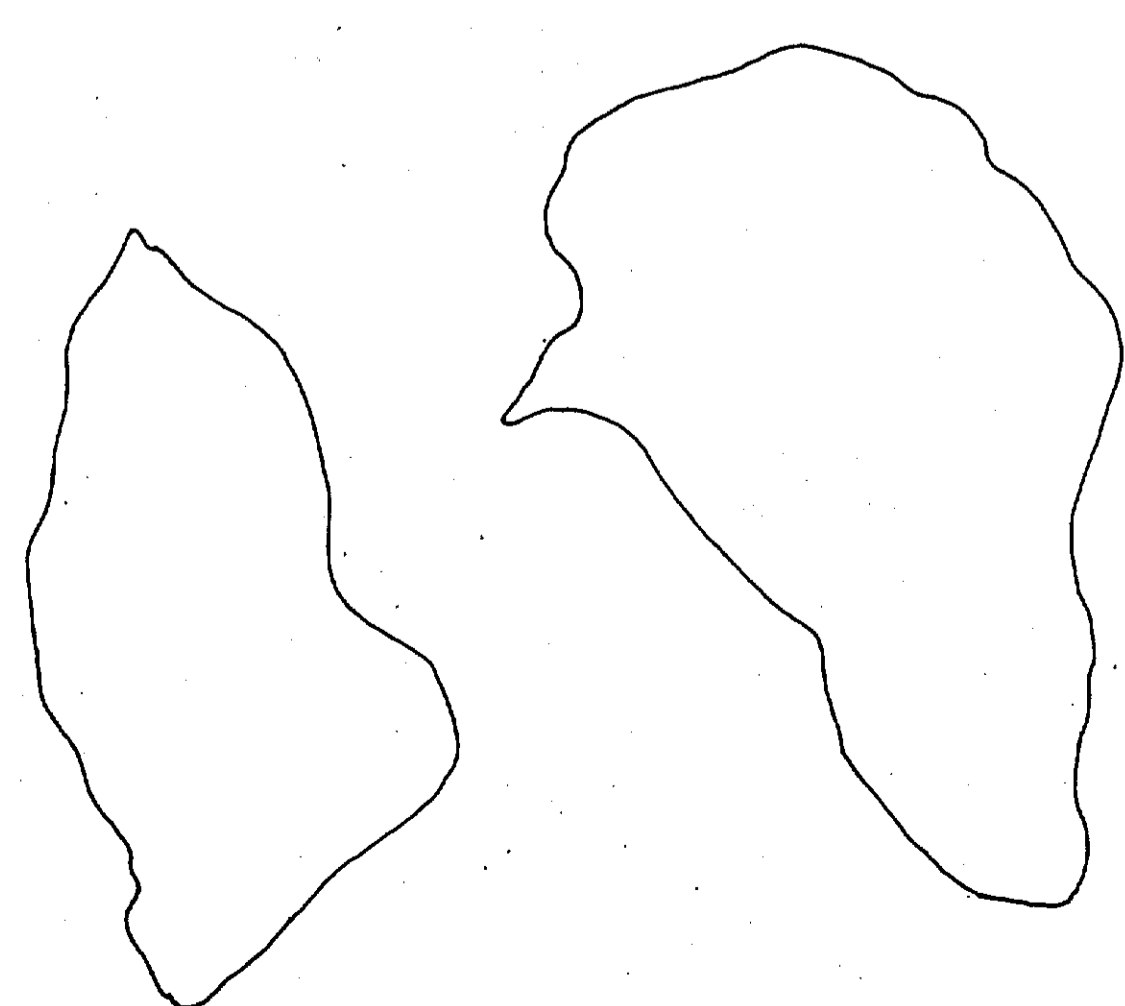
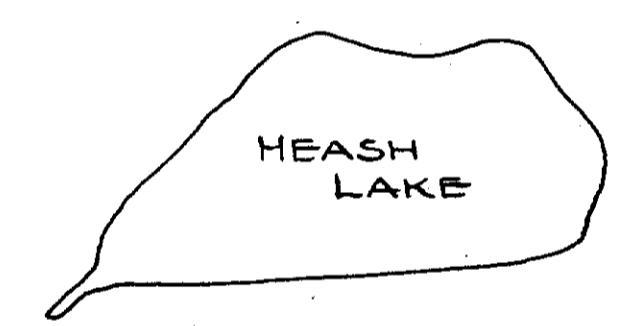




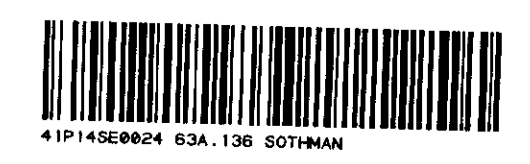
GROUP I

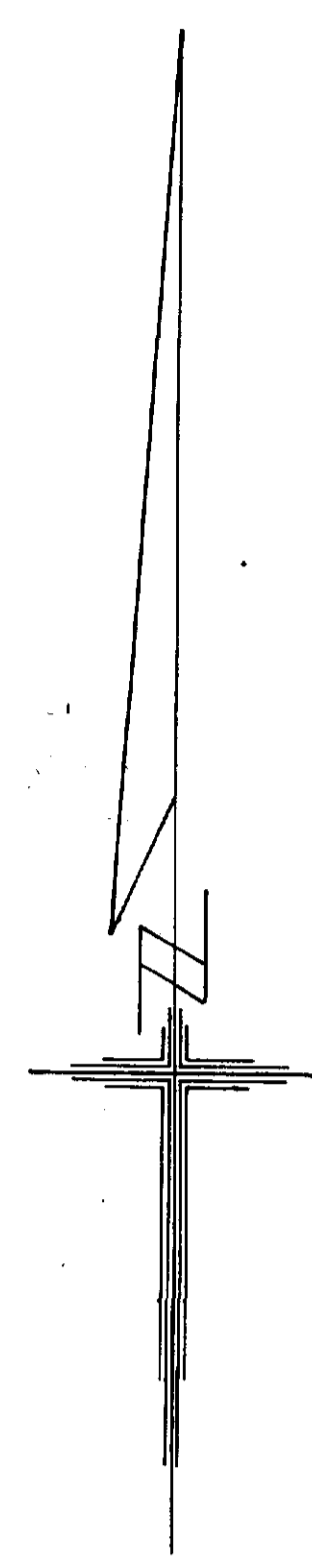


GROUP II



DOMINION GULF COMPANY
TOPOGRAPHY
SEMPLÉ TWP. CLAIMS
GROUP I
SEMPLÉ TWP. - PROV. OF ONT.
SCALE: 1"=400' NOV. 12, 1951.
W.A. ROBINSON





LEGEND

- ALGOMAN**
- A Acid Intrusive
 - Al Diorite
 - A₂ Gabbro
- HAILEYBURIAN**
- H₁ Peridotite (Serpentinized)
 - H₂ Pyroxenite
 - H₃ Gabbro
 - H₄ Diorite
- KEEWATIN**
- K₁ Dacite
 - K₂ Andesite
 - K₃ Dioritic Andesite
 - K₄ Tuff & Agglomerate
 - K₅ Amphibolite
 - K₆ Unidentified Highly Altd Rock

SYMBOLS

- EXPOSURE BOUNDARY
- CONTACT DEFINED
- CONTACT ASSUMED
- OUTLINE OF TOPOGRAPHY
- PILLOW FACING & STRIKE
- STRIKE & DIP OF FORMATIONS
- STRIKE & DIP OF SCHISTOSITY
- FAULT
- SWAMP

SEMPLER TWP.
SOITHMAN TWP.

DOMINION GULF COMPANY
GEOLOGICAL PLAN
SEMPLER TWP. CLAIMS-GRP. I
SEMPLER TWP., PROVINCE OF ONTARIO
SCALE: 1"=400' FEB. 5, 1952