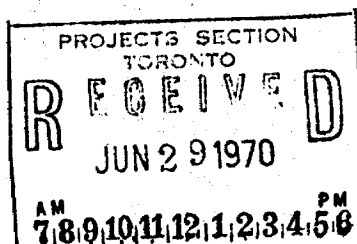




41P11SE0018 63.2746 MACMURCHY

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REPORT ON A
GEOPHYSICAL & GEOLOGICAL SURVEY
MAYFLOWER MINES LIMITED
McMURCHY TWP., ONTARIO

BY

H. H. SUTHERLAND, P.Eng.,
B.A.Sc., M.E.

JUNE 16, 1970.

Report on a Geophysical &
Geological Survey
Mayflower Mines Limited
McMurchy Twp., Ontario

* * * * *

INTRODUCTION

At the request of the management of the Company, a geophysical and geological survey was conducted over the 17 claim group of claims held by the Company in McMurchy Township, Shining Tree Area of Ontario.

PROPERTY

The property comprises 17 claims located in three separate groups in McMurchy Township, Shining Tree Area of Ontario. The groups comprise:

Group 3 - 3 claims (47365, 66, 67) MR-

Group 1 - 9 claims (47370, 71, 72, 73, 74, 75, 76, 47054, 47548) MR-

Group 2 - 5 claims (47368, 69, 47055, 56, 47547) MR-

respectively, and are located in the ^{west}southeast corner of McMurchy Township.

Group 1 is located 3 claims east of Group 3 and 1 claim south of Group 2.

The shapes are irregular.

All claims are on extension until September 1, 1970.

LOCATION AND ACCESS

The claims are located just east of the Shining Tree - Gowganda Road at a point 20 miles from Gowganda and 4 miles from the Village of Shining Tree. Several lumber and winter roads cross the various properties and they are also accessible by water.

Air service from Elk Lake or New Liskeard is available on a charter basis and the other access is by rail, road or air to New Liskeard and automobile from that point. Final access is on foot.



TOPOGRAPHY AND FACILITIES

The terrain cannot be regarded as rugged or rough, as elevations are small (100 ft.) and of a rolling rather than precipitous nature. Tree cover comprises pine, spruce, balsam, poplar and birch, with cedar and alder in the swamp areas. Ample water is available on all three groups for any purpose. The swamp areas are extensive.

Power and communication are available from the highway and, since this is a depressed area, labour is plentiful.

Transport and travel are available but not convenient.

HISTORY

The Shining Tree Area has been known since 1911, when it was hailed as a gold camp. Several properties in the area have considerable potential and indications of merit but as yet a consistent producer has not been developed. This may be due to many factors, among which are:

- (1) Uneven distribution of the ore;
- (2) Poor location;
- (3) Wartime development and bad timing on the discovery;
- (4) Bad repute;
- (5) A general lack of interest by major developers, perhaps brought about by the holding of the best ground by people difficult to deal with.

A small amount of scattered activity is consistently underway in the area.

GENERAL GEOLOGY

The entire area is underlain by Precambrian volcanics as illustrated by the following table:



Pre-Cambrian

KEWEENAWAN

Quartz and olivine diabase dikes and sill remnants.

ALGOMAN

Granite porphyry, quartz porphyry and felsite.
Granite, gneissic.
Lamprophyre.

PRE-ALGOMAN

Serpentine.

Intrusive Contact

KEEWATIN

Conglomerate, arkose and slate and tuff.
Iron formation.
Rhyolite, trachyte and hornblende andesite.
Pillow andesite and basalt, diabase, agglomerate, carbonate,
chlorite, hornblende and sericite-schist.

The older rocks of the area belong to the Keewatin. They consist dominantly of volcanics - andesite, basalt and rhyolite, with subordinate amounts of rusty carbonates, greenschists, iron formation, and sediments partly of pyroclastic origin. Some of the well water-sorted sediments may be Timiskaming in age. Intruding the schist complex are several igneous rocks, viz., dikes of serpentine, quartz porphyry and felsite, batholiths and stocks of granite and gneiss, dikes and stocks of lamprophyre granite porphyry, and dikes and sill remnants of diabase. All the intrusives may be of pre-Algonian or Algonian age except the later diabase, which is Keweenawan in age. The gold deposits occur largely in the basic schists, but they have been found in all varieties of rocks except the serpentine, granite-gneiss and Keweenawan diabase. There is even a possibility that gold will be found in the granite.



LOCAL GEOLOGY

The properties are underlain by greenstones (andesite) of Keewatin age intruded in places by Diabase dikes. The east 1/4 of the group is underlain by Keewatin rhyolites, which grade into the greenstones. Outcropping is about 8%, along ridge and hill faces, lakeshore and stream beds. Strike is N.60°E. with dips varying from 70° to vertical. Some fault areas appear to be present but the expressions are obscured by swamp beds.

MINERAL DEPOSITS

The area is well mineralized with scattered gold deposits which occur in almost all formations.

Chalcopyrite, molybdenite, pyrrhotite, barite, galena, tourmaline and specular hematite have all been located in certain deposits.

GEOPHYSICAL SURVEYS

The magnetometer was conducted over a grid of 200-foot lines with 100-foot stations. Intermediate readings were made where deemed necessary. All readings were corrected for temperature and diurnal effects and, as a control, a series of base stations were run (15). These stations were set up and run five times to establish a constant value and used as a control by hourly checks.

MAGNETOMETER RESULTS

In general, the east sides of the property were of low magnetic relief. This is an expression of the more acid nature of the rhyolite which underlies this portion or is in a transition form.

On Property C the diabase dike is clearly expressed magnetically and there may be an indication of metallic content in some of the high/low area, which generally suggests a metallic interface.



On property B, no magnetic areas were outstanding.

On property A, several areas of high magnetic intensity and one low/high interface. This area lies in the most part close to the east bank of Wasapika. This lake may well be a fault feature, and the magnetic zone could indicate mineralization along a cross fracture.

The area across the lower centre of claim 47054 could be drilled in the area of the high/low and the magnetic high of 4777 gammas.

RADEM E.M. SURVEY

This survey was also conducted over the 200 x 100 foot grid, with intermediate readings in the vicinity of crossovers. The instrument used was a Crone Radem VLF E.M. receiver, adapted for field strength and dip angle readings, and reading from Seattle, Washington. (Frequency - 18.6 Mhz)

SURVEY RESULTS

Very few long continuous conductors were located. All conductors were indicated by letter. Crossovers of less than two lines were indicated by X and not evaluated.

- A - Probable deep expression of the diabase greenstone contact - possibly mineralized.
- B - On higher ground. Possible fracture zone.
- C - Swamp - rock contact.
- D - Swamp - rock contact or fracture.
- E - Fracture zone - may be mineralized.
- F - Contact zone expression.
- G - Swamp.
- H - Fracture zone?
- J - Water rock contact



- K - Water rock contact.
- L - Water rock contact or fracture.
- M - Fracture or water contact.
- N - As above.
- O - Swamp - rock contact
- P - Possible expression of structure causing magnetic anomalies - fracture or fault.

Of the above conductors, the following are worthy of further investigation in order of importance: P, A, F, B.

GEOLOGICAL SURVEY

The geological survey was conducted using the grid as a control. Examinations were made between liners and outcrops were mapped as being specific with minimal overburden. Where possible, shears, dips, strikes and structure were noted. Structures were not fully determined due to the large amount of swamp areas. No mineralization was observed. Overburden areas were presumed as underlain by the rock types indicated based on outcrop examination.

SURVEY RESULTS

Two diabase dykes were observed, one lying along the west side of property C (47367). Strike is N.12°W. and dips are vertical.

Another lies in the peninsula into Knox Lake and strikes N.30°W. with vertical dips. Two old trenches were noted here, but no mineral observed.

The west side of property B is underlain by Kawatin greenstones, such as andesites, chlorite and hornblende schists, etc. In general, no major structural features were noted here and no mineralization. Strikes



varied from N.15°W. to N.60°W. and dips varied from vertical to 70° W. or E.

The same structures and rock types were observed on property B.

The east portion of property A appears to be underlain by Temiskaming rhyolites, breccias and tuffs. These are less clearly expressed by outcrop and the contact was not visible. Strikes and dips are similar to the greenstones and the change may be gradational.

The geophysical results suggest the same gradation to rhyolite on property B on the east end.

CONCLUSIONS

The surveys indicated two areas of possible economic interest which should be further investigated. This is the diabase dike and contact area on property C and the east side of Wasapika Lake where the magnetic anomalies and Radem crossover are in close proximity.

The magnetometer survey suggested the geological structure quite adequately.

The Radem Survey was valuable, but results are more indefinite due to the large amount of swamp area.

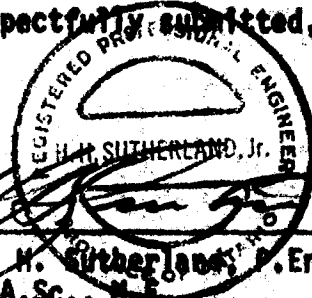
RECOMMENDATIONS

The area on the east side of Wasapika Lake on claim 47054 (S.W. corner) and (N.E. corner) of claim 47375 should be investigated. In addition, the diabase dike on property C should be checked. This could be done by drilling (6 holes at 300 feet), further geophysics (Afmag or horizontal/vertical loop E.M.) or geochemistry, using them as a detail tool in that specific area only. Further work programming should be budgetted for a figure of about:



Drilling	-	\$ 8,000.00
Geophysics	-	3,600.00
Geochemistry	-	3,600.00
		<hr/>
		\$15,200.00
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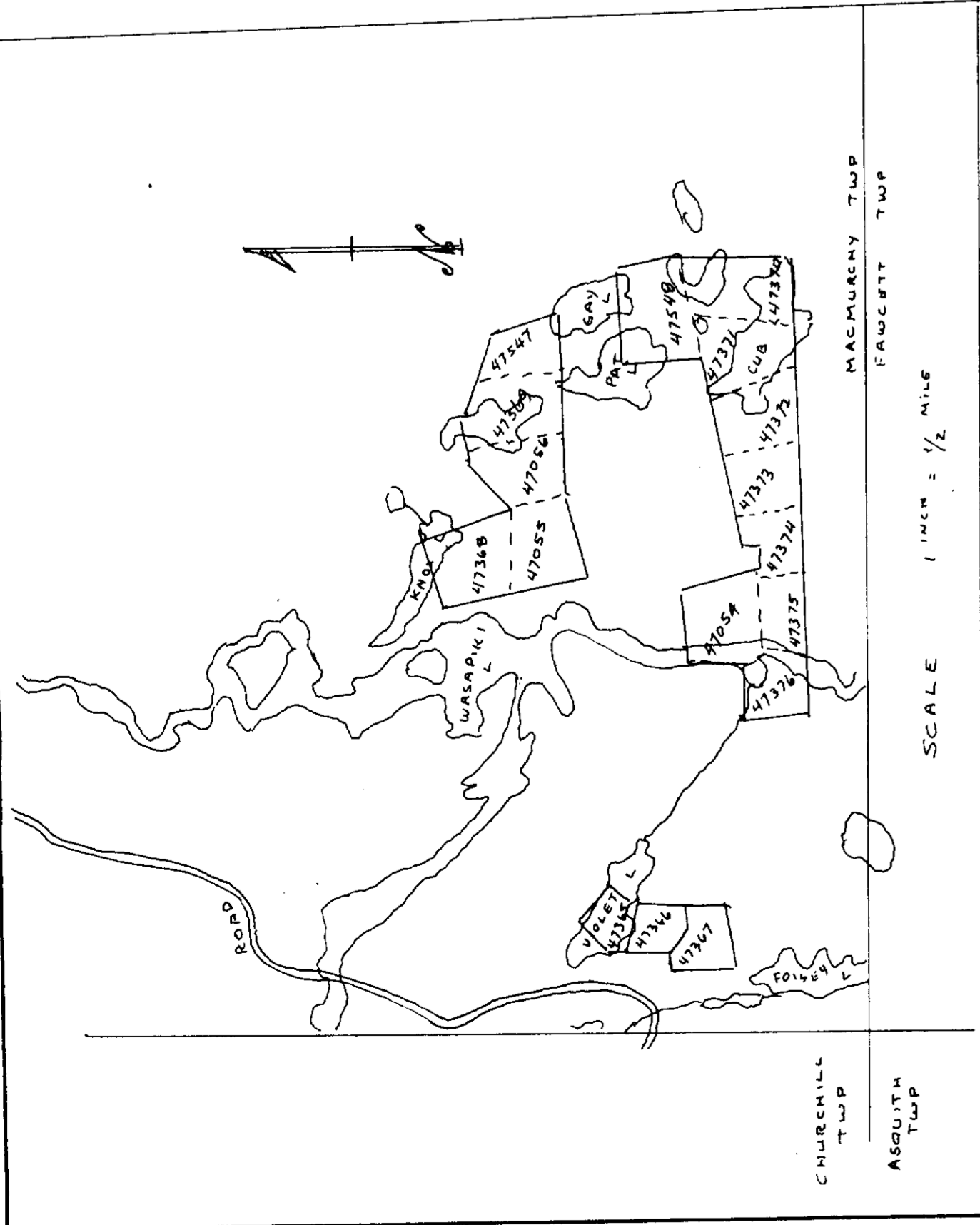
Respectfully submitted,



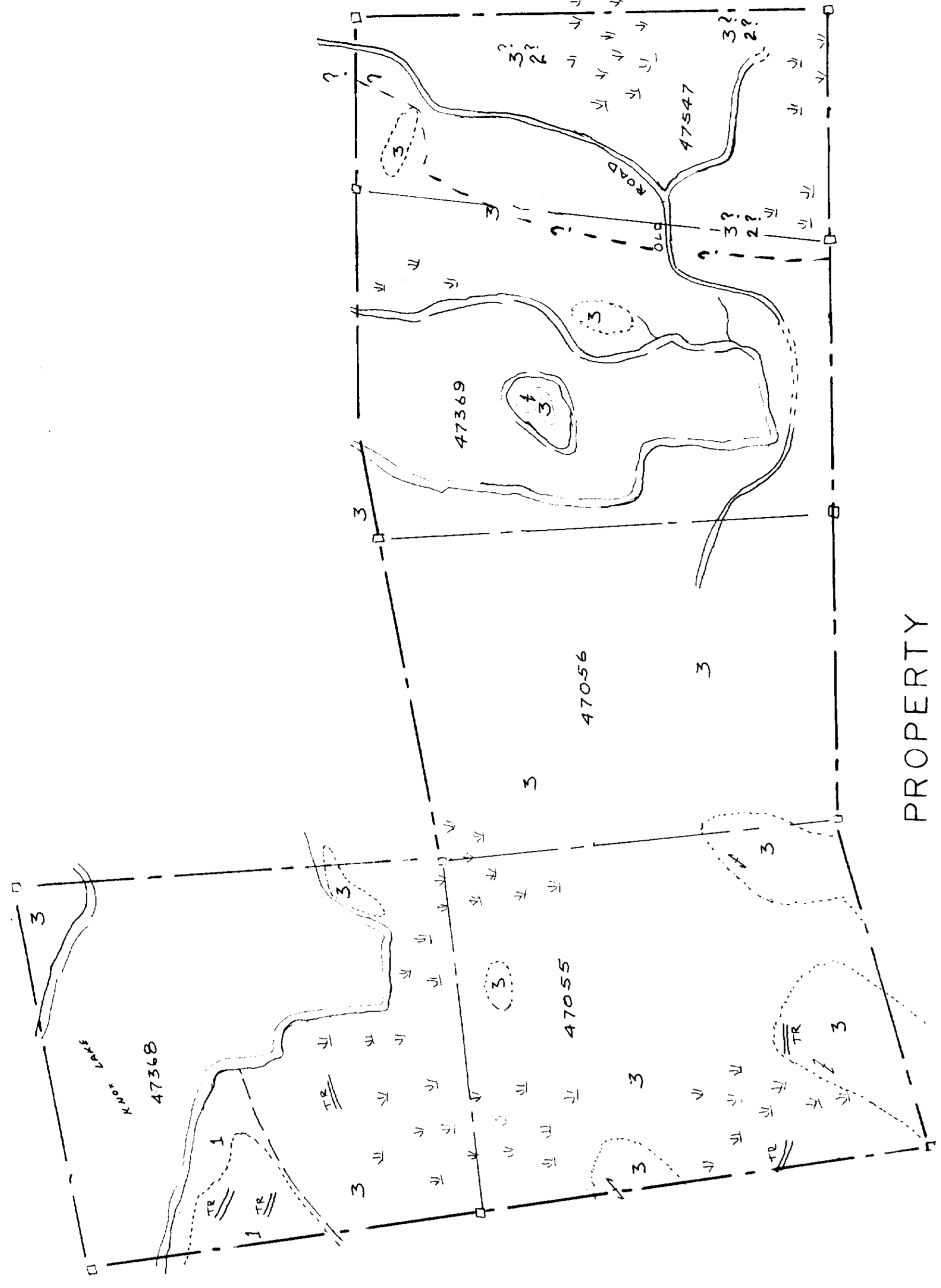
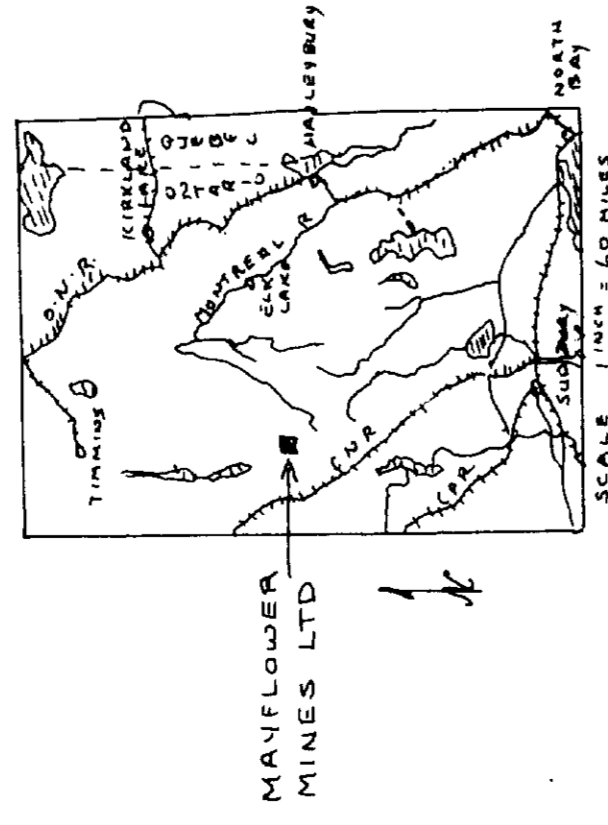
H. H. Sutherland, Jr.

H. H. Sutherland, Jr., Eng.,
B.A.Sc., M.E.

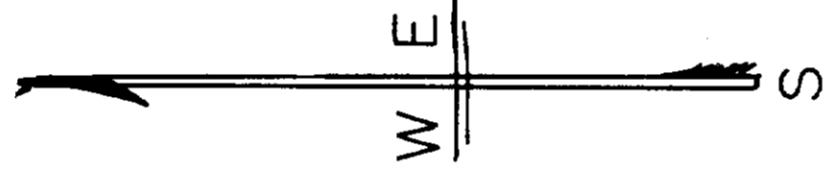
Toronto, Ontario
June 16, 1970



INDEX MAPS

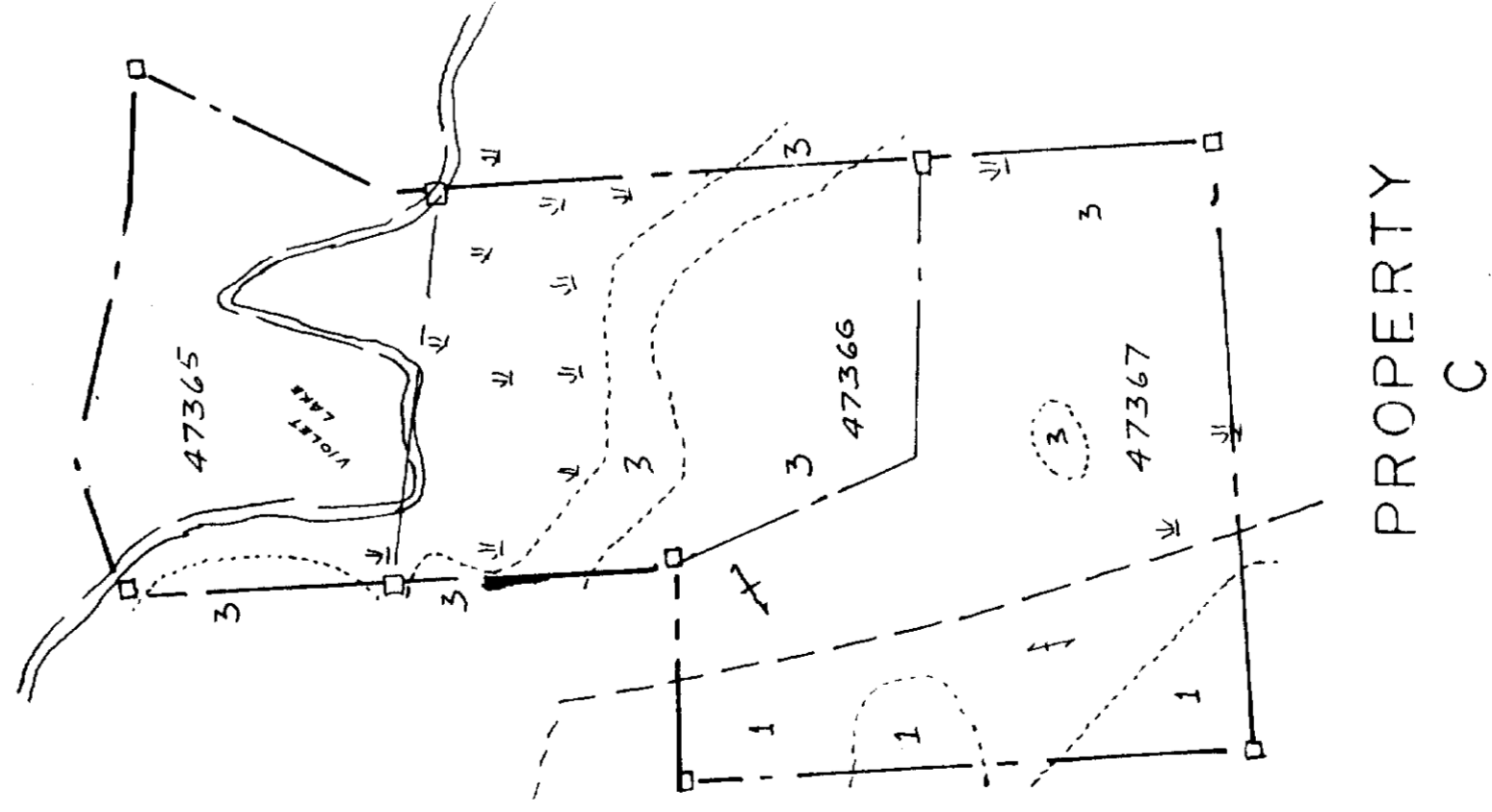


PROPERTY B

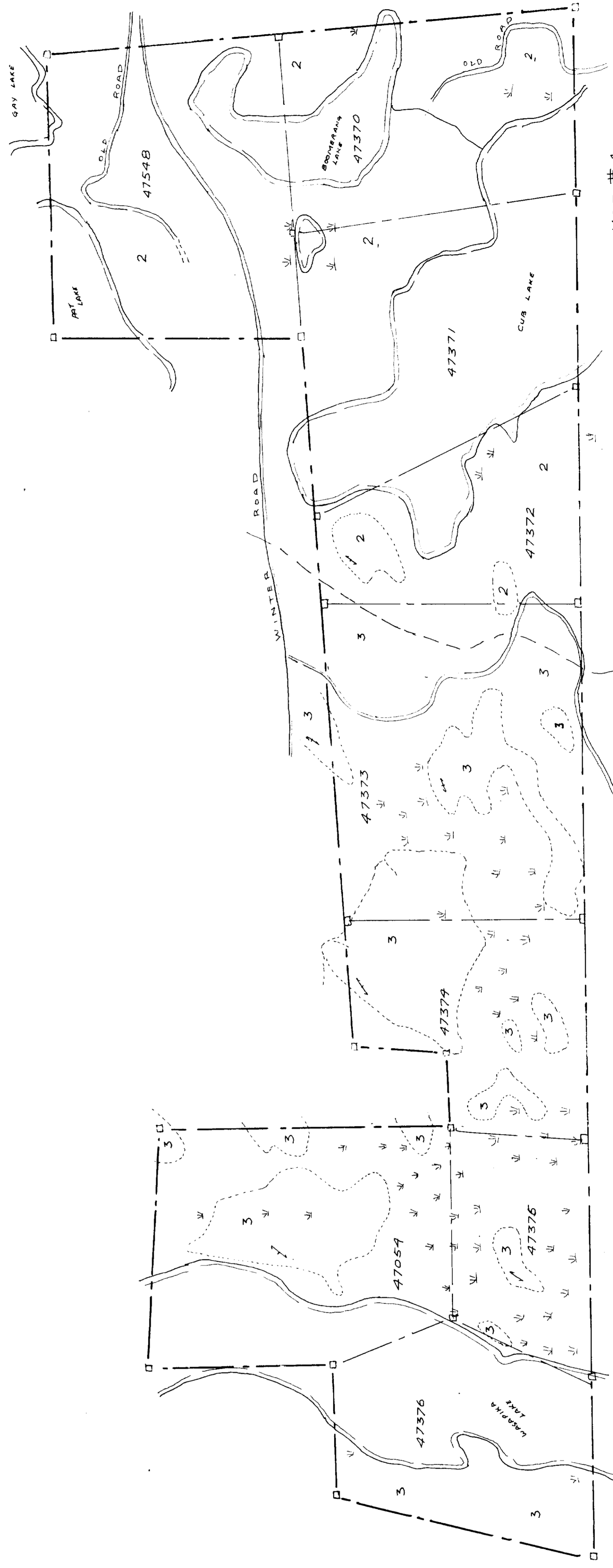


- LEGEND**
- W SWAMP
 - L LAKE
 - S SHORE
 - T TRENCH
 - O OUTCROP
 - R ROAD
 - C CREEK
 - DIP & STRIKE
 - CLAIM POST
 - CLAIM LINE

1	KEEWAUWAN	PRE-CAMBRIAN
2	DIABASE	TEMISKAMING
3	QUARTZITE	KEEWAUWAN
	UNCONFORMITY	
	BOUNDARY	GENERAL
		CONTACT



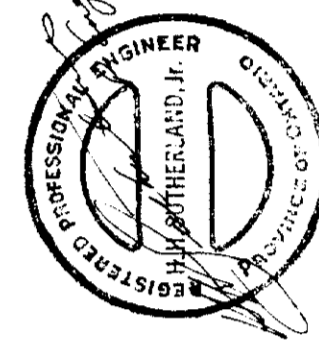
PROPERTY C



PROPERTY - A

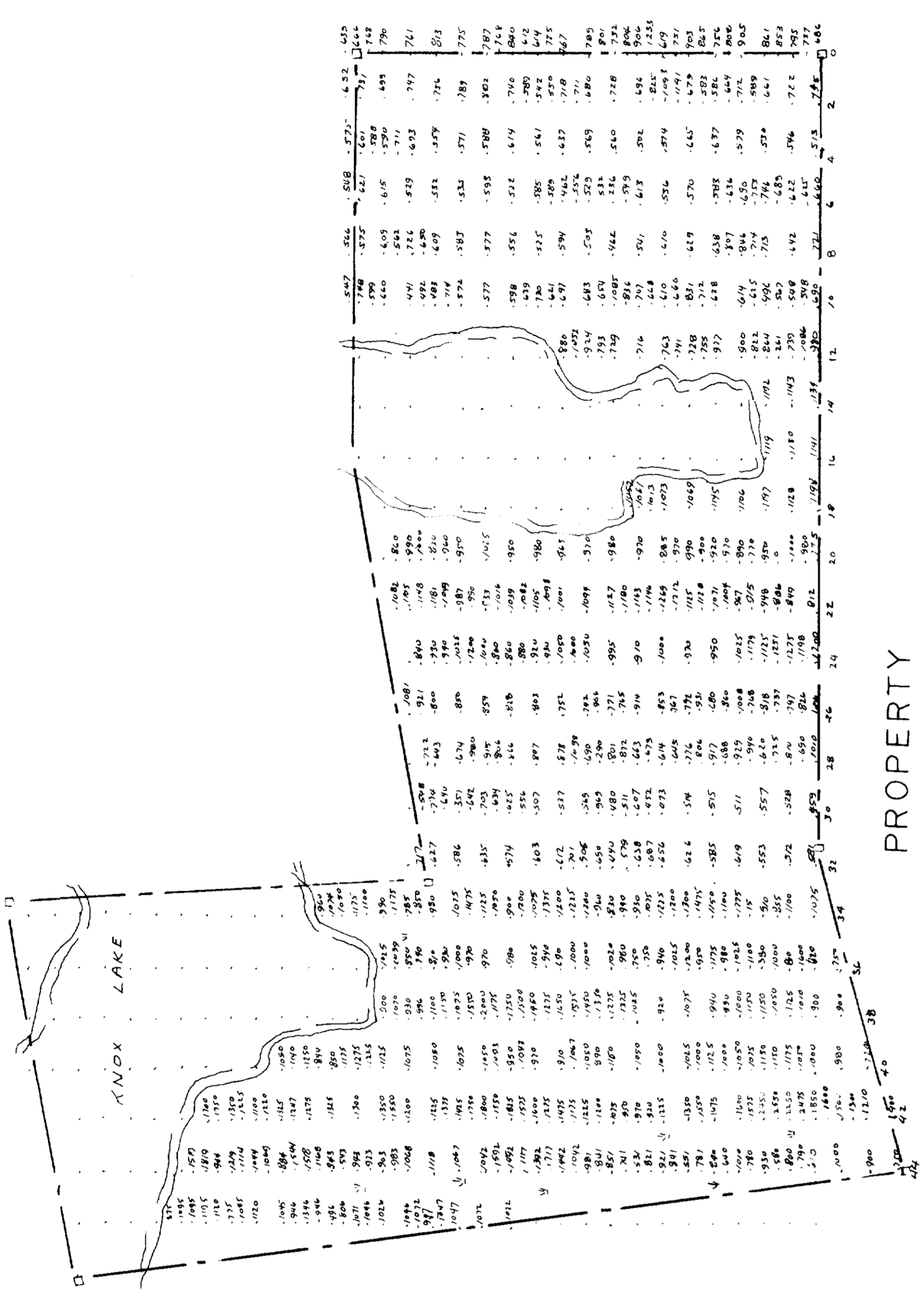
MAP # 1

GEOLOGICAL SURVEY
for
MAYFLOWER MINES LTD.
MACMURCHY TOWNSHIP
ONTARIO
BY
EARTH SCIENCES INTERNATIONAL
TORONTO, CANADA

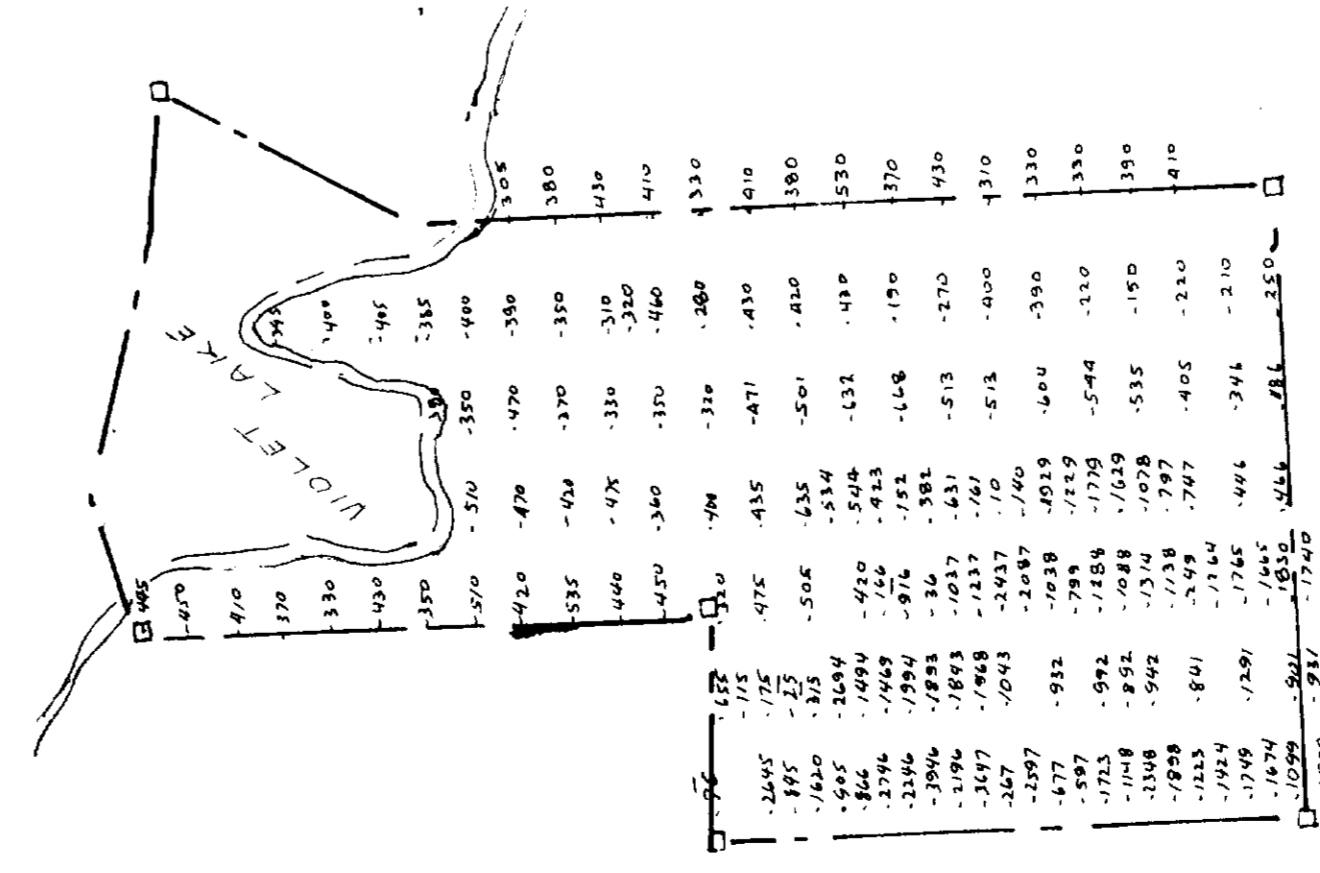


SCALE 1" = 1/4 MILE

MAY 30, 1970



PROPERTY B

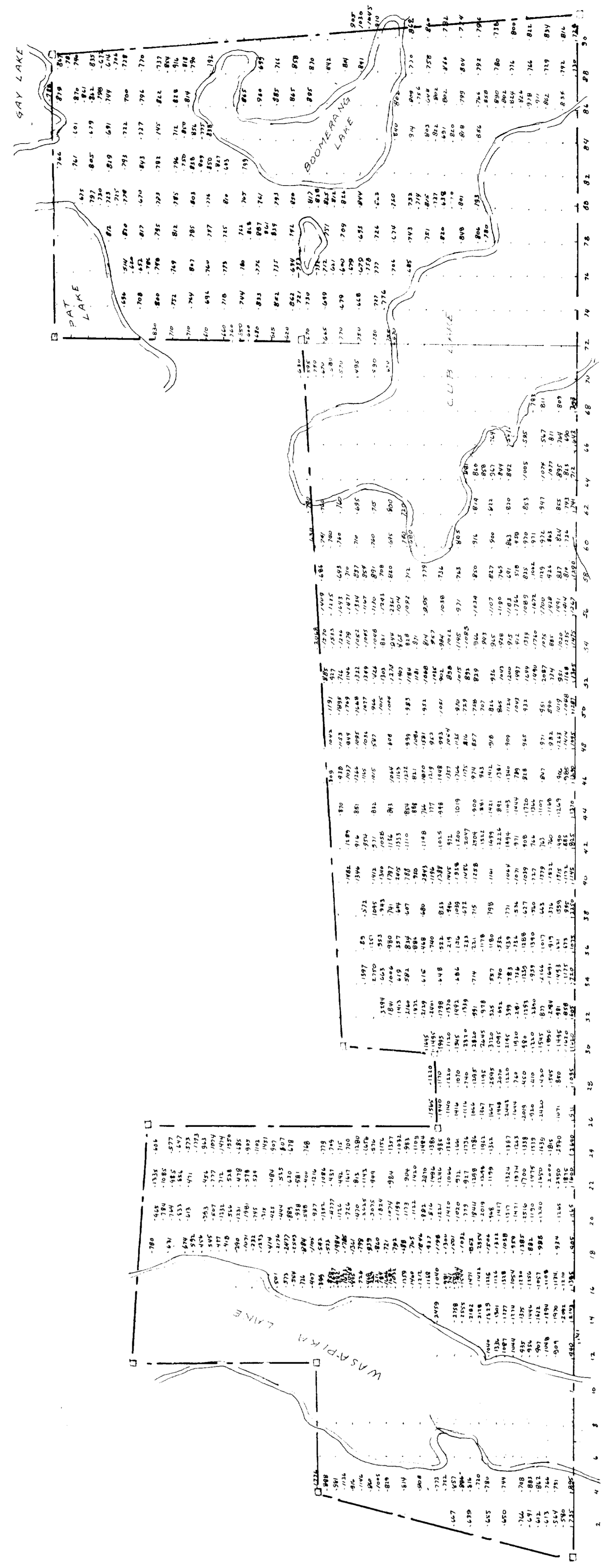
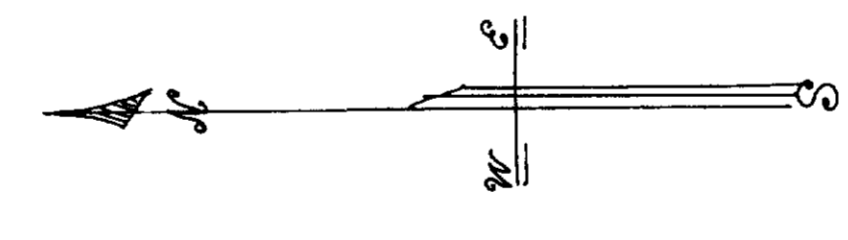


PROPERTY C

LEGEND

- LAKE
- CREEK
- CLAIM POST
- CLAIM LINE

ALL READINGS IN GAMMAS (±) CORRECTED FOR TEMPERATURE & DIURNAL DRIFT
 INSTRUMENT USED: MIPHAR M-700 MAGNETOMETER
 200 FOOT LINES - 100FOOT STATIONS - 50 (±) 25 FOOT CHECK STA.
 A BASE CONTROL STATIONS
 Δ BASE CHECKED HOURLY

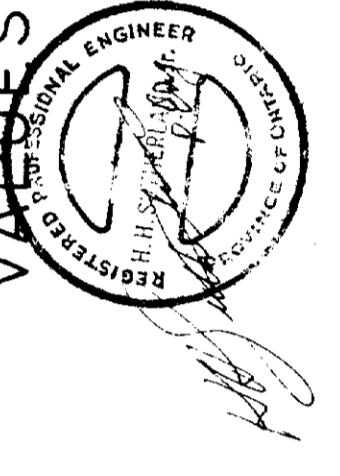


PROPERTY - A

MAP #2

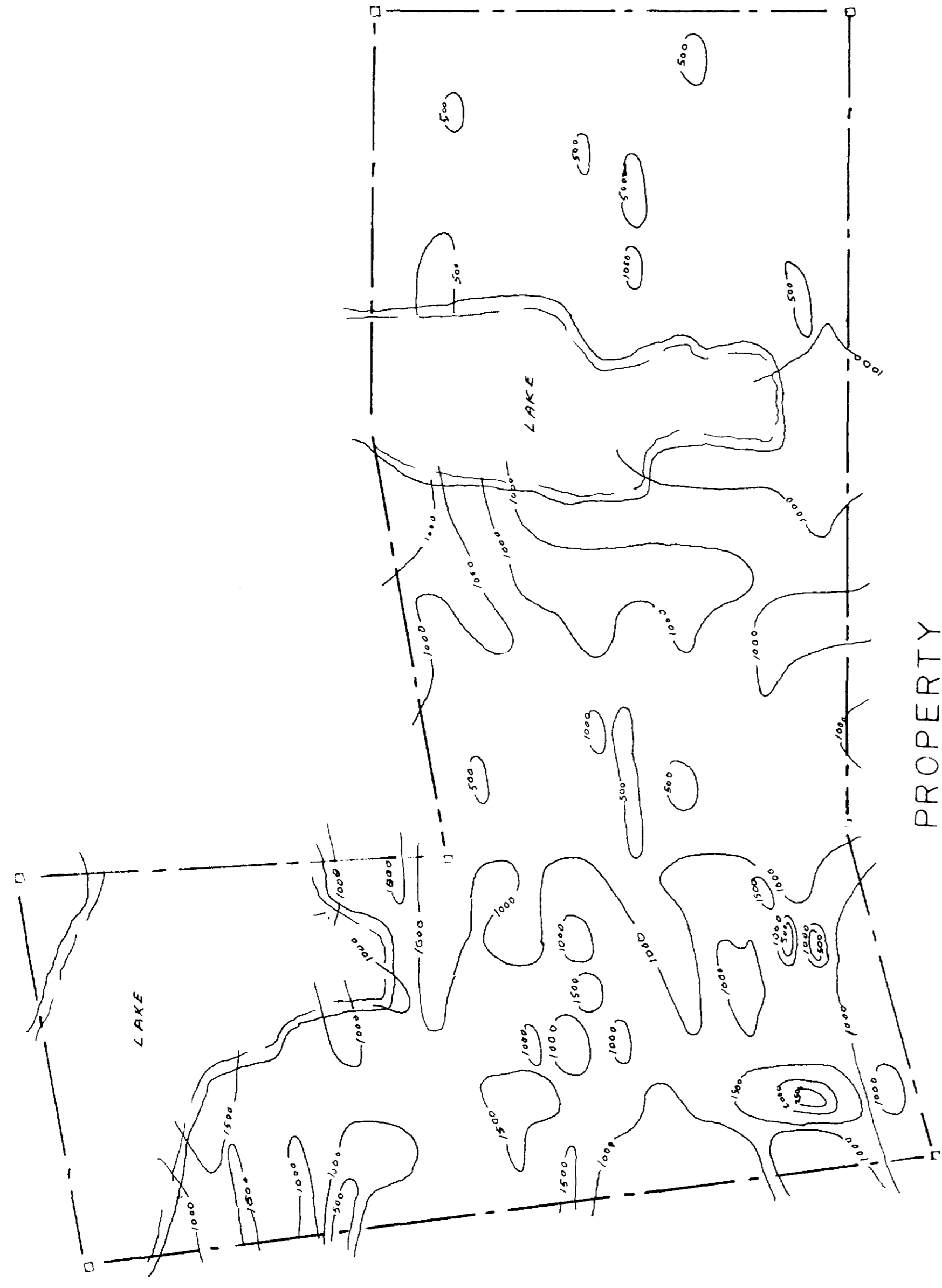
GEOPHYSICAL SURVEY
 for
MAYFLOWER MINES LTD.
 MACMURCHY TOWNSHIP
 ONTARIO
 BY
EARTH SCIENCES INTERNATIONAL
 TORONTO, CANADA.

MAGNETOMETER
 VALUES

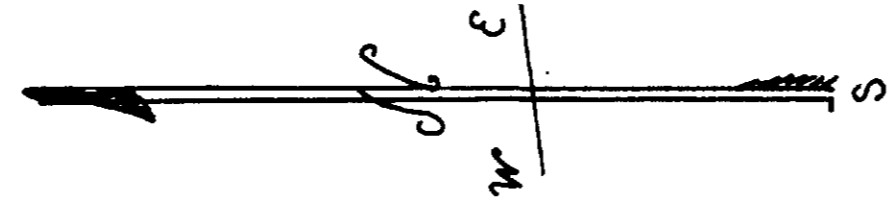


SCALE 1" = 100' ±

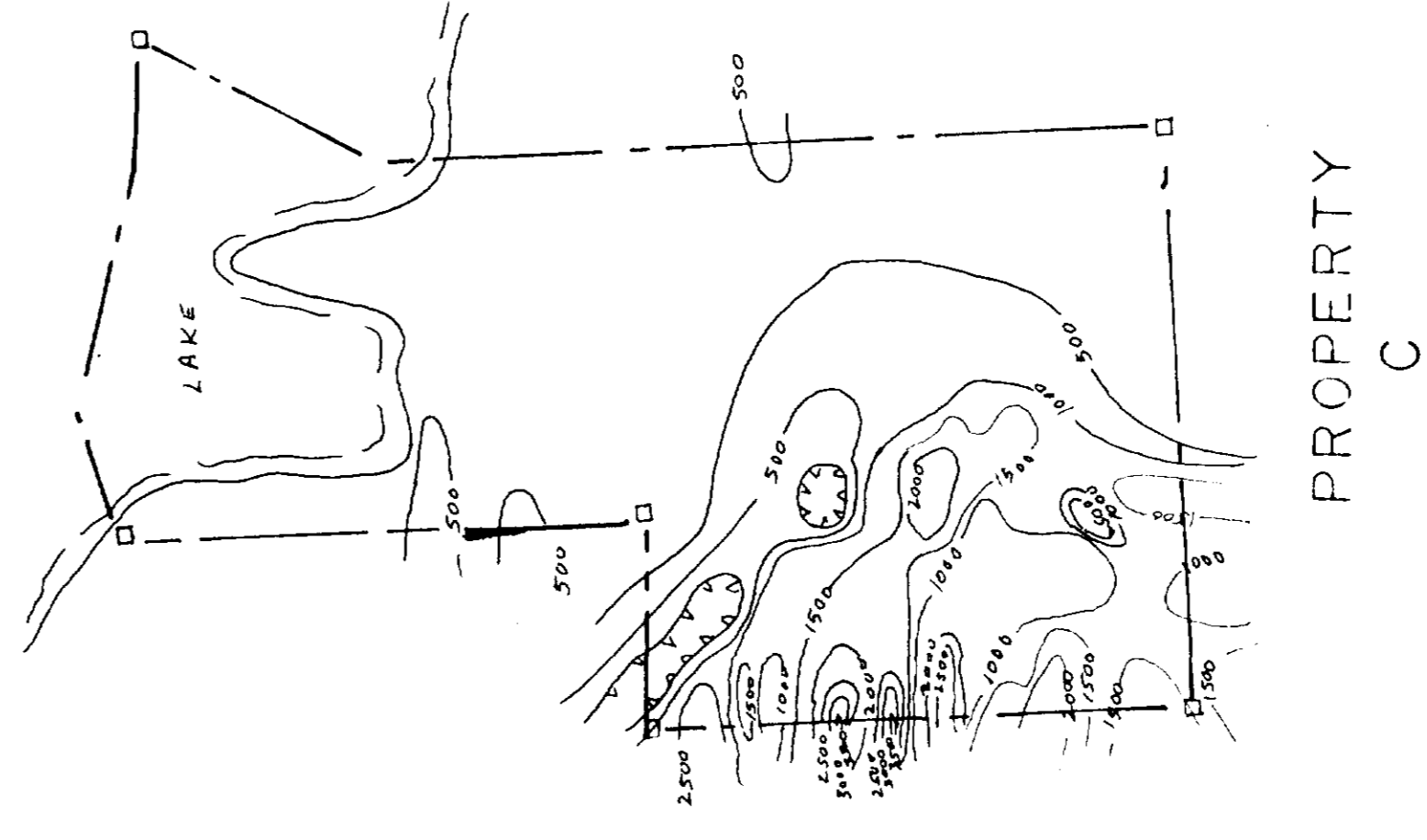
MAY 30, 1970



PROPERTY B



- LEGEND
- LAKE
 - CREEK
 - CLAIM PATH & LINE
 - MAGNETIC CONTOURS MARKED IN GAMMAS
 - NEGATIVE CONTOUR



PROPERTY C

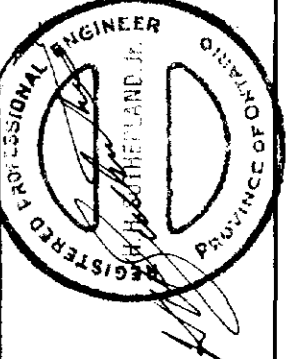


PROPERTY - A

MAP # 3

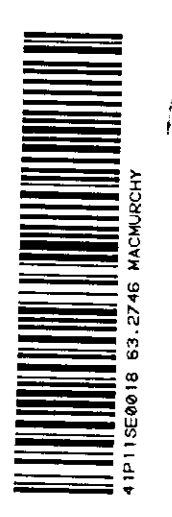
GEOPHYSICAL SURVEY
 for
MAYFLOWER MINES LTD.
 MACMURCHY TOWNSHIP
 ONTARIO
 BY
EARTH SCIENCES INTERNATIONAL
 TORONTO, CANADA

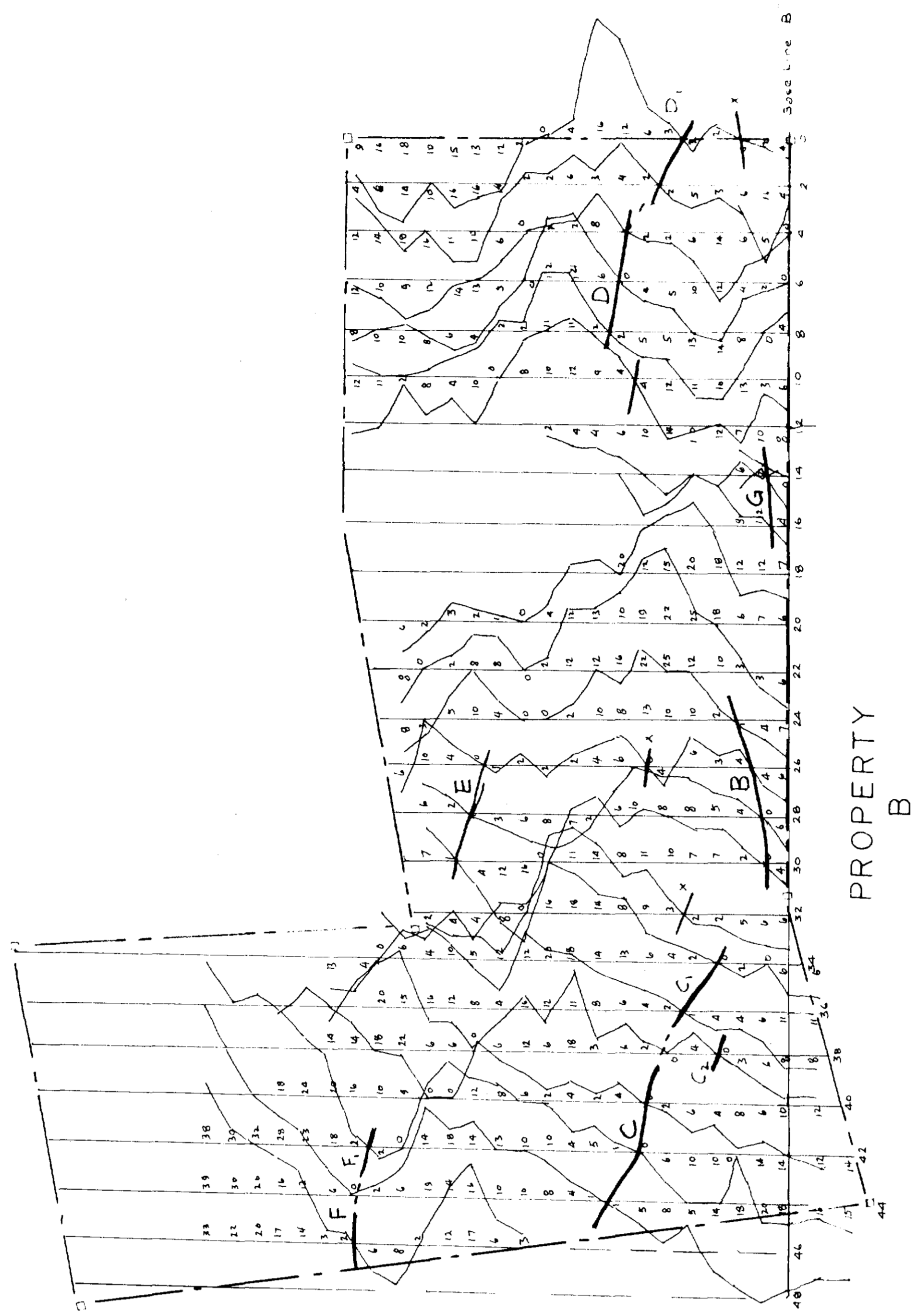
MAGNETOMETER
 CONTOURS



SCALE 1" = 1000 FEET

MAY 30, 1970

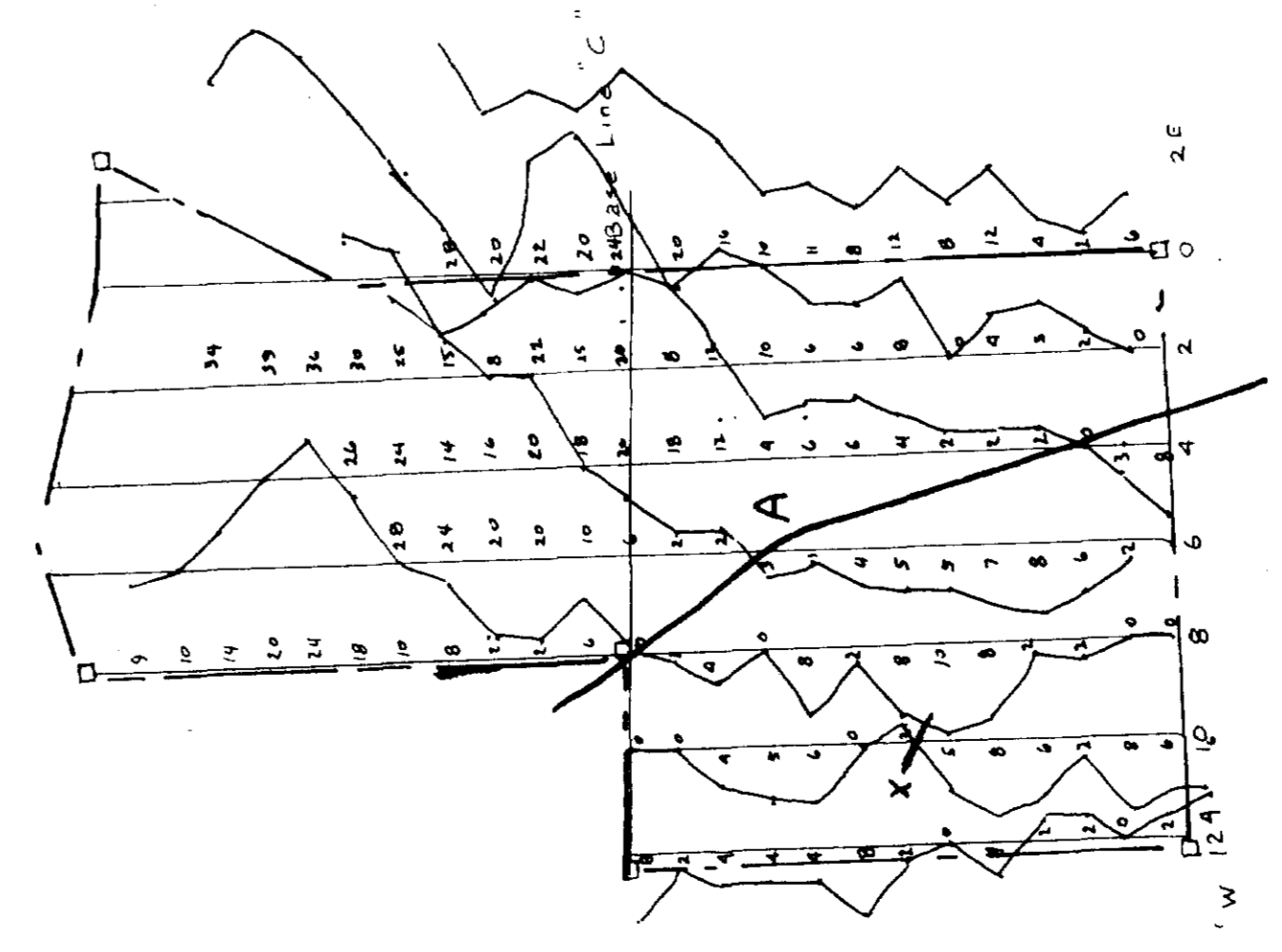




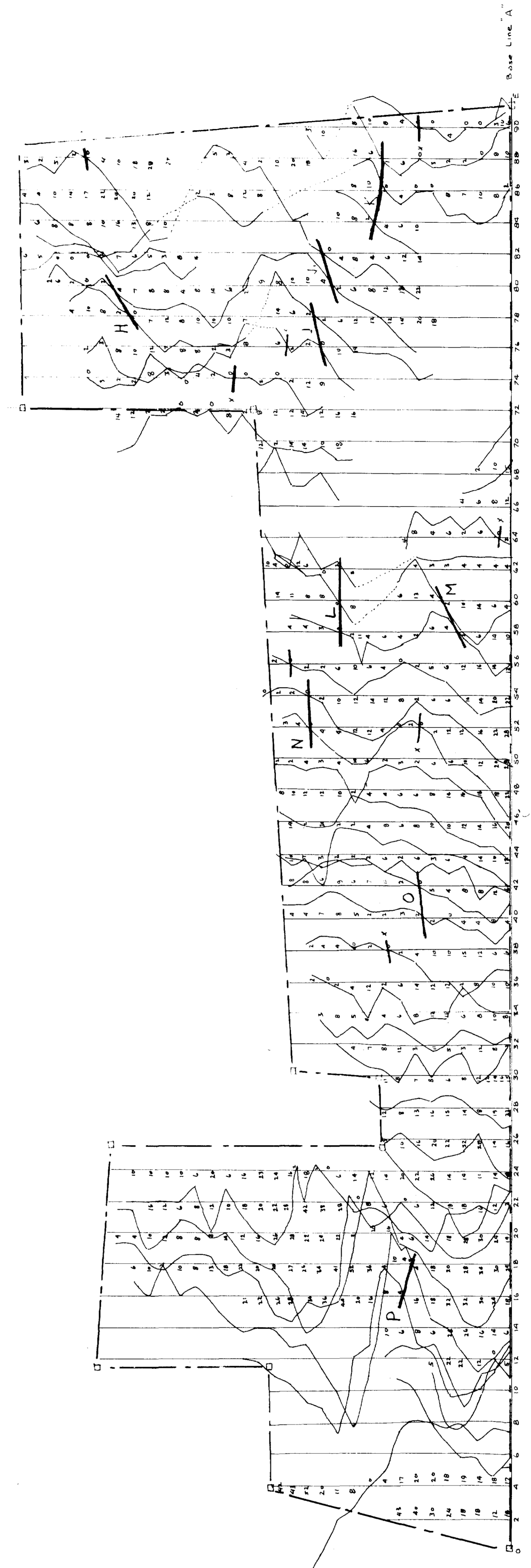
PROPERTY B

LEGEND

- CLAIM POST & LINE
- SURVEY PICKET LINE
- THE LINE
- || VALUES SHOWN ARE DEGREE OF TILT AS PLOTTED
SOUTH OR NEGATIVE TO LEFT OF LINE
NORTH OR POSITIVE TO RIGHT OF LINE
||| OF 1 INCH EQUAL 2° TILT
- STATION READ: SEATTLE WASHINGTON (REG - 164)
- INSTRUMENT USED: CAONE RADEM.
- CONDUCTORS SHOWN
- CONDUCTORS PROJECTED OR ASSUMED
- LOCATION INDEX ON MAP #1



PROPERTY C

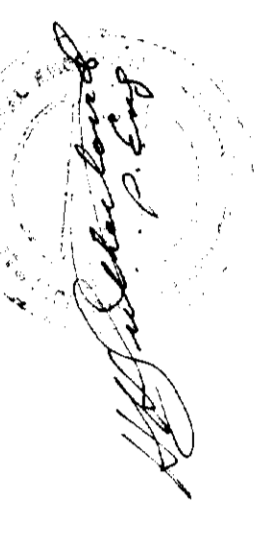


PROPERTY - A

MAP # 4

GEOPHYSICAL SURVEY
for
MAYFLOWER MINES LTD.
MACMURCHY TOWNSHIP
ONTARIO
BY
EARTH SCIENCES INTERNATIONAL
TORONTO, CANADA

RADEM E.M.
CONTOURS



SCALE: 1" = 400 FEET

MAY 30, 1970

