

41P155W0501 2.1676 AURORA

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PROJECTS UNIT

Geophysical Report  
of a  
Gradient Magnetic Survey  
on claims 354199, 354200

by

Robert S. Pekarik  
Geophysicist

The Gradient Magnetic Survey was performed and the report written by Robert S. Pekarik, Geophysicist.

(a) The claims are located in Northeastern Ontario, Porcupine Mining division, Cochrane District, in Aurora township. This is 35 miles northeast of Timmins and 6 miles northwest of Iroquois Falls. They are accessible by routes 11, 578, local roads around Nellie Lake and an old logging road which goes directly to the claim group.

(b) The property is held by Robert S. Pekarik, P.O. Box 466, Shalimar, Florida 32579.

(c) This survey is submitted as assessment work by Robert S. Pekarik, P.O. Box 466, Shalimar, Florida 32579.

(d) The work was performed on, and the survey covers claims 354199, 354200.

(e) The survey was made June 30, 1974.

(f) The only outcrop in the area is on claim 354201 and is pillowed lava. There are few outcrops in the township. South of the property and northeast of Nellie Lake are other pillowed lavas striking north and dipping east. Diabase dikes trending north-south cut these outcrops. To the east and northeast of the property, outcrops of granite and syenite are mapped along the Abitibi River, those closest being gneissic.

(g) An aeromagnetic survey at 500 feet was conducted by Dominion Gulf Company in 1947 which covers the property. In 1959 a Turam survey was conducted for Lake Osu Mines over an aeromagnetic anomaly southeast of Cole Lake. Claims had been staked and dropped without recorded ground work over what is now claims 354198, 354199, 354200. The Canadian government sponsored surface geology investigations in 1961 and a 1000 foot aeromagnetic survey by Spartan Air Services Ltd. in 1963. The property was staked in June, 1972 by Robert S. Pekarik as a group of four claims. A ground magnetometer survey was conducted by Shield Geophysics for him in September, 1972. Five other claims were later staked and a 500 foot hole drilled on 354200 in June, 1973. The gradient mag was performed in the area near the drill hole.

(h) The 500 foot aeromagnetic survey revealed a prominent magnetic anomaly one half mile southeast of Cole Lake. It occurs on the edge of a large ultrabasic intrusion extending to the south and southwest. It is most significant that a susceptibility analysis of magnetic highs in the ultrabasic intrusion showed them to be much less magnetic than the Cole Lake anomaly.

The only record of the Turam survey attempted is that no conductors were detected. The aeromags were used to fix location and are not exact. A power line 2000 feet away may have caused sufficient interference to invalidate any results.

The surface geology investigation confirmed that the area has granite volcanic contacts. A system of dikes confirms the existence of some structural weakness.

The 1000 foot aeromagnetic survey flight lines straddled the Cole Lake anomaly but defined the large ultrabasic intrusion.

The ground magnetic survey defined the anomaly southeast of Cole Lake to be 3500 gammas centered at 8E on line 4S. It also shows the basic rock extending south of the anomaly.

The 500 foot drill hole penetrated 100 feet of overburden, 53 feet of non-magnetic gabbro with the remainder of the hole predominantly serpentinized peridotite with some magnetite and background Ni value 0.22.

The gradient magnetic survey is a technique made practical by the availability of portable proton magnetometers with 1 gamma sensitivity. A reading is taken at a 5 foot elevation above the ground followed immediately by another at 8 feet. The difference between the readings is the gradient and requires no base station, or time corrections. The advantage of the method is that cross-overs define the exact edges of a magnetic body.

This survey defined the edges of the previously located anomaly as 2E and 18E on line 4S extending North and crossing line 0 at 5E and 13E to 16E. Edges also occurred at 9+50E to 19E on line 8S and at 2E to 18E on line 12S.

The most significant observation is the negative values W of 9E on line 8S defining the magnetic high on line 4S as an isolated anomaly, and not just a high within the large basic intrusion. This is in compliance with the 500 foot aeromag interpretation that the anomaly is distinctly different from the ultrabasics on its edge. The ground magnetic survey does not allow this degree of definition and separation because of the overlapping potential fields.

Another conclusion is that the drill hole is very close to the North edge of the anomaly and may or may not be an accurate sampling of the rock responsible for the high susceptibility. Fortunately the drill hole was left intact and well-logging techniques would be appropriate and effective.

(i) Geometrics (G-816) Portable Proton Magnetometer with  $\pm 1$  gamma sensitivity.

(j) Total of 90 stations, 120 readings, with 100 foot station intervals and 400 foot line spacing.

(k) Line was cut for previous survey.

(l) Summary of Assessment Credits

Total 8 hour technical days  $1.5 \times 7 = 10.5$      $10.5/2\text{claims} = 5$  assessment credits per claim

Field work June 30, 1974 one day

Interpretation and report One-half day

Both by Robert S. Pekarik P.O. Box 466 Shalimar, Florida 32579

(m) Report by:

*Robert S. Pekarik*

Qualifications - 2.1141



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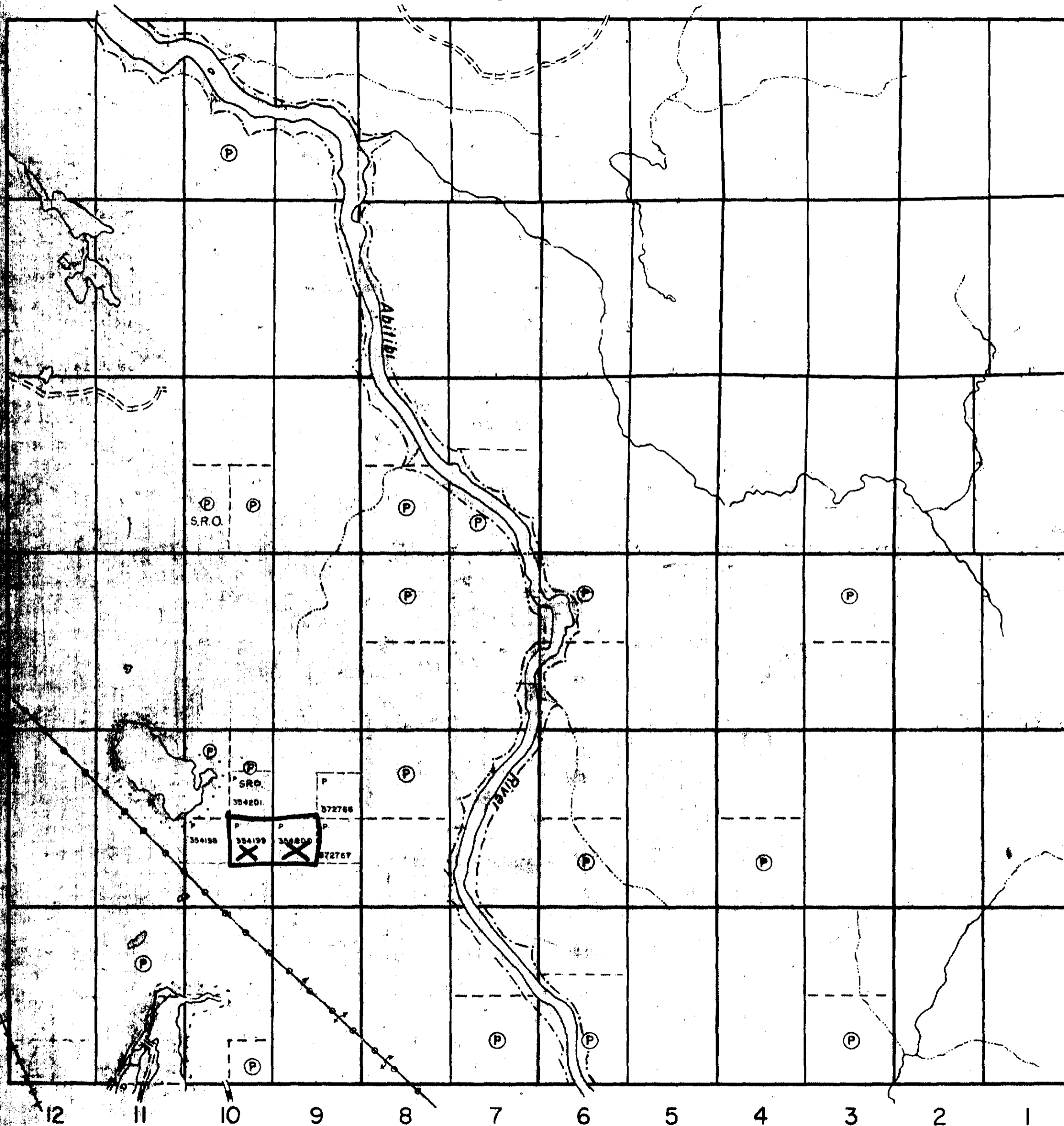
900

Recorded Holder	Robert S. Pekarik
Township or Area	Aurora Township

Type of survey and number of Assessment days credit per claim	Mining Claims
Geophysical Electromagnetic _____ days Magnetometer <u>16</u> _____ days Radiometric _____ days Induced polarization _____ days Section 86 (18) _____ days Geological _____ days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	P. 354199 - 200
<b>Notice of Intent to be issued:</b> <input type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant. <input type="checkbox"/> No credits have been allowed for the following mining claims as they were not sufficiently covered by the survey: _____ _____ _____ _____ _____	

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40;

Pyne Twp.



Calvert Twp.

VI

V

IV

III

II

I

Edwards Twp.

THE TOWNSHIP OF 2.1676

# AURORA

DISTRICT OF COCHRANE

PORCUPINE MINING DIVISION

SCALE 1-INCH = 40 CHAINS

## LEGEND

PATENTED LAND	(P)
CROWN LAND SALE	C.S.
LEASES	(L)
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
ROADS	
IMPROVED ROADS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
TRAIL	
WATER POWER LEASE	

## NOTES

400' Surface rights reservation around all lakes and rivers.

Flooding area shown thus:  
Flooding rights reserved to HEPC.

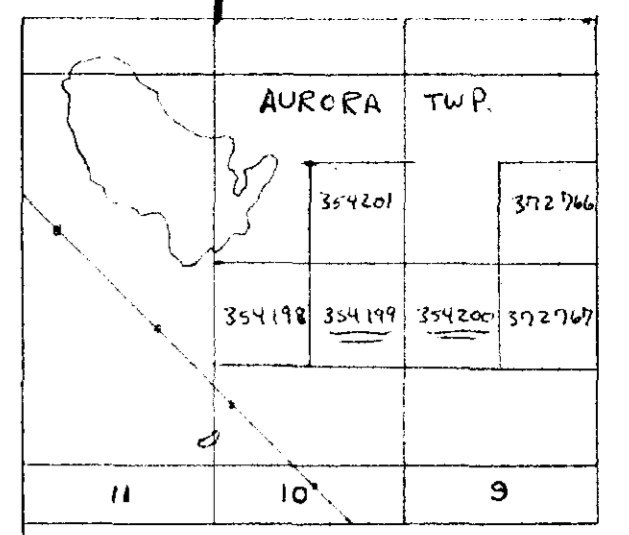
MINING LANDS  
DATE OF ISSUE  
DEC 27 1974  
MINISTRY OF NATURAL RESOURCES

PLAN NO — M. 408

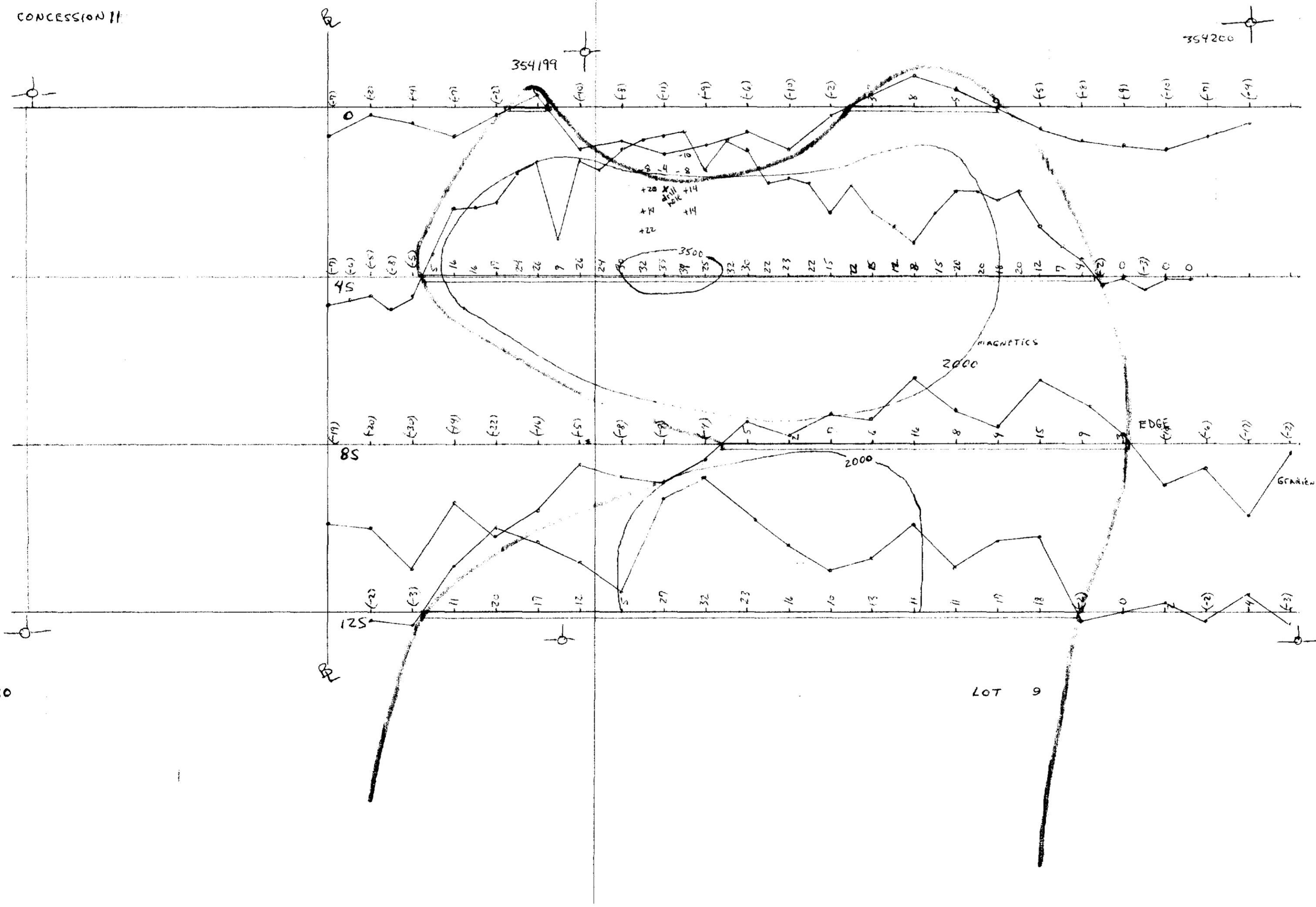
ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH



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KEY MAP  
ONE INCH TO ONE HALF MILE



LEGEND

- | measurement station along picket line
  - 2000 MAGNETIC VALUE IN GAMMAS
  - ∇ MAGNETIC GRADIENT IN GAMMAS ONE INCH = 20 GAMMAS
- INSTRUMENT: GEOMETRICS G 816 PROTON MAGNETOMETER

GRADIENT MAG SURVEY  
ON THE  
R. S. PEKARIK PROPERTY  
AURORA TOWNSHIP, ONTARIO



JUNE, 1974

BY: Robert S. Pekarik 2.1676

