010

MAGNETOMETER SURVEY

BEAUCAGE MINES LTD.

LAKE NIPISSING

PROVINCE OF ONTARIO

REPORT 60A

February 2, 1954. Geo-Explorers Ltd., Bathurst, New Brunswick

INDEX

MAGNETOMETER SURVEY
BEAUCAGE MINES LTD.
LAKE NIPISSING,
PROVINCE OF ONTARIO
REPORT 60A

SUMMARY

The survey located several highs interpreted as being caused by the columbium tantalum host rock.

Drilling of the most favourable of the highs is recommended. Testing of others for radioactivity is recommended.

Further magnetometer work is also recommended.

INTRODUCTION

A previous magnetometer survey carried out on Lake Nippissing and described in report no. 60 was conducted more or less as an experiment to see if the method could be applied to tracing the deposit of Columbium Tantalum.

This work was successful and further work was carried on this year over a larger area.

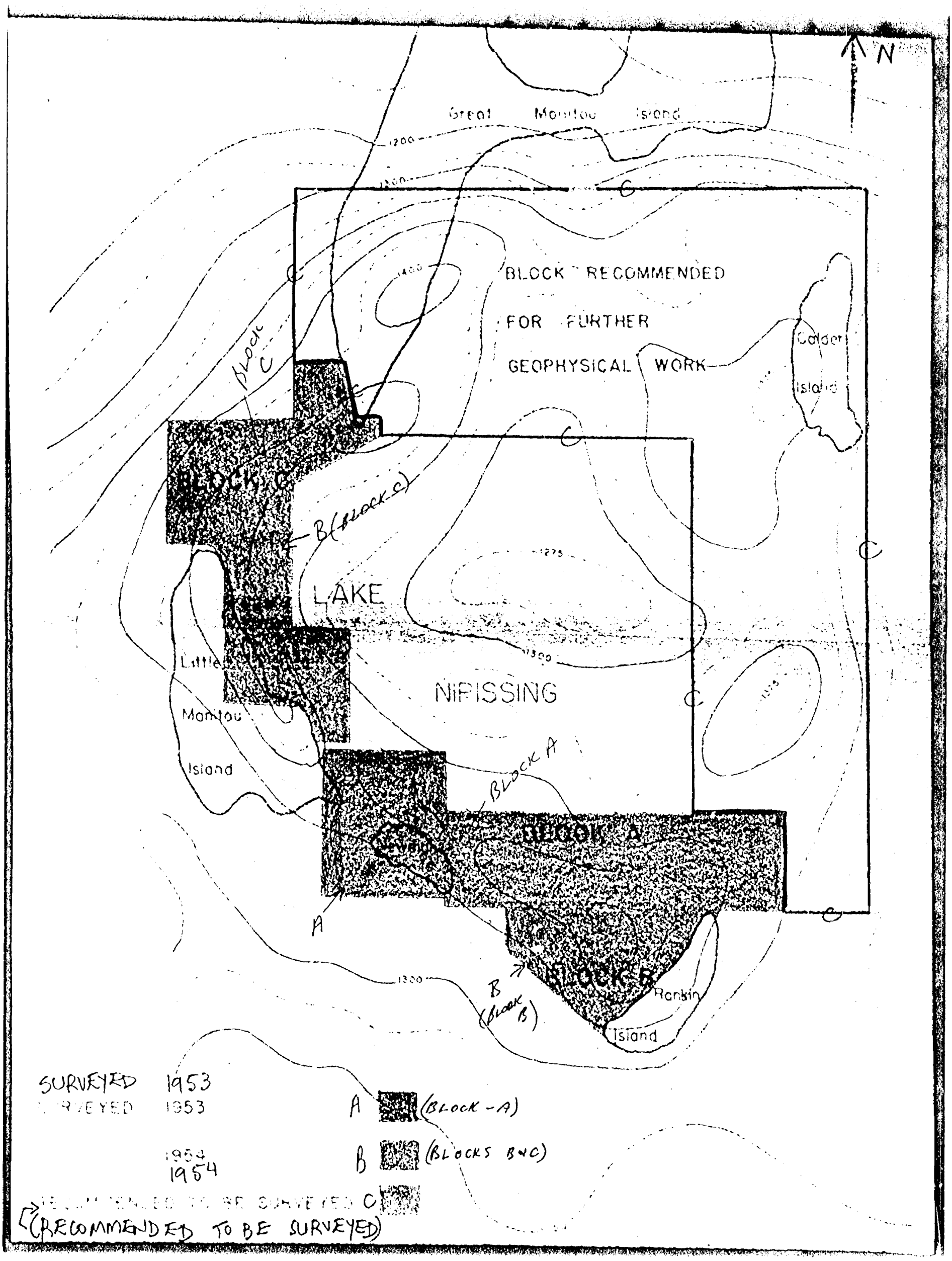
LOCATION AND ACCESS

The relative location of the blocks surveyed is shown in figure 1.

The islands are approximately five miles west of the city of North Bay in Lake Nipissing. They can be reached by snowmobile on the ice or by car if the snow cover is light.

THEORY OF SURVEY

See report 60.


N
Great Manitou Island
1200
1400
BLOCK RECOMMENDED
FOR FURTHER
GEOPHYSICAL WORK
Block C
BLOCK C
B (Block C)
LAKE
1275
1300
Little Manitou Island
NIPISSING
Block A
BLOCK A
A
1300
B (Block B)
BLOCK B
Rankin Island
Calder Island
SURVEYED 1953
SURVEYED 1953
1954
1954
A (BLOCK - A)
B (BLOCKS B+C)
C
(RECOMMENDED TO BE SURVEYED)

OLD BASE LINE 5008 N

NEWMAN
Newman IS
Islands

4500N

L5600E L5800E L6000E L6200E L6400E L6600E L6800E L7000E L7200E L7400E L7600E L7800E

5
#5
#4
4
3
#3
2
#2
#1
1

RANKIN ISLAND

3500N

BLOCK B

SCALE: 1 inch=200 feet

Interpreted fault

Interpreted Type "B" Rock

FIG.2

METHOD OF SURVEY

A transit sight from the collar of drill hole No. 1 to a boat target on Rankin Island was used to locate an east-west base line for section B(Fig. 1), 600 feet south of the original section A base line. (This base line is labelled 4400N, in accordance with the area grid used by Inspiration). Picket lines were turned off at 200 foot intervals, so as to be the southward extensions of the lines run in section A. The north-south base line of section C was located from a survey point on Little Manitou Island. The lines on Little Manitou Island had been previously cut and chained.

Readings were taken at 100 foot intervals with a Watt magnetometer under the operation of Mr. L. S. Edwards.

GEOPHYSICAL INTERPRETATION

The location of the areas to be surveyed was determined by an aeromagnetic survey flown in 1953. The aerial results are reproduced in Fig. 1.

The results of the ground survey of 1953 were interpreted as an east-west magnetic structure which was expected to extend further to the east and west. The aerial survey, however, indicates a roughly circular area of magnetic highs, enclosed by the islands.

This circular high zone with a magnetic low in the centre commonly appears around granitic intrusives.

It should be noted that the two aerial anomalies are only about 75 gammas above their surroundings, and hence are hardly significant.

A very local magnetic high on the ground spreads out over a broad area and diminishes in intensity as you proceed upwards from the source.

Block "B"

There is one magnetic high striking southeast; this is interpreted as being a type "B" rock as logged in 1953. It appears to be displaced at the east end. This could be caused by the same fault interpreted at the east end of Block "A" in the previous survey.

The extreme high in the southeast corner of this zone is probably caused by shallow overburden.

Block "C"

Zone B appears to be a continuation of the anomaly from Block "A".

Zone C could be the continuation of zone B but displaced by faulting. Three other anomalies zone D, E, and F and G could be rock "B" or amphibolite. They appear to have no direct connection with zone "C".

Whether this type "B" rock is merely a contact phase of a granitic intrusive or a product of metaporphism caused by a granite intrusion it is difficult to say. It could also be something entirely different.

CONCLUSIONS AND RECOMMENDATIONS

Anomaly number 1 near Rankin Island should be drilled. If columbium and tantalum bearing rock are found, the anomaly 2 should be tested along its length at three hundred foot intervals.

If zone A in Block A contained columbium tantalum then Zone

B should be drilled.

Zone C should be drilled irregardless of results in zone B.

Zone D, E, and G should be checked for radioactivity if possible in the manner described in the appendix.

Zone F should be examined by stripping at the shore of Great Manitou Island.

Further magnetic work should be done in the north and east portions of the magnetic aureole; that is to say south and west of Calder Island.

The location of the recommended drill holes are given in the appendix and the recommended geophysical work shown in figure 1.

Respectfully submitted,

D. J. Salt

L. S. Edwards
Geophysicist

D. J. Salt
Geophysical Consultant

APPENDIX

DIAMOND DRILL HOLE DATA

Drill Hole Designation	Location Line		Bearing	Dip	Length	Horizontal Projected Length
1	7450E	3550N	315°	45°	225 feet	160 feet
2	6970E	3535N	38°	45°	225 feet	160 feet
3	6740E	3720N	38°	45°	225 feet	160 feet
4	6500E	3910N	38°	45°	225 feet	160 feet
5	6270E	4100N	38°	45°	225 feet	160 feet
6	3600E	6800N	135°	45°	450 feet	320 feet
7	3000E	7200N	270°	45°	500 feet	350 feet
8	2700E	7200N	270°	45°	425 feet	300 feet

METHOD OF TESTING FOR

METHOD OF TESTING FOR RADIOACTIVITY ON LAKES

The method may or may not work but is discussed here with the understanding that if it did work it would be very useful.

The radioactivity test could be carried out by lowering the probe of a geiger counter designed for drill hole work through a hole in the ice at every station and taking readings. The results may or may not be valid due to the following factors:

1. Whether the rock is soil covered on the bottom of the lake or not.
2. If soil covered then radon gas could act to move the gamma ray source closer.
3. If soil covered the sand could be radioactive and might migrate to another area giving spurious results.
4. Radon gas could migrate and give spurious results.

The method should be tried in spite of these apparent obstacles.

ANOMALY IN GAMMAS

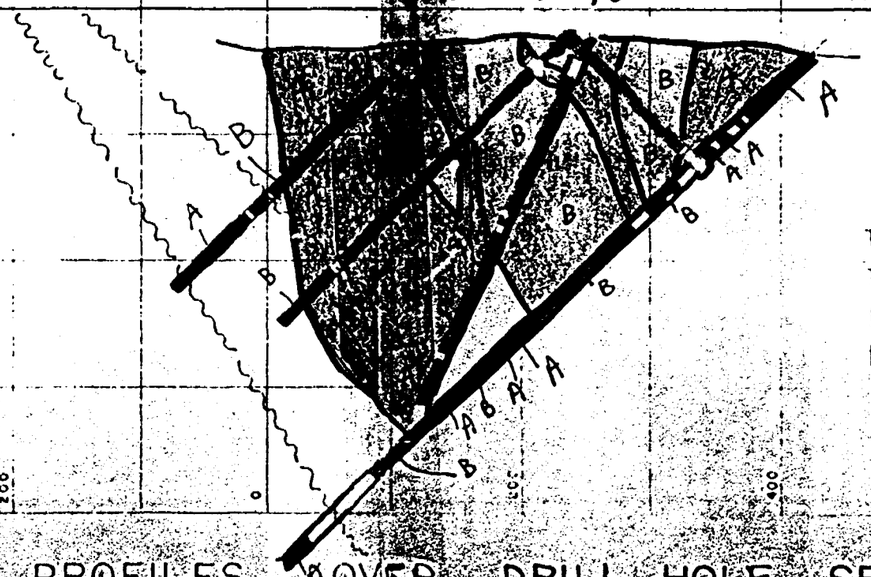
500
400
300
200
100
0

Note: Change of Scale to
1 inch = 1000 gammas
indicated by broken lines

N

0 2 4 6 8 10 12 14

Type "B" Rock coincides with the anomaly as illustrated



LEGEND

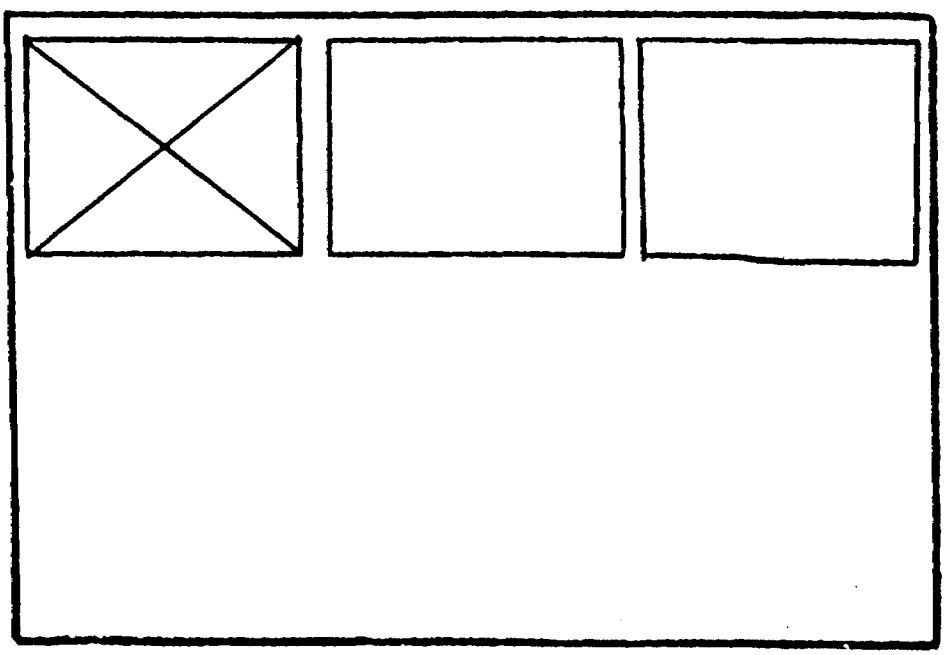
Type "B" - B
Type "A" - A
Diabase
Fault

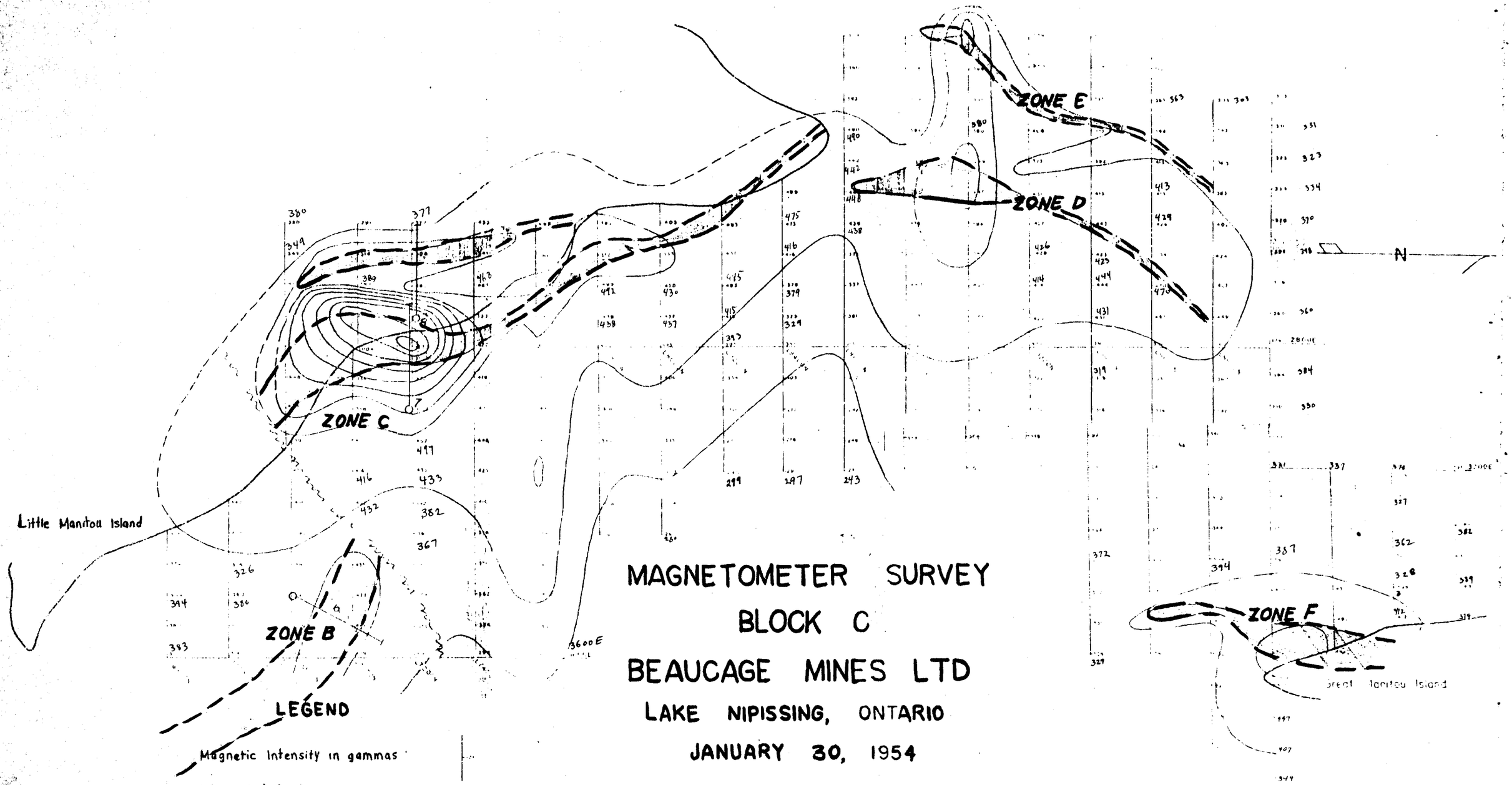
MAGNETIC PROFILES OVER DRILL HOLE SECTION FIG 1

SEE ACCOMPANYING MAP(S) IDENTIFIED AS

LAKE NIPISSING - 0019 - A1, #1

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





MAGNETOMETER SURVEY
BLOCK C
BEAUCAGE MINES LTD
LAKE NIPISSING, ONTARIO
JANUARY 30, 1954

SCALE 1 inch = 200'

LEGEND

Magnetic Intensity in gammas

Interpreted fault

interpreted Type 'B' Rock

Drill Hole

— obtain the absolute value of the magnetic field

1 57,200 gammas to the value on the map

Presented By

GEO-EXPLORERS LTD

D J Salt

D J SALT

GEOPHYSICAL CONSULTANT

LAKE NIPISSING-0019-AI, #1

FIG 3