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GEOPHYSICAL REPORT
ON PROPERTY OF
NIPIRON MINES LIMITED

FRIPP TOWNSHIP
PORCUPINE MINING DIVISION
PROVINCE OF ONTARIO

Introduction

A ground electromagnetic and magnetic survey was carried out on the property of Nipiron Mines Limited located in Fripp Township, Ontario.

The survey was carried out by Sulmac Exploration Services Limited during the period January 28th to March 23rd, 1965. The results obtained are depicted on the map accompanying this report.

Summary and Recommendations

A magnetic and electromagnetic survey was carried out in Fripp Township for Nipiron Mines Limited. The magnetic survey indicated no major anomalous zone. From the data obtained during the magnetometer survey it is indicated that the property is underlain by rocks probably of volcanic or

sedimentary origin, which have been intruded by more basic rock types.

The electromagnetic survey indicated no conducting zones within the boundaries of the property.

The present geophysical surveys indicate that no significant concentration of mineralization is to be found on the property. However, the overburden conditions may be such that any conducting zone may have been obscured. It is, therefore, recommended that further investigation of the property be held in abeyance for the present. Should other exploration work in the immediate area prove encouraging, then an Induced Polarization survey over the southern part of the property may be warranted.

Property, Location and Access

The property of Nipiron Mines Limited consists of a group of 51 unpatented mining claims located in Fripp Township, Ontario. The claims are numbered: 57430-32 inclusive, 57439-56 inclusive, 68424-33 inclusive, 68436-41 inclusive, 68443-50 inclusive, and 68454-59 inclusive.

The claim group lies in the northwest corner of Fripp Township. The Grassy River flows along the western

boundary and the eastern block of claims covers part of Quartz Lake.

Access to the property is by fixed wing aircraft from Timmins, which is some 16 miles to the north.

General Geology

The geology of the general Timmins district is shown on Map 2046, Timmins-Kirkland Lake Sheet, published by the Department of Mines, Ontario. This map indicates that Fripp Township is either unmapped or has no outcrops, and indeed no outcrop was evident during the present survey. However, it is thought that the area is underlain by sedimentary rock types and/or volcanics, which have probably been intruded by more basic rocks.

Method of Survey

A combined magnetic and electromagnetic survey was carried out over the claim group based on a line grid system of 400 foot spaced lines and 100 foot stations. The baseline for the survey was established in an east-west direction, with the traverse lines turned off at right angles to the baseline. Over that portion of the property covering Quartz Lake, another

line grid at right angles to the original system was established. A total of 42.7 miles of line were cut and chained for the survey. Due to the fast flowing water in the Grassy River, it was impossible to run lines over the river as the ice was not safe.

The electromagnetic survey was carried out using a vertical loop single phase unit. Readings were taken at 100 foot intervals along the traverse lines. A total of approximately 39.7 miles of line was surveyed by this method and 2080 stations were occupied.

A Sharpe MF-1 Fluxgate instrument was employed for the magnetic survey. The instrument had a sensitivity of 20 gammas per scale division on the 1000 gamma scale. A total of 39.7 miles of line were surveyed and 2080 station readings were taken.

The survey covered approximately 2000 acres.

Discussion of Results

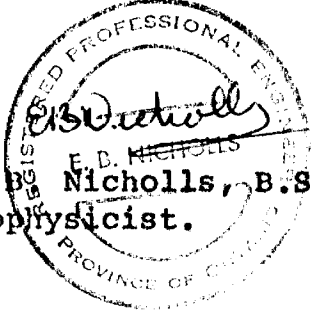
The magnetometer survey indicates that the property has fairly uniform magnetic relief, except for the area to the east of Quartz Lake. These magnetic 'highs' are probably due to the presence of basic intrusive rock types, possibly gabbro.

The remaining portion of the claim group appears to be underlain by one rock type, probably sedimentary, and/or volcanic rocks which may have been intruded by more basic rocks.

The electromagnetic reconnaissance survey conducted over the property did not indicate any major conducting zone. However, indications of a possible cross-over are evident on lines 12E at 15S to 28E at 28S. Due to the varying overburden conditions that are known to exist throughout the Timmins area, it is possible that the depth encountered in this area is sufficient to obscure the effects of a conducting zone, particularly if the zone was of a disseminated nature. Further work in the form of an Induced Polarization survey over the southern portion of the property may be warranted should exploration work in the immediate vicinity of this claim group prove to be encouraging.

Respectfully submitted,

SULMAC EXPLORATION SERVICES LIMITED

A circular seal for a Registered Professional Engineer in the Province of Ontario. The seal contains the name 'E. B. Nicholls' in a cursive script and 'E. B. NICHOLLS' in a sans-serif font. The outer ring of the seal reads 'REGISTERED PROFESSIONAL ENGINEER' at the top and 'PROVINCE OF ONTARIO' at the bottom.
E. B. Nicholls, B.Sc., P.Eng.,
Geophysicist.

April 7, 1965

Geological Report
Nipiron Mines Limited
Fripp Township Property

SUMMARY

A sulphide deposit containing lead and copper is located to the west of Grassy River, approximately due west and on line with the east-west arm and fault of Quartz Lake.

Other pyrite zones containing copper deposits are located in Price Township approximately due north of the north-south arm of Quartz Lake.

The most important geological feature on the property would appear to be the north-south and east-west faults through Quartz Lake where shearing, silicification and some mineralization can be seen. Particular attention should be paid to the junction of the two faults and as this area is in the lake, the geophysical survey in this area should be done on a maximum 200 foot grid.

PROPERTY

The property; consisting of some 54 claims, is all within Fripp Township, some 14 miles from the city of Timmins, Ontario.

ACCESS

Is via a secondary road from Timmins past the Spruce Needles Golf course to the Eastbank of the Grassy River where a jeep road turns south. Approximately 8 miles of jeep road from here to the property.

GENERAL GEOLOGY

The main portion of the property is underlain by meta sediments and greywacke.

The south-east portion of the property would appear to be mainly granitic with small intrusions of diorite and gabbro and with quartz filling on east-west fault.

Two main faults are evident in Quartz Lake; one running approximately north-south and the other east-west. Other faults on the property are evidenced by the topography.

DESCRIPTION OF PROPERTY

Starting from the north boundary, a general trend of east-west meta-sediments can be located on the west bank of Grassy river on the north boundary. East of this, is a band of hornblendite, meta-sediments and diorite in that order from north to south with an east-west shearing in the meta-sediments.

From the above area to below the east-west bend in the Grassy river there are few if any outcrops with most of the area swamp or drift covered.

Immediately south of the east-west portion of Grassy river, greywacke, and meta-sediments still predominate with some iron formation on the north boundary of claim 68432. The latter should have been followed up but time and the lack of tie points prevented this being done. Near the N-S base line on the north boundary of claim 57442, a boss of quartz feldspar

porphyry shows with an east-west feldspathic dike and numerous quartz stringers. Much of the meta-sediments here are gneissic.

On the west side of claim 68432, greywacke is sheared and cross faulted both north-south and east-west. Some small barren quartz veins were encountered here as well as slight pyrite mineralization in the shears. More work should be done in prospecting this area.

To the west, on Grassy river, a small outcrop of quartz feldspar prophyry with feldspathic dikes adjoins a large greywacke outcrop.

The central part of the property in claims 68437, 38, 39, 40, 41 and 57443, 44, 45, 46 would appear to be all meta-sediments or greywacke between Grassy river and Quartz Lake with an east-west strike and a dip of generally 50 ° north. The north-east corner of claim 57444 shows a topographic fault approximately north-west and the meta-sediments dip more steeply (80 °) to the north-east.

In and about the east-west base line as far east as Quartz lake, meta-sediments and greywacke again predominate. Some hornblende was noted on the west claim line of claim 68441 and again on the north-south base line just above the east-west base line. Two barren quartz veins were noted near the number one past of claim 68444. The two foot quartz vein shown in the attached

map being in a sheared greywacke and the 15" vein being between hornblendite and meta-sediments.

The southern portion of the property west of Quartz lake is mainly low ground with very few outcrops with the exception of near the Grassy river where there is an intermixture of diorite, gabbro, quartz-feldspar porphyry and some iron formation. Along the south base line, a large greywacke outcrop is cut off on the west with what is probably a fault running north-south up the Grassy river.

The east side of Quartz lake would appear to be mostly intrusives with the main portion a granodiorite. Some gabbro dikes cut the granodiorite and diorite. A section of feldspar amphibolite was encountered along the east side of claim 57452.

A strong shear zone into which a quartz vein has been intruded appears on the south shore at the east end of the east arm of Quartz lake. The quartz vein is 6 to 8 feet wide with slight copper-lead mineralization. Farther west on the south shore for almost a claim other quartz occurrences with slight pyrite mineralization can be seen in shore line trenches. Some 100 feet south of the shore line near the centre of claim 57450, (see BX on map) a flow breccia was uncovered with a feldspathic matrix - no mineralization was noted.

A strong north-south fault down Quartz lake can be presumed to run from north of the lake along a continuous

depression; to the east of the long island in the lake; crossing an area of low ground on the peninsula south of the east arm and then through the small lake south of Quartz lake.

ECONOMIC GEOLOGY

No economic values have been noted on the property although some copper-lead mineralization was seen in the quartz vein filling the east-west shearing through Quartz lake.

Much cross-fracturing with some quartz stringers and slight mineralization was noted on the east side of claim 68431. This is a good area to prospect.

In Price Township on the O'Leary Malartic property, heavy pyrite with some copper mineralization is located almost due north of Quartz lake and may be on the north-south fault running through this lake.

To the west of the Grassy river on the Rexdale property sulphides with lead zinc and copper line up with the east-west shearing passing through Quartz lake.

The two faults through Quartz lake mentioned above are good prospecting areas.

The meta-sediments underlying the main part of the property would be good host rocks for the deposition of sulphides.

O'Leary-Malartic have a strong anomaly just off

the north-east corner of claim 57451. An attempt has been made to drill the anomaly with no success due to boulders but a further attempt is to be made this winter. Results of this drilling should be watched.

RECOMMENDATIONS

1. Surface prospecting should be done in the vicinity of the east boundary of claim 68431. Overburden here is not extensive.

2. An electro-magnetic geophysical survey of the property should be made with lines spaced at 400 foot intervals. Close to the junction of the two faults in Quartz Lake, lines should be spaced 200 feet apart. Lines could be run north-south as the general schistosity appears to be east-west. Due to the water claims, this geophysical survey should await winter conditions.

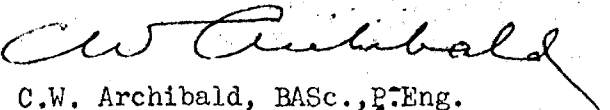
CONCLUSIONS

The claims are well situated and the chances of finding a sulphide deposit on them are excellent.

For the present, only a geophysical survey should be contemplated.

COST ESTIMATE

Line cutting	\$2,400.00
Geophysical survey	\$2,600.00
Incidentals	\$1,000.00
Total	<u>\$6,000.00</u>



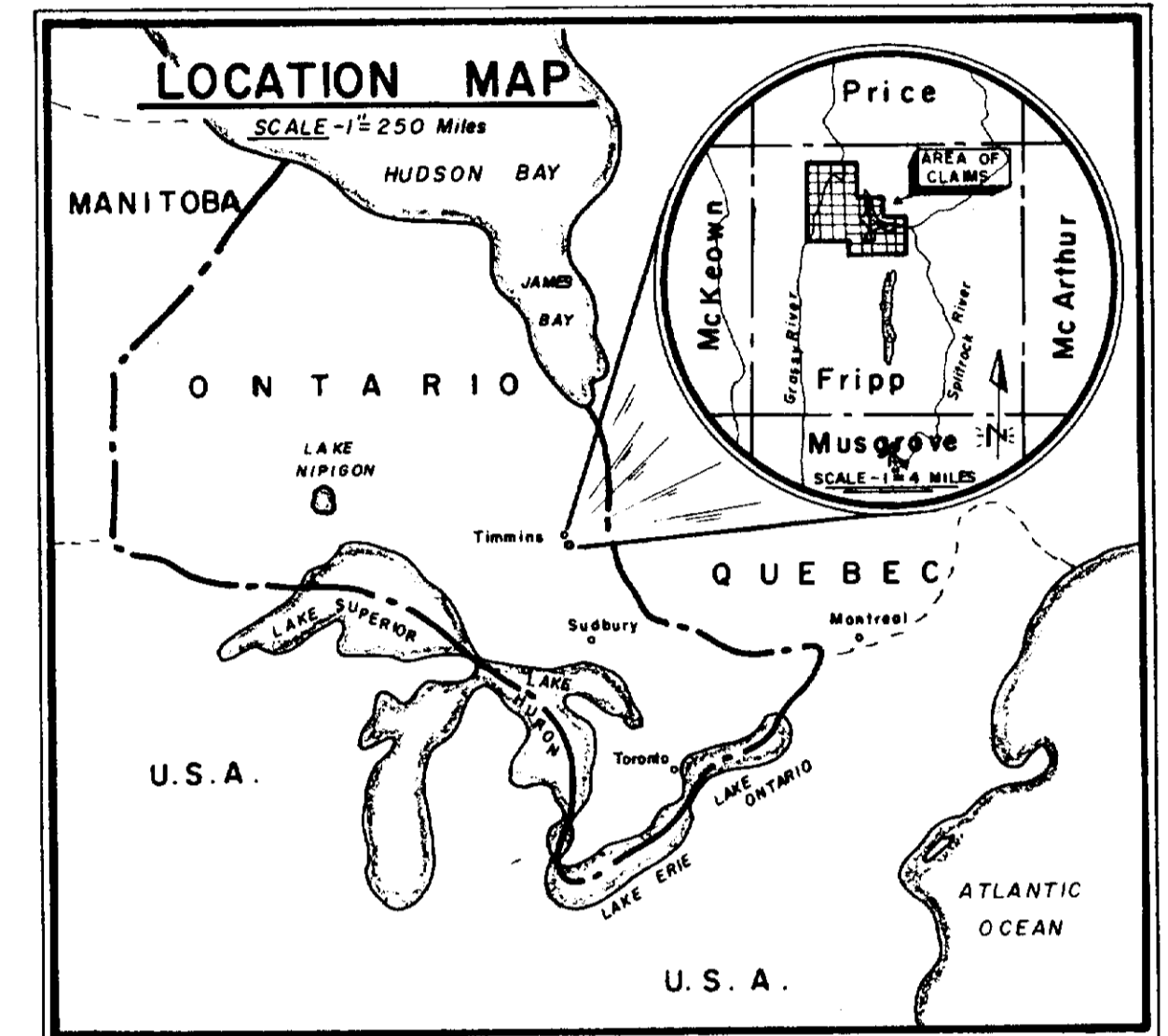
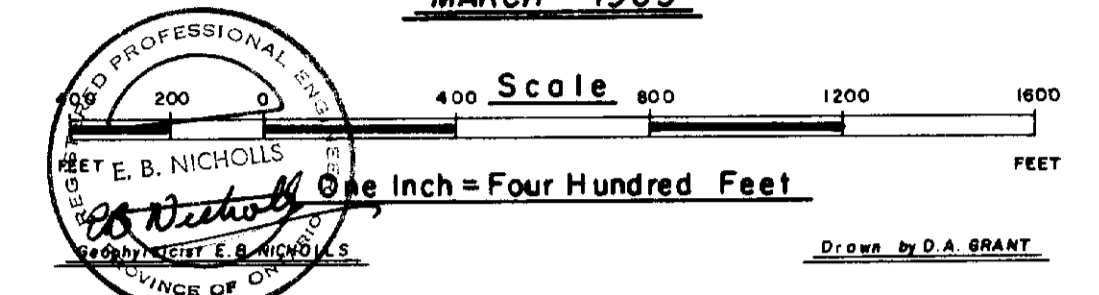
C.W. Archibald, B.A.Sc., P.Eng.

NIPIRON MINES LIMITED

FRIPP TOWNSHIP - ONTARIO
PORCUPINE MINING DIVISION
DISTRICT OF TIMISKAMING

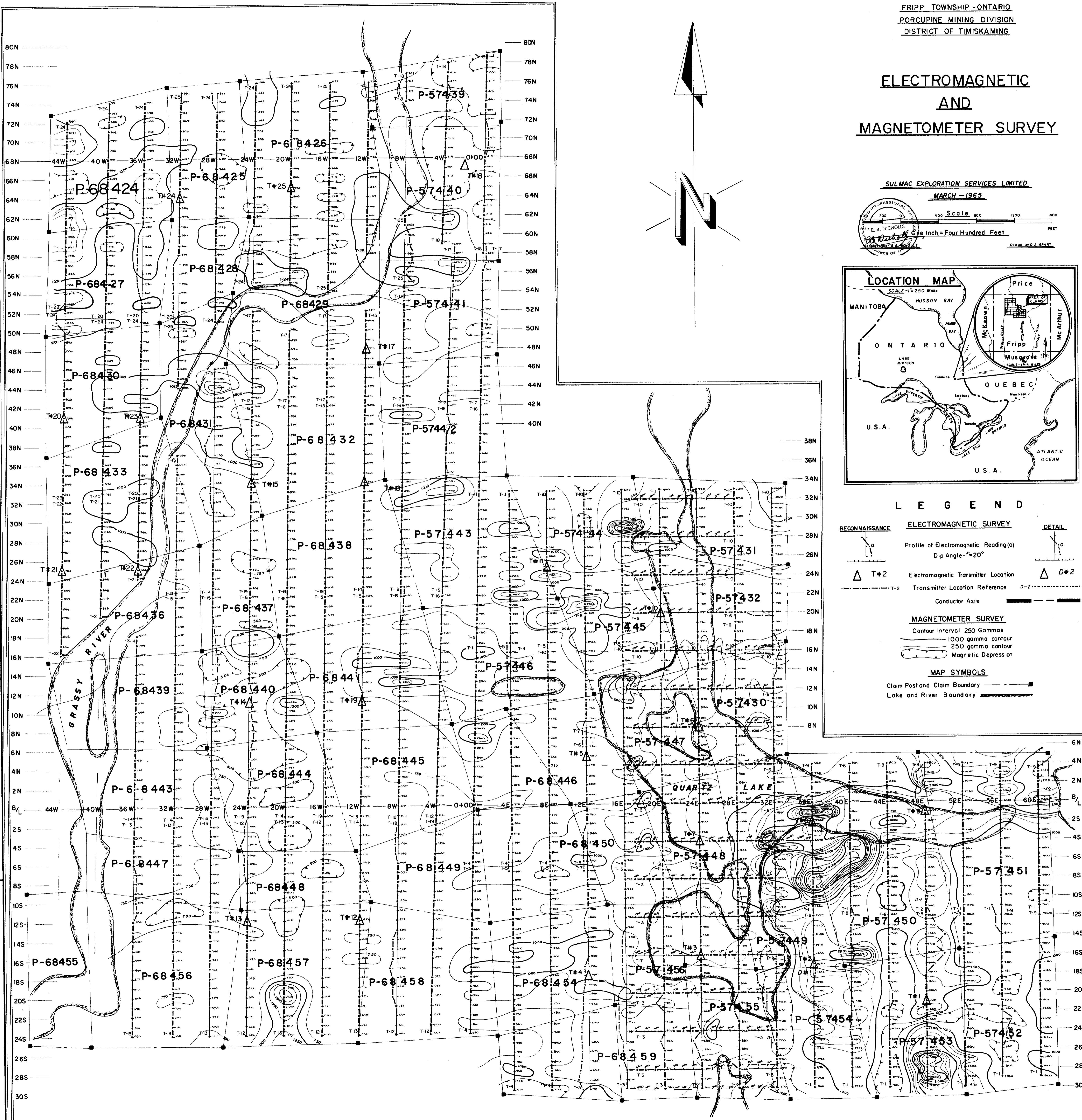
ELECTROMAGNETIC AND MAGNETOMETER SURVEY

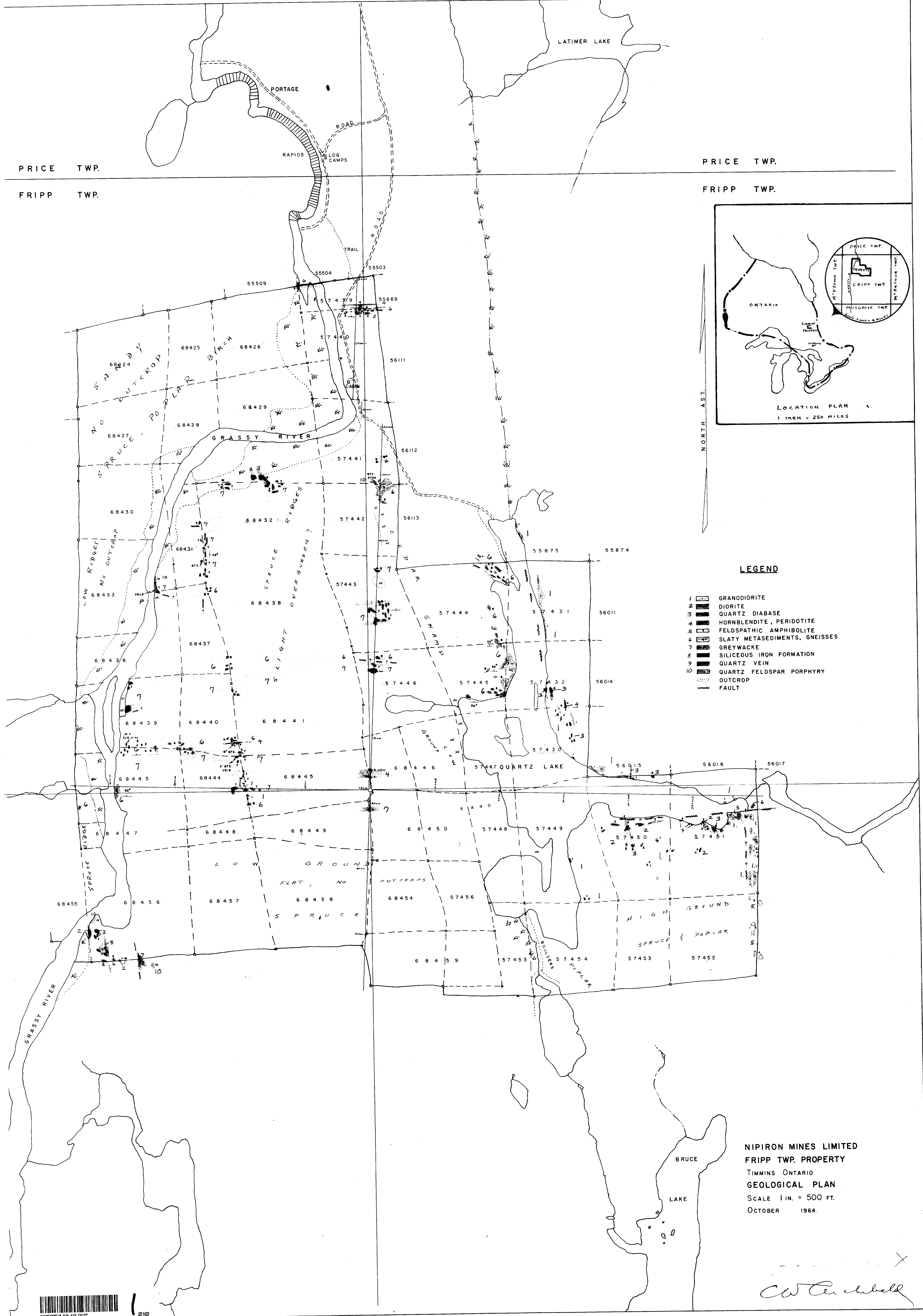
SUL MAC EXPLORATION SERVICES LIMITED
MARCH - 1965



LEGEND

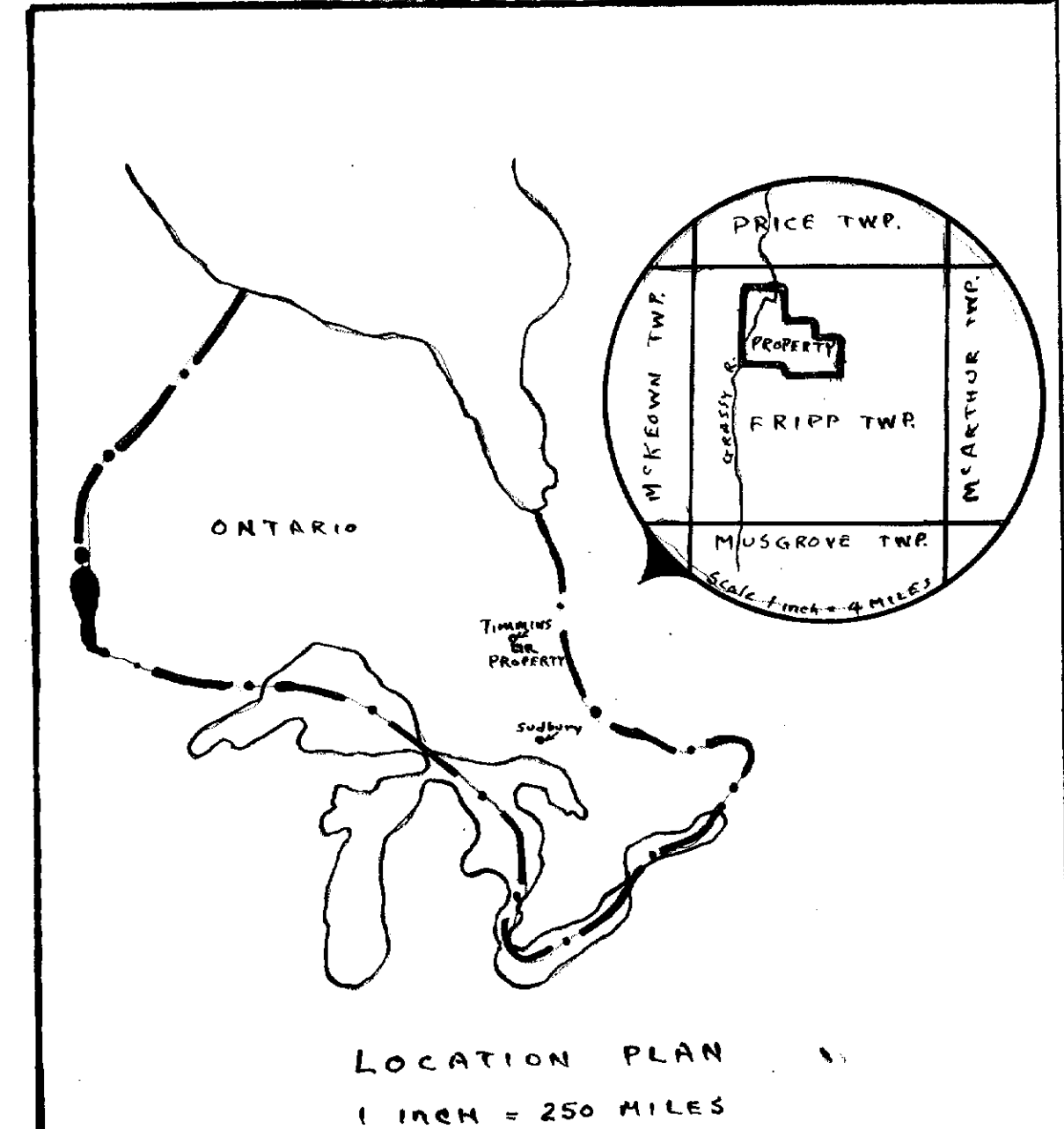
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|----------------------------|---|---------------|
| RECONNAISSANCE | ELECTROMAGNETIC SURVEY | DETAIL |
| | Profile of Electromagnetic Reading (a)
Dip Angle - f=20° | |
| | Electromagnetic Transmitter Location | |
| | Transmitter Location Reference | |
| | Conductor Axis | |
| MAGNETOMETER SURVEY | | |
| | Contour Interval 250 Gammas | |
| | 1000 gamma contour | |
| | 250 gamma contour | |
| | Magnetic Depression | |
| MAP SYMBOLS | | |
| | Claim Post and Claim Boundary | |
| | Lake and River Boundary | |





PRICE TWP.
FRIPP TWP.

PRICE TWP.
FRIPP TWP.



LEGEND

- 1 GRANODIORITE
- 2 DIORITE
- 3 QUARTZ DIABASE
- 4 HORNBLENDITE, PERIDOTITE
- 5 FELDSPATHIC AMPHIBOLITE
- 6 SLATY METASEDIMENTS, GNEISSES
- 7 GREYWACKE
- 8 SILICEOUS IRON FORMATION
- 9 QUARTZ VEIN
- 10 QUARTZ FELDSPAR PORPHYRY
- OUTCROP
- FAULT

NIPIRON MINES LIMITED
FRIPP TWP. PROPERTY
TIMMINS ONTARIO
GEOLOGICAL PLAN
SCALE 1 in. = 500 FT.
OCTOBER 1964.

C. W. Churchill

