



42A03NW0109 2.1427 MUSGROVE

010

GEOLOGICAL REPORT

on

MUSGROVE TOWNSHIP PROPERTY

PORCUPINE MINING DIVISION

for

SHADBRACK MINING LIMITED

TORONTO, ONTARIO

JOHN R. BOISSONNEVELT, B.Sc., P.Eng.
Geologist, Engineer

August 3, 1973

MAY 8 1974

PROJECTS UNIT

S U M M A R Y

The following report is the writer's evaluation of a base metal-gold prospect in Musgrove Township, south of Timmins, Ontario in the Porcupine Mining Division for Shadrack Mining Limited of Toronto, Ontario.

The property covers the southern end of an ultrabasic intrusive where it lies in contact with granitic rocks. Similar intrusives in the region contain several occurrences of sulfide mineralization containing nickel. There are at least two such occurrences on the property as well as a sulfide showing containing copper, silver, and gold in the granitic rocks. All of these are untested below surface.

Because of the base metal occurrences in what must be a favorable geological environment, the writer is of the opinion that there is a possibility of locating base metal, or base metal-gold, deposits on the property. He recommends, therefore, that a preliminary exploration program, consisting of ground electromagnetic and magnetometer surveys and surface sampling, be carried out on the claim group by the company.

INTRODUCTION

At the request of the directors of Shadrack Mining Limited of Toronto, Ontario, the writer examined a base metal-gold prospect in Musgrove Township south of Timmins, Ontario on July 29, 1973. The following report is the result of this examination as well as sources of information from the Division of Mines, Ministry of Natural Resources, including Preliminary Map P-810 Peter Long Lake Area, and assessment work reports on file at the Resident Geologist's office in Timmins. The report is an evaluation of the property as a base metal-gold prospect, and includes recommendations for an exploration program.

PROPERTY DESCRIPTION AND LOCATION:

The property consists of eight unpatented, 40-acre mining claims, a total of 320 acres. Four claims were staked by Robert Rousseau of Timmins, Ontario on December 12, 1972, and the other four claims were staked by Donat Clermont also of Timmins, on July 29, 1973.

The claim group is in the northeast corner of Musgrove Township, Porcupine Mining Division, in one continuous block. The northern boundary is $\frac{1}{4}$ miles from the Fripp-Musgrove common boundary. This is about 20 miles due south of the town of Timmins in northeastern Ontario. The following is a list of the claim numbers, their dates of staking and recording, and the names of the stakers:

<u>Claim Number</u>	<u>Date of Staking</u>	<u>Date of Recording</u>	<u>Staker</u>
P-366100	December 12, 1972	December 19, 1972	Robert Rousseau
P-366101	December 12, 1972	December 19, 1972	Robert Rousseau
P-366102	December 12, 1972	December 19, 1972	Robert Rousseau
P-366103	December 12, 1972	December 19, 1972	Robert Rousseau
P-372252	July 29, 1973	July 30, 1973	Donat Clermont
P-372253	July 29, 1973	July 30, 1973	Donat Clermont
P-372254	July 29, 1973	July 30, 1973	Donat Clermont
P-372255	July 29, 1973	July 30, 1973	Donat Clermont

The location of these claims are shown on the accompanying surface, claim, and geological map. Assessment work is due on the first four claims by December 19, 1973 and on the other four claims by July 30, 1974.

ACCESSIBILITY:

The claims may be reached from Timmins via a good secondary road which crosses the southeastern portion of the property, a distance of about 30 miles. Timmins is joined to Toronto, Ontario by paved highways and scheduled airliner.

Water is available in large quantities from both Donut Lake and Jules Lake which are on, or near the property. The nearest source of electrical power is Timmins, and the terminus for the Ontario Northland Railway is also in Timmins.

TOPOGRAPHY AND CLIMATE:

The northern and western parts of the property, except

for the shores of Donut Lake, are covered by thin overburden and contain many outcrop. They are forested by jackpines, poplars and birch trees. The central and southern sections contain many swampy areas with tag alders, spruce and balsam trees. Here the overburden is somewhat thicker and there are few outcrop. There is one lake of the property (Donut Lake) lying almost entirely within claim P-366102.

The total yearly precipitation in the region, is about 30 inches of rain, and 123 inches of snow. The mean temperatures for July and January are 60°F and 3°F respectively, the climate being north continental in nature, with freeze up usually occurring in late November, and break up in late April. Ground geophysics should be conducted in winter on this property, when the traverses may be extended over the frozen lake.

HISTORY:

There has been a considerable amount of mining activity in this region in the past, during the few years following the discovery of the Kidd Township ore deposit, of Texas Gulf Sulfur Co. Most of this activity has occurred in McArthur and Bartlett Townships to the east of the property and led to the discovery of the Texmont deposit. Considerable work was done in Fripp Township to the north by Hollinger Gold Mines in 1962, several small copper-bearing sulfide bodies being discovered. Their surveys extended southward into Musgrove Township, down to Donut Lake.

Prior to 1957, shallow pits and trenches were blasted

into two sulfide showings, south of Donut Lake on what is now claim P-366103. In 1957, Kerr Addison Gold Mines did a geological and electromagnetic vertical loop survey over this area, and a conductive zone was indicated which coincided well with the sulfide occurrences. In 1960 Sogemines Development Co. did some additional work on the claims but, despite this, no diamond drilling was done on the property to the writer's knowledge. Also, no subsequent work has been recorded on the property.

GEOLOGY AND MINERALIZATION:

The property lies near the southwestern end of a gold and base metal bearing "greenstone" belt which extends in an east-west direction across northeastern Ontario. These zones of Archean rocks occur within the Superior Province of the Precambrian Shield and consist of isoclinally folded volcanic and sedimentary rocks intruded by several ages of felsic and mafic to ultramafic plutons, and generally metamorphosed to the greenschist facies. A large fault zone, known as the Destor-Porcupine Fault crosses the region in an east-west direction, several miles north of the property and several subsidiary faults extend to the northwest and southeast.

Locally, the claim block covers the southern end of a lenticular, ultramafic intrusive which extends into Fripp Township for several miles in a direction of north-30°-west. It consists of dark green fine-grained massive peridotite with weak sheeting and is one of a group of ultramafic bodies

which occur in Bartlett, McArthur and Fripp Townships. South of Donut Lake, the peridotite lies in contact with a grey medium-grained granite, which apparently underlies most of the southern portion of the property. Near the contact, the grey granite contains dike-like pink phases which extend into the peridotite. Small quartz veins and stringers occur in both granitic types. A large medium-grained diabase dike, crossing the northern extremity of the property in a direction of north-70°-east, cuts both the felsic and ultramafic intrusives. A strong fault with a northwest-southeast strike, crosses claim P-366102, as evidenced by displacement in the diabase dike; the southwestern side has moved southeasterly.

Shallow pits and trenches south of Donut Lake, have exposed two occurrences of massive, or near massive sulfides, 300 feet apart, in the granite near the peridotite contact. The westerly showing consists of massive pyrrhotite (Fe_7S_8) about four feet wide--samples taken by the writer assayed 0.02 ounces per ton of gold. The easterly showing consists of massive pyrrhotite with minor chalcopyrite ($CuFeS_2$) about ten feet wide and disseminated pyrrhotite extending well into the peridotite. Grab samples taken previously from this showing gave from nil to 1.46% copper, with low values in nickel and gold, and contained from 0.84 to 1.16 ounces per ton of silver. The disseminated pyrrhotite in the ultramafic rock contains low values in nickel. Also, a band of disseminated, nickeliferous pyrrhotite about two feet wide, was found in the peridotite, west of Donut Lake.

The vertical loop electromagnetic survey of 1957 has indicated a continuous conductive zone, about 500 feet long, in the vicinity of the sulfide showings, south of the lake. Other weaker conductors were found in the general area.

CONCLUSIONS AND RECOMMENDATIONS:

The ultramafic intrusive in the northern section of the property, is lithologically similar to those in which nickel deposits have been discovered in both Bartlett (Texmont) and Langmuir Townships. Furthermore, at least two occurrences of disseminated pyrrhotite, containing low nickel values within the intrusive, can be found on the property. Also, the copper, gold, and silver bearing sulfide occurrences in the granitic rocks, near the southern contact, have not been tested by diamond drilling despite their close association with a vertical loop electromagnetic anomaly.

For these reasons, it is the writer's opinion that an exploration program, designed to explore for nickel bearing sulfide deposits within and near the margins of the peridotite, and for copper, gold, and silver bearing sulfide deposits in the granitic rocks to the south, is warranted and should be performed by the company.

Since the ultramafic intrusive extends northward and is largely unexplored in Musgrove Township, it is recommended that the claim block be enlarged to the north, by staking three additional claims. Once this is done, the company should proceed in the following manner: first, picket lines should

be established in a north-south direction, 300 feet apart, and chained from an east-west base line with pickets erected at 100 foot intervals; secondly, a horizontal loop electromagnetic survey using a 200 foot cable, should be carried out along these lines; thirdly, a magnetometer survey should be carried out at the same time. If this is done in the summer, then only the land area can be covered, and the survey would have to be extended over the lake during the following winter. The purpose of these programs is to better define the anomalous areas in the vicinity of the mineral occurrences, and to explore for other anomalous conditions which might occur on other parts of the property. The company should also take channel samples in the known mineralized areas, and be prepared to arrange additional financing for diamond drilling, should this be indicated by the results of the preliminary exploration programs.

The following is an estimate of the costs of these recommended programs:


Line cutting, 12 miles, at \$110/mile.....	\$1,320
Horizontal loop E-M survey, 11 miles, at \$120/mile.....	1,320
Magnetometer survey, 12 miles, at \$75/mile.....	900
Sampling and assaying of surface mineralization....	200
Staking and recording additional claims.....	180
Supervision, engineering and other costs.....	1,000
Subtotal.....	<u>\$4,920</u>
+ 10% contingency factor.....	500
TOTAL.....	<u>\$5,420</u>

Respectfully submitted,

JRB/lb

August 8, 1973

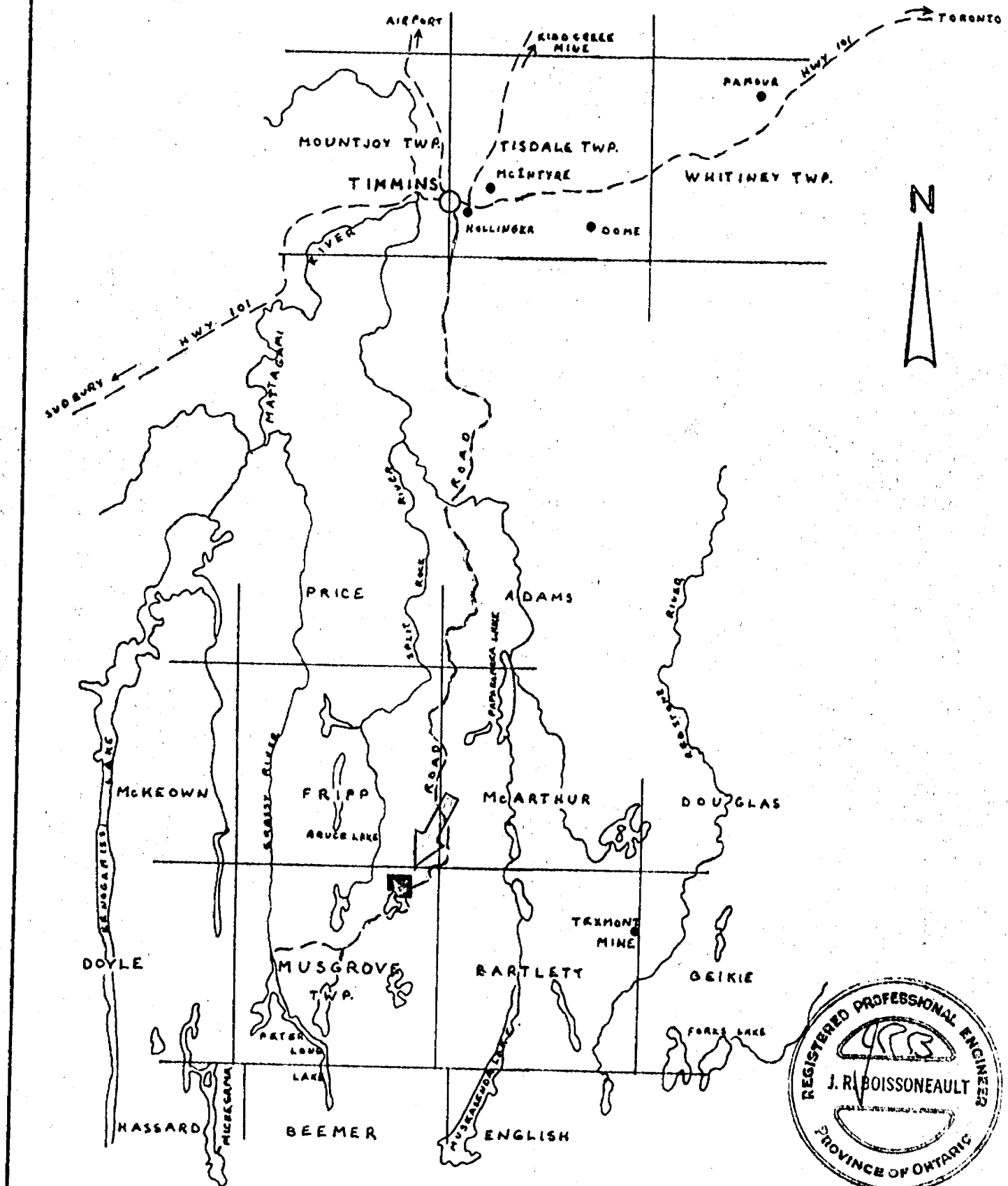
J. R. Boissoneault
John R. Boissoneault, D.Sc., P.Eng.
Geologist

A circular professional seal for a Registered Professional Engineer in the Province of Ontario. The seal contains the text "REGISTERED PROFESSIONAL ENGINEER" around the top inner edge and "PROVINCE OF ONTARIO" around the bottom inner edge. The name "J. R. BOISSONEAULT" is printed across the center of the seal.

GENERAL LOCATION MAP
SHADRACK MINING LIMITED

MUSGROVE TWP., ONTARIO

SCALE : 1 IN. = 4 MI.



SURFACE, CLAIM, AND GEOLOGICAL MAP
SHADRACK MINING LIMITED

MUSGROVE TWP., ONTARIO

SCALE: 1 IN. = 1/4 MI.



2 M

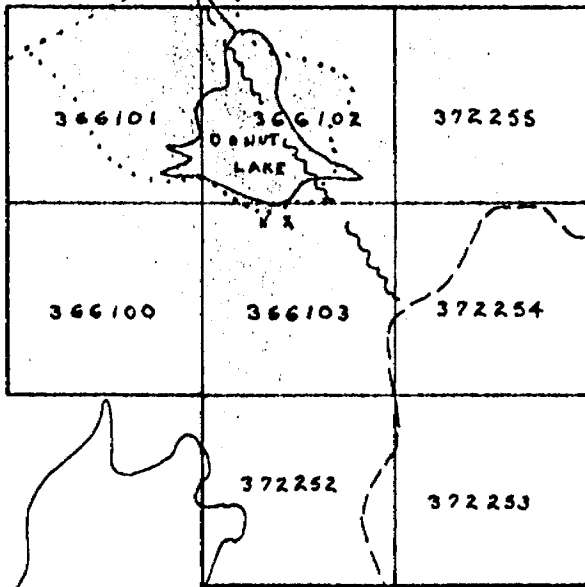


1 M.



FRIPP.
MUSGROVE

JULIE
LAKE



R.O.A.D

LEGEND



DIABASE



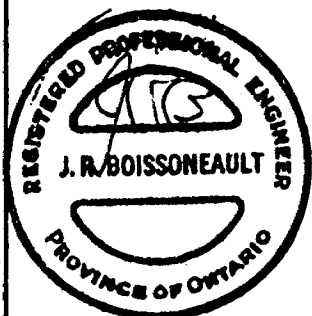
FELSIC INTRUSIVE



ULTRAMAFIC INT.

XX SULFIDE MINERALIZATION

~~~~~ FAULT





42A03NW0109 2.1427 MUSGROVE

020

R E P O R T

PROJECTS UNIT

on

ELECTROMAGNETIC AND MAGNETOMETER SURVEY

on

MUSGROVE TOWNSHIP PROPERTY

of

SHADRACK MINING LIMITED  
PORCUPINE MINING DIVISION, ONTARIO

CLAIMS

P-366100 to P-366103

P-372252 to P-372255

P-373576 to P-373577

P-381496

John R. Boissoneault, B.Sc., P.Eng.  
Geologist, Engineer

February 18, 1974

## INTRODUCTION

During the period of January 10 to January 28, 1974 a geophysical field party executed an electromagnetic and magnetometer survey on the Musgrove Township property of Shadrack Mining Limited in northeastern Ontario. The field party, consisting of three men, was under the supervision of a professional engineer.

The survey grid consisted of north-south picket lines, 300 feet apart, as was previously recommended, a total of 11.0 miles. The location of the grid, relative to property boundaries, is shown on Plate 1 on a scale of 1 in. = 400 ft.

The location and description of the property is covered in a previous<sup>?</sup> report entitled "Geological Report on Musgrove Township Property for Shadrack Mining Limited". Both the land and lake portions of the property were covered by the survey. The claims involved are listed on the title page of this report, and all belong to Shadrack Mining Limited.

The overburden cover over most of the property, is quite thin except possibly in the southern section, probably less than 50 feet, and there are several outcrops, most of them along the shore lines of both small lakes.

The land surface is undulating with small hills and ridges of moderate relief. One ridge runs along the eastern shore of Jules Lake and is probably a fault scarp. The two small lakes are shallow and have swampy edges.

A McPhar VHEM model-660 electromagnetic unit was used

for the survey and a total of 10.1 miles was covered. The horizontal loop configuration (loops horizontal and coplanar) with a 200 foot cable, was employed at a frequency of 2,400 cps. This method consists of two coils, one transmitting and one receiving, being moved in line at a separation held constant by a cable, along which is passed a reference signal. The inphase and outphase components of the resultant electromagnetic field are measured at the receiver and are expressed as a percentage of the free air primary field. Additional coverage was done over the anomalous areas using the same instrument with the lower frequency (600 cps).

A Scintrex MF-1, "fluxgate" type magnetometer was used for the magnetometer survey, with readings taken to an accuracy of  $\pm 10$  gamma, every 100 feet along the picket lines. The 'tie in' procedure, used to correct diurnal variation, is included in the appendix. A total of 11.0 miles were covered by the survey. Additional readings were taken at 50 foot intervals in the anomalous areas. This instrument measures the vertical component of the earth's magnetic field, at the point where the reading is taken.

The purpose of the survey was to detect subsurface concentrations of metallicly conducting mineralization, with anomalous magnetic susceptibility, which might occur beneath the grid covered, and within the range of the instruments. The majority of ore deposits in the Precambrian Shield occur as tabular bodies of "massive sulfides" which are usually distinguishable from the enclosing rocks by their

electrical conductivity and magnetic susceptibility. Unfortunately, anomalous electromagnetic or magnetic responses are also caused by concentrations of minerals such as graphite or pyrrhotite which have little or no commercial significance. These are not distinguishable from "ore deposits" by the geophysical means employed.

#### DISCUSSION OF MAGNETIC RESULTS:

The magnetic intensity readings and contours are shown on Plate 2. These show considerable variation across the northern half of the property with sharp irregular highs and lows. This section is probably underlain by remnants of a large ultramafic sill which extends northwestward into Fripp Township and as far south as the base line, between cross lines 15 West and 6 West. It is discussed in the previous geological report. These ultramafic rocks lie in contact with granitic intrusives which underlie most of the remainder of the property and reflect magnetics of lower intensity and less variation. Two large diabase dikes cross the property in a direction of north-70°-east as indicated by long linear intense magnetic highs. One of these dikes which is about 750' wide, cuts across the ultramafic rocks in the northern half of the property, while the other, which is about 300' wide, cuts across the granitic rocks in the southeastern section.

There is strong indication of a large strike slip fault crossing the property in a direction of north-30°-west as evidenced by the displacement of the linear magnetic highs and



by the abrupt termination of other geophysical features. This fault displaces both the diabase dikes and the ultramafic intrusive (east side northward) and is indicated on surface by a scarp along the east shore of Jules Lake. This fault appears to be itself displaced eastward, south of the base line.

Several small magnetic anomalies, three of which coincide with electromagnetic conductive zones, occur within or along the margins of the intrusive. The most interesting of these is a pair of strong lows of between 3,000 and 5,000 gammas at 100 South and 250 South on line 9 West, and an associated high of from 300 to 500 gammas to the east. Also of interest, is a high of about 1,000 gammas at 1100 North on lines 21 and 18 West, and a high of in excess of 3,000 gammas from 500 to 700 North on line 12 East.

#### DISCUSSION OF ELECTROMAGNETIC RESULTS:

The inphase and outphase components of the resultant electromagnetic field measured in the survey, are plotted as profiles on Plate 3. Examination of these, reveals five zones of anomalous conductivity, four of them coinciding closely with the previously discussed magnetic anomalies.

Zones 'A' and 'B' are both in excess of 300' long with east-west strikes and steep dips. They are in close proximity to the magnetic lows, south of the base line on line 9 West. These are both moderately strong anomalies, with inphase:outphase ratios of from 2:1 to 3:1, the tops of which are indicated as being within 20 feet of the surface.

Zone 'C' is a short anomaly, having been picked up only on line 21 West at 1100 North. It is strong with an inphase:outphase ratio of 4:1, and coincides exactly with a narrow magnetic high of 1000 gammas. The top of the zone lies about 50 feet below the surface.

Zone 'E' is a weak to moderate conductor, crossing line 12 East and 600 North and extending westward to line 9 East, (inphase:outphase ratio = 4:3). It coincides with a strong irregular magnetic anomaly of in excess of 3,000 gammas. The top of this zone is also about 50 feet below the surface.

Other anomalous electromagnetic responses were obtained during the course of the survey, such as conductor 'D'. These, however, are either weak conductors or they have little or no coinciding magnetic anomalies. In this geological environment, these anomalies must be considered of secondary importance since they are less likely to be caused by features of commercial interest.

#### CONCLUSIONS AND RECOMMENDATIONS:

The electromagnetic and magnetometer profiles for the anomalies on lines 21 West, 9 West, and 12 East are shown on Plate 4. On line 21 West, strong conductivity ('C') coincides closely with a magnetic high of moderate intensity; whereas, on line 9 West, two conductors of moderate strength ('A' and 'B') are located on the northern flanks of two strong magnetic lows. In the latter case, sulfide mineralization, containing base metals and gold, occurs at the surface, in the

vicinity of the anomalies; in both cases the anomalies occur near the edge of an ultrabasic intrusive.

The shape and strength of the magnetic anomalies, and the nature of the electromagnetic responses for 'A', 'B' and 'C' are such that they are probably caused by metallic sulfides containing pyrrhotite ( $Fe_7S_8$ ). Since deposits of this type, in this geological environment, sometimes contain nickel, and since occurrences of base metals including nickel can be found in the vicinity, the anomalies have strong significance and should be tested by diamond drilling. Anomaly 'C' requires detail geophysical work, prior to drilling, in order to ascertain length, strike, and dip; also, one additional claim should be staked to the southwest. Anomalies 'A' and 'B' can be tested by one drill hole collared at 100 feet north on line 9 W and drilled southward at  $-45^\circ$  for 600 feet.

The conductive zone on line 12 East ('E') is somewhat weak but it coincides exactly with an intense magnetic high. These geophysical responses are consistent with those that would be caused by stringers and disseminations of pyrrhotite, which could contain nickel, and are also of some importance. The company should consider testing this zone by diamond drilling after some detail geophysical work is done.

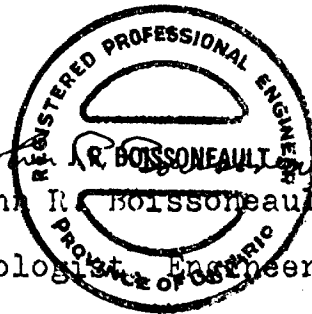
One day of geophysical work and 12,000 feet of diamond drilling would be required to complete the recommended programs and would cost about nine thousand dollars (\$9,000). Further drilling, of course, would depend on the results of these programs.

Other anomalous electromagnetic responses were obtained during the course of the survey, such as conductor 'D' on line 00, but these are either too weak or lack coinciding magnetic anomalies. They are of less interest since they are not likely caused by features of commercial significance.

Respectfully submitted,

JRB/lb

February 18, 1974

A circular seal for a Registered Professional Engineer. The outer ring contains the text "REGISTERED PROFESSIONAL ENGINEER" at the top and "Province of Ontario" at the bottom. The center of the seal features a stylized signature of "John R. Boissoneault" and the name "J. R. BOISSONEAULT" in a smaller font. The seal is stamped over the typed name and title of the signatory.

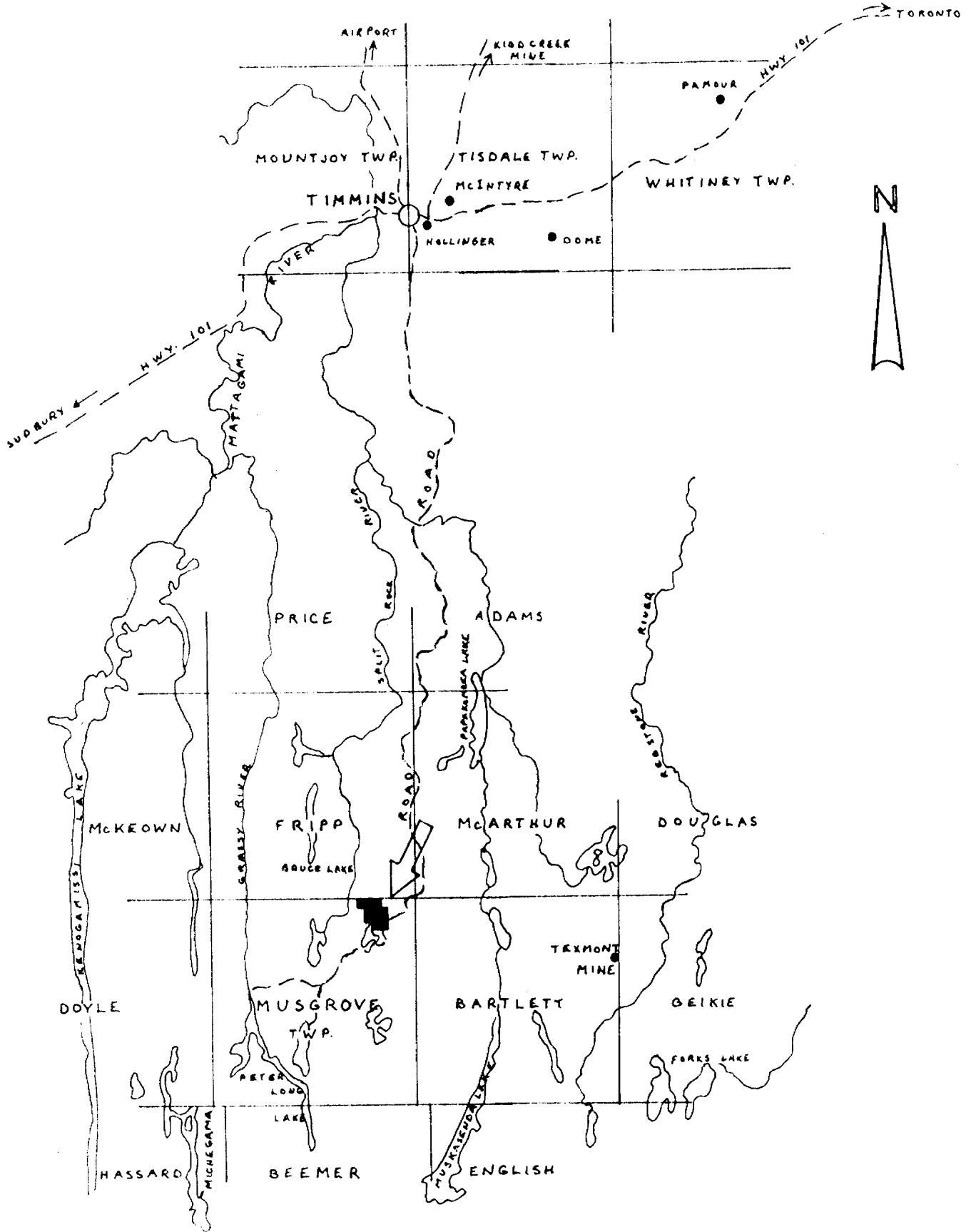
John R. Boissoneault, B.Sc., P.Eng.  
Geologist, Engineer

GENERAL LOCATION MAP

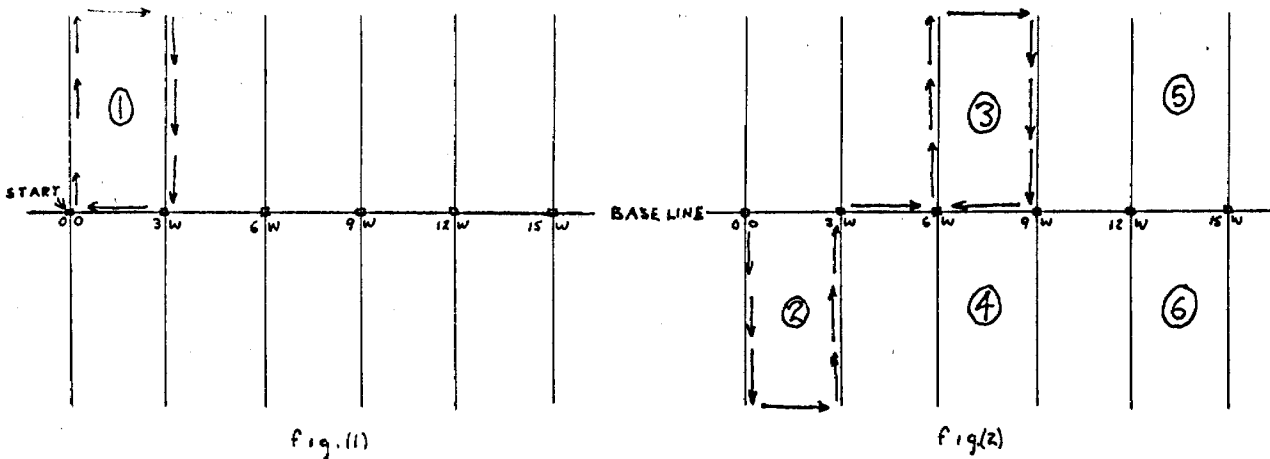
# SHADRACK MINING LIMITED

MUSGROVE TWP., ONTARIO

SCALE : 1 IN. = 4 MI.



## Tie In Procedure to Correct Diurnal Variation



The method used to correct Diurnal Variation is one suggested by D. S. Parasnis (1966) as being "sufficiently accurate for most surveys". It consists of repeating the reading taken at a base station after an interval of less than two hours during which traverses are carried out. Any increase in the repeated reading "d" is divided by the number of readings 'n' and each reading corrected by subtracting  $d/n \cdot x$  (where  $x$  = the ordinal number of the reading). For example, if the diurnal variation was +120 gamma and 60 readings were taken, the correction for the 25th reading =  $-d/n \cdot x$  or  $-120/60 \cdot 25 = -50$  gamma.

In order to extend this over the entire grid, the survey is done in loops (see map), beginning and ending at a base station on the base line and then tying in to the next base station, also on the base line. For example, when loop 1 is completed, base stations 00 and 3W are tied in. When loop 2 is completed, station 6W is tied in and loop 3 is started.

As a further check, when the last loop is completed at 15W, all the base stations are read on the way back. This is done as quickly as possible to minimize the effects of drift.

One makes the assumption that the change 'd' occurred at a fairly constant rate, and that the time interval between the readings is relatively constant.

The method allows reasonably accurate corrections, for drift in the instrument due to such factors as temperature changes, as well as, for diurnal variation.

*John Sansonault*

**GEOPHYSICAL - GEOLOGIC  
TECHNICAL DATA**



300

1314

PROJECTS UNIT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT  
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT  
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey ELECTROMAGNETIC - MAGNETOMETER  
 Township or Area MUSGROVE TWP.  
 Claim holder(s) SHAWRACK MINING LIMITED  
805-88 UNIVERSITY AVE, TORONTO  
 Author of Report JUNN BOISSONNEAULT  
 Address 670 SPRUCE STN. TIMMINS ONT.  
 Covering Dates of Survey JANUARY 10 - FEBRUARY 18  
 (linecutting to office) 1974  
 Total Miles of Line cut 11.0 MILES

**MINING CLAIMS TRAVERSED**  
List numerically

|            |          |
|------------|----------|
| ✓ P        | 366.100  |
| (prefix)   | (number) |
| ✓ P        | 366.101  |
| ✓ P        | 366.102  |
| ✓ P        | 366.103  |
| P 1/3 N.C. | 372.252  |
| ✓ P        | 372.253  |
| ✓ P        | 372.254  |
| ✓ P        | 372.255  |
| ✓ P        | 373.576  |
| ✓ P        | 373.577  |
| ✓ P        | 381.496  |

If space insufficient, attach list

**SPECIAL PROVISIONS  
CREDITS REQUESTED**

DAYS  
per claim

ENTER 40 days (includes  
line cutting) for first  
survey.

ENTER 20 days for each  
additional survey using  
same grid.

- Geophysical
- Electromagnetic 40
- Magnetometer 20
- Radiometric \_\_\_\_\_
- Other \_\_\_\_\_
- Geological \_\_\_\_\_
- Geochemical \_\_\_\_\_

**AIRBORNE CREDITS** (Special provision credits do not apply to airborne surveys)

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: FEB 27, 1974 SIGNATURE: John Boissonneault  
Author of Report or Agent

**PROJECTS SECTION**

Res. Geol. \_\_\_\_\_ Qualifications 2.740

Previous Surveys 63.9.92 E.M. and geological performed 1957, 63.1190

Checked by geological & E.M. many different instruments performed 1962 diff lines & L.D. date \_\_\_\_\_

GEOLOGICAL BRANCH \_\_\_\_\_

Approved by \_\_\_\_\_ date \_\_\_\_\_

GEOLOGICAL BRANCH \_\_\_\_\_

Approved by \_\_\_\_\_ date \_\_\_\_\_

TOTAL CLAIMS 11

OFFICE USE ONLY

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

### GEOPHYSICAL TECHNICAL DATA

#### GROUND SURVEYS

Number of Stations 583 Number of Readings 680  
 Station interval 100' EXCEPT IN ANOMALOUS AREAS (50')  
 Line spacing 300'  
 Profile scale or Contour intervals 1 IN = 20' 10 100 gamma  
(specify for each type of survey)

#### MAGNETIC

Instrument SHIMPE MF-1  
 Accuracy - Scale constant ± 10 gamma  
 Diurnal correction method RETURNING TO BASELINE STATION AFTER COMPLETION OF  
LOOP AND THEN MAKING PROPORTIONATE ADJUSTMENT OF ALL READINGS  
 Base station location BASELINE STATIONS

#### ELECTROMAGNETIC

Instrument Mc PHAR V.M.C.M. MODEL 600  
 Coil configuration HORIZONTAL - COPLANAR  
 Coil separation 200 FEET  
 Accuracy ± 1%  
 Method:  Fixed transmitter  Shoot back  In line  Parallel line  
 Frequency 7,400 C.P.S.  
(specify V.L.F. station)

Parameters measured INPHASE AND OUTPHASE COMPONENTS OF RESULTANT ELECTROMAGNETIC FIELD

#### GRAVITY

Instrument \_\_\_\_\_  
 Scale constant \_\_\_\_\_  
 Corrections made \_\_\_\_\_  
 Base station value and location \_\_\_\_\_

Elevation accuracy \_\_\_\_\_

#### INDUCED POLARIZATION -- RESISTIVITY

Instrument \_\_\_\_\_  
 Time domain \_\_\_\_\_ Frequency domain \_\_\_\_\_  
 Frequency \_\_\_\_\_ Range \_\_\_\_\_  
 Power \_\_\_\_\_  
 Electrode array \_\_\_\_\_  
 Electrode spacing \_\_\_\_\_  
 Type of electrode \_\_\_\_\_



FRIPP TWP. M.281

THE TOWNSHIP OF  
OF  
**MUSGROVE**

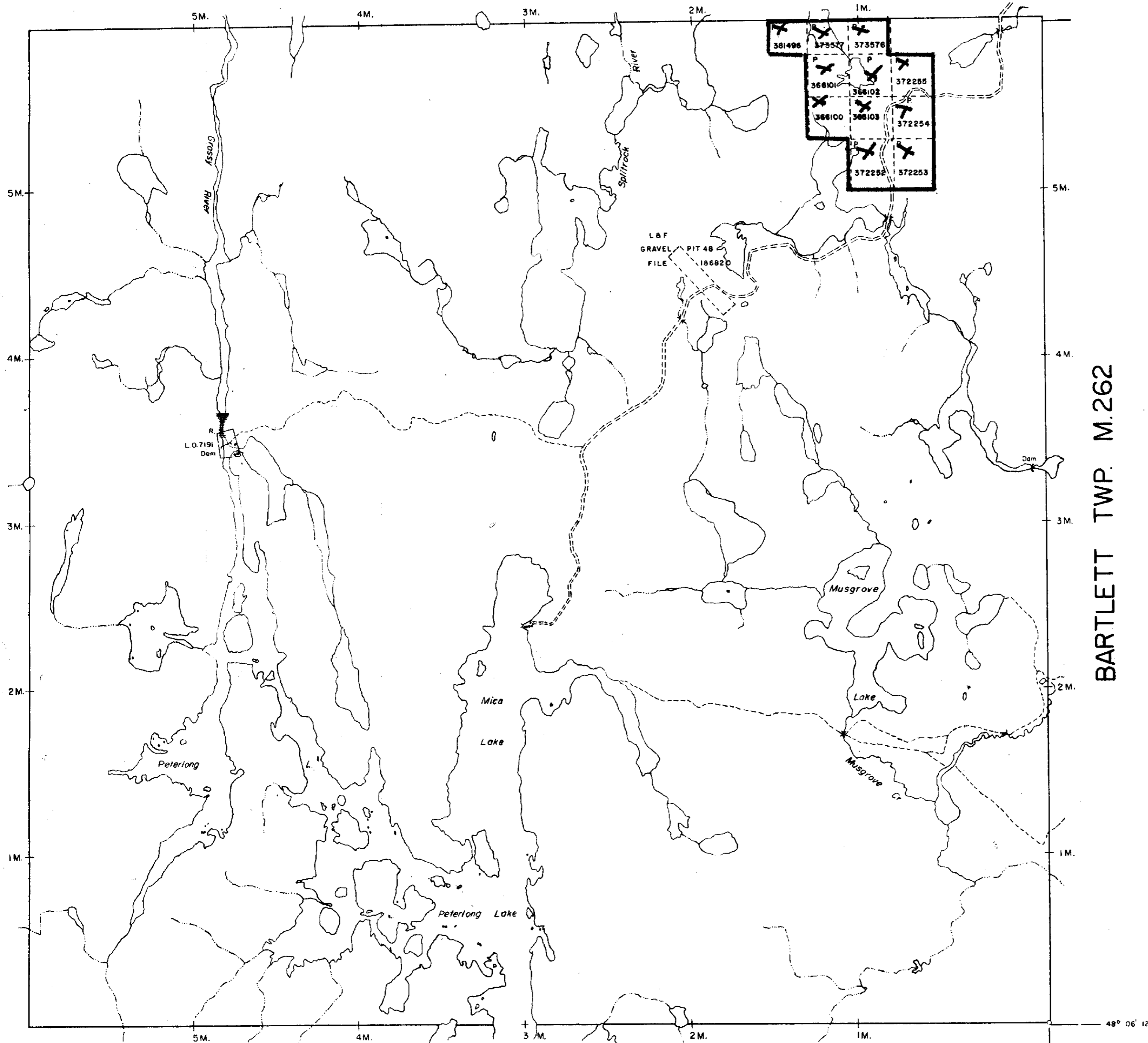
DISTRICT OF  
TIMISKAMING

PORCUPINE  
MINING DIVISION

SCALE: 1-INCH 40 CHAINS

DOYLE TWP. M.275

BARTLETT TWP. M.262



**LEGEND**

|                       |           |
|-----------------------|-----------|
| PATENTED LAND         | Ⓟ         |
| CROWN LAND SALE       | C.S.      |
| LEASES                | Ⓛ         |
| LOCATED LAND          | Loc.      |
| LICENSE OF OCCUPATION | L.O.      |
| MINING RIGHTS ONLY    | M.R.O.    |
| SURFACE RIGHTS ONLY   | S.R.O.    |
| ROADS                 | — — — — — |
| IMPROVED ROADS        | — — — — — |
| KING'S HIGHWAYS       | — — — — — |
| RAILWAYS              | — — — — — |
| POWER LINES           | — — — — — |
| MARSH OR MUSKEG       | — — — — — |
| MINES                 | Ⓧ         |
| CANCELLED             | Ⓞ         |

**NOTES**

400' Surface Rights Reservation around all lakes and rivers.

Flooding Rights in Peterlong & Mica lakes assigned to HEPC LO 7191  
File 1162 Vol 4

MINING LANDS  
DATE OF ISSUE  
MAR - 5 1974  
MINISTRY OF NATURAL RESOURCES

File - 2.1427

PLAN NO. **M.304**

ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH

BEEMER TWP. M.656

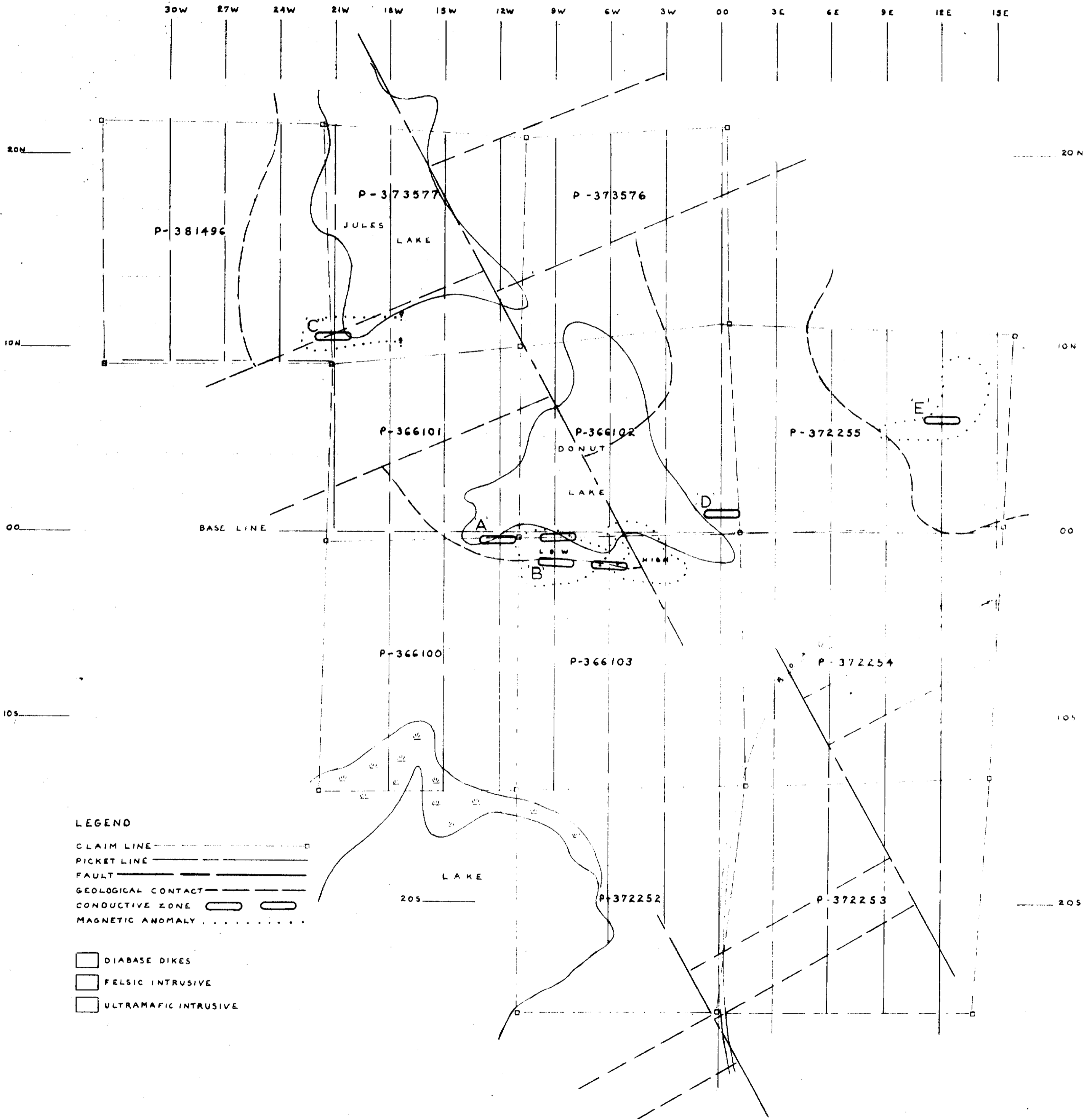


42A83NW0109 2.1427 MUSGROVE

200

**PLATE 1**  
**SHADRACK MINING LIMITED**  
 MUSGROVE TWP. PROPERTY  
 ONTARIO  
**GENERAL PLAN**

SCALE: 1 IN. = 400 FT.



**LEGEND**

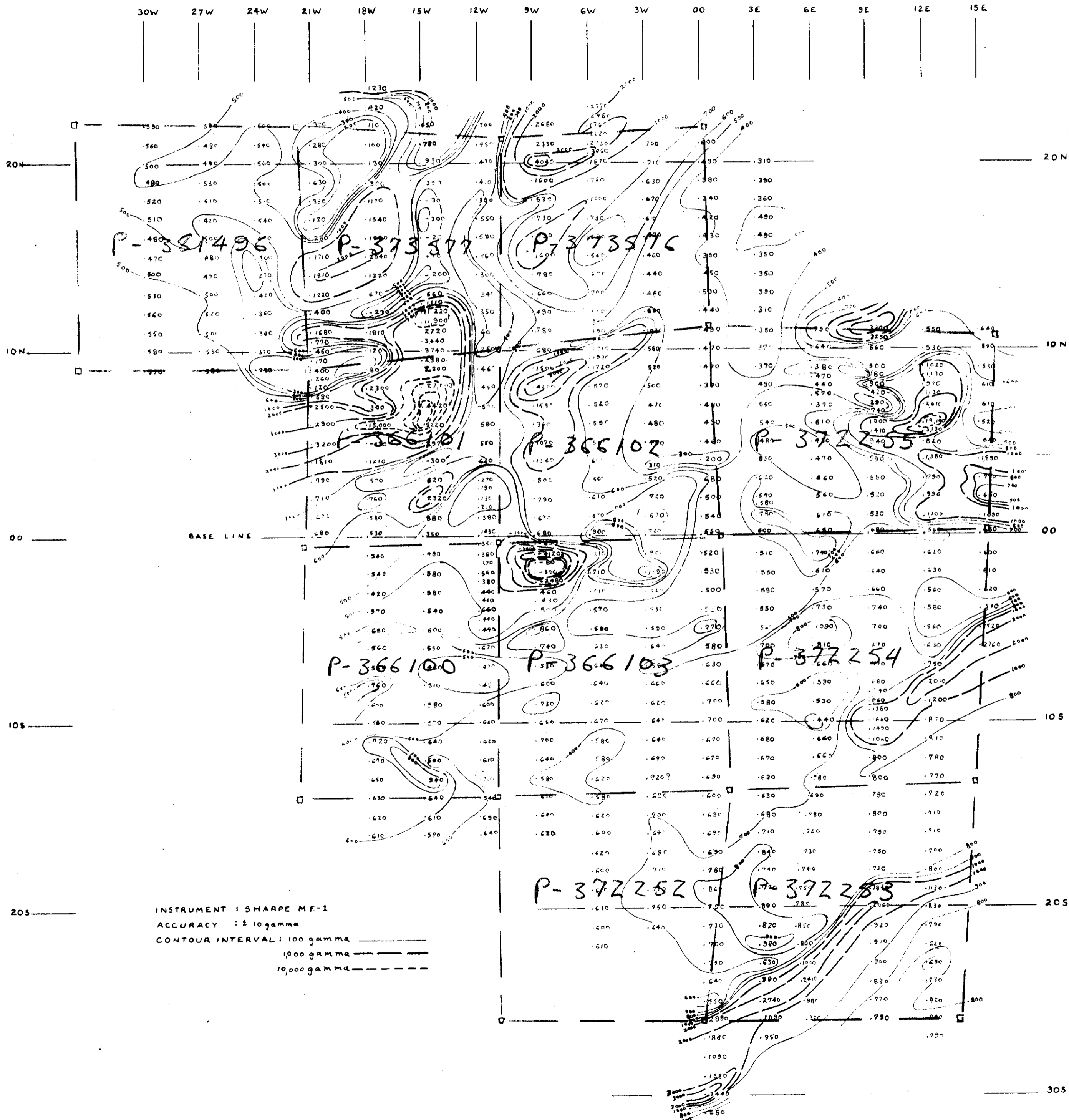
- CLAIM LINE ———— □
- PICKET LINE ————
- FAULT ————
- GEOLOGICAL CONTACT ————
- CONDUCTIVE ZONE ○ ○
- MAGNETIC ANOMALY ·····

- DIABASE DIKES
- FELSIC INTRUSIVE
- ULTRAMAFIC INTRUSIVE



PLATE 2  
SHADRACK MINING LIMITED  
MUSGROVE TWP. PROPERTY  
ONTARIO  
MAGNETIC CONTOURS

SCALE : 1 in. = 400 ft.



INSTRUMENT : SHARPE MF-1  
ACCURACY :  $\pm 10$  gamma  
CONTOUR INTERVAL : 100 gamma ———  
1,000 gamma - - - - -  
10,000 gamma - - - - -



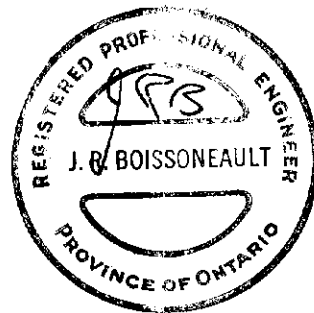
# PLATE 3

## SHADRACK MINING LIMITED

MUSGROVE TWP. PROPERTY  
ONTARIO

### E-M PROFILES

SCALE : 1 IN = 400 FT.

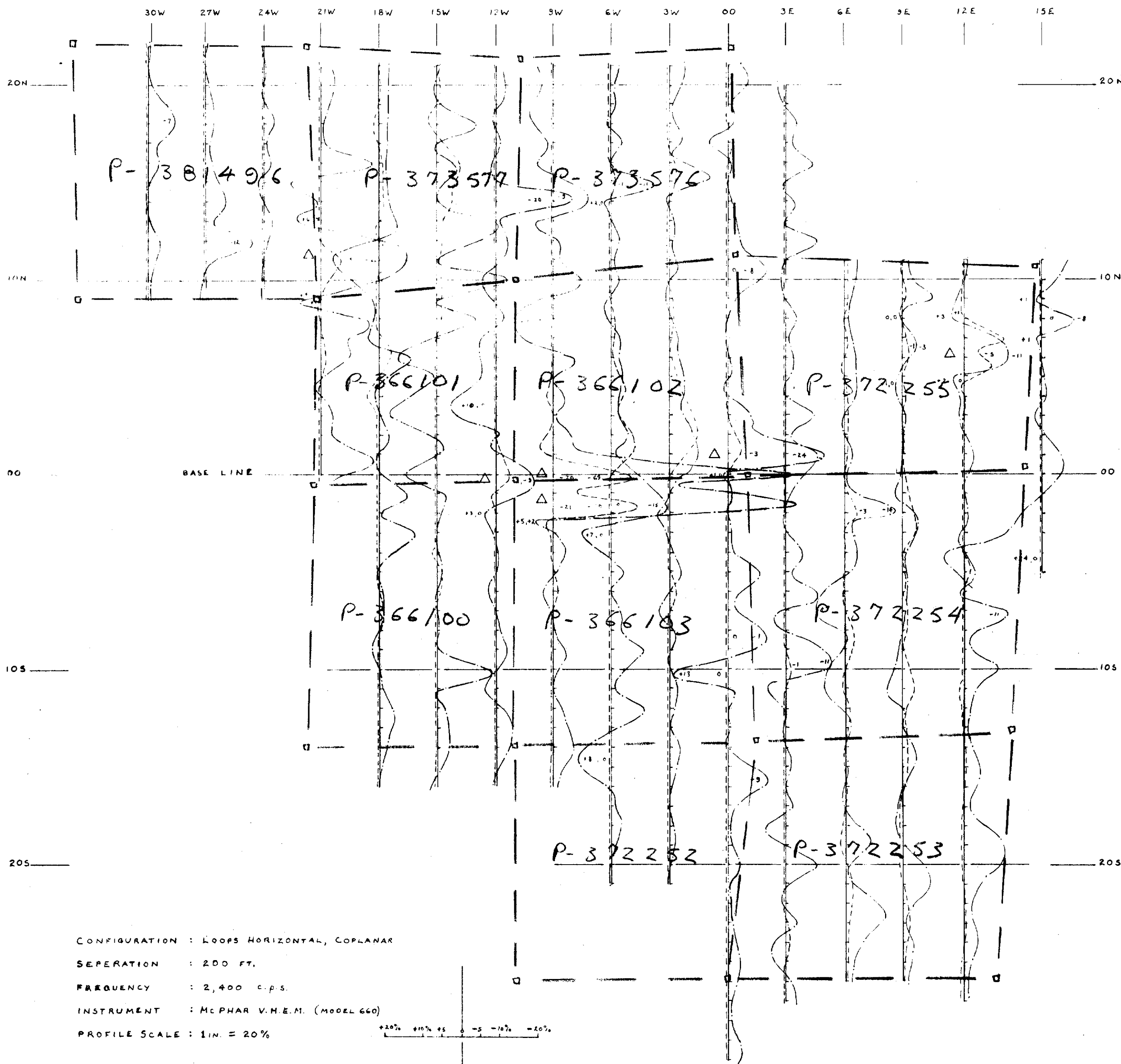


LEGEND

INPHASE ————

OUTPHASE - - - - -

CONDUCTOR Δ



CONFIGURATION : LOOPS HORIZONTAL, COPLANAR  
 SEPERATION : 200 FT.  
 FREQUENCY : 2,400 c.p.s.  
 INSTRUMENT : McPHAR V.H.E.M. (MODEL 660)  
 PROFILE SCALE : 1 IN = 20%



# PLATE 4

## SHADRACK MINING LIMITED

MUSGROVE TWP. PROPERTY, ONTARIO

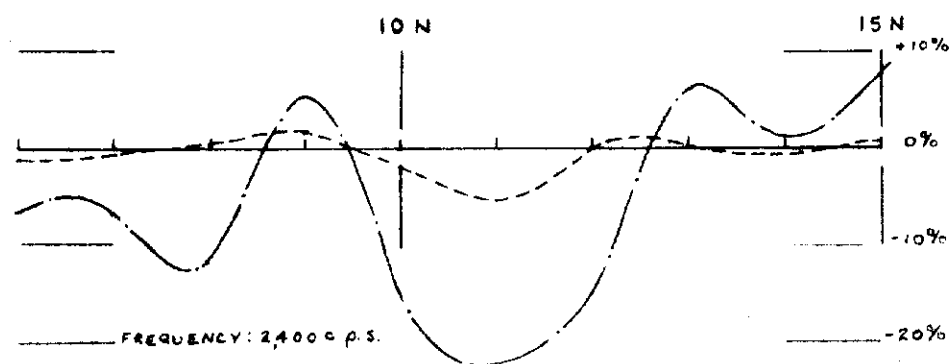
### GEOPHYSICS DETAIL

SCALE: 1 IN. = 200 FT.

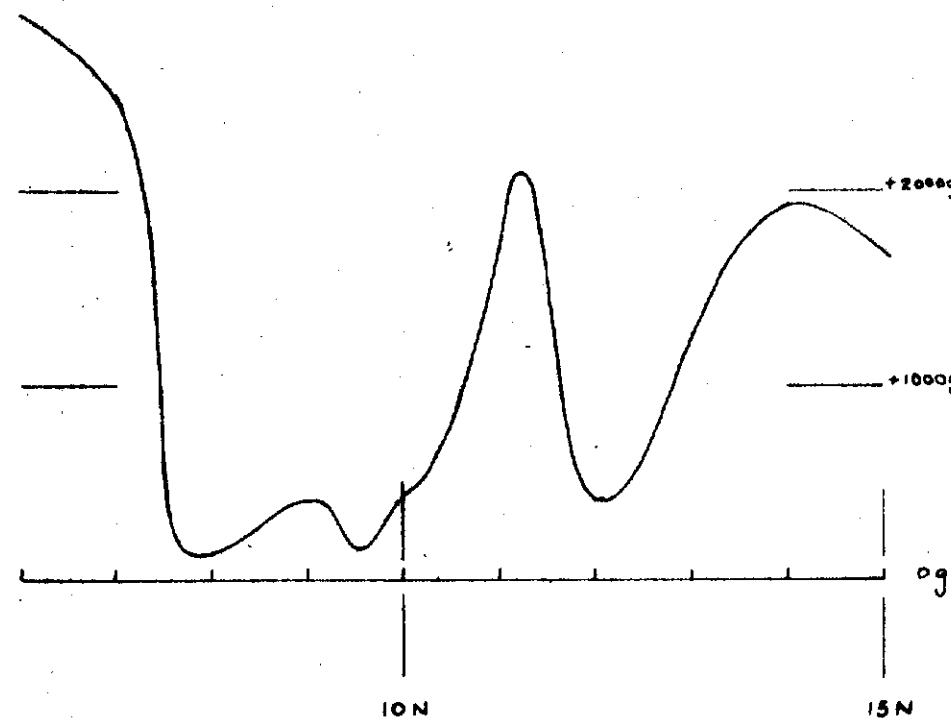


LEGEND  
INPHASE - - - - -  
OUTPHASE - - - - -  
MAGNETICS - - - - -

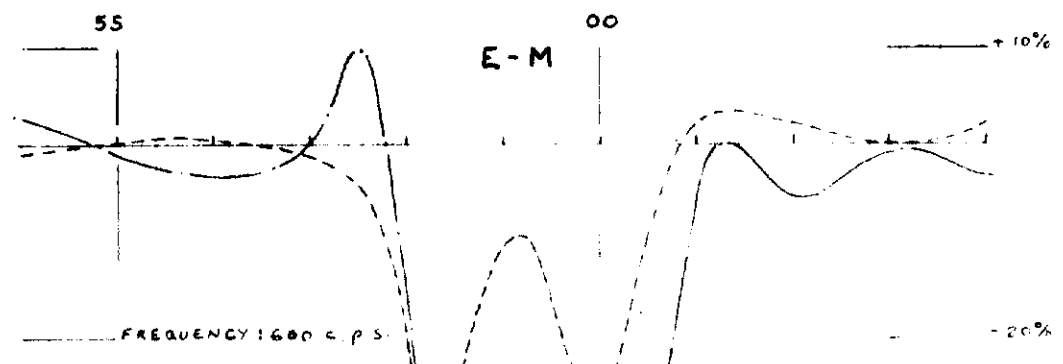
E-M PROFILE



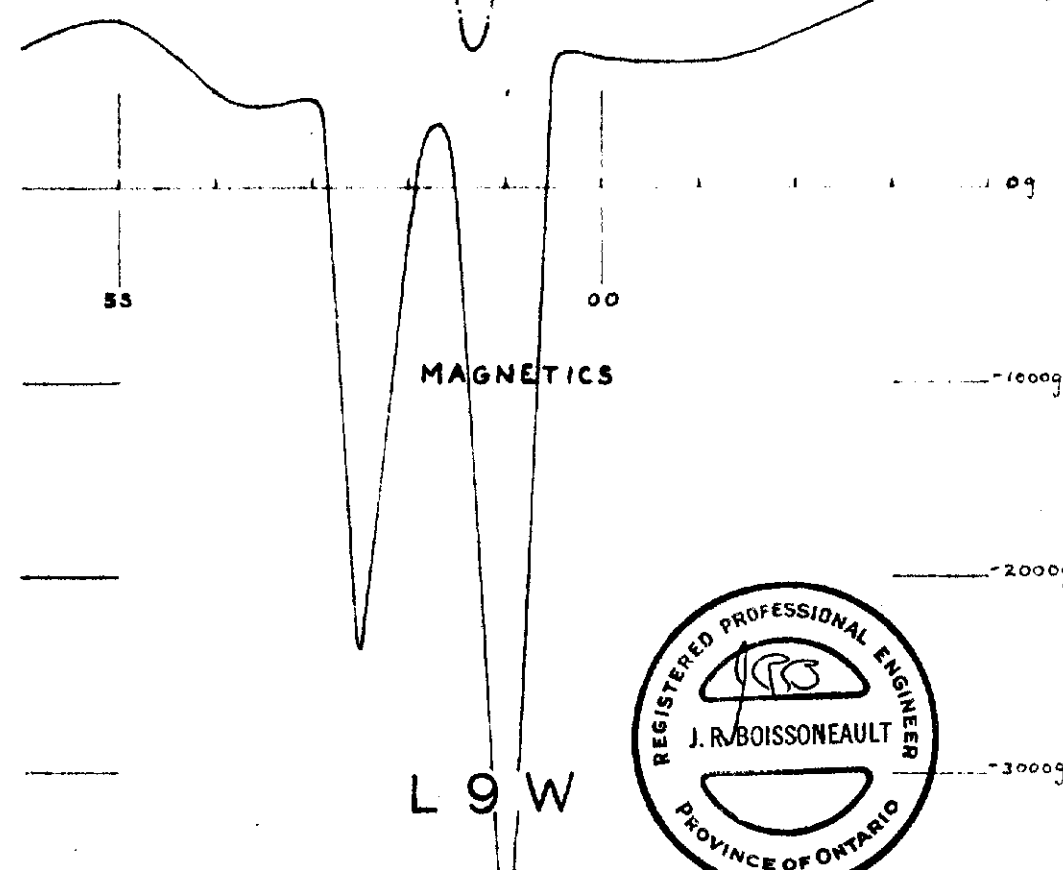
MAGNETICS



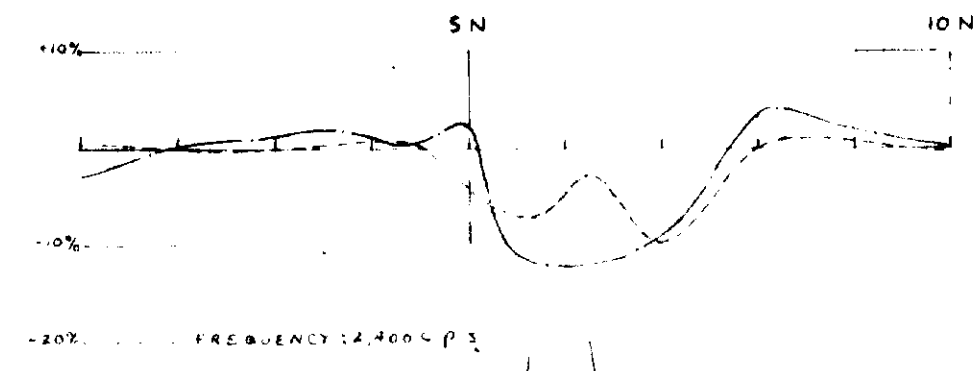
E-M



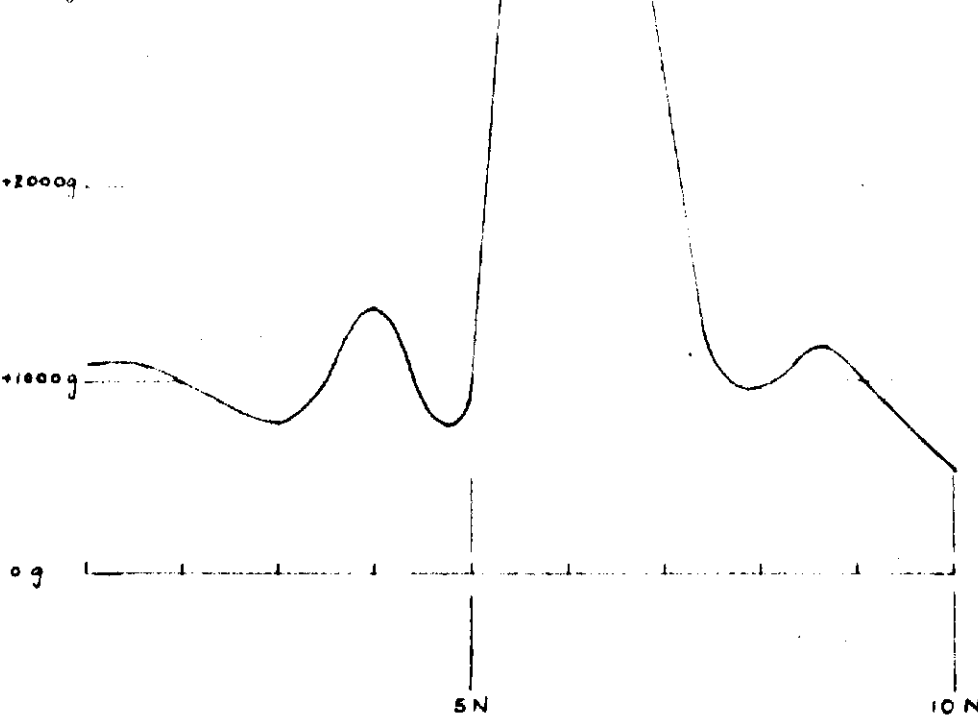
MAGNETICS



E-M PROFILE



MAGNETICS



42A03NW0109 2.1427 MUSGROVE



L 9 W

L 12 E