



41P11SW0258 2.3972 ASQUITH

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MINING LANDS SECTION

PATINO MINES (QUEBEC) LIMITED

V.L.F. ELECTROMAGNETIC GEOPHYSICAL SURVEY

SHINING TREE I PROJECT

ANNETT OPTION

ASQUITH TOWNSHIP

SHINING TREE, ONTARIO

LARDER LAKE MINING DIVISION

DISTRICT OF SUDBURY, ONTARIO

Chibougamau, Quebec

June, 1981

Introduction

The property described in this report, consists of 11 contiguous claims held under option by Patino Mines (Quebec) Limited, Suite 1401, 7 King Street East, Toronto, Ontario M5C 1A6, from Mr. R. Annett, Shining Tree, Ontario. All the claims are located within the township of Asquith and are numbered as follows:

| | | |
|----------|----------|----------|
| L-531398 | L-512386 | L-531425 |
| L-531399 | L-512387 | L-531426 |
| L-531400 | L-512388 | L-531427 |
| L-531401 | L-578736 | |

A grid was cut on this property, during the month of December, 1980 and a V.L.F. survey was conducted over the grid during the month of February, 1981.

Location and Access

The claim group is located on the southeast and northwest sides of highway 560, approximately one kilometer to the northeast of the hamlet of Shining Tree. The highway 560 is the principle means of access between the hamlet and Elk Lake, one hundred kilometers to the east and highway 144, forty kilometers to the west.

In addition to highway 560, several bush roads provide access onto the property, however most of these roads are only suitable for four wheel drive vehicles.

Topography and Geology

The physiography of the claim group consists of gently undulating terrain. There are several linear features, which form shallow valleys occupied by swamps. These features are approximately orientated in a north-northwest to south-southeast direction. There are no significant deposits of sand or gravel: In general only a thin blanket of humus and glacial till covers the whole area.

The area is underlain by a sequence of early Precambrian metavolcanic rocks. They are composed mainly, of northwest trending metabasaltic flows

intercolated with minor flows of felsic, intermediate and ultramafic meta-volcanics. The metavolcanic sequences are intruded by a series of feldspar porphyries and peridotites.

Line Cutting

To facilitate the survey a grid, consisting of 8.1 miles of line, was cut on the claim group. The grid comprises of a base line, which has an azimuth of 325° north and cross lines, which are located at intervals of 400 feet along the base line and are perpendicular to it. Both the base line and the cross lines have stations, which are marked by means of a picket, at intervals of 100 feet.

V.L.F. Survey

The electromagnetic survey was conducted using a "Geonics E.M. 16" unit. This instrument utilizes very low frequency (V.L.F.) signals transmitted by certain marine navigation systems. At the present time, the stations, which transmit these signals, are located at Cutler, Maine (NAA); Annapolis, Maryland (NSS) and Seattle, Washington (NLK). For the purpose of this survey, the station at Annapolis, Maryland (NSS, frequency 21.4 kHz) was used.

The V.L.F transmitting stations have vertical antennas, the antenna current is thus vertical, creating a concentric horizontal magnetic field around them. When this magnetic field meets a conductive body in the ground, secondary fields are created which will radiate from the body. The E.M. 16 unit is simply a sensitive receiver covering the frequency band of the V.L.F. transmitting stations and it measures the vertical components of these secondary fields.

The receiver measures a tilt angle (in-phase) and a quadrature (out-phase) component by means of two mutually perpendicular coils wound on ferrite cores. The coil, whose axis is normally vertical, is first held in a horizontal position and rotated in azimuth to find a minimum, this direction is in line with the transmitter station and is usually well defined.

The same coil is next held vertically and tilted about a horizontal axis parallel to the direction of propagation. The second coil is rigidly mounted at right angles to the first and so is approximately horizontal. Its signal is shifted in-phase by 90° and, connected in series with the vertical coil signal, is fed into the receiver. The amplitude of this signal is adjustable on the quadrature dial, which reads percent plus or minus. A clinometer on the instrument allows tilt angle measurement. By tilt and quadrature adjustments, a good minimum can be obtained thus permitting an accurate measurement.

Interpretation of V.L.F. Survey Results (Drawing 1)

Several medium to very strong conductive zones have been delineated by the survey. The most significant are those identified by the letters 'A' and 'B' on the attached plan. There does not appear to be any significant correlation between the V.L.F. anomalies and the magnetic anomalies discussed in a previous report.

Conductor 'A':

This is a strong to very strong conductor located at the eastern perimeter of the claim group. It is located within a linear topographical feature which forms a shallow valley, occupied by a creek and a swamp. The conductor probably represents a weakly mineralized shear zone located at the contact of two lithological units or within one of the units itself. The possibility also exists that the anomaly is due to conductive overburden. A trench on the east side of the valley contains highly sheared and carbonatized material containing minor lead, pyrite and chalcopyrite and this would therefore indicate that the first hypothesis is the correct one.

Conductor 'B':

This conductor is very similar to conductor 'A' and therefore probably also represents a weakly mineralized shear zone.

Conductor 'B':

This is a weak conductor located immediately to the east of the base-line. The conductivity may represent a weak zone of shearing. The conductivity appears to be enhanced, at the northern end, by the lake shore.

Conductors 'D', 'E' and 'F':

With the exception of 'D', which is intermittent, these are fairly short medium to strong conductors. These may represent minor shear zones, weakly mineralized contacts or conductive overburden.

Conclusions and Recommendations

It is difficult to interpret the results of the survey without a detailed knowledge of the geological units underlying the claim group. This geophysical survey will therefore be followed by a geological mapping program in order that an appropriate interpretation may be undertaken.

APPENDIX I

Professional Qualifications

Mr. David Roger Scammell, B.Sc.

- Graduate University of London, England, 1970
- Member of the Prospectors and Developers Association
- Member of the Canadian Institute of Mining and Metallurgy

1970 - 1972: Worked for the International Nickel Company of Canada Limited (Thompson, Manitoba) as a grade control geologist.

1972 - 1973: Worked for McIntyre Porcupine Coal Mines Limited (Grand Cache, Alberta) as an exploration and structural geologist.

- 1973: Joined Patino Mines (Quebec) Limited, Chibougamau, Quebec. Present position is Senior Exploration Geologist and have worked on various properties in Ontario, Quebec and Nova Scotia.

D.R. Scammell

D.R. Scammell, B.Sc.

Chibougamau, Quebec

June 24, 1981



Ministry of N

GEOPHYSICAL - GEOL
TECHNICAL D



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900

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(s) VLF Geophysical Survey
Township or Area Asquith
Claim Holder(s) Patino Mines (Que) Ltd
7 King St East Toronto
Survey Company Patino Mines (Que) Ltd
Author of Report D.R. Scammell
Address of Author C.P. 8000, Chibougamau, Quebec
Covering Dates of Survey Dec. 1980 to June 1981
(linecutting to office)
Total Miles of Line Cut 8.1 miles

MINING CLAIMS TRAVERSED
List numerically

| | |
|----------|------------|
| L | 531398 ✓ |
| (prefix) | (number) |
| L | 531399 ✓ |
| L | 531400 ✓ |
| L | 531401 1/2 |
| L | 512386 ✓ |
| L | 512387 ✓ |
| L | 512388 ✓ |
| L | 578736 ✓ |
| L | 531425 ✓ |
| L | 531426 ✓ |
| L | 531427 ✓ |

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 20
-Magnetometer _____
-Radiometric _____
-Other _____
Geological _____
Geochemical _____

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

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: 26th June 1981 SIGNATURE: D.R. Scammell
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

| File No. | Type | Date | Claim Holder |
|----------|------|------|--------------|
| | | | |
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| | | | |

TOTAL CLAIMS 11

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations ~~332~~ 332 Number of Readings 663

Station interval 100' Line spacing 400'

Profile scale 1" to 20%

Contour interval

MAGNETIC

Instrument

Accuracy - Scale constant

Diurnal correction method

Base Station check-in interval (hours)

Base Station location and value

ELECTROMAGNETIC

Instrument GEONICS E.M. 16

Coil configuration

Coil separation

Accuracy

Method: Fixed transmitter Shoot back In line Parallel line

Frequency Annapolis, Maryland (NSS Frequency 21.4 kHz (specify V.L.F. station))

Parameters measured

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument

Method Time Domain Frequency Domain

Parameters - On time Frequency

- Off time Range

- Delay time

- Integration time

Power

Electrode array

Electrode spacing

Type of electrode

Churchill Twp. - M.719

THE TOWNSHIP OF
OF

ASQUITH

DISTRICT OF
SUDBURY

LARDER LAKE
MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

| | |
|-----------------------|--------|
| PATENTED LAND | ● or ⊕ |
| 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 | C. |
| PATENTED FOR S. R. O. | ⊙ |

NOTES

400' Surface Rights Reservation along
the shores of all lakes and rivers

SAND and GRAVEL

- ① MTC Pit 489
- ② MTC Gravel Pit No 3C-14
- ③ M.T.C. Pit 3C-16
- ④ Gravel Pit File 124425
- ⑤ M.T.C. GRAVEL PIT. 3C-15

RESERVES

- ⑥ MNR SRO Reserve File 163003
- ⑦ M.N.R. S.R.O. RESERVE FILE 163005
- ⑧ Waste Disposal Site Buffer Zone 2/9/81

Areas withdrawn from staking under Section
43 of the Mining Act (R.S.O. 1970)

| Order No. | File | Date | Disposition |
|-----------|----------|-------|----------------|
| ⑧ | W. 91/81 | 18857 | 28/8/81 S.R.O. |

DATE OF ISSUE

MAR - 1 1982

Ministry of Natural Resources
TORONTO

PLAN NO. - M.637

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

Miramichi Twp. - M.865

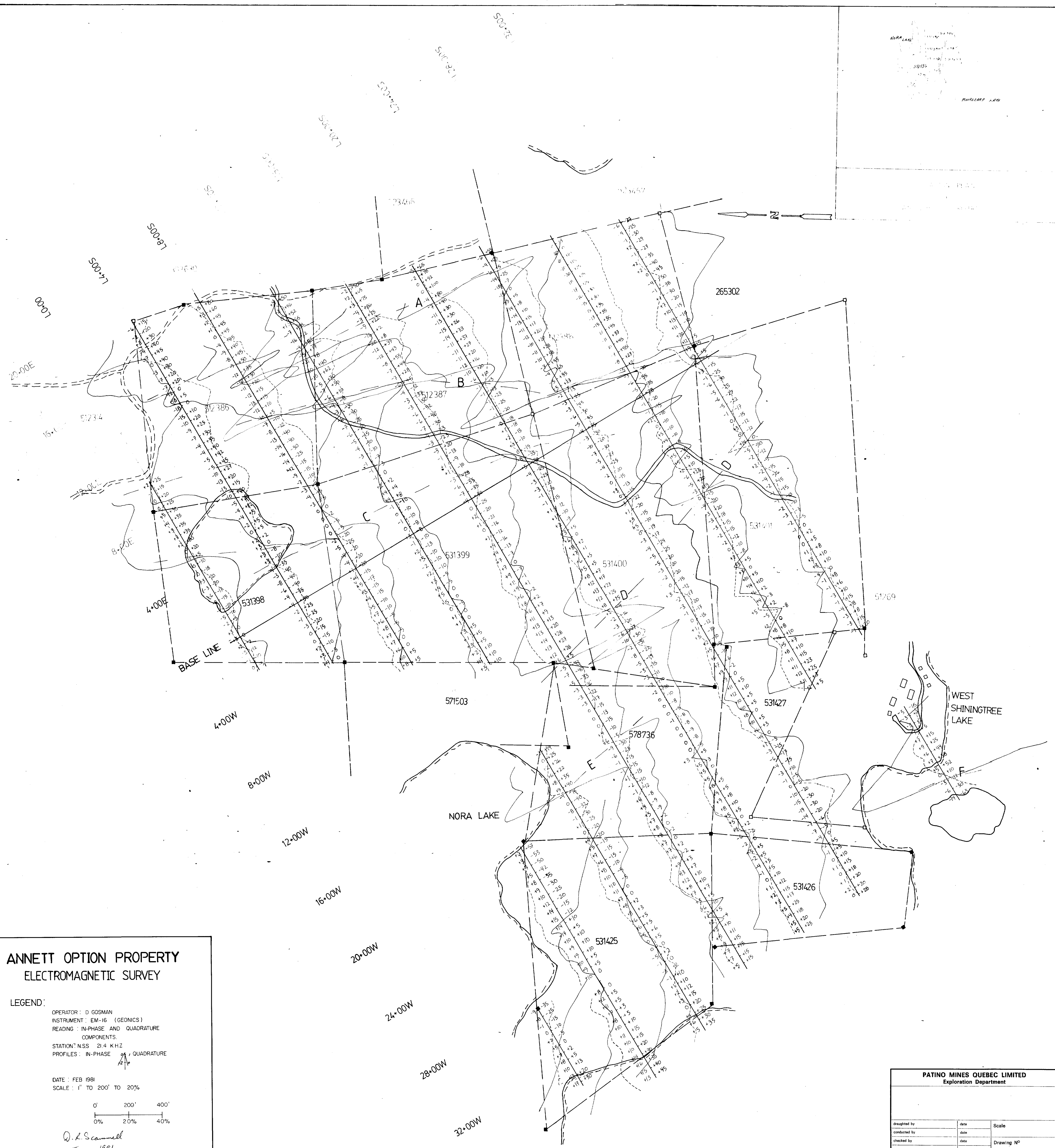
Fawcett Twp. - M.803

Sheard Twp. - M.1107

2.3972



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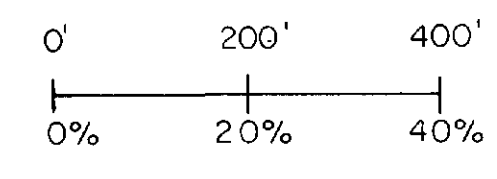


**ANNETT OPTION PROPERTY
ELECTROMAGNETIC SURVEY**

LEGEND:

OPERATOR : D GOSMAN
 INSTRUMENT : EM-16 (GEONICS)
 READING : IN-PHASE AND QUADRATURE COMPONENTS
 STATIONING : 21.4 KHZ
 PROFILES : IN-PHASE $\frac{1}{2}$ QUADRATURE

DATE : FEB 1981
 SCALE : 1" TO 200' TO 20%



D. L. Scammell
 June, 1981

| PATINO MINES QUEBEC LIMITED Exploration Department | | |
|---|------|------------------------|
| drawn by | date | Scale |
| conducted by | date | |
| checked by | date | Drawing N ^o |