## DISPOSITION OF CROWN LANDS

| TYPE OF DOCUMENT | SYMBOL |
|---|---|
| PATENT, SURFACE & MINING RIGHTS | ● |
| " , SURFACE RIGHTS ONLY | ◒ |
| " , MINING RIGHTS ONLY | ◓ |
| LEASE, SURFACE & MINING RIGHTS | ■ |
| " , SURFACE RIGHTS ONLY | ◨ |
| " , MINING RIGHTS ONLY | ◧ |
| LICENCE OF OCCUPATION | ▼ |
| ORDER-IN-COUNCIL | OC |
| RESERVATION | Ⓡ |
| CANCELLED | ⊗ |
| SAND & GRAVEL | Ⓢ |

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC 1.

### SAND & GRAVEL

Ⓢ GRAVEL FILE 58008

Ⓢ M.T.C. PIT No. 961 FILE 117961

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF

41014SW0001 2.14183 COCHRANE

200

D'ARCY TWP. M-749

PANET TWP. M-1046

BORDEN TWP. M-673

GALLAGHER TWP. M-823

VI V IV III II I

12 11 10 9 8 7 6 5 4 3 2 1

Cochrane Lake

Henderson

Chapleau River

Lake

Borden

Chapleau Lake

I.R.

I.R. RESERVES FILE 117960

2.14183

PROPOSED ROAD

MAGNETIC DECLINATION 9° WEST

## LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT
- REGISTERED PLAN OF SUBDIVISION

### · NOTES ·

400' surface rights reservaton along the shores of all lakes and rivers.

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000

METRES 0 200 1000 (1 KM) 2000 (2 KM)

| ACRES | HECTARES |
|---|---|
| 40 | 16 |

RECEIVED JUN 21 1991

**TOWNSHIP OF**

# COCHRANE

**DISTRICT**

SUDBURY

**MINING DIVISION**

PORCUPINE

Ontario Ministry of Natural Resources — Surveys and Mapping Branch

| Date | Plan No. |
|---|---|
| FEB./80 | M-724 |

National Topographic Series

2.14183

# REPORT
# ON
# VLF-EM SURVEY
# COCHRANE TOWNSHIP



MICHAEL A. TREMBLAY
GEOLOGICAL ENGINEERING TECHNICIAN

MATHESON, ONTARIO
JUNE 13, 1991

## INTRODUCTION

During March of 1991 a VLF-EM survey was performed by the author over a group of four claims within Cochrane Township, sudbury District, Ontario.

## LOCATION AND ACCESS

The four claims covered by this report consist of P.1133103 to 1133106 inclusive. The claims cover the north half of Lot 6 Concession 11, Cochrane Township. Highway 101 transects the property in a northeasterly direction through the southwest corner of the property. The town of Chapleau is located approximately six miles to the west of the claims. Access to the property is by foot from the highway where grid lines intersect the highway.

## PREVIOUS WORK

During the early to mid 1980's, Noranda Exploration Co. Ltd. carried out an extensive exploration program on the present claim group, as well as on ground to the west and to the north of the property. The Noranda program consisted of magnetometer, Max-min EM and geological surveys, followed by approximately 1007 feet of diamond drilling. All this data is available for viewing in the Assessment Files of the Resident Geologist on Wilson Avenue in Timmins, Ontario.(File # T-2826).

Two diamond drill holes were collared to intersect a strong EM anomaly at the southwest corner of the present survey area. This anomaly is represented by anomalies D and F in the present survey. A second Max-min anomaly was noted by the author on Noranda's EM survey which coincides with anomaly B in the present study.

The following are excerpts from reports filed by Noranda Exploration in 1984. B. Groves (Report on Ground Magnetometer and Horizontal Loop E.M. Surveys...T-2826) writes: "Detailed geological mapping by Noranda has revealed eas-west trending sequences of ultramafic, intermediate and felsic volcanics, with an increasing occurence of clastic sediments towards the western portion of the property. Sulphide mineralization was noted within the intermediate to mafic flows."

P. Dunbar,(Geology of... T-2826), writes: "Due to extensive alteration of the roadcut and abundance of sulphide mineralization, it is possible to conclude that this outcrop may be located in close proximity to a volcanic alteration pipe."

## SURVEY SPECIFICATIONS

The VLF-EM16 survey was performed along north-south grid lines spaced 400 feet apart. Readings were taken at stations spaced 100 feet apart. The survey was performed using NAA Cutler, Maine 24.0 KHz. Both in-phase and quadrature responses were recorded. A total of 4.2 miles of grid line were covered by the survey. A total of 215 readings were taken.

## DATA PRESENTATION

In-phase and quadrature components of the secondary EM field are plotted in profile on the accompanying map at a scale of 1"=32%. The map is drawn at a scale of 1"=200'.

## DISCUSSION OF RESULTS

A total of six anomalous features were noted in the VLF survey.

### ANOMALY A

Occurs at the guard rail on highway 101 were line 4W intersects. It is not a true crossover and is likely caused by the guard rail.

### ANOMALY B

This anomaly is the most extensive noted in the survey. It transects the entire property, but is strongest between lines 0W and 16W. This stronger portion corelates to an anomaly noted by the author on Noranda's Max-min survey map. This anomaly is located immediately north of the alteration zone noted by Dunbar in his geological report. Zinc-lead-copper soil geochemical anomalies noted by the author in 1990 run parallel to the western portion of this anomaly between lines 20W and 28W.

### ANOMALY C

Anomaly C features a very steep crossover as might be expected of a massive sulphide zone. However its true cause appears to be the guard rail on highway 101. Readings taken in the field indicate the wire as the source. This conductivity may in part be due to secondary effects created by the strength of anomalies D and F.

### ANOMALY D

This anomaly features a very strong (steep) crossover and is likely caused by massive sulphide mineralization. The crossover itself is located immediately south of the collar of DDH-CO-84-1 of Naranda Exploration. The drill log of this hole indicates magnetite-pyrrhotite-graphite iron formation as the cause of the conductor.

ANOMALY E

This anomaly crosses lines 12W and 16W and occurs on the edge of a cedar swamp. The cause of this weak crossover is likely conductive overburden.

ANOMALY F

This anomaly corelates with the strong Max-min anomaly noted by Groves in his report for Noranda Exploration. Both DDH-CO-84-1 and CO-84-2 intersected this anomaly. The cause was found to be sulphide-oxide iron formation.

CONCLUSIONS AND RECOMMENDATIONS

There were a total of six anomalous features noted on the property. Of these the most extensive and most interesting is anomaly B. As it occurs adjacent to the strongest alteration and is related to zinc-lead-copper soil anomalies further work is recommended.

Any further work should include detailed soil geochemistry followed by powerstripping if warranted. As overburden appears to be relatively thin this would be the most economically feasible method to uncover the cause of both the geophysical and geochemical anomalies.

Respectfully submitted,

Michael A. Tremblay

Qual - 2.12657

CERTIFICATE

I, Michael Alexander Tremblay, of the Township of Black River-Matheson, Province of Ontario, do hereby certify that:

1. I am a geological engineering technician residing at RR# 2 Matheson, Ontario.

2. I have a diploma from Sault College for the Geological Engineering Technician Program.

3. I have worked steadily in various capacities in mining exploration since graduating in 1983.

4. I hold a direct 100% interest in this property.

5. The statements made herein are based on the study of published reports and on the results of the survey that I performed and have herein described.

Dated June 13, 1991
Matheson, Ontario

Michael Alexander Tremblay

Ministry of Northern Development and Mines
Ontario

DOCUMENT No. W 9160.00162

Mar 19 June 18

41014SW0001 2.14183 COCHRANE

900

# Mining Act

## Report of Work
(Geophysical, Geological and Geochemical)

| | | |
|---|---|---|
| Type of Survey(s): VLF-EM Survey | Mining Division: Porcupine | Township or Area: Cochrane Tp |
| Recorded Holder(s): Michael Alexander Trembly | | Prospector's Licence No.: M-21667 |
| Address: P.O. Box 183 Timmins 2.14183 | | Telephone No.: 705-273-2051 |
| Survey Company: M.A. TREMBLAY Exploration Services | | |
| Name and Address of Author (of Geo-Technical Report): Michael Trembly | | Date of Survey (from & to): 10 03 89 / 15 03 91 (Day / Mo. / Yr.) |

Credits Requested per Each Claim in Columns at right

| | | Days per Claim |
|---|---|---|
| **Special Provisions** For first survey: Enter 40 days. (This includes line cutting) For each additional survey: using the same grid: Enter 20 days (for each) | Geophysical - Electromagnetic | 40 |
| | Geophysical - Magnetometer | |
| | Geophysical - Other | |
| | Geological | |
| | Geochemical | |
| **Man Days** Complete reverse side and enter total(s) here | Geophysical | Days per Claim |
| | - Electromagnetic | |
| | - Magnetometer | |
| | - Other | |
| | Geological | |
| | Geochemical | |
| **Airborne Credits** Note: Special provisions credits do not apply to Airborne Surveys. | | Days per Claim |
| | Electromagnetic | |
| | Magnetometer | |
| | Other | |

Total miles flown over claim(s).

Date | Recorded Holder or Agent (Signature)

Mining Claims Traversed (List in numerical sequence) 91 MT 91 M.T.

| Mining Claim Prefix | Mining Claim Number | Mining Claim Prefix | Mining Claim Number | Mining Claim Prefix | Mining Claim Number |
|---|---|---|---|---|---|
| P | 1133103 | | | | |
| P | 1133104 | | | | |
| P | 1133105 | | | | |
| P | 1133106 | | | | |

RECORDED
APR 19 1991

RECEIVED
JUN 12 1991
MINING LANDS SECTION

Total number of mining claims covered by this report of work: 4

## Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in this Report of Work, having performed the work or witnessed same during and/or after its completion and annexed report is true.

Name and Address of Person Certifying: Michael A. Tremblay P.O. Box 183 Timmins Ont.

Telephone No.: 705-273-2051 | Date: April 19 /91 | Certified By (Signature): Mike Tremblay

Received Stamp

PORCUPINE MINING DIVISION
RECEIVED
APR 19 1991
303

## For Office Use Only

| Total Days Cr. Recorded | Date Recorded | Mining Recorder |
|---|---|---|
| 160 | April 19/91 | Robert Bailey |
| | Date Approved as Recorded | Provincial Manager, Mining Lands |
| | June 18/91 | Tom Gibert |

AI

Ontario

Ministry of Northern Development and Mines

# Geophysical-Geological-Geochemical Technical Data Statement

2.14183 File W 9160-00161

**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-EM 16

Township or Area Cochrane Twp

Claim Holder(s) Michael Tremblay
M-21667

Survey Company M.A. TREMBLAY Exploration Services

Author of Report M. Tremblay

Address of Author P.O. Box 183 Timmins, Ont.

Covering Dates of Survey March 1 TO March 31 /91
(linecutting to office)

Total Miles of Line Cut 5.5 miles

**SPECIAL PROVISIONS CREDITS REQUESTED**

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

ENTER 20 days for each additional survey using same grid.

| | DAYS per claim |
|---|---|
| Geophysical | |
| --Electromagnetic | 40 |
| –Magnetometer | |
| –Radiometric | |
| –Other | |
| Geological | |
| Geochemical | |

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

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

DATE: June 12 /91 SIGNATURE: [signature]
Author of Report or Agent

Res. Geol. _____ Qualifications 2.12657

Previous Surveys

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

**MINING CLAIMS TRAVERSED**
**List numerically**

(prefix) (number)

P 1133103
P 1133104
P 1133105
P 1133106

If space insufficient, attach list

TOTAL CLAIMS 4

**OFFICE USE ONLY**

837 (85/12)

## GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 215 Number of Readings 215

Station interval 100' Line spacing 400'

Profile scale 1" = 200'

Contour interval

### MAGNETIC

Instrument ~~GEONICS~~ VLF-EM 16

Accuracy -- Scale constant

Diurnal correction method

Base Station check-in interval (hours)

Base Station location and value

### ELECTROMAGNETIC

Instrument GEONICS VLF-EM 16

Coil configuration

Coil separation

Accuracy

Method: ☑ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency VLF STA: NAA Cutler Maine 24.0 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

## SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

_____

Corrections made _____

_____

## RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth – include outcrop map)

## OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

_____

Additional information (for understanding results) _____

_____

_____

## AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

_____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

## GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

Drainage Development _____

Estimated Range of Overburden Thickness _____

### SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

General _____

### ANALYTICAL METHODS

Values expressed in: per cent ☐
p. p. m. ☐
p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____

# DISPOSITION OF CROWN LANDS

| TYPE OF DOCUMENT | SYMBOL |
|---|---|
| PATENT, SURFACE & MINING RIGHTS | ● |
| " , SURFACE RIGHTS ONLY | ◒ |
| " , MINING RIGHTS ONLY | ◒ |
| LEASE, SURFACE & MINING RIGHTS | ■ |
| " , SURFACE RIGHTS ONLY | ◨ |
| " , MINING RIGHTS ONLY | ◧ |
| LICENCE OF OCCUPATION | ▼ |
| ORDER-IN-COUNCIL | OC |
| RESERVATION | ® |
| CANCELLED | ⊗ |
| SAND & GRAVEL | (S) |

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC 1.

## SAND & GRAVEL

(S) GRAVEL FILE 88008

(S) M.T.C. PIT Nº 981 FILE 117961

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF



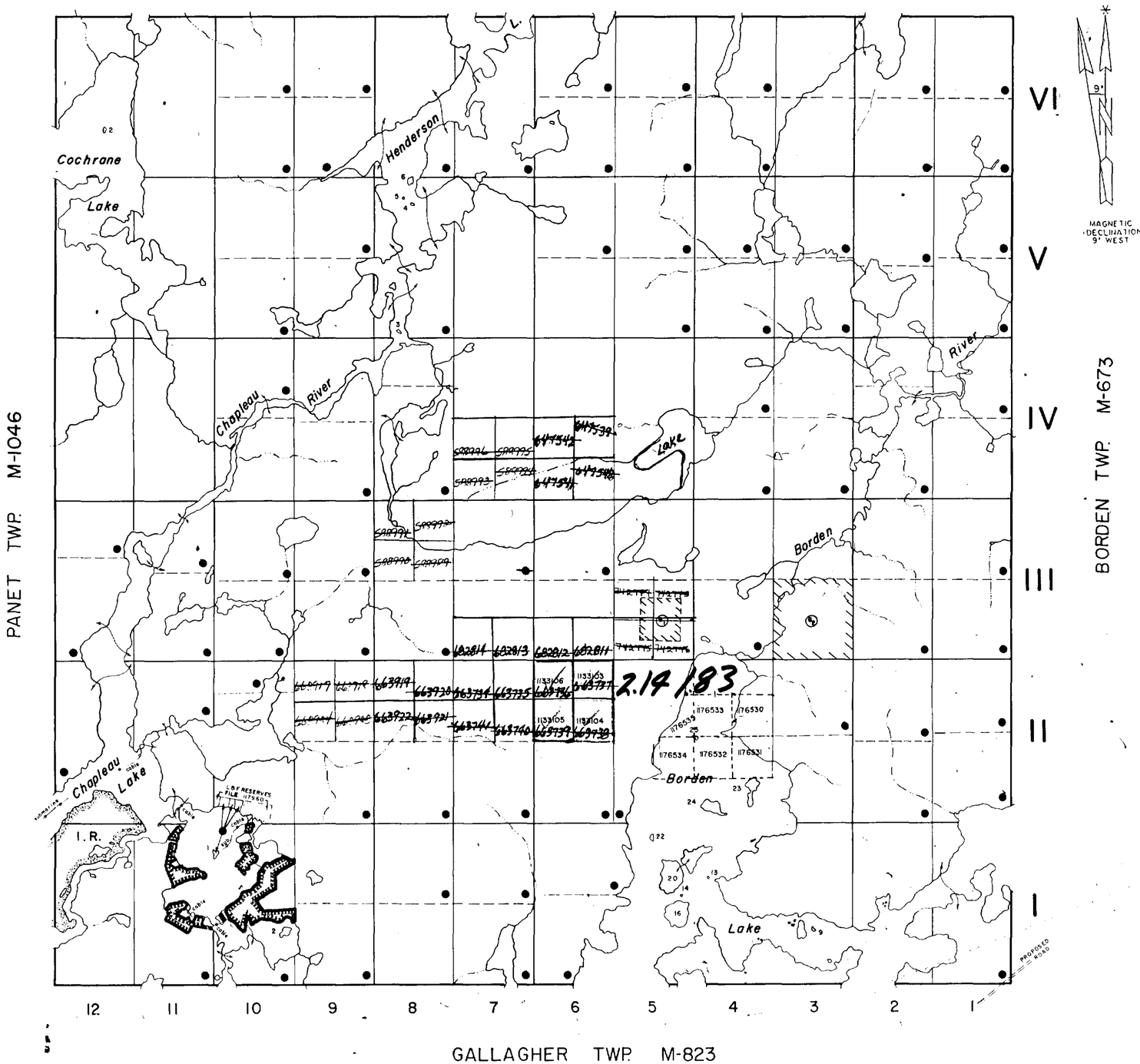


D'ARCY TWP. M-749

PANET TWP. M-1046

BORDEN TWP. M-673

GALLAGHER TWP. M-823




MAGNETIC DECLINATION 9° WEST

## LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT
- REGISTERED PLAN OF SUBDIVISION

## · NOTES ·

400' surface rights reservaton along the shores of all lakes and rivers.

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000

METRES 0 200 1000 (1 KM) 2000 (2 KM)

| ACRES | HECTARES |
|---|---|
| 40 | 16 |



**TOWNSHIP OF**

# COCHRANE

**DISTRICT**

SUDBURY

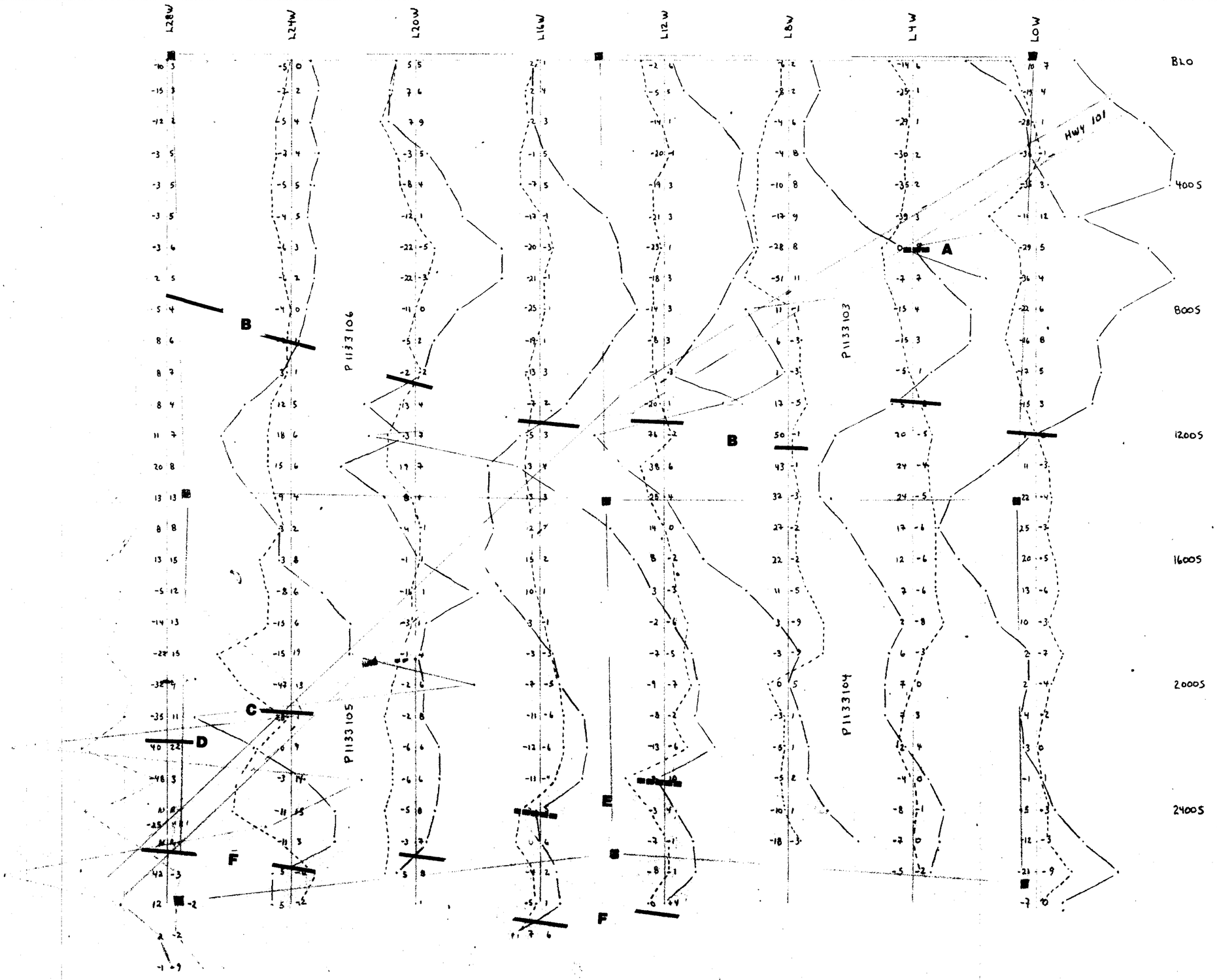
**MINING DIVISION**

PORCUPINE

Ministry of Natural Resources — Surveys and Mapping Branch

Ontario

| Date | Plan No. |
|---|---|
| FEB / 80 | M-724 |
| National Topographic Series | |




N

W E

S

# VLF-EM SURVEY

## Cochrane Township Project

NAA Cutler Maine - 24.0 KHz

+5% | -5%

■ Claim post, Located

**2.14183**

In-phase Quadrature

— — A Anomaly

Scale 1" = 200'

0 200 400 600 feet

M.A TREMBLAY
EXPLORATION SERVICES