# 1998 OPAP FINAL SUBMISSION

# FOR THE

# MANN PROJECT

# MANN and DUFF TOWNSHIPS

# PORCUPINE MINING DIVISION

# NTS 42 A/NW





**November 18, 1998**

**Todd Keast**

## Table of Contents

Page

Introduction....1
Project Location....1
Access....1
Land Tenure and Ownership....4
Prospecting Target....4
Regional Geology....4
Local Geology....5
Summary of Previous Exploration....5
Project Justification....6
1998 Exploration Program....7
Results of 1998 Exploration Program....8
Recommendations....8

### Figures

Figure 1 Project Location....2
Figure 2 Claim Location....3

### Tables

Table 1 Project Location....1
Table 2 Ni-Cu Sulphide Deposits of the Timmins Area....4

### Appendices

Appendix I ICP and XRF Certificates
Appendix II Survey Procedures

### Maps

Map 1 Geology
Map 2 HLEM Survey 1777 Hz
Map 3 HLEM Survey 444 Hz
Map 4 Magnetometer Survey

## INTRODUCTION

During October of 1998, an integrated exploration program was completed on Mr. Lenonard Hill's OPAP Mann Project. The exploration program was directed towards identifying nickel-copper sulphide (Ni-Cu) mineralization associated with the Mann Intrusive complex. The exploration program included linecutting, prospecting, mapping, horizontal loop electromagnetic (HLEM) surveys, and magnetometer surveys. A significant HLEM anomaly with a coincident magnetic anomaly has been identified on the Mann Project. The target is approximately 300 metres in strike length. The anomaly is overlain by clay overburden so the bedrock source is unknown. Based upon available outcrop exposure, previous diamond drilling, and the results of the magnetometer survey this conductor is a priority exploration target that should be diamond drill tested. In addition to the drilling a number of airborne anomalies situated outside the grid area should be evaluated. The proposed budget for this work is $15,000.

## PROJECT LOCATION

The Mann Project is located 47 km north of Timmins Ontario, in Duff Township and Mann Township, of the Porcupine Mining Division (**Figure 1**). The specific project location is enclosed on the following **Table 1.**

**Table 1 Project Location**

| | |
|---|---|
| Area: | Timmins Area |
| Township: | Duff and Mann |
| Mining Division: | Porcupine |
| Claim Map: | G-3234 G-3537 |
| NTS: | 42 A/NW |
| Latitude: | 48° 52' |
| Longitude: | 81° 02' |

## ACCESS

The Mann Project is located 47 km north of Timmins, Ontario (**Figure 2**). Access to the property is along Hwy 11, approximately 14 km northwest of the Iroqouis Falls turnoff (highway 578). From this location travel west along an all-season gravel road for 19 km until you reach a bridge over the Frederick House River. This is the central portion of the Mann Project.

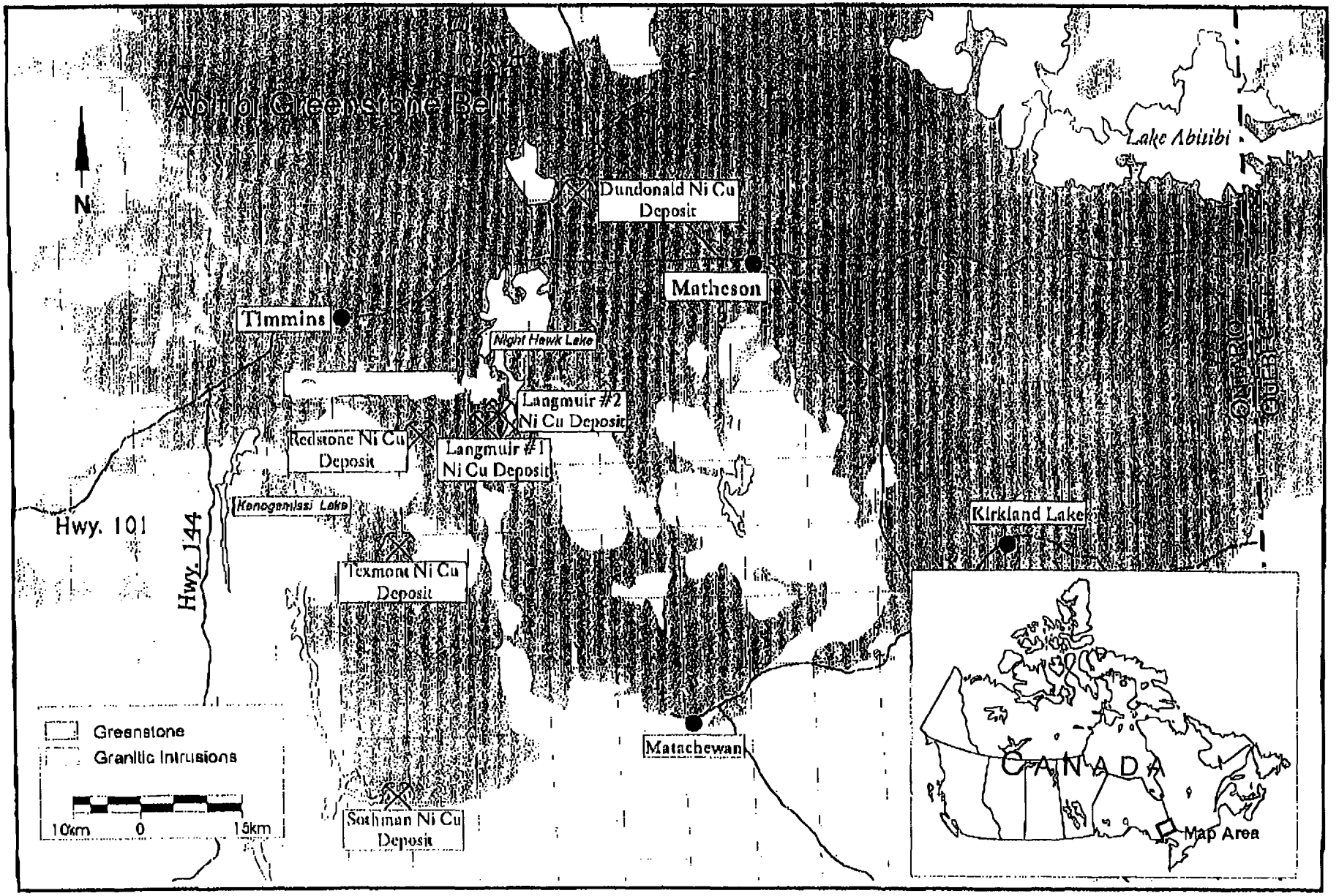



Figure 1

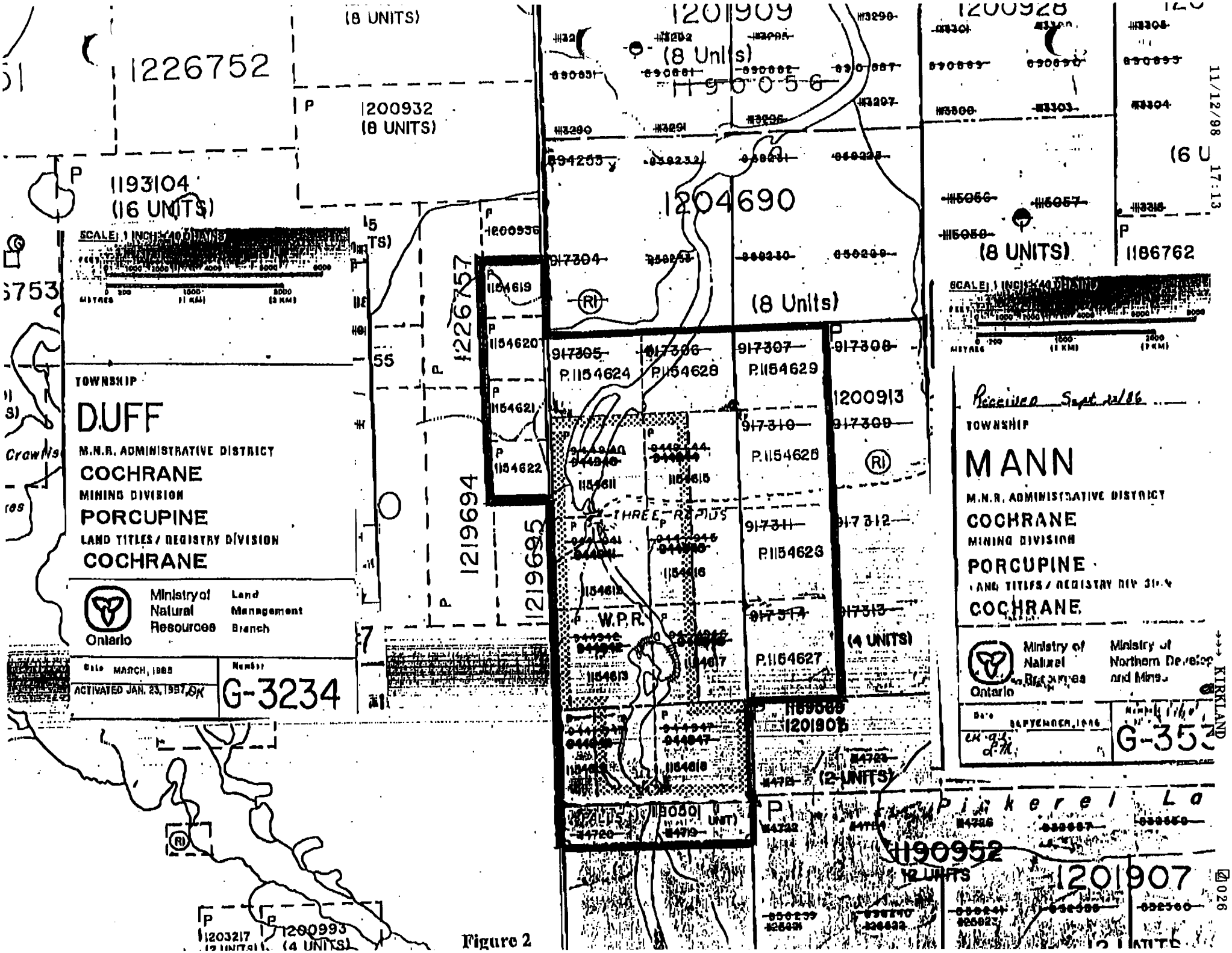

1226752
(8 UNITS)
1200932
(8 UNITS)
1193104
(16 UNITS)
1200909
(8 Units)
1200928
1204690
(8 Units)
(8 UNITS)
1186762
1226757
1219694
1219695
1200913
1200993
(4 UNITS)
1201907
(12 UNITS)
(2 UNITS)
TOWNSHIP
DUFF
M.N.R. ADMINISTRATIVE DISTRICT
COCHRANE
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
COCHRANE
Ministry of Natural Resources
Land Management Branch
Ontario
Date MARCH, 1988
ACTIVATED JAN. 23, 1997
Number
G-3234
Received Sept 22/86
TOWNSHIP
MANN
M.N.R. ADMINISTRATIVE DISTRICT
COCHRANE
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIV
COCHRANE
Ministry of Natural Resources
Ministry of Northern Development and Mines
Ontario
G-35
THREE RIVERS
W.P.R.
Pikerel La
KIRKLAND
11/12/98 17:13
026

Figure 2

## LAND TENURE AND OWNERSHIP

The Mann Project consists of 19 claims covering 304 hectares. The claims are registered to Mr. Leonard Hill (100%) of South Porcupine, Ontario.

## PROSPECTING TARGET

The prospecting target sought for is Ni-Cu massive sulphide deposit hosted within ultramafic flows and intrusions. Platinum and palladium are secondary exploration targets that may be associated with a layered ultramafic intrusion. The exploration model is that of Ni-Cu sulphide deposits of the Abitibi subprovince (Langmuir, Alexo, Montcalm). Ni-Cu sulphide deposits are generally associated with ultramafic and gabbroic volcanic rocks of both intrusive and extrusive nature. The Ni-Cu sulphide deposits are generally associated with a specific sulphide rich horizon, which is generally conductive due to the high sulphide content. A summary of Ni-Cu sulphide deposits from the Timmins Area is included in **Table 2.**

**Table 2 Ni-Cu Sulphide Deposits in the Timmins Area**

| Deposit Name | Grade | Tonnes |
|---|---|---|
| Texmont | 0.93% Ni, Cu N.A. | 3,190,000 |
| Langmuir (1&2) | 2.09% Ni, 0.08% Cu | 1,600,00 |
| Alexo | 4.5% Ni, 0.50% Cu | 52,000 |
| Redstone | 2.39% Ni, 0.09% Cu | 1,220,000 |
| Montcalm | 1.44% Ni, 0.68% Cu | 3,560,000 |

## REGIONAL GEOLOGY

The Mann Project is situated with the Mann complex of the Abitibi subprovince. It is located at the northwestern end of the belt of ultramafic/mafic intrusive and extrusive rocks included in the Stoughton-Roquemaure assemblage, as recognized by Jackson and Fyon (1991). The geology of Mann Township was mapped by Satterly (1959), and Hunt and Richard (1980), and included in the regional studies of Jensen and Langford (1985).

In addition to ultramafic and mafic intrusions, the major lithologies in the area are predominantly northwestly striking mafic metavolcanics accompanied by minor

intermediate matavolcanics and interflow sediments. The Mann complex is folded along a west to northwest trending fold axes.

## LOCAL GEOLOGY

The property geology is based upon work by government agencies, work in the area by previous operators, and a research paper by Good, Crocket, and Barnet (1997). Regional mapping and limited diamond drilling on the project (three holes) indicates the presence of ultramfic intrusions. Diamond drilling to the north of the project area has intersected anomalous Ni and Cu mineralzation in ultramafic flows, intrusions and sediments. The drill holes were planned to test conductive horizons. Anomalous Ni-Cu mineralization was reported in six diamond drill holes.

Research by Good, Crocket and Barnet on the central portion of the Mann Project concluded that "**Clinopyroxenite in the mafic-ultramafic complex in Mann township apparantly crystallized from magma similar to that which formed sulphide bearing komattiite at the Ni-Cu Alexo Deposit**". This research indicates that exploration potential exists for the development of Ni-Cu sulphide mineralization in the Mann Complex.

## SUMMARY OF PREVIOUS EXPLORATION

Exploration work on the Mann Project is limited. Very little exploration work has been completed on the project. Mr. Len Hill has completed a total of 7 diamond drill holes on the property. The diamond drilling was focussed along several locations along the Frederick House River. The purpose of the drill holes were to evaluate the platinum group element and diamond potential of the property. Mr. Hill reported intersecting 1 diamond in drill core, and has panned several diamonds from the river. A number of sections of core which contain a silvery mineral are currently being assayed for platinum.

Holmer Gold Mines Completed one diamond drill in 1973 to test a vertical EM anomaly. A summary of the hole is as follows:

| From – To (feet) | Rock Type |
|---|---|
| 0 - 40 ft | Casing |
| 40 – 368.5 | Peridotite |
| 368.5 – 379.5 | Ultramafic Porphyry |
| 379.5 – 393.5 | Peridotite |
| 393.5 - 420 | Ultramafic pyroxenite |
| 420 - 499 | Ultramafic Porphyry |
| 499 – 550 (E.O.H.) | Peridotite |

Mineralization to account for the VEM anomaly was not encountered in the drill hole. Plotting of the drill hole on the recently cut grid indicates that the hole was spotted south of the EM anomaly and possibly overshot the anomaly. Follow up work on the unexplained anomaly was not reported.

## PROJECT JUSTIFICATION

The justification for the Mann Project is based upon two important features;

1) The Mann Project is situated within the Mann Complex, which has recently been shown to have the same chemistry as ultramafics which host the Alexo Ni-Cu sulphide deposit.
2) Ni-Cu sulphide deposits are accumulations of semi-massive to massive sulphide minerals. They are conductive horizons that may be detected with EM geolphysical techniques. A number of airborne EM anomalies are located on the Mann project which have not been drill tested. A number of EM anomalies north of the Mann Project which have been tested intersected anomalous Cu and Ni mineralization.

## 1998 EXPLORATION PROGRAM

The 1998 exploration program on the Mann Project focussed on utilizing cost effective, proven field exploration techniques, geared towards identifying new exploration targets. The purpose of the program was to identify Ni-Cu sulphide targets, delineate their extent, and document the mineralization, alteration, and controls on mineralization.

A total of 10.225 kilometres of linecutting was completed at 100 metre spaced lines with picket stations established every 25 metres. The purpose of the linecutting was to provide a reference system for the prospecting, geophysics and geological programs. In addition the grid was intended to provide a framework for further work on the property.

The prospecting and mapping proved to be of limited effectiveness. Outcrop exposure was poor <1% (**Map 1**). The best exposure of bedrock is situated along the Frederick House River at the bridge crossing. The continuous outcrop exposure consists of peridotite, dunite, pyroxenite and gabbro. Sulphide mineralization was not identified. A total of six samples were collected for XRF and ICP analysis.

A total 9.225 km of HLEM surveys were completed, with 100 metre length cable and 25 metres spaced stations (**Map 2, Map 3**). The survey was intended to locate a number of airborne EM anomalies. The HLEM survey identified a significant EM anomaly on the central portion of the grid from L 15+00 E / 13+00 N to L 19+00 E / 11+75 N. The EM anomaly is located coincident with a strong airborne EM anomaly.

A total of 10.225 km of magnetometer surveys were completed, with readings taken at 25m spaced stations (**Map 4**). The survey identified a significant magnetic high horizon, which is coincident with the HLEM anomaly. Adjacent to this magnetic high feature is a strong magnetic low, which extends for approximately 300 metres.

A soil survey was planned for the project but due to the extensive clay cover, the survey was not completed. Clays are not a good medium for soil surveys.

## RESULTS OF 1998 EXPLORATION PROGRAM

The results of the exploration program indicate encouraging Ni-Cu sulphide potential for the Mann Project. Mapping and prospecting and previous diamond drilling has identified ultramafic rocks typical of those associated with Ni-Cu sulphide deposits. Geophysical surveys have identified a significant HLEM anomaly with a coincident magnetic high feature. A strong magnetic low feature flanks the HLEM anomaly.

## RECOMMENDATIONS

Further work is recommended for the Mann Project. Diamond drilling in conjunction with down-hole EM surveys should be utilized to evaluate the Cu-Ni sulphide potential of this property. The HLEM anomaly with coincident mag high/mag low feature should be tested. Additional deeper penetrating geophysics should be performed on a number of airborne anomalies not identified through the HLEM survey. The estimated cost of the proposed program is $15,000.

# Appendix I

ICP and XRF Certificates

Established 1928

# Swastika Laboratories

A Division of TSL/Assayers Inc.

Assaying - Consulting - Representation

## *Geochemical Analysis Certificate*

8W-4294-RG1

Company: **T. KEAST**
Project: MANN OPAP
Attn: T. Keast

Date: NOV-10-98

*We hereby certify* the following Geochemical Analysis of 6 Rock samples submitted NOV-02-98 by .

| Sample Number | Au PPB | Au Check PPB | Multi Element | WRA + Minors |
|---|---|---|---|---|
| 35772 | 17 | 26 | Results | Results |
| 35773 | 14 | - | to | to |
| 35774 | Nil | - | follow | follow |
| 35775 | 3 | - | | |
| 35776 | 57 | 46 | | |
| 35777 | 10 | - | | |

One assay ton portion used.

*Certified by* G. Eckstrand

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories
1 Cameron Ave., Swastika, Ontario
PHONE (705) 642-3244 FAX (705) 642-3300

**T. KEAST**
Attention: T. Keast
Project: MANN OPAP
Sample: Rock

Report No : 8W4294 R
Date : Nov-12-98

# MULTI-ELEMENT ICP ANALYSIS

Aqua Regia Digestion

| Sample Number | Ag ppm | Al % | As ppm | Ba ppm | Be ppm | Bi ppm | Ca % | Cd ppm | Co ppm | Cr ppm | Cu ppm | Fe % | K % | Mg % | Mn ppm | Mo ppm | Na % | Ni ppm | P ppm | Pb ppm | Sb ppm | Sc ppm | Sn ppm | Sr ppm | Ti % | V ppm | W ppm | Y ppm | Zn ppm | Zr ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35772 | <0.2 | 1.11 | <5 | 20 | <0.5 | <5 | 0.33 | 1 | 31 | 2097 | 31 | 3.08 | 0.06 | 6.98 | 590 | <2 | 0.02 | 126 | 80 | <2 | 30 | 5 | <10 | 7 | 0.01 | 39 | <10 | <1 | 43 | |
| 35773 | <0.2 | 1.28 | <5 | 10 | <0.5 | <5 | 0.43 | 1 | 40 | 1912 | 26 | 3.44 | 0.04 | 10.41 | 620 | <2 | 0.02 | 163 | 50 | 2 | 30 | 5 | <10 | 7 | 0.01 | 41 | <10 | <1 | 49 | |
| 35774 | <0.2 | 1.44 | <5 | 10 | <0.5 | <5 | 0.15 | <1 | 76 | 455 | 1 | 5.19 | 0.05 | 14.85 | 640 | <2 | 0.01 | 1076 | 100 | 2 | 10 | 5 | <10 | 2 | 0.02 | 31 | <10 | 2 | 37 | |
| 35775 | <0.2 | 1.58 | <5 | 20 | <0.5 | <5 | 0.65 | <1 | 17 | 243 | 100 | 1.67 | 0.03 | 1.91 | 205 | <2 | 0.04 | 51 | 40 | <2 | 5 | 2 | <10 | 17 | 0.02 | 26 | <10 | <1 | 12 | |
| 35776 | <0.2 | 1.93 | <5 | 60 | <0.5 | <5 | 0.75 | <1 | 15 | 576 | 15 | 1.46 | 0.07 | 2.98 | 230 | <2 | 0.05 | 58 | 20 | <2 | 10 | 2 | <10 | 40 | 0.01 | 14 | <10 | <1 | 15 | |
| 35777 | <0.2 | 1.07 | <5 | 10 | <0.5 | <5 | 0.48 | <1 | 20 | 815 | 17 | 2.00 | 0.03 | 3.30 | 250 | <2 | 0.02 | 74 | 40 | <2 | 10 | 3 | <10 | 2 | 0.02 | 26 | <10 | <1 | 16 | |

A 5 gm sample is digested with 10 ml 3:1 HCl:HNO3 at 95c for 2 hours and diluted to 25ml with D.I.H20.



Signed G. Leb

Swastika Laboratories
1 Cameron Ave., Swastika, Ontario
PHONE (705) 642-3244 FAX (705) 642-3300

**T. KEAST**
Attention: T. Keast
Project: MANN OPAP
Sample: Rock

**Report No** 8W4294 RL
Date : Nov-12-98

## ICP Whole Rock Assay

Fusion Analysis

| Sample Number | $SiO_2$ % | $Al_2O_3$ % | $Fe_2O_3$ % | CaO % | MgO % | $Na_2O$ % | $TiO_2$ % | $K_2O$ % | MnO % | $P_2O_5$ % | LOI % | Ba ppm | Sr ppm | Zr ppm | Sc ppm | Y ppm | Be ppm | Co ppm | Cr ppm | Cu ppm | Ni ppm | V ppm | Zn ppm | Rb % | Nb ppm | Total % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35772 | 51.18 | 2.81 | 7.15 | 8.03 | 23.96 | 0.11 | 0.06 | 0.07 | 0.19 | 0.05 | 5.92 | 20 | 30 | <10 | 20 | <5 | <5 | 40 | 2970 | 25 | 205 | 70 | <5 | <0.01 | <10 | 99.8 |
| 35773 | 47.30 | 2.92 | 6.77 | 10.45 | 25.49 | 0.07 | 0.08 | 0.05 | 0.18 | 0.02 | 6.34 | 20 | 20 | <10 | 20 | <5 | <5 | 40 | 2480 | 20 | 175 | 65 | 50 | <0.01 | <10 | 99.9 |
| 35774 | 39.75 | 3.90 | 10.73 | 2.81 | 31.18 | 0.06 | 0.23 | 0.05 | 0.15 | 0.04 | 10.39 | 10 | <10 | 10 | 10 | 5 | <5 | 70 | 1445 | <5 | 1145 | 75 | 15 | <0.01 | <10 | 99.5 |
| 35775 | 48.81 | 16.03 | 5.66 | 15.28 | 9.35 | 1.54 | 0.17 | 0.49 | 0.13 | 0.02 | 2.31 | 170 | 100 | 10 | 30 | 5 | <5 | 20 | 630 | 115 | 75 | 130 | <5 | <0.01 | <10 | 99.9 |
| 35776 | 49.64 | 13.25 | 4.63 | 13.70 | 12.72 | 1.53 | 0.12 | 0.90 | 0.12 | 0.02 | 2.94 | 500 | 210 | <10 | 30 | 5 | <5 | 20 | 2020 | 10 | 105 | 95 | <5 | <0.01 | <10 | 99.9 |
| 35777 | 50.16 | 3.18 | 7.43 | 17.42 | 18.04 | 0.20 | 0.21 | 0.04 | 0.19 | 0.03 | 2.27 | 10 | 10 | 10 | 45 | 5 | <5 | 35 | 3070 | <5 | 135 | 160 | <5 | <0.01 | <10 | 99.5 |

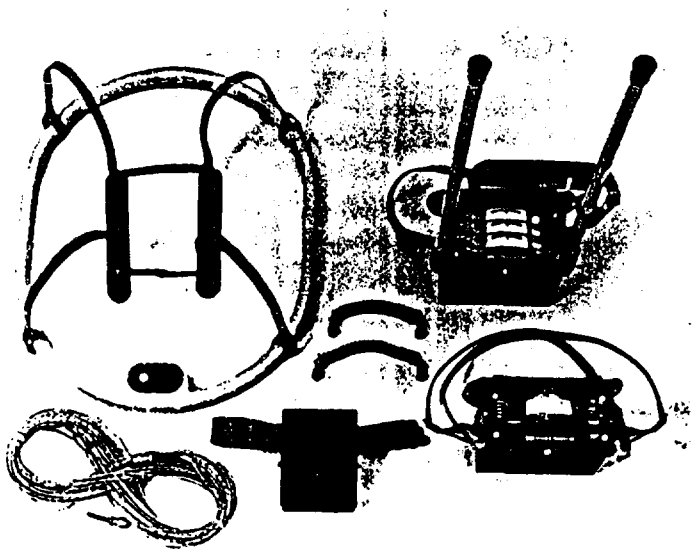
Sample is fused with Lithium Metaborate or Sodium Peroxide and dissolved with either HNO3 or HCl respectively

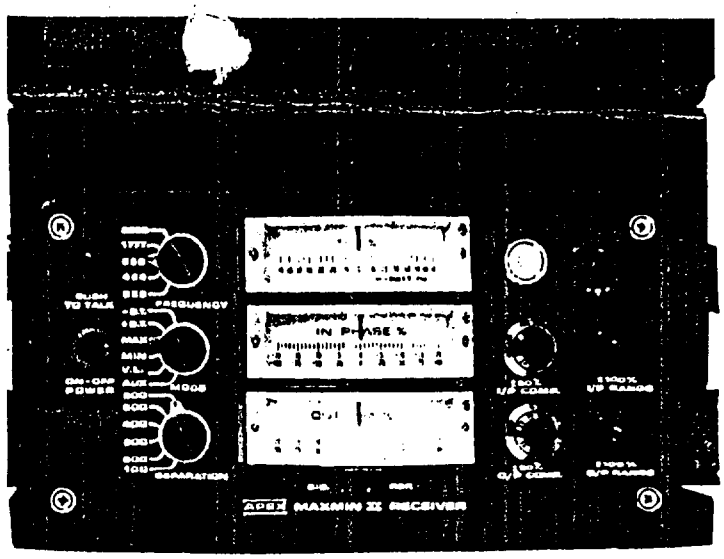


Signed G. Leboss

# Appendix II

## Survey Procedure






## SPECIFICATIONS

**Frequencies:** 222, 444, 888, 1777 and 3555 Hz.

**Modes of Operation:**

MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with reference cable.

MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.

V.L. : Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

**Coil Separations:** 25, 50, 100, 150, 200 & 250 m (MMII) or 100, 200, 300, 400, 600 and 800 ft. (MMIIF).
Coil separations in V.L. mode not restricted to fixed values.

**Paramaters Read:**

- In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
- Tilt-angle of the total field in V.L. mode.

**Readouts:**

- Automatic, direct readout on 90 mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
- Tilt angle and null in 90 mm edgewise meters in V.L. mode.

**Scale Ranges:**

In-Phase: ±20%, ±100% by push-button switch.
Quadrature: ±20%, ±100% by push-button switch.
Tilt: ±75% slope.
Null (V.L.): Sensitivity adjustable by separation switch.

**Readability:** In-Phase and Quadrature: 0.25 % to 0.5 % ; Tilt: 1 %.

±0.25% to ±1% normally, depending on conditions, frequencies and coil separation used.

- 222 Hz : 220 Atm²
- 444 Hz : 200 Atm²
- 888 Hz : 120 Atm²
- 1777 Hz : 60 Atm²
- 3555 Hz : 30 Atm²

9V trans. radio type batteries (4) Life: approx. 35 hrs. continuous duty (alkaline, 0.5 Ah), less in cold weather.

12V 6 Ah Gel-type rechargeable battery. (Charger supplied)

Light weight 2-conductor teflon cable for minimum friction. Unshielded. All reference cables optional at extra cost. Please specify

Built-in intercom system for voice communication between receiver and transmitter operators in MAX and MIN modes, via reference cable.

Built-in signal and reference warning lights to indicate erroneous readings.

-40°C to +60°C (-40°F to +140°F).

6 kg (13 lbs.)

13 kg (29 lbs.)

Typically 60 kg (135 lbs.), depending on quantities of reference cable and batteries included. Shipped in two field/shipping cases.

Specifications subject to change without notification

## 8.0 SPECIFICATIONS

### 8.1 Magnetometry Specifications

| | |
|---|---|
| **Total Field Operating Range** | 20,000 to 100,000 nT (1 nT = 1 gamma). |
| **Gradient Tolerance For Total Field:** | ±5000 nT/m. |
| **Total Field Absolute Accuracy** | ±1 nT at 50,000 nT<br>±2 nT over total field operating and temperature range. |
| **Resolution** | 0.1 nT. |
| **Tuning** | Fully solid-state. Manual or automatic mode is keyboard selectable. |
| **Reading Time** | 2 seconds. For portable readings this is the time taken from the push of a button to the display of the measured value. |
| **Continuous Cycle Times** | Keyboard selectable in 1 second increments upwards from 2 seconds to 999 seconds. |
| **Operating Temperature Range** | -40°C to +50°C provided optional Display Heater is used below -20°C. |

### 8.2 Sensor Options

In the following options the actual sensors are identical; however, mountings and cables vary.

| | |
|---|---|
| **Portable Total Field Sensor Option** | Includes sensor, staff, two 2 m cables and backpack sensor harness. Weight of sensor, cable and staff is 1.9 kg. |

| | |
|---|---|
| | Staff is 30 x 600 mm collapsed and 1600 mm extended. |
| **Base Station Sensor Option** | Includes sensor, tripod, 50 m cable external power cable and analog chart recorder cable. Weight of sensor, cable and tripod is 6.5 kg. Tripod is 540 mm collapsed, 1650 mm extended. |
| **Gradiometer Sensor Option** | For use with the Portable Total Field Sensor Option, includes second sensor, cables and both a .5m and a 1m staff extender. Combined weight of Total Field and Gradiometer Sensor options with staff, extender and cables is 3.5 kg. |

Ontario Ministry of Northern Development and Mines

# Declaration of Assessment Work Performed on Mining Land

**Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990**

Transaction Number (office use)
W9960.00193
Assessment Files Research Imaging

42A14SE2007 2.19475 MANN 900

ıbsections 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Ac
nent work and correspond with the mining land holder. Questions about this coll
ment and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240.
- Please type or print in ink.

**1. Recorded holder(s)** (Attach a list if necessary)

| | |
|---|---|
| Name: Leonard Edward Hill (100%) | Client Number: 144430 |
| Address: 122 Helen Ave | Telephone Number: 1-705-235-973 |
| South Porcupine, Ontario, P0N1H0 | Fax Number: — |
| Name | Client Number |
| Address | Telephone Number |
| | Fax Number |

**2. Type of work performed:** Check (✓) and report on only ONE of the following groups for this declaration.

☒ Geotechnical: prospecting, surveys, assays and work under section 18 (regs) ☐ Physical: drilling stripping, trenching and associated assays ☐ Rehabilitation

| | |
|---|---|
| Work Type: linecutting 10.225 km<br>magnetometer survey 10.225 km<br>HLEM survey 9.225 km<br>mapping & prospecting of Grid. | Office Use<br>Commodity<br>Total $ Value of Work Claimed: $11,458 |
| Dates Work Performed: From 15 Sept 1998 (Day / Month / Year) To 10 Nov 1998 (Day / Month / Year) | NTS Reference |
| Global Positioning System Data (If available) — Township/Area: Mann + Duff Twp's; M or G-Plan Number: G3839 G-3234 | Mining Division: Porcupine<br>Resident Geologist District: TIM. |

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

**3. Person or companies who prepared the technical report** (Attach a list if necessary)

| | |
|---|---|
| Name: Todd Keast. | Telephone Number: 1-705-235-2540 |
| Address: Box 147, South Porcupine, Ontario, P0N1H0 | Fax Number: 1-705-235-2991 |
| Name | Telephone Number |
| Address | Fax Number |
| Name | Telephone Number |
| Address | Fax Number |

**4. Certification by Recorded Holder or Agent**

I, Leonard Edward Hill (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

| | | |
|---|---|---|
| Signature of Recorded Holder or Agent: L. E. Hill | | Date: April 22/99 |
| Agent's Address | Telephone Number: 235-5736 | Fax Number |

0241 (03/97)

RECEIVED
APR 30 1999
10:45 a.m.
PORCUPINE MINING DIVISION

2.19475

RECEIVED
10a.m.
MAY 03 1999
GEOSCIENCE ASSESSMENT OFFICE

**5.** Work to be recorded and distributed. Work can only be assigned [illegible] land where work was performed, at the time work was performed. A map showing the contiguous link must accompa form.

W9960.00193

| Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map. | | Number of Claim Units. For other mining land, list hectares. | Value of work performed on this claim or other mining land. | Value of work applied to this claim. | Value of work assigned to other mining claims. | Bank. Value o to be distribute at a future dat |
|---|---|---|---|---|---|---|
| eg | TB 7827 | 16 ha | $26,825 | N/A | $24,000 | $2,825 |
| eg | 1234567 | 12 | 0 | $24,000 | 0 | 0 |
| eg | 1234568 | 2 | $ 8,892 | $ 4,000 | 0 | $4,892 |
| 19 | 1154627 | 1 | — | 400 | — | — |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| | Column Totals | 19 | $11,458 | $11,200 | $6,890 | $258 |

RECEIVED
APR 30 1999
10:45 AM
PORCUPINE MINING DIVISION

2.19475

RECEIVED
10 a.m.
MAY 03 1999
GEOSCIENCE ASSESSMENT OFFICE

Ontario Ministry of Northern Development and Mines

# Statement of Costs for Assessment Credit

Transaction Number (office use): W9960.00193

Personal information collected on this form is obtained under the authority of subsection 6 (1) of the Assessment Work Regulation 6/96. Under section 8 of the Act, this information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions abo collection should be directed to a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontari 6B5.

| Work Type | Units of work<br>Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc. | Cost Per Unit of work | Total C |
|---|---|---|---|
| Line cutting | 11.32 Km | $ 325.00/Km | $ 3,6 |
| Magnetometer | 10.275 Km | $ 100/ Km | $ 1,0 |
| HLEM | 10.275 Km | $ 210/Km | $ 2,4 |
| Mapping / Prospecting | 11.32 Km | $ 100/Km | $ 2,2 |
| Assays | 8 samples | $ 25/sample | $ 2C |
| Report / Drafting | 4 days | $ 250/day | 1,00 |
| **Associated Costs (e.g. supplies, mobilization and demobilization).** | | | |
| | | | $ 35 |
| **Transportation Costs** | | | $ 20C |
| **Food and Lodging Costs** | | | $ 35C |
| **Total Value of Assessment Work** | | | $ 11,45 |

2.19475

RECEIVED
10 a.m.
MAY 03 1999
GEOSCIENCE ASSESSMENT

**Calculations of Filing Discounts:**

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK x 0.50 = Total $ value of worked claime

**Note:**
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

**Certification verifying costs:**

I, Leonard Hill (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as recorded Holder (recorded holder, agent, or state company position with signing authority) I am authorized to make this certificati

RECEIVED
APR 30 1999
10 Yr Assn
PORCUPINE MINING DIVISION

Signature L. E. Hill Date April 22/99

0212 (03/97)

**Ministry of Northern Development and Mines**

**Ministère du Développement du Nord et des Mines**

Ontario

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9846
Fax: (877) 670-1555

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

June 1, 1999

LEONARD EDWARD HILL
122 HELEN AVENUE
P.O. BOX 1022
SOUTH PORCUPINE, Ontario
P0N-1H0

Dear Sir or Madam:

**Submission Number:** 2.19475

**Status**

**Subject: Transaction Number(s):** W9960.00193 Deemed Approval

---

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Lucille Jerome by e-mail at lucille.jerome@ndm.gov.on.ca or by telephone at (705) 670-5858.

Yours sincerely,

ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Correspondence ID: 13827
Copy for: Assessment Library

# Work Report Assessment Results

**Submission Number:** 2.19475

**Date Correspondence Sent:** June 01, 1999 **Assessor:** Lucille Jerome

**General Comment:**

| Transaction Number | First Claim Number | Township(s) / Area(s) | Status | Approval Date |
|---|---|---|---|---|
| W9960.00193 | 1154628 | MANN, DUFF | Deemed Approval | June 01, 1999 |

**Section:**
14 Geophysical MAG
12 Geological GEOL
14 Geophysical EM

**Correspondence to:**
Resident Geologist
South Porcupine, ON

Assessment Files Library
Sudbury, ON

**Recorded Holder(s) and/or Agent(s):**
LEONARD EDWARD HILL
SOUTH PORCUPINE, Ontario



Correspondence ID: 13827

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M.& S. – MINING AND SURFACE RIGHTS

| Order No. | Date | Disposition | File |
|---|---|---|---|

W.P.R. WATER POWER RESERVE

W.O. 87/87

SURFACE AND MINING RIGHTS RE-OPENED TO PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 36 OF THE MINING ACT R.S.O. 1980 EFFECTIVE 90-SEP-05 AT 7AM E.S.T. ORDER NO. O-P 4/90 NR DATED 90-AUG-22.

NOTE: P1125837 PLOTTED IN ERROR. S/B P1114737.



G-3537

MANN TOWNSHIP

CUFF TOWNSHIP

NEWMARKET TOWNSHIP

LITTLE TOWNSHIP

1201909 (8 Units)
1200926 1200927 1200925
1201319 (2 UNITS)
1227014
1204690
(6 UNITS) (16 UNITS)
1206524 F-2 1225560
1186760 1180029 1200909
(8 UNITS) 1186762 1180028 2 UNITS (6 UNITS) (4 UNITS) 2 UNITS 1200684
1200912 (3 UNITS) 1180030
P1154624 P1154628 P1154629 P1154625 P1154626 P1154627 P1154615 P1154616 P1154617 P1154618 P1154619 P1154620
1200913 1200903 1200911 1200906
2.19475 MAG, EM GEOL. (12 UNITS) Pickerel Lake (8 UNITS) 1200910
(4 UNITS) (16 UNITS) (8 UNITS) (16 UNITS)
1201905 1200914 (4 UNITS) 1200915 1200916 1200908
1180501 (NT) Pickerel Lake
1201907 12 UNITS (16 UNITS) (16 UNITS) (16 UNITS)
1200947 1200918 12 UNITS
1200948 (9 UNITS) 1200919 1200920 1200922
1227796 (4 UNITS)
H14737 1200938 (16 UNITS) 1200921
(8 UNITS) (4 UNITS) (16 UNITS)
1201904 (4 UNITS) 1204445 (2 UNITS) 1200923
1201945 12 UNITS 1190189 16 UNITS
(16 UNITS)
1201373 (4 UNITS) W.P.R. 1200984 (4 UNITS) 1201901 16 UNITS 1201903 8 UNITS 1201902 4 UNITS
12 11 10 9 8 7 6 5 4 3 2 1
VI V IV III II I

HIGHWAY AND ROUTE NO.
CITY, TOWN, VILLAGE
TRAILS
DRIVE-ON LINES
TOWNSHIP, BASE LINE, ETC.
CLAIMS, MINING CLAIMS, LEASE, ETC.
PIPE LINE
POWER LINE
TRANSMISSION LINE
MINING CLAIM, ETC.
RAILWAY AND RIGHT OF WAY
UTILITY LINES
NON-PERENNIAL STREAM
FLOODING RIGHTS OR DRAINAGE RIGHTS
SUBDIVISION OR CONDOMINIUM PLAN
RESERVATIONS
ORIGINAL SHORELINE
MARSH OR MUSKEG
MINES
TRAVERSE MONUMENT

## DISPOSITION OF CROWN LANDS

| TYPE OF DOCUMENT | S |
|---|---|
| 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 | |
| RESERVATION | |
| CANCELLED | |
| SAND & GRAVEL | |
| LAND USE PERMIT | |

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO 1913, VESTED IN ORIGINAL PATENTEE BY MINING LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 4.

* L.U.P.

SCALE 1:20 000

(ST) SNOWMOBILE TRAIL (LAND USE PERMIT) NOTICE RECEIVED 92-DEC-09



Received Sept 22/86

TOWNSHIP

# MANN

M.N.R. ADMINISTRATIVE DISTRICT

COCHRANE

MINING DIVISION

PORCUPINE

LAND TITLES / REGISTRY DIVISION

COCHRANE

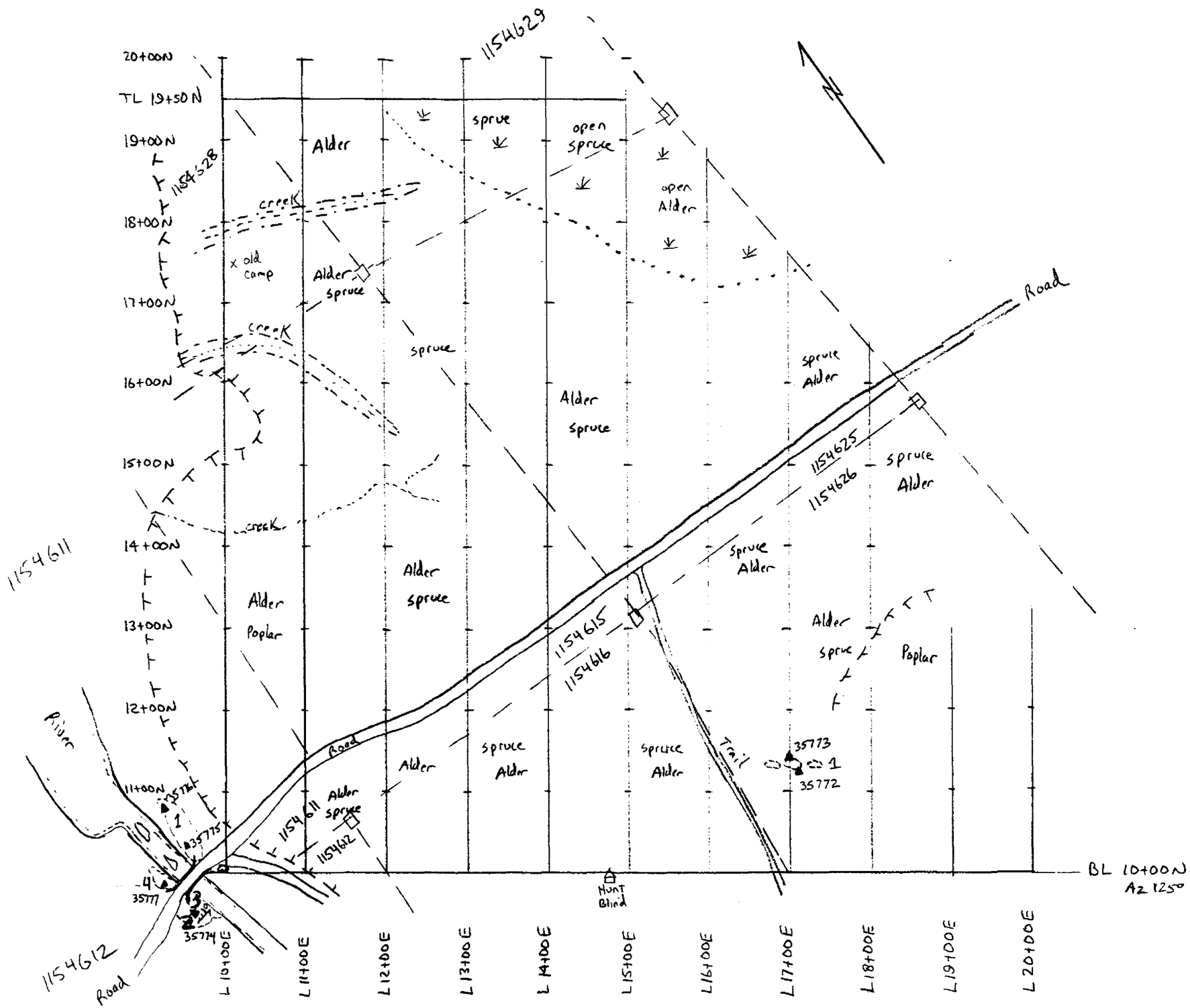
Ministry of Natural Resources — Ontario

Ministry of Northern Development and Mines

Date: SEPTEMBER 1986

Number: G-3537

ck-ai
dm




## Legend

- 4 Pyroxenite
- 3 Peridotite
- 2 Dunite
- 1 Gabbro
- outcrop
- Foliation
- Sample Location
- Positive Topographic Feature
- claim post
- Road
- Bridge
- Creek

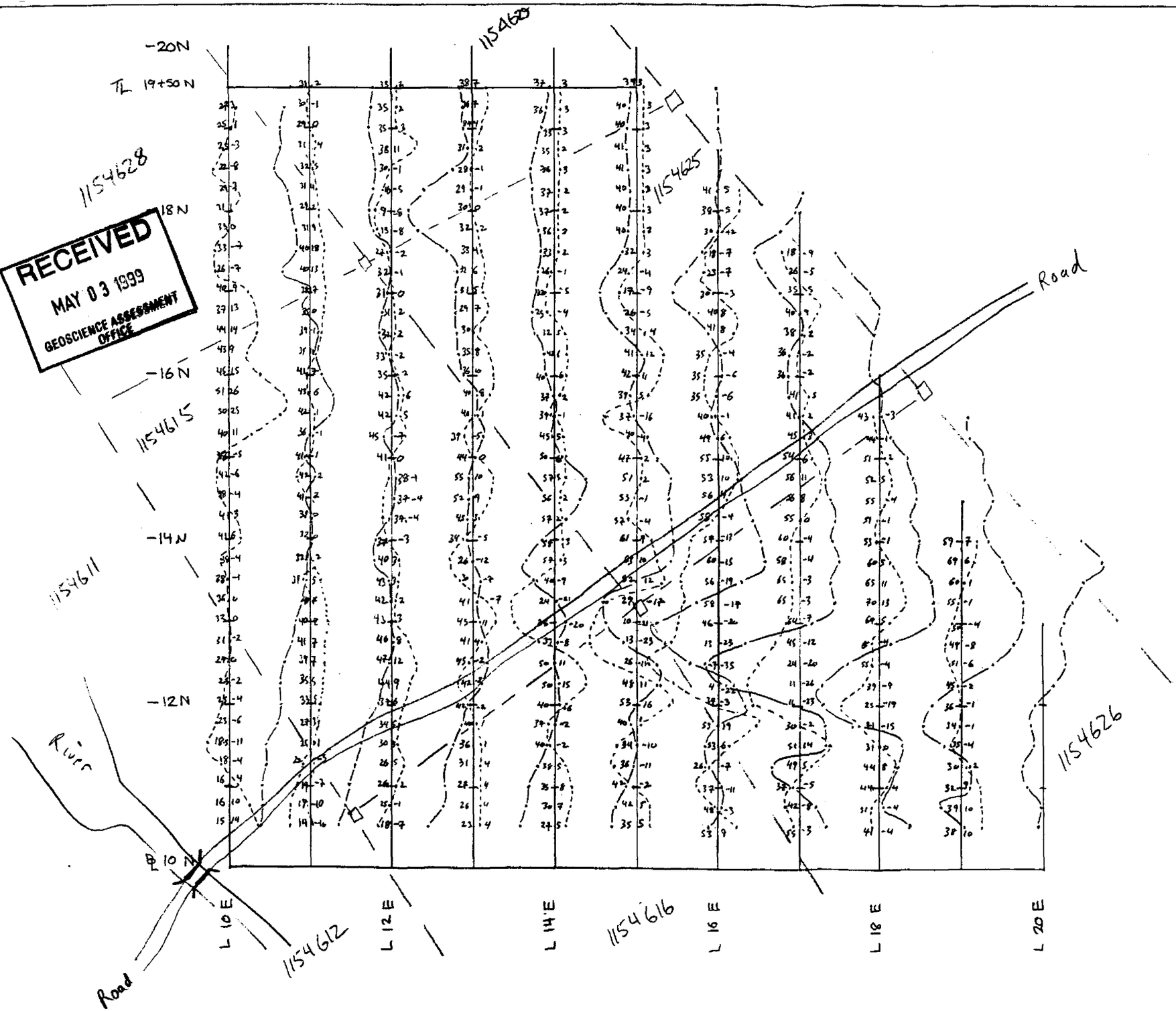


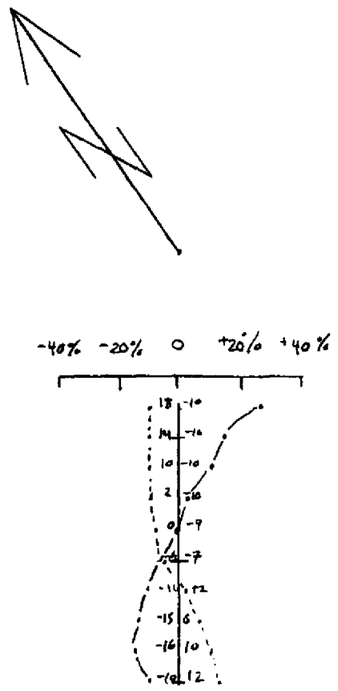
**2.19475**

0 100 200
metres

**Map 1**

| Mann Project |
|---|
| Len Hill OPAP 98 |
| Geological Mapping |
| 1:5,000 |
| T.K. / 98 42A |




100 meter cable spacing

——— In-Phase

- - - - - Quadrature

Profile Scale 1 cm = 20%

Scale 1:5000

0 50m 100m 150m 200m 250m

Instrument: Apex MAXMIN II, SN 1204

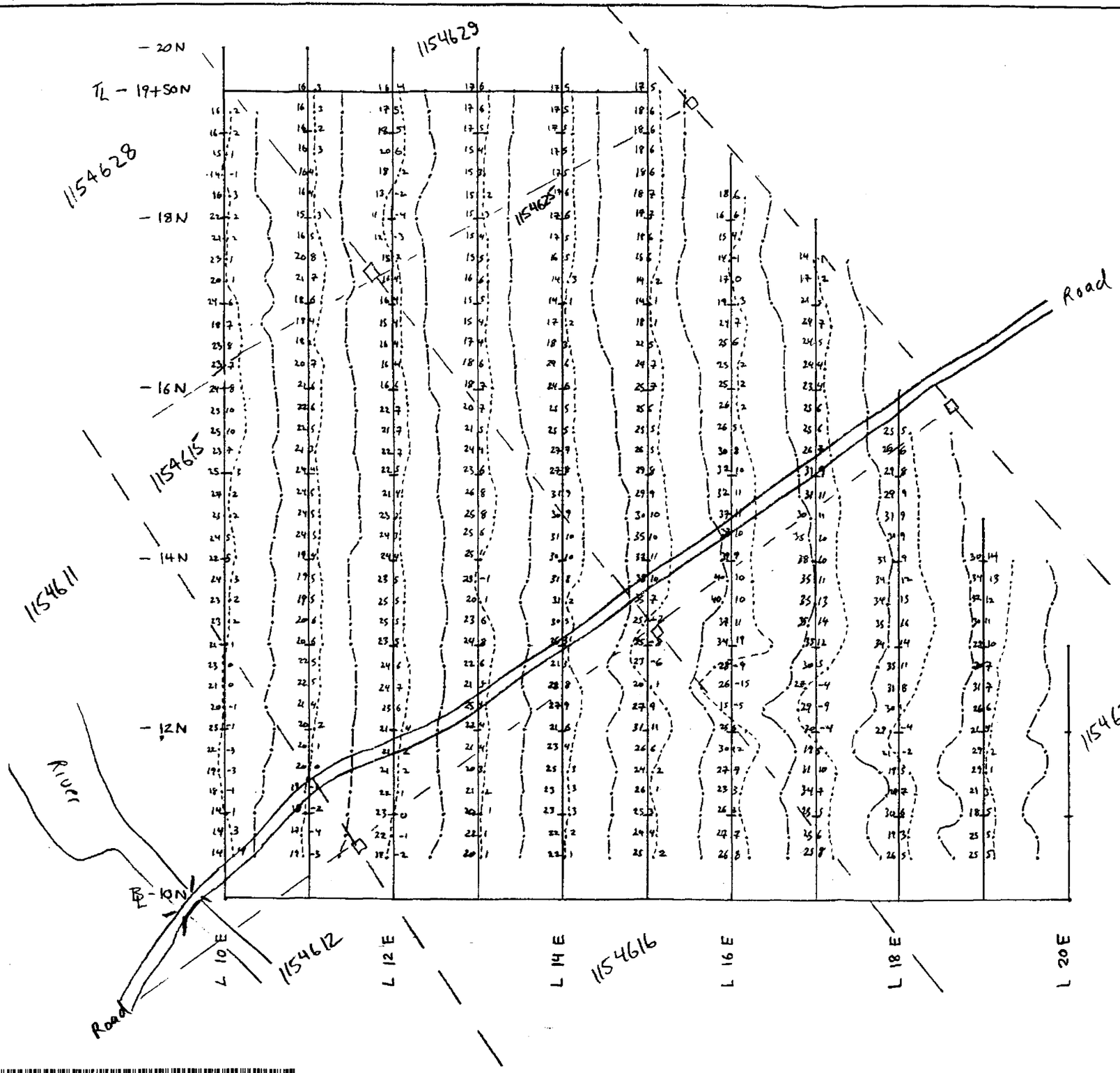
Map 2

Mann Twp Project
Porcupine Mining Division

Ground Geophysical Survey

HLEM Maxmin II
1777 Hz.

| Scale 1:5000 | NTS 42A/NW | Oct 1998 |
|---|---|---|







100 meter cable spacing

In- Phase

Quadrature

Profile Scale 1 cm = 20 %

Scale 1:5000

0 50m 100m 150m 200m 250 meters

Instrument : Apex MAXMIN II
SN: 1204

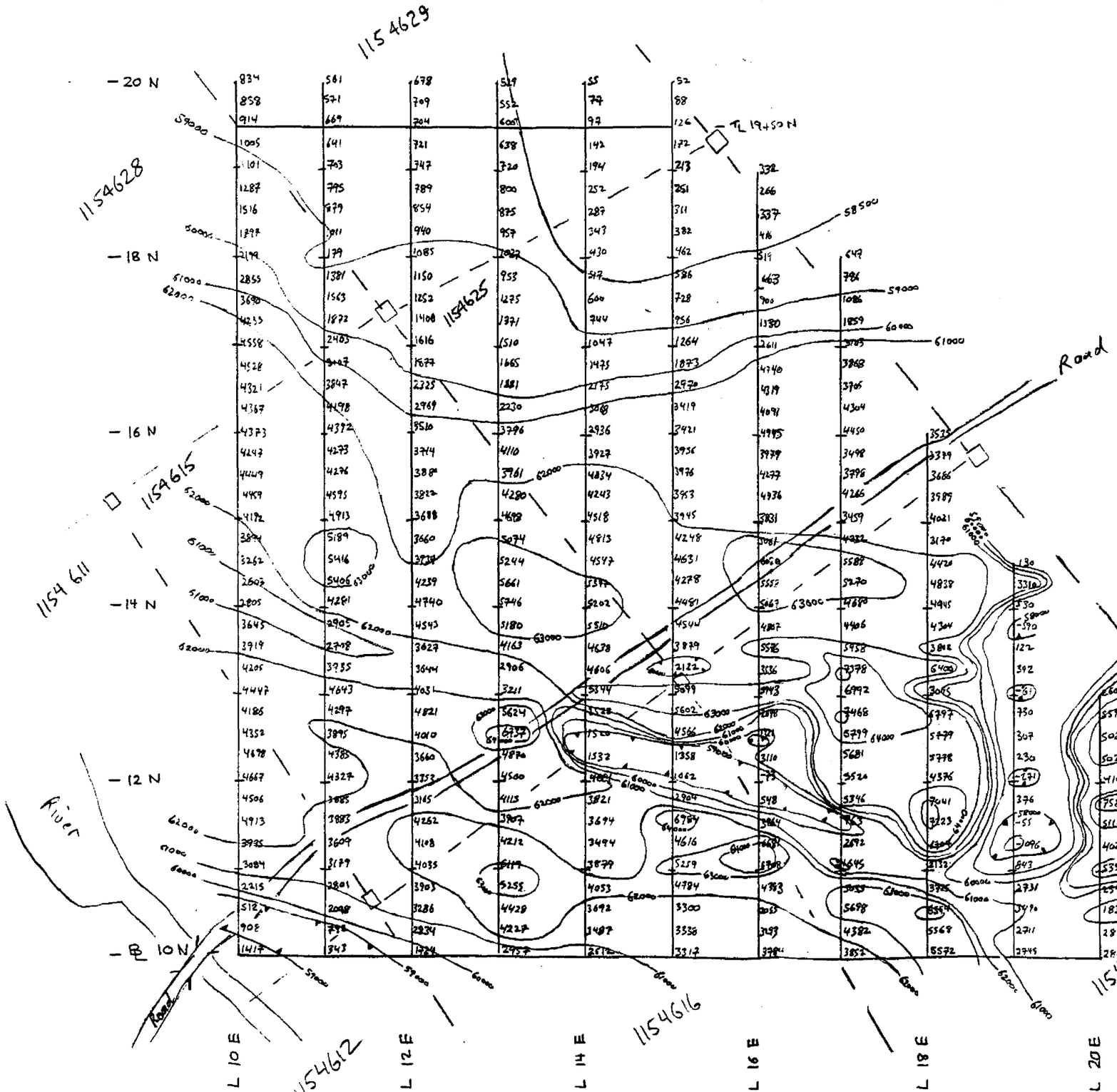
Mann Twp Project
Porcupine Mining Division

Ground Geophysical Survey

HLEM Maxmin II
444 Hz

Scale 1:5000 | NTS 42A NW | Oct. 1998

**Map 3**




Map 4

58,000 subtracted from all readings

Instrument: Scintrex IGS 2, MP4
SN: 8507254

Scale 1:5000

0 50m 100m 150m 200m 250m



**2.19475**

Mann Twp Project
Porcupine Mining Division

Ground Geophysical Survey
Total Field Magnetics

| Scale 1:5000 | NTS 42A/NW | Oct 1998 |
|---|---|---|