



42F 025E 0001 2.12776 LARKIN

010

GEOLOGICAL REPORT

LARKIN TOWNSHIP PROPERTY

District of Porcupine

for

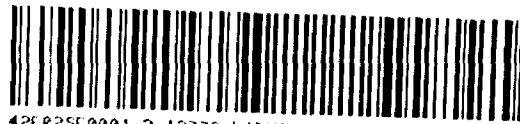
MANRIDGE EXPLORATIONS LTD.

RECEIVED  
SEP 20 1989  
LARKIN TOWNSHIP

2.12776

Donald F. Garden

September 1989



42FR25E0001 2.12776 LARKIN

010C

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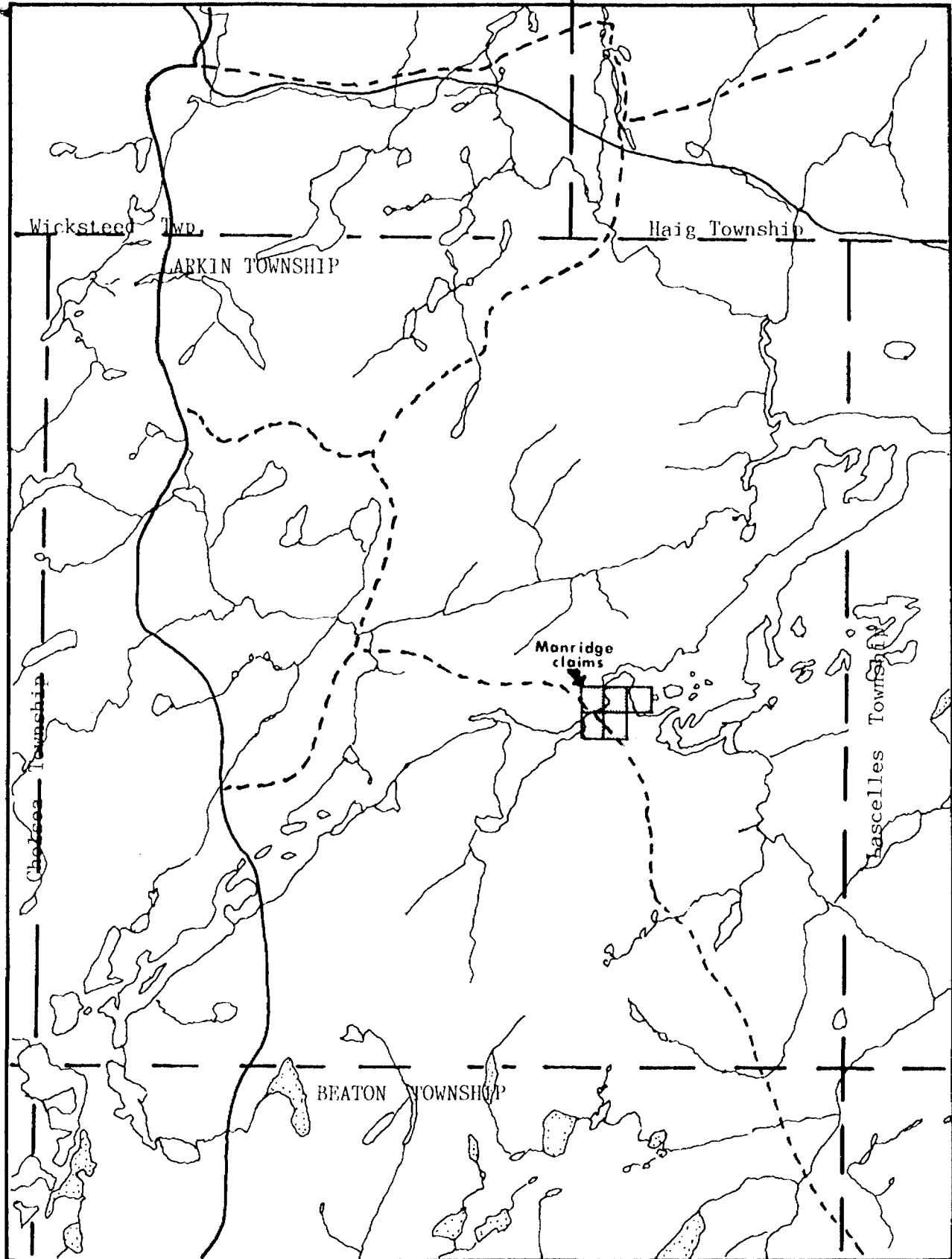
Inside Back Cover

Geological Map;      at 1:5000 scale



GENERAL LOCATION MAP

PROPERTY LOCATION MAP



## 1.0 INTRODUCTION

The Larkin Property comprises five claims staked in October 1988 in Larkin Township, district of Porcupine. They were transferred in early 1989 to the present holder, Manridge Explorations Ltd.

According to the Ontario Government map P-476, there is a north-east trending fault through Larkin and Haken Lakes generally delineated by the stream that joins them. This fault apparently cuts off a greenstone belt extending easterly into Woolrich Township. The majority of outcrop is found along the stream course and on the shore of Haken Lake. The rock is sheared mafic metavolcanics.

The five claims are a part of a large block that was previously held. The former claim holder drilled several holes to the west of the five claims and the assessment logs indicate sections of mafic metavolcanics with magnetite, banded iron formation and some sulfides. No assay results were indicated.

In August 1989, the author completed the mapping and sampling of the property.

## 2.0 LOCATION AND ACCESS

The claim group straddles a stream running from Haken Lake to Larkin Lake. The property is readily accessible by timber road. This road is marked "North Larkin Road" about 6 km. south of Hornepayne off highway 631. The property is 22 km. from Hornepayne. There is a well worn path easterly from the road to Larkin Lake, and another path south-westerly from the road to Haken Lake

### 3.0 TOPOGRAPHY

There is little or no outcrop exposure in the region except along the stream channel and at Haken Lake. The ground is rolling with relief difference approximately 75'. The hills are sand and silt. Generally, the moderate to higher ground is covered with poplar, some birch and a heavy second growth of alder and young maple. Along the stream valley and where the stream joins the lakes, spruce is dominant. Larkin Lake shoreline is sandy silt and is lined along the claim group shore with cedar.

### 4.1 REGIONAL GEOLOGY

The area has not been mapped in detail, however, according to the preliminary map OGS P-476, (Hornepayne sheet) the regional geology comprises a massive area of granitoid, granites & gneissic rocks with a band of greenstone (mafic metavolcanics) crossing east - west from mid Woolrich Twp. to the Larkin-Haken fault in Larkin Township.

The eastern end of the greenstone belt is apparently one half mile wide ending at a north-east trending fault defined by the course of the Kabinakagami River. This greenstone belt widens slightly toward the west to where it is cut off by the Larkin fault. There are several diabase dykes in the region crossing through both the granitic rocks and the greenstone belt in a north-east and north-west direction.

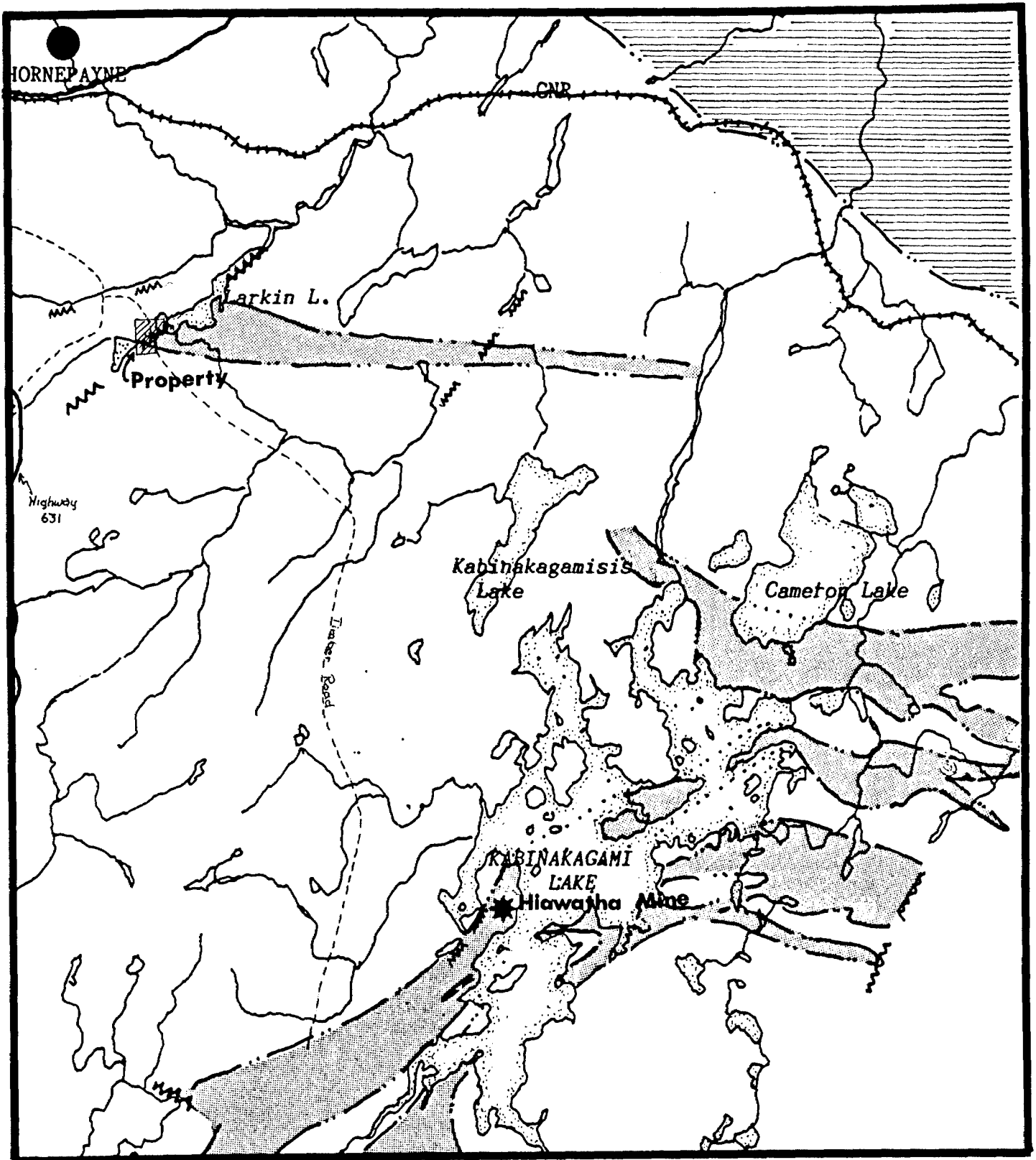
### 4.2 DETAILED GEOLOGY - Claim Group

The only rock exposure is on the shore of Haken Lake and along the stream channel downstream from Haken Lake for about  $\frac{1}{4}$  mile.




There is only one rock type, a mafic metavolcanic which is massive fine-grained to a very sheared, biotite, amphibolite rock.

REGIONAL GEOLOGY



(from ODMNA Map 2220, Manitowadge-Wawa; 1972)



LEGEND

-  Greenstone
-  Granitoids, granites, gneisses
-  Sediments

SYMBOLS

-  fault zones
-  Gold Mine, past producer

4.2 DETAILED GEOLOGY (cont.)

Some thin banding is evident where siliceous layers 2 to 3 cm. thick weather a light brown colour. This siliceous layer is also associated with gossan and contains sulfides, pyrite, and pyrrhotite.

At Haken Lake there are quartz segregations forming small drag folds and boudinage structural features. The drag folds are clearly visible along the stream bed east of the road, where they are in relief from weathering of the stream.

Just east of the road is a gossan where the rock contains 15% to 20% sulfide mineralization, mainly pyrite. This mineralization is also present about 150 metres downstream where thin banding is more evident.

To the west of the claim group, (south-west side of the road), there is an isolated outcrop of mafic metavolcanics with similar drag folding as to that seen at Haken Lake.

The drilling to the immediate west of the claim group gives a better picture of the bedrock geology. Mostly the intersections cut a biotite hornblende gneiss which contains scattered traces of pyrite and pyrrhotite, There is some carbonate and sericitation in the rock.

Mafic metavolcanics were intersected in two holes for considerable length. They are fine-grained, foliated and "crudely banded". This sequence contains several bands of iron formation and magnetite. A two-foot section contains massive magnetite with hematite and chert, and 3% to 6% pyrite and pyrrhotite sulfides.

If the drill holes are correctly located, the mafic metavolcanics appear to trend toward the north-west.



#### 4.3 STRUCTURAL GEOLOGY

The strike direction taken from several readings between Haken and Larkin Lake shows a gentle but distinctive change that outlines a fold-like structure with severe shearing. This could be caused by the interpreted Larkin Lake fault. The strike varies from 65° Az. to 120° Az.

Generally the structure appears to be an east-west striking, vertical dipping band of metavolcanics. In the area around the stream the drag folding and shearing indicates the possible fault with relative displacement north along the south east side of the fault. There is evidence that the fault does not terminate the greenstone band.

#### 5.0 MINERALISATION

Sulfide mineralisation appears to be stratigraphically controlled in the more siliceous bands of the mafic metavolcanics. Pyrite is dominant with some pyrrhotite and some possible chalcopyrite. The assays yielded values of 0.03% copper and 0.005% zinc. There was no gold.

#### 5.1 ASSAY RESULTS

Sample No.	Location	Assay
1270	furthest point downstream from road; hbde-bte; 10% qtz, tr. py.	0.005% zinc 0.01% copper
1273	same as 1270 (except 15% py)	0.03% copper
1274	gossan, 35 meters downstream from road. mafic mv, pyrite	0.03% copper

6.0 CONCLUSIONS AND RECOMMENDATIONS

Sulfide mineralization does not contain gold values, however the small amounts of copper and zinc indicates the possibility of base metals.

Future work should comprise airborne magnetometer and EM surveys to further delineate the structure, then a ground follow-up to pin-point the target areas for drilling.

*Donald E. Garden*

Donald E. Garden BSc

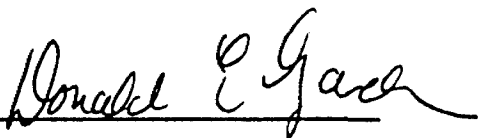
September 1989

CERTIFICATE OF QUALIFICATIONS

I, Donald E. Garden, of 124 Lyndhurst Ave., in the city of Toronto, County York, do hereby certify that:

1. *I am a consulting geologist, and that I have researched, worked and written this report.*
2. *I am a graduate of the University of Toronto, having achieved the degree of honours BSc (geology) in 1976.*
3. *I have practised my profession both in industry and with the Ontario government and with the Geological Survey of Canada, from 1958 to 1962 and from 1976 to present.*
4. *I have no interest, direct or indirect, in the property described herein, nor in either Manridge Explorations Ltd. or Metina Developments Inc.*

September 7th, 1989

  
Donald E. Garden

APPENDIX I

PROPERTY HOLDER

Manridge Explorations Ltd.  
suite 2314  
401 Bay St.,  
Toronto, Ontario M5H 2Y4

CONSULTANT

Donald E. Garden  
124 Lyndhurst Ave.  
Toronto, Ontario M5R 2Z9

CLAIMS

1063733	staked	October	20th	1988
1063734	"	"	20th	1988
1063735	"	"	23rd	1988
1063736	"	"	21st	1988
1063738	"	"	20th	1988

GEOLOGICAL SURVEY

Work performed by  
Donald E. Garden BSc  
August 8th to 14th, 1989

APPENDIX II

Certificate of Assays



Established 1928

# Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

## Certificate of Analysis

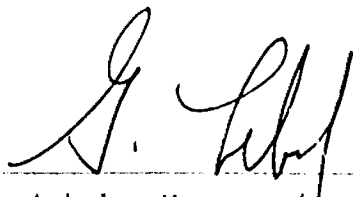
Certificate No. 75922 Date Aug. 21, 1989

Received Aug. 18, 1989 9 Rock Samples

Submitted by Manridge Explorations Ltd., Toronto, Ontario.

ATTENTION: M. Mackler

SAMPLE NO.	GOLD Oz/ton	COPPER %	ZINC %	LEAD %
1270	Nil	0.01	0.005	---
1271	Nil	---	---	---
1272	Nil	---	---	---
1173	Nil	0.03	---	---
1274	Nil	0.03	---	---

Per 

G. Lebel - Manager /rs

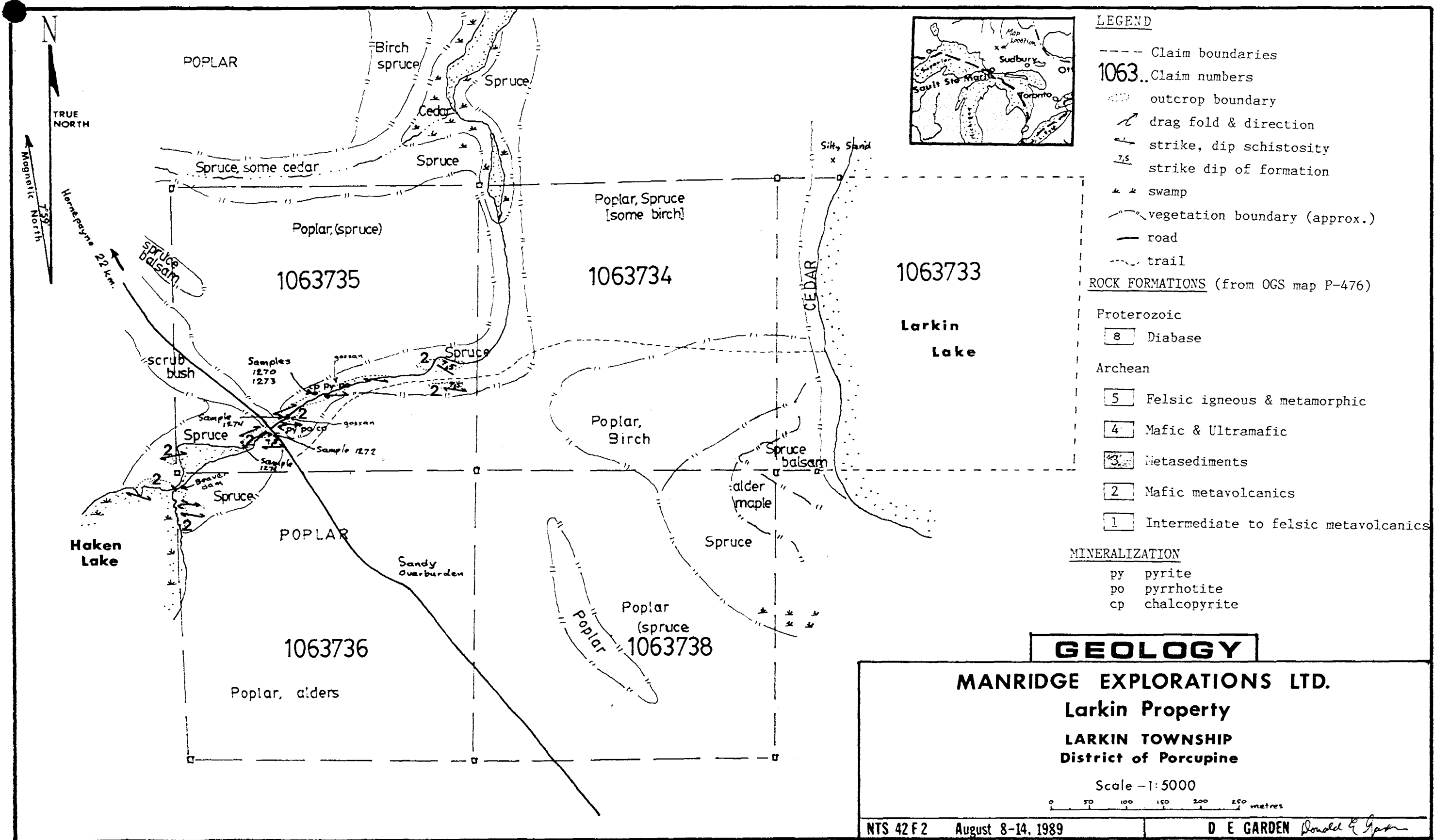


P.O. Box 10, Swastika, Ontario P0K 1T0

Telephone (705) 642-3244

FAX (705) 642-3300





**LEGEND**

- Claim boundaries
- 1063.. Claim numbers
- outcrop boundary
- ↗ drag fold & direction
- ↘ strike, dip schistosity
- 7.5 strike dip of formation
- \* \* swamp
- ~ vegetation boundary (approx.)
- road
- trail

**ROCK FORMATIONS (from OGS map P-476)**

- Proterozoic
  - 8 Diabase
- Archean
  - 5 Felsic igneous & metamorphic
  - 4 Mafic & Ultramafic
  - 3 Metasediments
  - 2 Mafic metavolcanics
  - 1 Intermediate to felsic metavolcanics

**MINERALIZATION**

- py pyrite
- po pyrrhotite
- cp chalcopyrite

**GEOLOGY**

**MANRIDGE EXPLORATIONS LTD.**  
**Larkin Property**  
**LARKIN TOWNSHIP**  
**District of Porcupine**

Scale - 1:5000

0 50 100 150 200 250 metres





Ontario



42F02SE0001 2.12776 LARKIN

900

Ministry of  
Northern Development  
and Mines

Ministère du  
Développement du Nord  
et des Mines

November 29, 1989

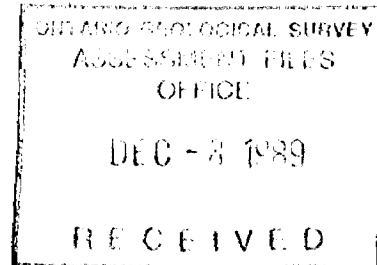
Mining Lands Section  
880 Bay Street, 3rd Floor  
Toronto, Ontario  
M5S 1Z8

Telephone: (416) 965-4888

Your File: W8906-476

Our File: 2.12776

Mining Recorder  
Ministry of Northern Development and Mines  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7



Dear Sir:

Re: Notice of Intent dated October 30, 1989 for Geological Survey  
submitted on Mining Claims P 1063734 et al in Larkin Township.

The assessment work credits, as listed with the above-mentioned Notice of Intent  
have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your  
records.

Yours sincerely,

W.R. Cowan  
Provincial Manager, Mining Lands  
Mines & Minerals Division

*rm*  
LS:eb  
Enclosure

cc: Mr. G.H. Ferguson  
Mining and Lands Commissioner  
Toronto, Ontario

Resident Geologist  
Timmins, Ontario

Mandridge Explorations Ltd.  
2314-401 Bay Street  
Toronto, Ontario  
M5H 2Y4

Donald E. Garden, Consulting  
124 Lyndhurst Ave.  
Toronto, Ontario  
M5R 2Z9



File  
2.12776

Date  
October 30, 1989

Mining Recorder's Report of  
Work No.  
W8906-476

Recorded Holder  
**MANDRIDGE EXPLORATIONS LTD.**

Township or Area  
**LARKIN TOWNSHIP.**

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
<p>Geophysical</p> <p>Electromagnetic _____ days</p> <p>Magnetometer _____ days</p> <p>Radiometric _____ days</p> <p>Induced polarization _____ days</p> <p>Other _____ days</p> <p>Section 77 (19) See "Mining Claims Assessed" column</p> <p>Geological <u>20</u> days</p> <p>Geochemical _____ days</p> <p>Man days <input type="checkbox"/> Airborne <input type="checkbox"/></p> <p>Special provision <input type="checkbox"/> Ground <input type="checkbox"/></p> <p><input type="checkbox"/> Credits have been reduced because of partial coverage of claims.</p> <p><input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.</p>	<p>P 1063734 to 736 incl. 1063738</p>

Special credits under section 77 (16) for the following mining claims

10 days Geological P 1063733

No credits have been allowed for the following mining claims

not sufficiently covered by the survey       insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.



Mining Act

Type of Survey(s) <b>Geological Mapping</b>	Township or Area <b>LARKIN</b>
Claim Holder(s) <b>Manridge Explorations Ltd.,</b>	Prospector's Licence No. <b>T 5258</b>
Address <b>Suite 2314; 401 Bay St., Toronto Ontario M5H 2Y4</b>	Date of Survey (from & to) <b>08   08   89   14   08   89</b>
Survey Company <b>Donald E. Garden, consulting</b>	Total Miles of line Cut
Name and Address of Author (of Geo-Technical report) <b>124 Lyndhurst Ave., Toronto, Ontario M5R 2Z9</b>	

Credits Requested per Each Claim in Columns at right

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

Mining Claims Traversed (List in numerical sequence)

Prefix	Mining Claim Number	Expend. Days Cr.	Prefix	Mining Claim Number	Expend. Days Cr.
<b>P</b>	1063733				
	1063734				
	1063735				
	1063736				
	1063738				

**RECORDED**  
OCT - 6 1989

**RECEIVED**  
OCT 6 1989  
11:40 a.m. "3" AC

**RECEIVED**  
OCT 26 1989  
MINING LANDS SECTION

Expenditures (excludes power stripping)

Type of Work Performed
Performed on Claim(s)
Calculation of Expenditure Days Credits
Total Expenditures \$ <input type="text"/> ÷ <input type="text" value="15"/> = Total Days Credits <input type="text"/>
Instructions Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Total number of mining claims covered by this report of work. **5**

Date <b>Sept 28/89</b>	Recorded Holder or Agent (Signature) <b>Donald E. Garden</b>
---------------------------	---

For Office Use Only		Mining License No.
Total Days Cr. Recorded <b>100</b>	Date Recorded <b>OCT. 6/89</b>	<b>White</b>
	Date Approved as Recorded	Branch Director
	<b>See revised work statement</b>	

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

Name and Postal Address of Person Certifying <b>Donald E. Garden, 124 Lyndhurst Ave., Toronto M5R 2Z9</b>	Date Certified <b>Sept 28/89</b>	Certified by (Signature) <b>Donald E. Garden</b>
--	-------------------------------------	---



2.12776

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) Geological Mapping
Township or Area LARKIN TOWNSHIP
Claim Holder(s) Manridge Explorations Ltd.
Ste. 2314 - 401 Bay St. Toronto Ont. M5H 2Y4
Survey Company Donald E. Garden, consulting
Author of Report Donald E. Garden
Address of Author 124 Lyndhurst Ave., Tor. M5R 2Z9
Covering Dates of Survey August 8 - 14, 1989
Total Miles of Line Cut

MINING CLAIMS TRAVERSED
List numerically

P 1063733
(prefix) (number)
1063734
1063735
1063736
1063738

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

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

Magnetometer Electromagnetic Radiometric
(enter days per claim)

DATE: SIGNATURE: Donald E. Garden
Author of Report or Agent

Res. Geol. Qualifications 2.5955

Previous Surveys

Table with 4 columns: File No., Type, Date, Claim Holder

TOTAL CLAIMS 5

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations \_\_\_\_\_ Number of Readings \_\_\_\_\_

Station interval \_\_\_\_\_ Line spacing \_\_\_\_\_

Profile scale \_\_\_\_\_

Contour interval \_\_\_\_\_

MAGNETIC

Instrument \_\_\_\_\_

Accuracy - Scale constant \_\_\_\_\_

Diurnal correction method \_\_\_\_\_

Base Station check-in interval (hours) \_\_\_\_\_

Base Station location and value \_\_\_\_\_

ELECTROMAGNETIC

Instrument \_\_\_\_\_

Coil configuration \_\_\_\_\_

Coil separation \_\_\_\_\_

Accuracy \_\_\_\_\_

Method:  Fixed transmitter  Shoot back  In line  Parallel line

Frequency \_\_\_\_\_  
(specify V.I. 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 \_\_\_\_\_



