



42A06NW2005 2.18175 OGDEN

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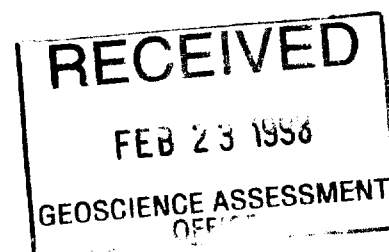
**A REPORT ON MAGNETIC AND ELECTRO-  
MAGNETIC GEOPHYSICAL SURVEYS ON THE  
OGDEN PROPERTY**

**OGDEN TOWNSHIP, ONTARIO**

For: Haddington Resources Ltd.  
Suite 1100, 808 West Hastings Street  
Vancouver British Columbia  
V6C 2X4

February 15, 1998

By: David Brown





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**A REPORT ON MAGNETIC AND ELECTRO-MAGNETIC  
GEOPHYSICAL SURVEYS ON THE OGDEN PROPERTY  
OGDEN TOWNSHIP, ONTARIO**

**1) INTRODUCTION**

During late January and early February, 1998 a ground total field magnetic and VLF electro-magnetic survey was completed on the Ogden Twp. Property by D.L. Brown and Associates on behalf of Haddington Resources Ltd. The project included establishing a line grid system over the property. Which grid was subsequently surveyed with a Gem Systems GSM-19 magnetometer and VLF receiver. The purpose of the survey was to detect magnetic anomalies and electro-magnetic conductors.

This report will provide details of the scope of the geophysics program and present the data followed by a discussion of the results.

**1.1) LOCATION AND ACCESS**

The claim blocks are located within the city limits of Timmins, approximately 10 kilometers southwest of the city center (Figure 1).

As shown on the property location map (Figure 2) the claims form a rectangular block. The block is approximately 4 kilometers long.

The property can be accessed year round via Dalton Road which connects the city to the electric power generating station on Kenogamissi lake.

**1.2) PROPERTY STATUS**

The Ogden property is held by Noront Resources Ltd. and subject to a joint venture agreement with Haddington Resources Ltd. who commissioned the geophysical project.

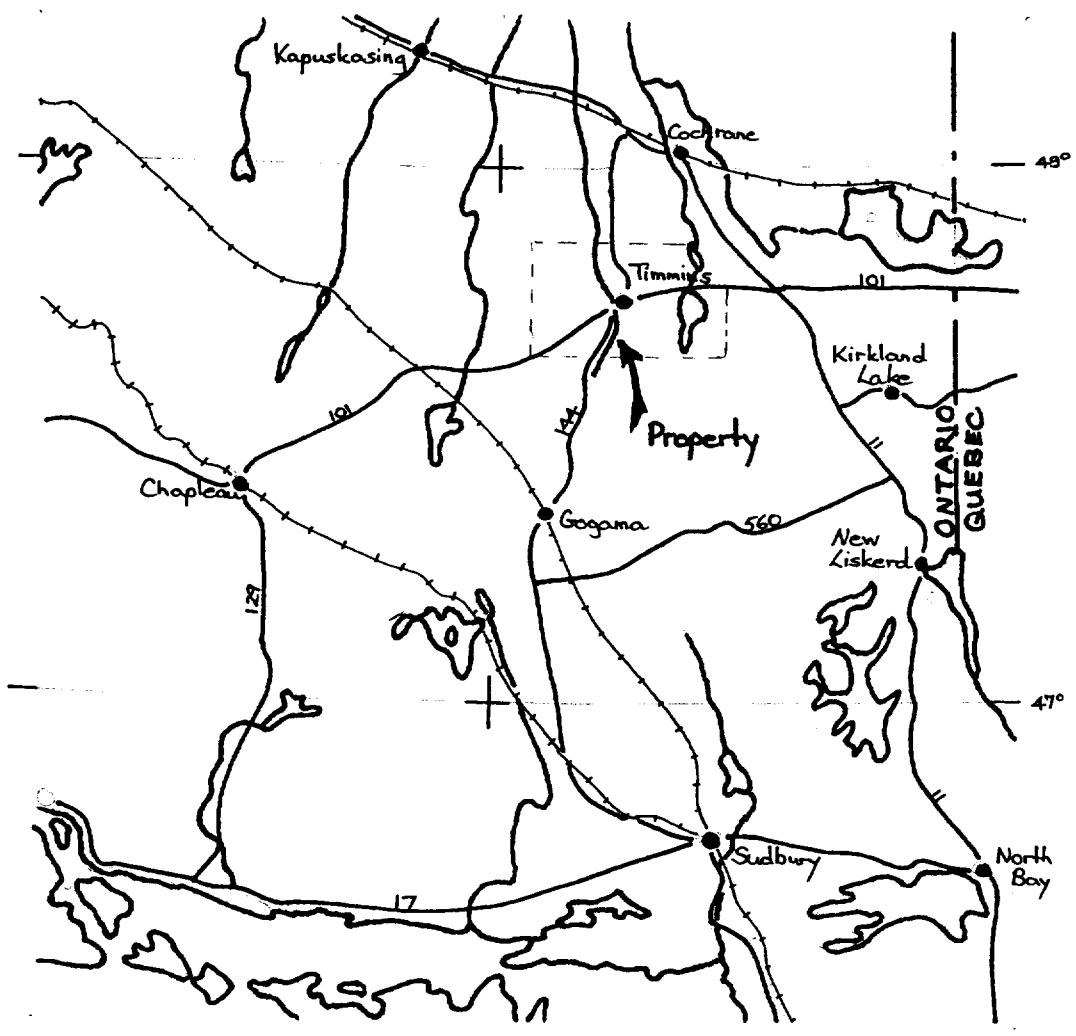
The Ogden property (figure 2) consists of 50 claim units contained in 4 contiguous unpatented claim blocks mining claims numbered 1212630, 1212722, 1212723 and 1212724.

**2) DATA ACQUISITION**

**2.1) GRID SPECIFICATIONS**

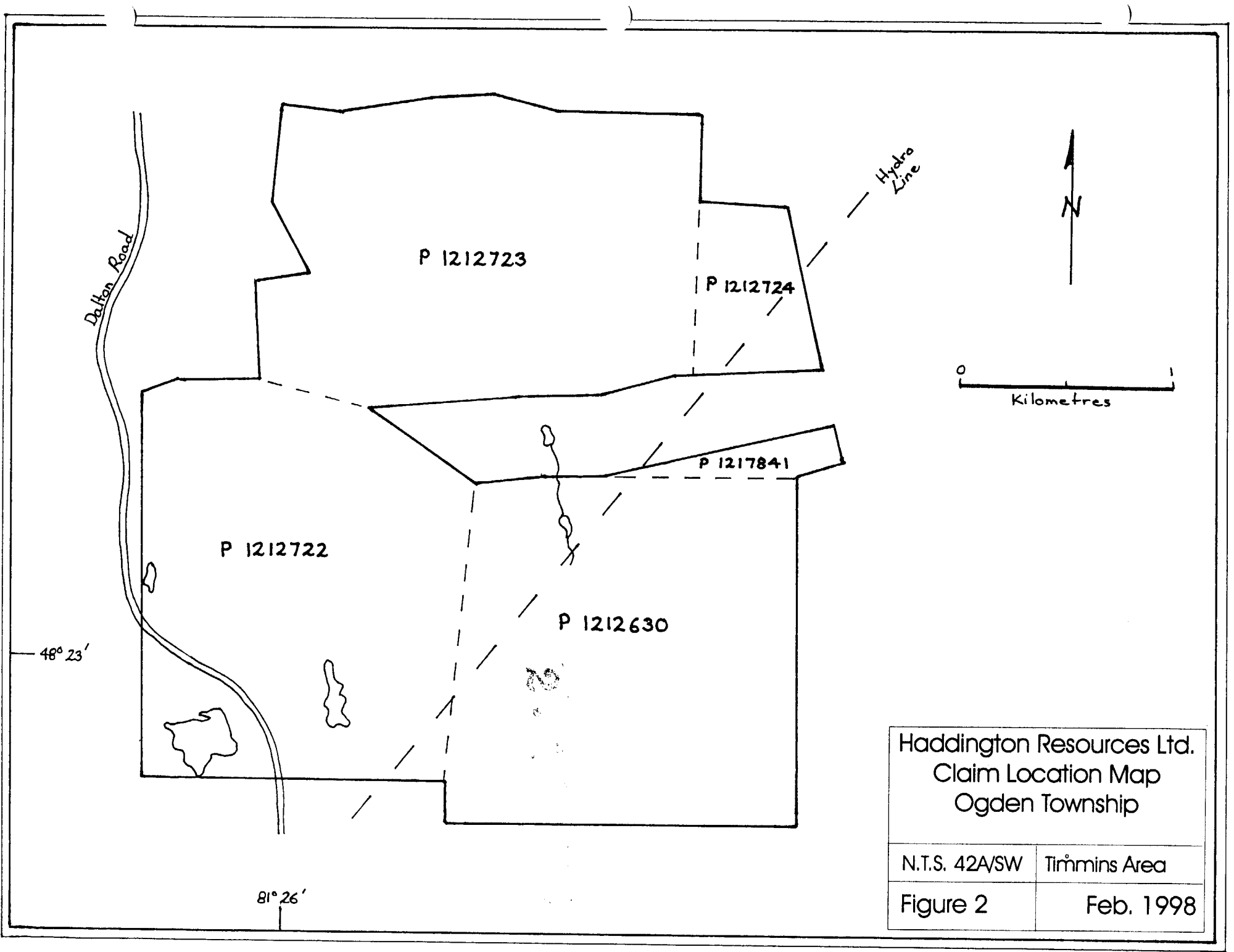
The Ogden grid (figure 3) consists of fifteen cut lines (L 0 – 2800 inclusive).

A baseline was established at 00 north between 0 and 2800 east and at 800 north. Tie lines were established at 1450 north and 800 south. The entire grid had a station spacing of 25 meters and a line separation of 200 meters.



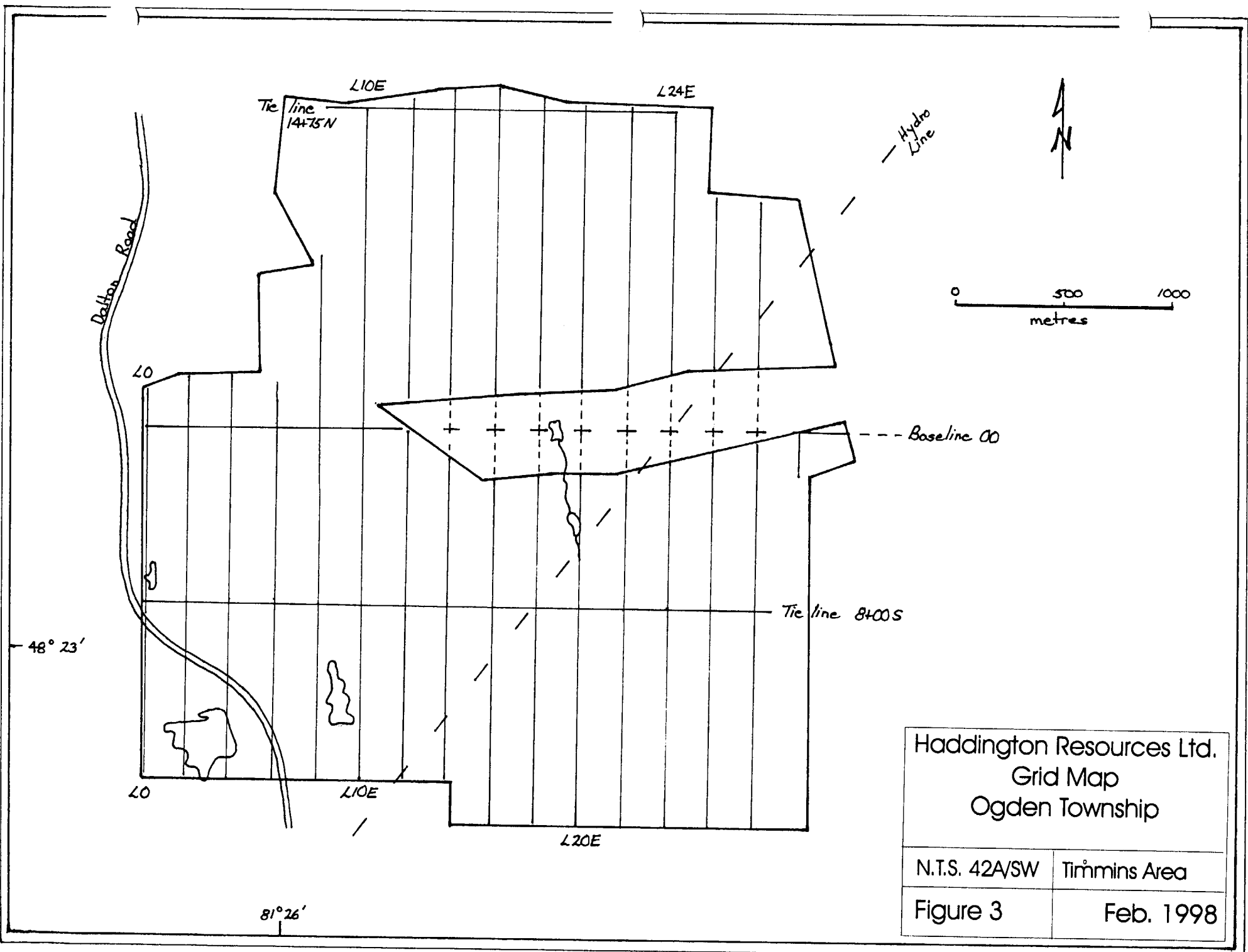
Haddington Resources Ltd.  
 Property Location Map  
 Ogden Township

N.T.S. 42A/SW	Timmins' Area'
Figure 1	Feb. 1998



Haddington Resources Ltd.  
Claim Location Map  
Ogden Township

N.T.S. 42A/SW	Timmins Area
Figure 2	Feb. 1998



Haddington Resources Ltd. Grid Map Ogden Township	
N.T.S. 42A/SW	Timmins Area
Figure 3	Feb. 1998

## 2.2) SURVEY SPECIFICATIONS

All data were collected utilizing a Gem Systems GSM-19 Overhauser magnetometer with an integrated VLF receiver. The instrument collected magnetic and VLF EM data every 12.5 meters along the crosslines, baselines and tielines.

The magnetic data was corrected for diurnal variations using a GSM-19 base station cycling every 3 seconds.

The VLF station near Cutler Maine (24.0 kHz) was selected and used for the duration of the survey. The bearing in Ogden township to Cutler is approximately 100 degrees this gave good electro-magnetic coupling with the east-west geological trend.

## 2.3) PRODUCTION SUMMARY

A total of 44.6 kilometers were surveyed during the program including the base and tielines.

## 2.4) PERSONNEL

David Brown (Geophysicist): Mr. Brown operated the Gem GSM-19, was responsible for the data collection, processing, plotting and the linecutting.

Ulo Paltser (Engineer): Mr. Paltser operated the Gem GSM-19, chained lines wrote the report

Matt Hoiko (Geophysical Technician): Mr. Hoiko operated the Gem GSM-19.

The Linecutting was subcontracted to Natives Exploration Services of Chibougamou Quebec and Jack the Bear Exploration Services of Timmins.

## 3.0) DATA PROCESSING

After being down loaded to a computer at the end of each survey day the data were examined, corrected and plotted using GeoPak and in-house software. The magnetic data were posted, contoured and plotted at the end of the survey. The electro-magnetic results were profiled and plotted as line drawings.

## **4.0) INTERPRETATION**

### **4.1) MAGNETIC DATA**

Magnetic data reflects the relative magnetic susceptibilities of the various rock types on the survey area.

The magnetic results were plotted and studied for lateral changes in the magnetic field. Magnetic anomalies were selected and estimates of depth and spatial orientation were determined. The anomalies were classified by their strength and labeled as MH for magnetic highs or labeled ML as magnetic lows.

### **4.2) VLF ELECTRO-MAGNETIC DATA**

Magnetic data reflects the relative magnetic susceptibilities of the various rock types on the survey area.

The VLF data were plotted and studied for conductive anomalies. EM conductors were selected and estimates of spatial orientation of their axis were determined. The conductors were labeled EM 1, EM2 etc.

## **5) DISCUSSION OF RESULTS**

### **5.1) MAGNETIC SURVEY**

There were four magnetic anomalies detected on the Ogden grid. They are described as follows:

- MH1** *L6700E, 1000N – L6200E, 1200N*  
4000 nanoTesla high  
Approximately 100 meters to top of anomaly  
Near vertical structure
  
- MH2** *L00E, 200S – L1400E, 00N*  
5000 nanoTesla high  
Approximately 100 meters to top of anomaly
  
- MH3** *L1600E, 450N – L2400E, 450N*  
4000 nanoTesla high  
Approximately 100 meters to top of anomaly  
Shallow near vertical structure  
Possible faulted offset of MH3



**MH4** *L1000E, 1000N – L2400E, 1000N*  
2000 nanoTesla high  
Shallow near vertical structure

## 5.2) VLF ELECTRO-MAGNETIC SURVEY

There was one major electro-magnetic anomaly detected on the Ogden grid. The large conductor trending from L1400E, 1500S to L2800E, 500N is due to a power line in the area.

The conductor is described as follows:

**EM1** *L00E, 1000S – L600E, 1500S*  
Moderate – weak conductor

## 6) CONCLUSIONS

The magnetic survey detected four magnetic high zones that are interpreted as probable iron formations. If there is any evidence of gold mineralisation occurring with the iron formations in the surrounding areas the targets should be sampled by drilling.

The electro-magnetic survey detected one major conductor over the property. The conductor is possibly due to a fault. The EM anomaly cross cuts the geologic trend in the area and is considered a low priority target.

### 6.1) RECOMMENDATIONS

The depth of overburden in the area probably masked the VLF EM response. If another survey is warranted it would be recommended that IP be used to geophysically survey the property.

Respectfully Submitted

  
David Brown



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)
W9860.00/26
Assessment Files Research Imaging



42A06NW2005 2.18175 OGDEN

900

Sections 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, this work and correspond with the mining land holder. Questions about this collection contact the Ministry of Northern Development 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.

Sj

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

Name	Noront Resources Ltd.	Client Number	176367
Address	Suite 1800, 95 Wellington St. W.	Telephone Number	(416) 864 1457
	Toronto, Ontario M5J 2N7	Fax Number	(416) 947 0807
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	Geophysical Survey line cutting	Office Use	
		Commodity	
		Total \$ Value of Work Claimed	25,064. <sup>00</sup>
Dates Work Performed	From 31 Day 01 Month 1998 Year To 15 Day 02 Month 1998 Year	NTS Reference	
Global Positioning System Data (if available)	Township/Area	Mining Division	Porcupine
	Ogden Twp.	Resident Geologist District	Timmins
	M or G-Plan Number		
	G-3979		

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.

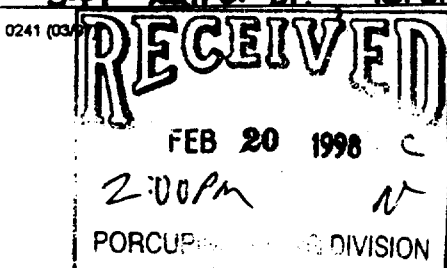
### 3. Person or companies who prepared the technical report (Attach a list if necessary)

Name	David L. Brown	Telephone Number	(905) 523-8675
Address		Fax Number	
Name	Ulo Paltser	Telephone Number	(416) 421-7048
Address	349 Laird Dr. Toronto, Ontario M4G 3Y1	Fax Number	
Name		Telephone Number	
Address		Fax Number	

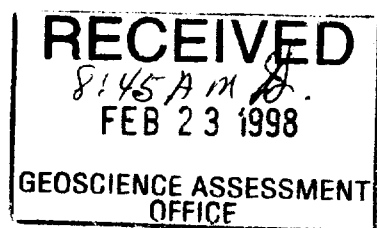
### 4. Certification by Recorded Holder or Agent

I, Ulo Paltser (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	U. Paltser	Date	Feb 18/98
Agent's Address	349 Laird Dr. Toronto, Ont.	Telephone Number	(416) 421-7048
		Fax Number	



Deemed May 21 1998



5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

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 of work to be distributed at a future date
eg TB 7827	16 ha	\$28,825	N/A	\$24,000	\$2,825
eg 1234567	12	0	\$24,000	0	0
eg 1234568	2	\$ 8,892	\$ 4,000	0	\$4,892
1 1212630	16	# 7049.00	# 6400		# 649
2 1212722	16	# 9365.00	# 6400		# 2965
3 1212723	15	# 7576.00	# 6000	# 866	# 650
4 1212724	3	# 864.00	# 1200		
5 1217841	2	# 270.00	# 800		
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
Column Totals	52	# 25,064	# 20,800	# 866	# 4264

I, Ulo Paltser (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing

*U. Paltser*

Date

Feb. 18/98

6. Instructions for cutting back credits that are not approved.

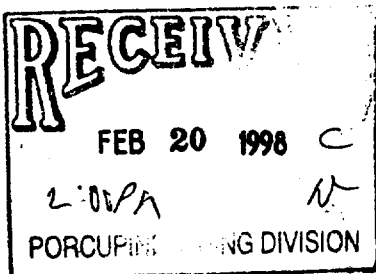
Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

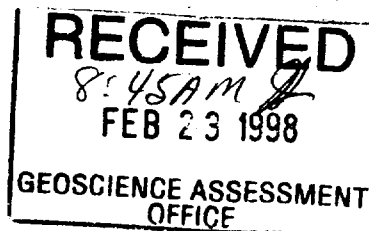
For Office Use Only

Received Stamp



0241 (03/97)

Deemed Approved Date	Date Notification Sent
Date Approved	Total Value of Credit Approved
Approved for Recording by Mining Recorder (Signature)	



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 Mining 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 about this collection should be directed to a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Work Type	Units of work 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 Cost
Geophysics (mag + VLF-EM)	44.6 km	\$ 215 / km	\$ 9,589.00
Line cutting (base tie lines)	5.6 km	\$ 500 / km	2,800.00
(grid lines)	39.0 km	\$ 325 / km	12,675.00
Associated Costs (e.g. supplies, mobilization and demobilization).			
Transportation Costs			
Food and Lodging Costs			
<b>Total Value of Assessment Work</b>			<b>\$ 25,064.00</b>

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 claimed.

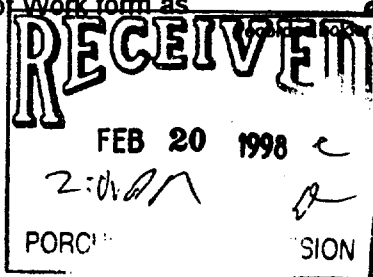
Note:

- 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.

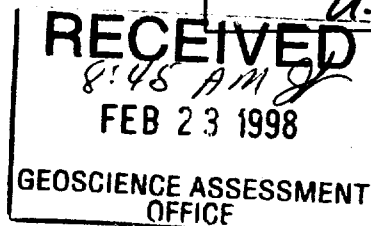
Certification verifying costs:

I, Ulo Paltser, 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 agent I am authorized to make this certification.  
(please print full name) (agent, or state company position with signing authority)



Signature U. Paltser Date Feb 18/98



May 7, 1998

NORONT RESOURCES LTD.  
95 WELLINGTON STREET WEST  
SUITE 1800  
TORONTO, ONTARIO  
M5J-2N7

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

Telephone: (888) 415-9846  
Fax: (705) 670-5881

Dear Sir or Madam:

**Submission Number: 2.18175**

**Status**

**Subject: Transaction Number(s):** W9860.00126 **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.

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 Steve Beneteau by e-mail at [benetest@epo.gov.on.ca](mailto:benetest@epo.gov.on.ca) or by telephone at (705) 670-5855.

Yours sincerely,



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

# Work Report Assessment Results

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**Submission Number:** 2.18175

**Date Correspondence Sent:** May 07, 1998

**Assessor:** Steve Beneteau

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<b>Transaction Number</b>	<b>First Claim Number</b>	<b>Township(s) / Area(s)</b>	<b>Status</b>	<b>Approval Date</b>
W9860.00126	1212630	OGDEN	Deemed Approval	April 29, 1998

**Section:**

14 Geophysical MAG

14 Geophysical VLF

**Correspondence to:**

Resident Geologist  
South Porcupine, ON

**Recorded Holder(s) and/or Agent(s):**

Ulo Paltser  
TORONTO, ON, CAN

Assessment Files Library  
Sudbury, ON

NORONT RESOURCES LTD.  
TORONTO, ONTARIO

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MAP SYMBOLOLOGY	
Aerial Cableway	Pipeline (above ground)
Boundary	Railroad
International	Single Track
District Territory	Double Track
Local Boundary	Abandoned
Approximate	Utility
Lot, Concession	Road
Approximate	Highway, County
Part Boundary	Township
Bridge	Access (road of doubtful maintenance or significant driveway)
Road, Millstone	Front, Back Road (under utility)
Building	Road
Chimney	Rapids
Cliff, Pit, Pile	Double line river with multiple rapids
Contours	Double line river with multiple rapids
International	Reservoir
Approximate	River, Stream, Canal
Destruction	Approximate
Control Points	Approximate
Horizontal	Vertical
Vertical	Horizontal
Culvert	Spot Elevation (above natural)
Falls	Tower
Fence, Hedge, Wall	Transmission Line
Feature Outline (contour lines, etc.)	Price
Flooded Land	Spine
Lock	Tunnel
Marsh or Swamp	Utility Poles
Mast	Wharf, Dock, Pier
Mine Head Frame	Wooded Area
Outcrop	

**REFERENCES**

L.O. 6613 "BOOMING GROUNDS" COVERS THE WESTERLY HALF OF THE BED OF THE MATTAGAMI RIVER FLOWING THROUGH THE TOWNSHIP FILE: 73543

**AREAS WITHDRAWN FROM DISPOSITION**

M.R.O. - MINING RIGHTS ONLY  
 S.R.O. - SURFACE RIGHTS ONLY  
 M.+S. - MINING AND SURFACE RIGHTS

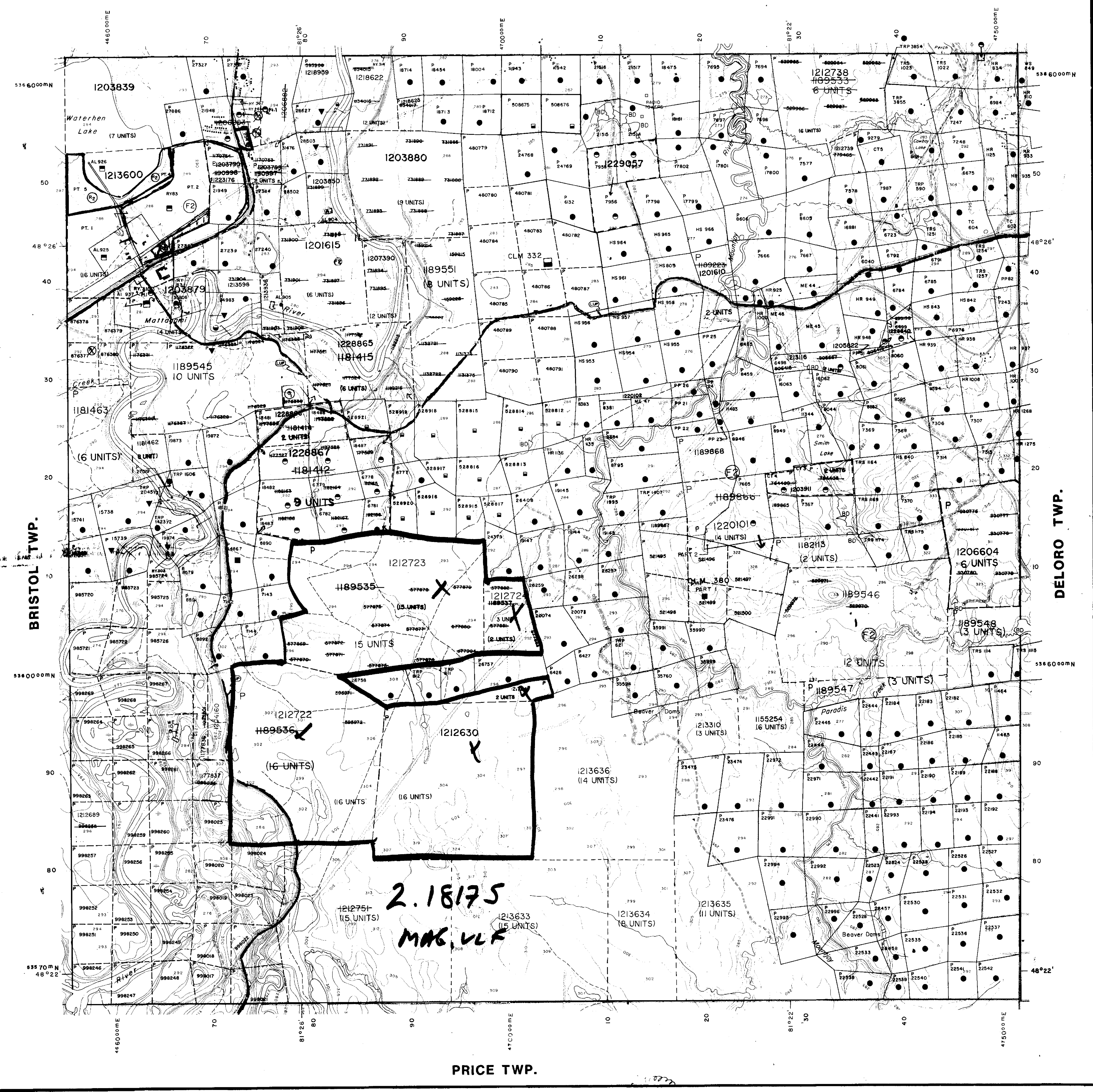
Disposition	Order No.	Date	Disposition	File
1	A.F.D.		APPLICATION UNDER P.L.A. FOR SURFACE RIGHTS	
2	NRW 5179, 21179	S.R.O.		
3	30NA	FIDE	APPLICATION UNDER P.L.A., MAY 9, 1995	
4	30NA	FIDE	APPLICATION UNDER P.L.A., MAY 9, 1995	
5			APPLICATION PENDING UNDER PUBLIC LANDS ACT (UNKNOWN TRAIL)	
6			AGGREGATE PERMIT	
7			APPLICATION PENDING UNDER PUBLIC LANDS ACT SEP. 09/95	

1 - THIS TWP. IS SUBJECT TO FORESTRY ACTIVITIES IN 1995/96. FURTHER INFORMATION AVAILABLE ON FILE.

2 - THIS TWP. SUBJECT RIGHTS TO FOREST ACTIVITY IN 1995/96. FURTHER INFORMATION AVAILABLE ON FILE.

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 NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

**MOUNTJOY TWP.**



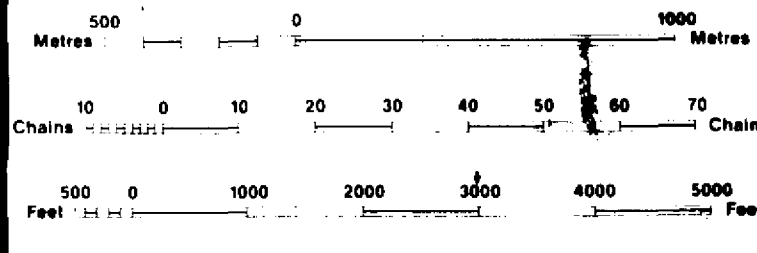
**LEGEND**

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 MUSKOG	
MINES	
TRAVERSE MONUMENT	

**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	
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. 1913, CHAP. 380, SEC. 63, SUBSEC. 1



**NOTES**

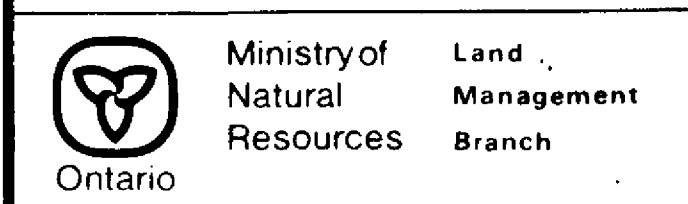
**DATE OF ISSUE**

MAR 31 1998

PROVINCIAL RECORDING OFFICE - SUDBURY

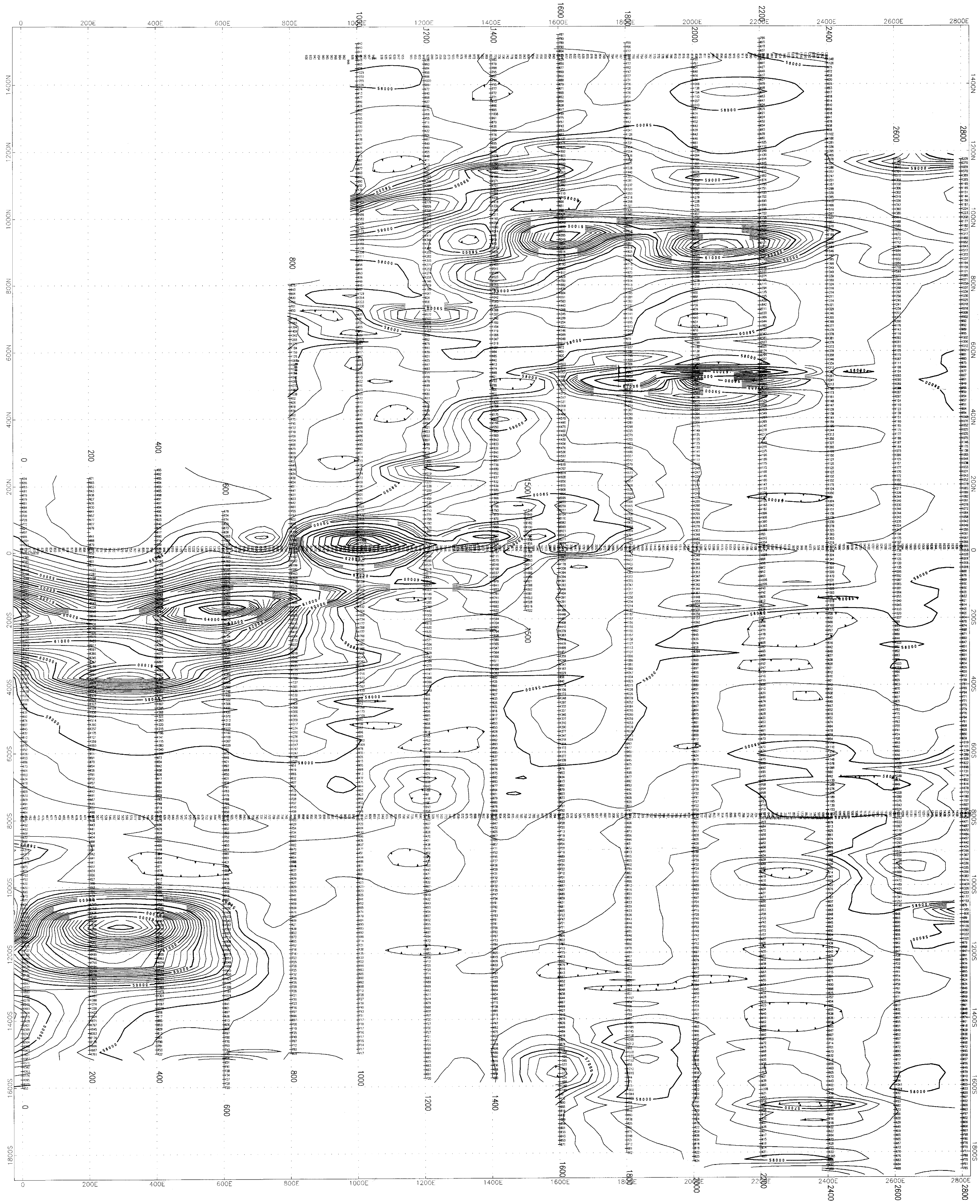
**TOWNSHIP**  
**OGDEN**

M.N.R. ADMINISTRATIVE DISTRICT  
**TIMMINS**  
 MINING DIVISION  
**PORCUPINE**  
 LAND TITLES / REGISTRY DIVISION  
**COCHRANE**

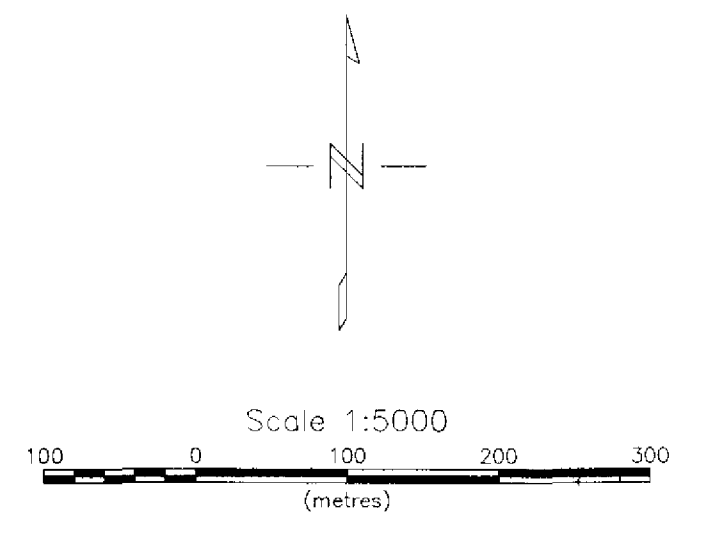


ORIGINAL COMPILATION JULY 1984

Number  
**G-3979**

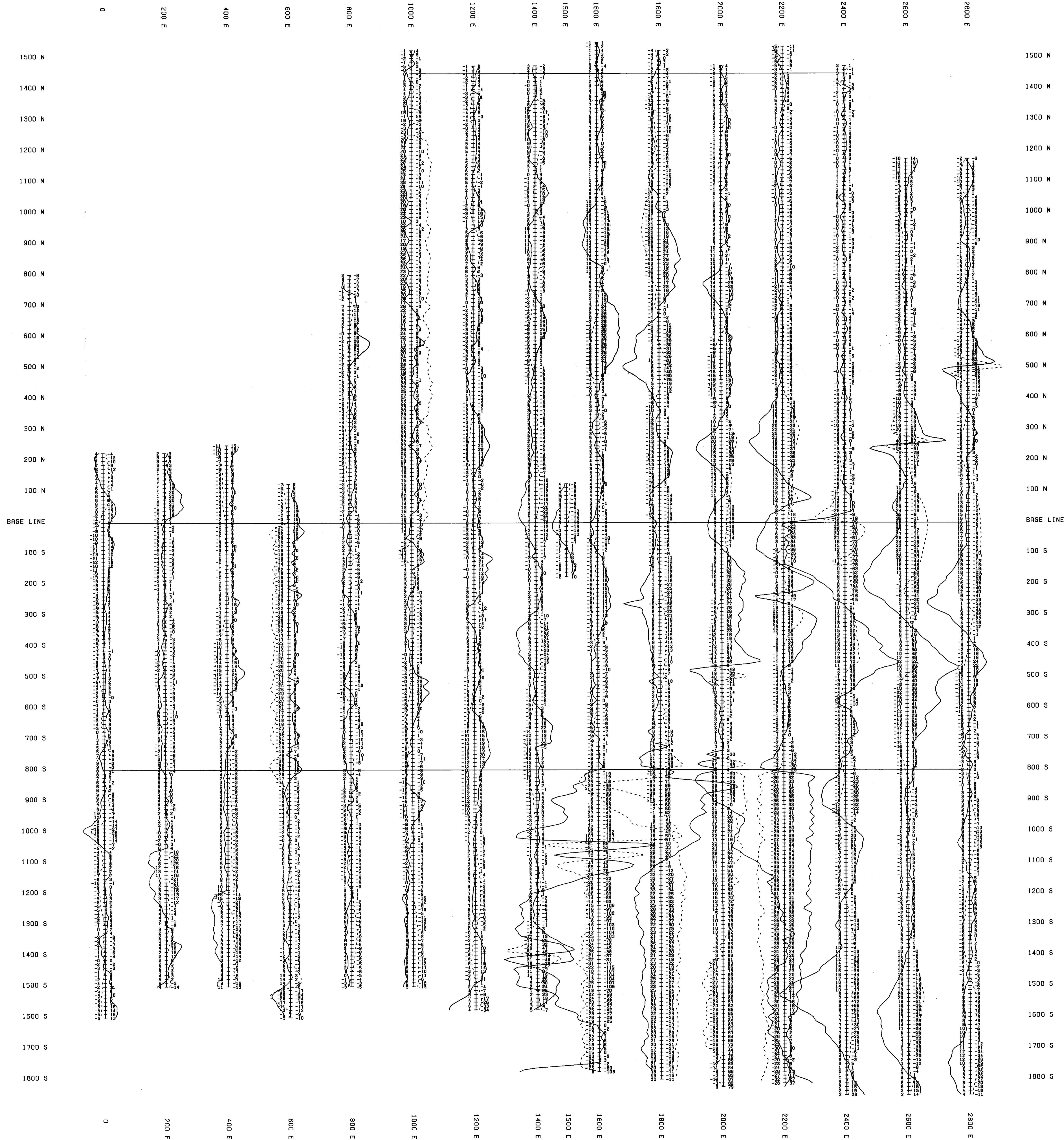


2.18175



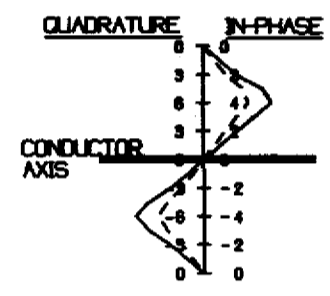
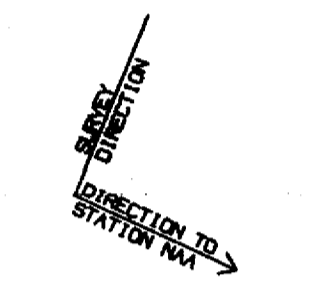
Haddington Resources Ltd.  
 Total Field Magnetic Map  
 Ogden Property  
 Ogden Township, Timmins Area  
 Gem Systems GSM-19  
 Base station Corrected  
 February 1998  
 All readings + 57000 nT  
 D L Brown and Associates





**VLF-EM LEGEND**

INSTRUMENT: GEM GSM-19 MAGNETOMETER/VLF  
 PARAMETERS MEASURED: IN-PHASE AND QUADRATURE  
 READING INTERVAL: 12.5  
 PROFILE SCALE: 1 = 20%  
 STATION: CUTLER MAINE NAA-24.0 KHZ.



Client: HADDINGTON RESOURCES LIMITED

Property: OGDEN PROPERTY

Title:  
 VLF-EM SURVEY  
 24.0 KHZ. CUTLER MAINE

Processed: DLB	Checked: DLB
Date: FEB/98	Township: OGDEN
Province: ONT.	N.T.S.: 42A/5N
Scale: 1:5,000	Drawing: VLF