



32D04SW0181 2.7484 MCELROY

010

REPORT ON
VLF-EM SURVEY
MOLY HILL GROUP
MCELROY TOWNSHIP, ONTARIO

by

R.A. MacGregor, P. Eng.

November 9, 1984

I. INTRODUCTION

A VLF-EM survey was carried out on a block of 10 claims in the west central part of McElroy Township over previously cut lines. The linecutting was done in November 1980 and VLF-EM instrument work was completed in September 1984.

II. LOCATION, ACCESS AND OWNERSHIP

The property is located in the west central part of McElroy Township, Ontario, Larder Lake Mining Division, west of the Misema River. There are 10 claims covered by the survey numbered L512333 to L512342 inclusive. The claims are recorded in the name of R.A. MacGregor, 134 Palace Dr., Sault Ste. Marie, Ontario.

A good gravel road leading from the Adams Iron Mine of Dofasco Limited to their pumphouse on the Misema River bisects the claims. The Adams mine may be reached from Highway 112 by way of a paved secondary Highway 650 from Dane, Ontario about 10 miles south of Kirkland Lake. Permission to use the pumphouse road which is closed to traffic by a gate, may be obtained at the Mine security office.

There is a large diameter water-line buried along the north side of the road. A powerline to the pumphouse runs just to the south of the road. There is also a decant tower from the tailing pond which covers the south west part of the claims, with a buried pipeline running to the Misema River to carry the decant overflow.

III. PREVIOUS EXPLORATION

There are a number of old pits and trenches on the claims from previous surface prospecting. A number of these contain molybdenum mineralization with other sulphides.

In the area where line 46SE crosses the baseline, there is evidence of old diamond drilling. Assessment records record the drilling of 4 holes by the McElroy Syndicate on this showing. The holes record a breccia with scattered molybdenum values.

IV. TOPOGRAPHY

The topography of the claims is relatively flat with considerable swamp and beaver ponds. Rock outcrops usually 20 to 30 feet above the surrounding level ground or swamp and are often quite rugged. The entire area has been cut over and is covered with a dense second growth of small trees, underbrush and tag alders. The south west part of the claims are flooded by the decant area of the Adams mine tailing area.

V. GEOLOGY

The area was mapped in some detail by E.M. Abraham (1) in 1947-1948. Abraham's map No. 150-3 at 1 inch = 1,000 feet shows the claims to be underlain by sedimentary and volcanic rocks intruded by small mafic dykes and plugs. The McElroy stock lies just to the east of the claims and possibly under-lying part of the south-east corner of the claims.

(1) E.M. Abraham O.D.M. Vol. 59 part 6 1950

VI. SURVEY PROCEDURE

A previously cut baseline to the north was extended from picket 36SE to 54SE. A tieline was turned off at 90° from 46SE and cut SW to the Adams mine tailings decant pond. At 28 + 00 SW a baseline was turned off at 90° (parallel to the previous baseline) and cut north-west to picket 24SE and south-east to picket 84SE. Crosslines were cut at 200-foot intervals perpendicular to the baseline north east to the claim boundaries or the north baseline and south-west to the tailings decant pond or a previously cut tieline. All lines were chained and picketed every 100 feet.

A VLF-EM survey was carried out using a Phoenix VLF-2 instrument set to the signal from Annapolis, Maryland (21.4 KHz). Readings were taken at 100-foot intervals using the procedure outlined in Appendix I along lines 400 feet apart. The looping method was used for control of variation and the time was noted for each station. Results were plotted on 1" = 400' scale plans.

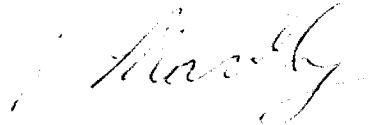
VII. DISCUSSION OF RESULTS

There are a number of cross-overs of potential interest from the VLF-EM survey.

Discussion of Results (Continued)

Most of these cross-overs are in similar locations to that shown by the previous survey using Cutler, Maine as the station signal. The cross-overs should be checked by a vertical loop or Max Min survey.

Respectfully submitted



November 9, 1984

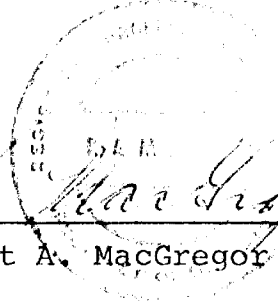
R.A. MacGregor, P. Eng.

CERTIFICATE

I, Robert A. MacGregor, Certify:

1. I am a Mining Engineer residing at 134 Palace Drive Sault Ste. Marie, Ontario. I have worked as a mining engineer and geologist for the past 17 years.
2. I am a member of the Association of Professional Engineers of the Province of Ontario and a member of the Canadian Institute of Mining and Metallurgy.
3. I attended Queen's University for two years in the Mining Geology course.
4. I am the recorded holder of the mining claims in this report and have personal knowledge of the work performed.

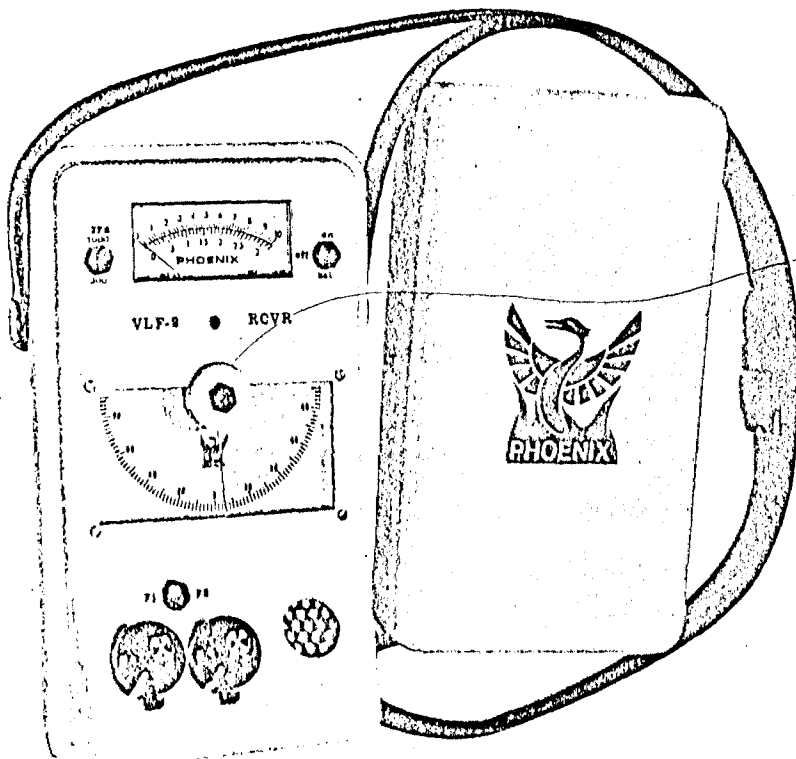
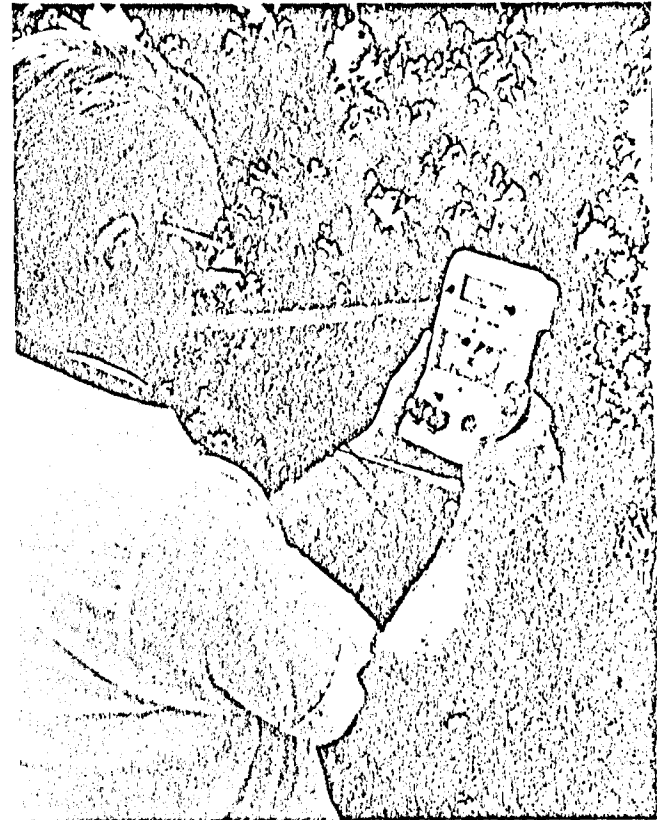
Nov 9/84
Date

A circular professional seal for Robert A. MacGregor, P. Eng. The seal contains the text "PROFESSIONAL ENGINEER" around the top edge, "R. A. MACGREGOR" in the center, and "P. ENG." at the bottom. The seal is partially obscured by a handwritten signature.
Robert A. MacGregor
Robert A. MacGregor

VLF-2

Electromagnetic Unit

- Lightweight, low battery drain, rugged, simple to operate
- Two independent channels
- Each channel may select any station between 14.0 and 29.9 kHz
- Single crystal used for all frequencies
- Locking clinometer provides tilt-angle memory
- Superheterodyne detection and digital filtering provide extremely high selectivity and noise rejection



Military and time standard VLF transmitters are distributed over the world. These stations are used for geophysical EM surveying thus eliminating the need for a local transmitter and permitting one-man operation.

To ensure that a station excites the prospective conductor, two stations at approximately right angles are used during a survey (see data on back).

The choice of 160 frequencies in the range 14.0 to 29.9 kHz permits the use of a local EM transmitter when no suitable regular VLF station is available.



PHOENIX GEOPHYSICS LIMITED

Geophysical Consulting and Contracting, Instrument Manufacture, Sale and Lease.

Head Office: 200 Yorkland Blvd. Willowdale, Ont., Canada, M2J 1R6. Tel: (416) 493-6350
1424 - 355 Burrard St. Vancouver, B.C., Canada, V6C 2G8. Tel: (604) 684-2285
9420 N. Huebner Dr. Tucson, Arizona, U.S.A. 85705. Tel: (602) 884-8542

Specifications

Parameter Measured	:	Orientation and magnitude of the major and minor axes of the ellipse of polarization.
Frequency Selection, Front Panel	:	Dual channel, front panel selectable (F1 or F2) each with independent precision 10-turn dial gain control.
Frequency Selection, Internal	:	F1 and F2 can be selected by internal switches within the range 14.0 to 29.9 kHz in 100 Hz increments.
Detection And Filtering	:	Superheterodyne detection and digital filtering provide a much narrower bandwidth and thus greater rejection of interfering stations and 60 cycle noise than conventional receivers.
Meter Display	:	2 ranges: 0 to 300 or 0 to 1000. Background is typically set at 100. Meter is also used as dip angle null indicator and battery test.
Audio	:	Crystal speaker. 2500 Hz used as null indicator.
Clinometer	:	+90°, +0.5° resolution. Normal locking, push button release.
Battery	:	One standard 9v transistor radio battery. Average life expectancy - 1 to 3 months (battery drain is 3 mA)
Temperature Range	:	-40° to + 60° C.
Dimensions	:	8 x 22 x 14 cm (3 x 9 x 6 inches).
Weight	:	850 grams (1.9 pounds).

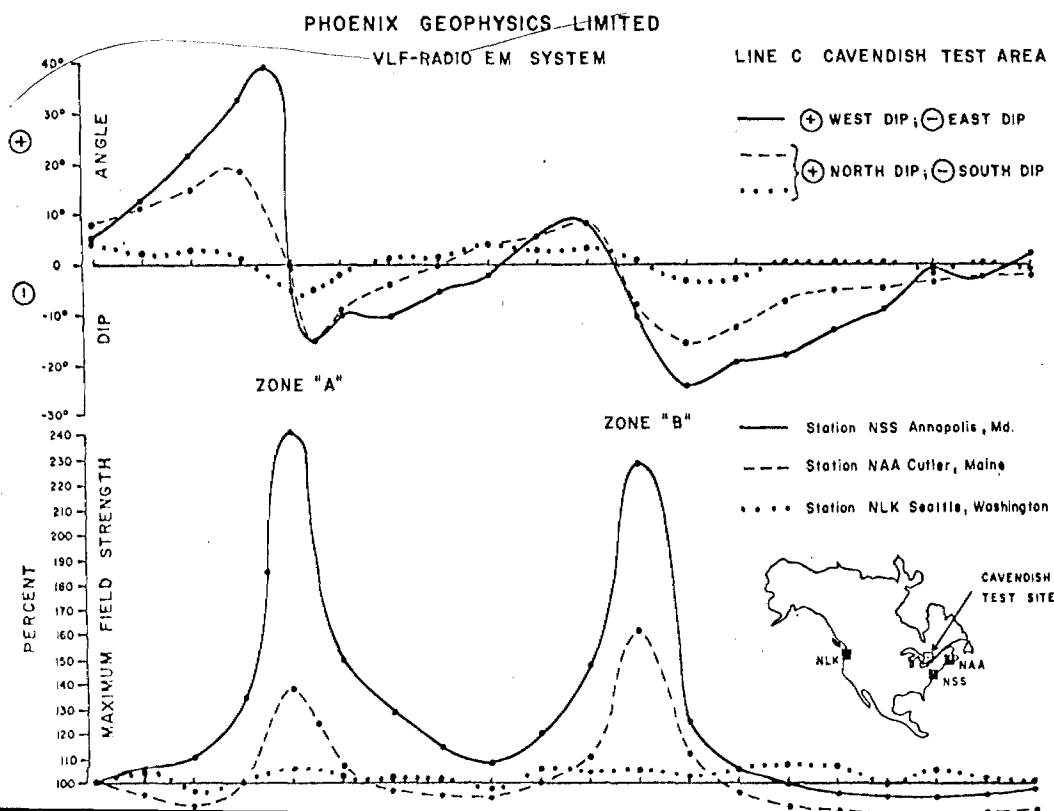
All of the established stations may be selected, or alternatively, a local VLF transmitter may be used which transmits at any frequency in the range 14.0 to 29.9 kHz.

VLF Station	Frequency (kHz)
Bordeaux, France	15.1
Odessa (Black Sea)	15.6
Rugby, U.K.	16.0
Moscow, U.S.S.R.	17.1
Yosama, Japan	17.4
Hegaland, Norway	17.6
Cutler, Maine	17.8
Seattle, Washington	18.6
Malabar, Java	19.0
Oxford, U.K.	19.6
Paris, France	20.7
Annapolis, Maryland	21.4
Northwest Cape, Australia	22.3
Laulualei, Hawaii	23.4
Buenos Aires, Argentina	23.6
Rome, Italy	27.2

Field Data

The results below illustrate the need for using two orthogonal stations when the strike of the prospective conductor is not well-known. The dip angle and amplitude data measured using station NLK in Seattle, Washington, show only a very weak anomaly associated with the two conductive sulphide zones at Cavendish, Ontario.

The results obtained using Cutler, Maine reveal a more prominent anomaly, but the best response was obtained using Annapolis, Maryland since the station lies almost due south and the transmitted electromagnetic field is thus maximum-coupled with the North-South trending conductors.



LANDS
MAN
(11)
Outcrop

Report of Work
Geophysical, Geological,
Geochemical and Expenditures)

(File 1512.333) The Mining



1730 No. 1. R

900

Type of Survey(s) **VLF-EM** | **McElroy**

Claim Holder(s) **R.A. MacGregor** | Prospector's Licence No. **K-15070**

Address **134 Palace Dr., Sault Ste. Marie, Ontario P6B 5H5**

Survey Company **Colex Explorations Inc.** | Date of Survey (from & to) **9 84** | Total Miles of line Cut **8 84**
Day | Mo. | Yr. | Day | Mo. | Yr.

Name and Address of Author (of Geo Technical report)

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

Mining Claims Traversed (List in numerical sequence)

Prefix	Mining Claim Number	Expend. Days Cr.	Prefix	Mining Claim Number	Expend. Days Cr.
L	512333				
	512334				
	512335				
	512336				
	512337				
	512338				
	512339				
	512340				
	512341				
	512342				

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures ÷ =

Total Days Credits

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.

WORK CREDITS REDUCED TO 15 DAYS ON CLAIM 1512.342

Total number of mining claims covered by this report of work. **10**

For Office Use Only

Total Days Cr. Recorded **195** | Date Reported **SEP 27 1984** | Mining Recorder

Date Approved as Recorded **See Revised Statement** | Branch Director

Date **Sept 20/84** | Recorded Holder or Agency (Signature) *R.A. MacGregor*

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 **R.A. MacGregor, 134 Palace Dr. Sault Ste. Marie, Ontario P6B 5H5**

Date Certified **Sept 20/84** | Certified by (Signature) *R.A. MacGregor*



GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL
 TECHNICAL DATA STATEMENT

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

Township or Area McElroy

Claim Holder(s) R.A. MacGregor

Survey Company Colex Explorations Inc.

Author of Report R.A. MacGregor

Address of Author 134 Palace Dr, Sault Ste. Marie

Covering Dates of Survey September 1984-November 1984
(linecutting to office)

Total Miles of Line Cut -----

MINING CLAIMS TRAVERSED	
List numerically	
<u>L512333</u>	
(prefix)	(number)
<u>L512334</u>	
<u>L512335</u>	
<u>L512336</u>	
<u>L512337</u>	
<u>L512338</u>	
<u>L512339</u>	
<u>L512340</u>	
<u>L512341</u>	
<u>L512342</u>	
TOTAL CLAIMS <u>10</u>	

<u>SPECIAL PROVISIONS</u>	<u>DAYS</u>
<u>CREDITS REQUESTED</u>	<u>per claim</u>
Geophysical	
– Electromagnetic <u>20</u>	
– Magnetometer _____	
– Radiometric _____	
– Other _____	
Geological _____	
Geochemical _____	

ENTER 40 days (includes line cutting) for first survey.
 ENTER 20 days for each additional survey using same grid.

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
 Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: Nov. 9, 1984 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. _____ Qualifications 2.1102

Previous Surveys

File No.	Type	Date	Claim Holder

OFFICE USE ONLY

If space insufficient, attach list

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 419 Number of Readings 419
Station interval 100 feet Line spacing 400 feet
Profile scale 1" = 40'
Contour interval

MAGNETIC

Instrument
Accuracy - Scale constant
Diurnal correction method
Base Station check-in interval (hours)
Base Station location and value

ELECTROMAGNETIC

Instrument Phoenix VLF-2
Coil configuration N/A
Coil separation N/a
Accuracy +/- 1/2 degree
Method: [X] Fixed transmitter [] Shoot back [] In line [] Parallel line
Frequency Annapolis, Maryland (21.4 KHz)
Parameters measured Dip angle of the resultant field

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

Mining Lands Section

File No 27984

Control Sheet

TYPE OF SURVEY GEOPHYSICAL
 GEOLOGICAL
 GEOCHEMICAL
 EXPENDITURE

MINING LANDS COMMENTS:

L.D. lga

A. B. West
Signature of Assessor

8-01-09
Date

1985 02 05

Your File: 430
Our File: 217484

Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

RE: Notice of Intent dated January 15, 1985.
Geophysical (Electromagnetic) Survey on
Mining Claims L 512333 et al in McElroy
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,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-6918

S. Hurst:sc

cc: R.A. MacGregor
134 Palace Drive
Salt Ste. Marie, Ontario
P6B 5H5

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

cc: Resident Geologist
Timmins, Ontario

Recorded Holder	R.A. MacGREGOR
Township or Area	McELROY TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic _____ 20 days Magnetometer _____ days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological _____ days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/> <input type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	L 512333 512337 to 342 inclusive

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

<u>15 DAYS</u>	<u>5 DAYS</u>
L 512334-36	L 512335

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:



Jan 30/85

1985 01 15

Your File: 430
Our File: 2.7484

Mining Recorder
Ministry of Natural Resources
4 Government Road East
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. R.J. Pichette at 416/965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3

RJ S. Hurst:mc

Encls.

cc: R.A. MacGregor
134 Palace Drive
Sault Ste. Marie, Ontario
P6B 5H5

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



Ministry of
Natural
Resources

Notice of Intent
for Technical Reports

1985 01 15

2.7484/430

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Land Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.

December 21, 1984

File: 2.7484

R.A. McGregor
134 Palace Drive
Sault Ste. Marie, Ontario
P6B 5H5

Dear Sir:

RE: Geophysical (Electromagnetic) Survey
submitted on Mining Claims L 512333
et al in McElroy Township

This will acknowledge receipt of the above-described survey on November 28, 1984.

Returned herein is the plan (in duplicate) for the above-described submission. On each, please indicate the north direction and show all claim numbers. When returning this material, please quote file 2.7484.

For further information, please contact Susan Hurst at (416)965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416)965-4888

S. Hurst:mc

cc: Mining Recorder
Kirkland Lake, Ontario

Encl.

P.O. BOX 1110
SAULT STE. MARIE
ONTARIO P6A 5N7

R. A. MACGREGOR, P.ENG.
MINING ENGINEER
134 PALACE DRIVE
SAULT STE. MARIE, ONTARIO
P6B 5H5

OFFICE:
705-949-5928
HOME:
705-949-4250

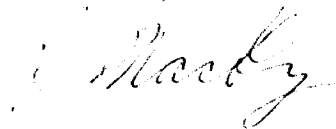
Nov. 26, 1984

PROJECTS BRANCH
MINISTRY OF NATURAL RESOURCES
Room 1617
Mining Lands Section
Whitney Block
Queen's Park
TORONTO, Ontario
M5C 2M6

Dear Sir or Madam:

Enclosed are reports on VLF-EM Survey, Moly Hill
Group, McElroy Township, Ontario by R.A. MacGregor, P. Eng.
November 9, 1984

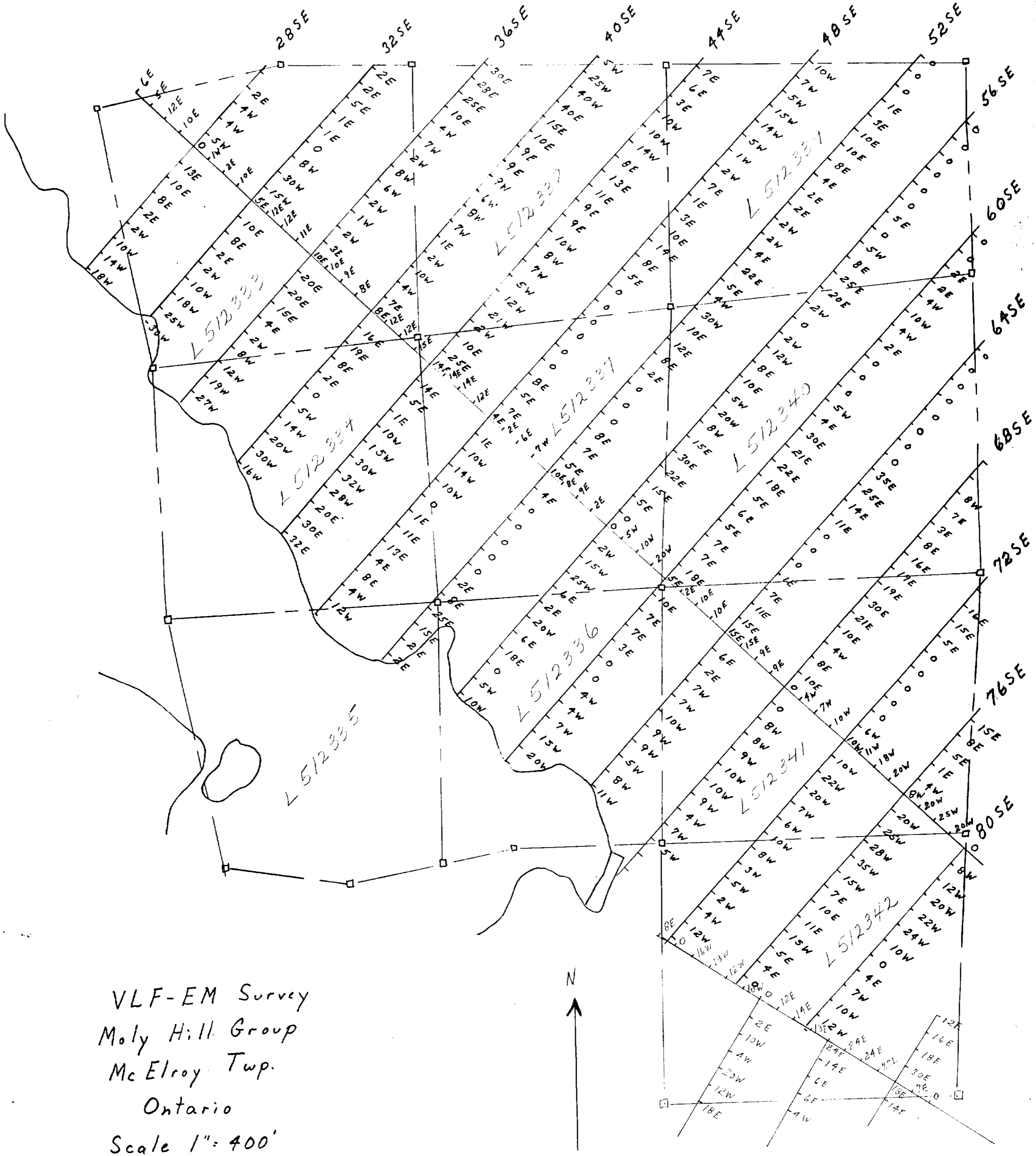
Yours truly



Robert A. MacGregor

RAM/jh

Encl.



VLF-EM Survey
 Moly Hill Group
 McElroy Twp.
 Ontario
 Scale 1" = 400'

Inst. Phoenix VLF-2
 Station Annapolis, Maryland (21.4 KHz)
 Scale 1" = 40'

