



32D04SE0161 2.11228 HEARST

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LAC MINERALS LTD
RPT ON GEOPHYSICS
HEARST TWP.
MARCH 1988



32D04SE0161 2.11228 HEARST

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LIST OF FIGURES

Figure 1 Location Map 1:100,000

ENCLOSURES

TWD Grid Total Field Magnetic Survey 1" = 200'

TWD VLF-EM Survey 1" = 200'

TWD Grid Claims 1" = 200'

RECEIVED
MAY 25 1988
MINING LANDS SECTION

INTRODUCTION

In March of 1988 LAC Minerals Ltd. conducted Geophysical Surveys over 7 contiguous mining claims in Hearst Township. An Existing baseline running at N55E was brushed out and rechained. Grid lines were cut and chained perpendicular to the base line at 400 foot intervals. VLF-EM and Magnetometer Surveys were carried out on this grid.

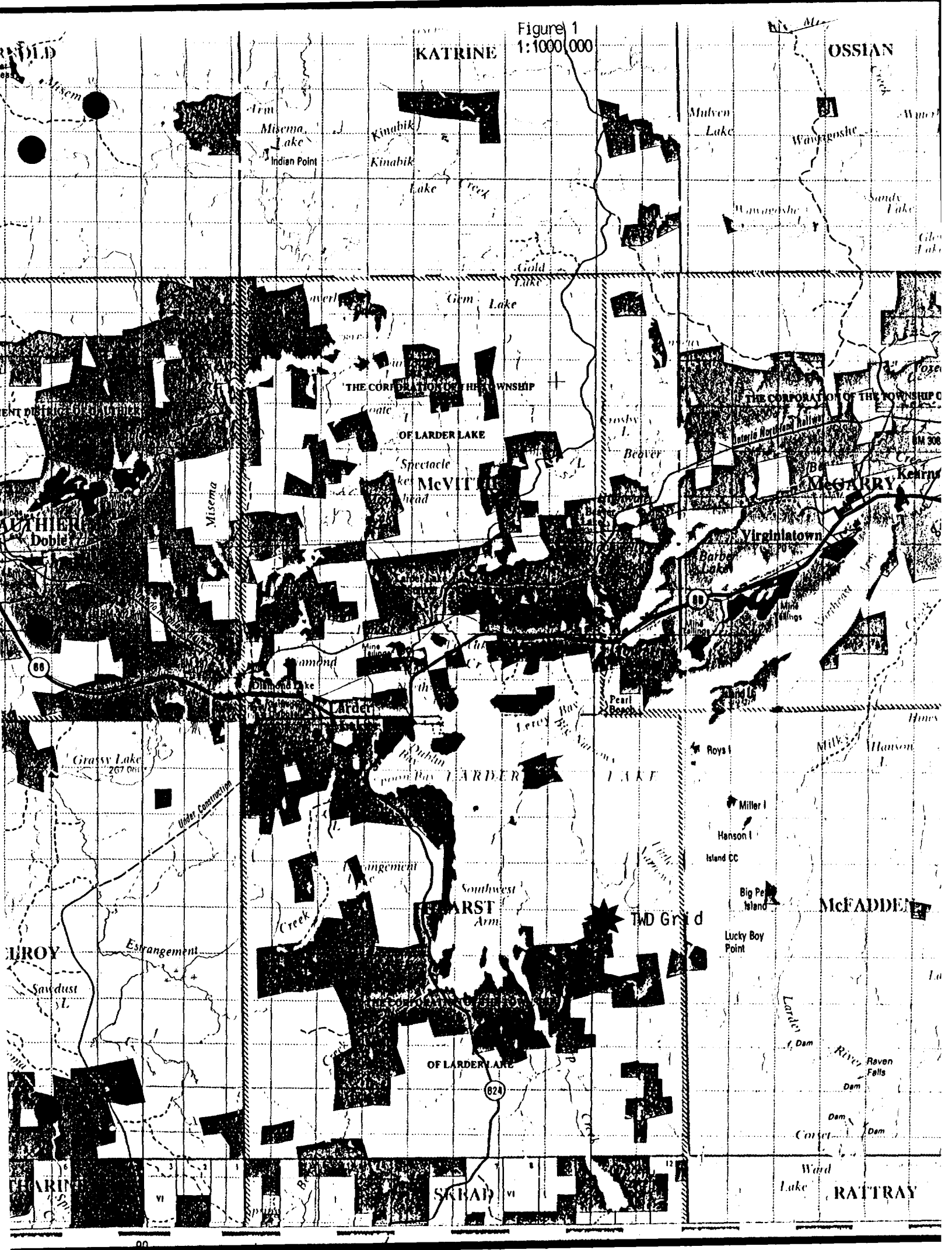
PROPERTY DESCRIPTION

The property is located in the east central portion of Hearst Township approximately 1/2 south of Larder Lake and 3/4 mile west of the Hearst McFadden Township boundary. The claims are numbered L-955114 - 955116 incl., L-955124 - 955126 incl. and L-979429. LAC Minerals Ltd. is the recorded holder.

ACCESS

The property is accessable from highway 624 and an east then northeasterly trending bush road approximately 2.25 miles long. The bush road starts approximately 4.25 miles south of the Town of Larder Lake. Logging has been carried out on a large portion of the property leaving a fairly extensive system of tractor roads.

Figure 1
1:1000,000



VEGETATION AND TOPOGRAPHY

Elevations on the property ranges from 1000 to 1050 feet as indicated on the 1:50,000 Topographic Map 32 D/4 "Larder Lake." Rock outcrops are present in several locations. Logging operations have recently been conducted on the property leaving few mature trees in some areas.

PREVIOUS WORK

Between 1976 and 1978 Airborne EM, Aeromagnetic and Ground VLF-EM surveys were conducted over the property. Diamond Drilling was performed on 1 claim in the group (L-446637 now L-955125). Some of this information is available in the Kirkland Lake assessment files.

The Martin Bird Property located to the west has been the site of considerable exploration activity. From 1934 - 1936 the Martin Bird Syndicate conducted surface trenching and surface and underground diamond drilling. Underground development consists of two (2) 400 foot vertical shafts and 15,480 feet of lateral work. Subsequent owners have conducted Ground Geophysical Surveys, geological mapping, stripping and surface diamond drilling.

GEOLOGY

The property is mapped as being mainly underlain by temiskaming sedimentary rocks. The sedimentary rocks are extensively intruded by syenite and syenite porphyry. There are volcanics and a large Diabase Dike mapped in the south part of the claims. A northeast trending fault cuts through the centre of the property.

(from Ontario Department of Mines Report Vol. LVI Part VIII, 1947)

SURVEY PROCEDURES

VLF-EM

The VLF-EM Survey was conducted by the Author using a Geonics EM-16 VLF unit and the VLF transmitter located at Cutler Maine (24.0KHZ). Inphase and Quad Phase values were recorded at 50 foot intervals with a line spacing of 400 feet. The operator was facing in a northerly direction. The survey results are presented in profiles of inphase and quadphase data on a plan located in the back pocket.

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(from Ontario Department of Mines Report Vol. LV1 Part VIII, 1947)

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MAGNETIC

A magnetic survey was conducted on the same grid of lines. The magnetic survey was performed by G. Fitzgerald using a Scintrex MP-3 Proton Magnetometer. Observations were made at 50 foot intervals. Diurnal control was maintained using a Scintrex MP-3 Proton Magnetometer in the base station Mode. Observations were made at 3 second intervals from this station (0+00N, 3+00W). Both instruments have built in clocks and a solid state memory for data storage. The instruments are plugged together each evening and a computer program in the base station allows for automatic diurnal corrections. The survey results are presented as contoured magnetic data on a plan located in the back pocket.

SURVEY RESULTS

VLF-EM

The VLF-EM Survey indicates two main zones of conductivity and several weaker one and two line anomalies. The results suggest a northwest trending fault may be present between 4 and 8 W. Some evidence of this is indicated in the magnetic survey results.

MAGNETIC

The total field magnetic contours show a general northeast trend and fairly uniform values the exception being a northeast trending magnetic high located in southwest portion of the property a Diabase Dyke is indicated on map 1947-1 in the area of this magnetic high.

CONCLUSIONS AND RECOMMENDATIONS

Carefull examination of any outcrop present in vicinity of the VLF-EM and magnetic anomolies would help determine there cause.

JW/lep



Jim Whelan

REFERENCES

Bergmann, H.J.: Report on Geophysical Surveys on the Property of Thunderwood Exploration Hearst Township Ontario. July 1980

MacGregor, R.A.: Report on Magnetometer and Electromagnetic Surveys Hearst Township Ontario. November 1978

Ontario Department of Mines Geology Map 1947-1 1" = 1000'

APPENDIX



**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, Magnetic
 Township or Area Hearst Township
 Claim Holder(s) LAC Minerals Ltd.
91 Duncan Avenue, Kirkland Lake
 Survey Company LAC Minerals Ltd.
 Author of Report Jim Whelan
 Address of Author 6 Baron Avenue, Kirkland Lake
 Covering Dates of Survey March 12 - 24
(linecutting to office)
 Total Miles of Line Cut 5

<u>SPECIAL PROVISIONS CREDITS REQUESTED</u>	<u>Geophysical</u>	<u>DAYS per claim</u>
ENTER 40 days (includes line cutting) for first survey.	-Electromagnetic	<u>40</u>
	-Magnetometer	<u>20</u>
	-Radiometric	_____
	-Other	_____
ENTER 20 days for each additional survey using same grid.	Geological	_____
	Geochemical	_____

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

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

DATE: May 10, 1988 SIGNATURE: _____
Author of Report or Agent

Res. Geol. _____ Qualifications 2.11164

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

L -	955114
(prefix)	(number)
	955115
	955116
	955124
	955125
	955126
	979429

If space insufficient, attach list

TOTAL CLAIMS 7

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 265 Number of Readings 529
 Station interval 50 foot Line spacing 400 foot
 Profile scale 1" = 50%
 Contour interval 100 nt

MAGNETIC

Instrument Scintrex MP-3
 Accuracy – Scale constant ± 1 Gamma
 Diurnal correction method Scintrex MP-3 in Base Station Mode
 Base Station check-in interval (hours) Continuous (3 second)
 Base Station location and value 0+00N, 3+00W 58,375 Gammas

ELECTROMAGNETIC

Instrument Geonics EM-16
 Coil configuration Not Applicable
 Coil separation Not Applicable
 Accuracy ± 1%
 Method: Fixed transmitter Shoot back In line Parallel line
 Frequency Cutler, Maine 24.0 KHZ
(specify V.L.F. station)
 Parameters measured In Phase and Quad Phase components of Vertical Magnetic Field as a percentage of Horizontal Primary Field

GRAVITY

Instrument _____
 Scale constant _____
 Corrections made _____
 Base station value and location _____
 Elevation accuracy _____

INDUCED POLARIZATION RESISTIVITY

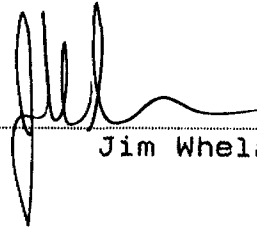
Instrument _____
 Method Time Domain Frequency Domain
 Parameters – On time _____ Frequency _____
 – Off time _____ Range _____
 – Delay time _____
 – Integration time _____
 Power _____
 Electrode array _____
 Electrode spacing _____
 Type of electrode _____

I Jim Whelan of 6 Baron Avenue Kirkland Lake Ontario Hereby certify:

That I am a Geotechnician employed by LAC Minerals Ltd.

That I have been practicing my profession for 6 years.

That I am qualified to write this report.

A handwritten signature in black ink, appearing to read 'Jim Whelan', is written over a horizontal dotted line. The signature is stylized with a large initial 'J' and a long horizontal stroke.

Jim Whelan



Mar 14

08808.123

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300

Type of Survey(s)
Magnetic, VLF EM

Claim Holder(s)
Lac Minerals Ltd. Exploration Division

Address
91 Duncan Avenue, KIRKLAND LAKE, Ontario P2N 1Y2

Survey Company
Lac Minerals Ltd.

Date of Survey (from & to)
23 03 88 | 24 03 88
Day | Mo. | Yr. | Day | Mo. | Yr.

Total Miles of line Cut
6.0

Name and Address of Author (of Geo-Technical report)
Jim Whelan, 6 Baron Avenue, KIRKLAND LAKE, Ontario P2N 2Y2

2.11228

Hearst

Prospector's Licence No.
T-664

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

Mining Claims Traversed (List in numerical sequence)

Mining Claim			Mining Claim		
Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
L	979429				
	955114				
	955115				
	955116				
	955124				
	955125				
	955126				

RECEIVED
APR 12 1988
MINING LANDS SECTION

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
OFFICE
JUN 1 1988
RECEIVED

KIRKLAND LAKE
MINING DIV.
RECEIVED
MAR 25 1988
AM **PM**
7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6

Total number of mining claims covered by this report of work. **7**

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.

For Office Use Only

Total Days Cr. Recorded **420**

Date Recorded **Mar. 25/88**

Date Approved as Recorded **30 May 88**

Mining Recorder **[Signature]**

Branch Director **[Signature]**

Date **March 25, 1988**

Recorded Holder or Agent (Signature) **[Signature]**

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
Jim Whelan, 6 Baron Avenue, KIRKLAND LAKE, Ontario P2N 1Y2

Date Certified **March 25, 1988**

Certified by (Signature) **[Signature]**

AREAS WITHDRAWN FROM DISPOSITION

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

Description Order No. Date Disposition File

(R1) SURFACE RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W 14/80

(R2) Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 65/84

(R3) MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W 9/85

(R4) Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 17/85

O 32/85 OPENS W 17/85.

(R5) Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 36/85

O 22/85 OPENS W 36/85

(R6) Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 38/85

- O 24/85 OPENS PART OF W 38/85.
- O 25/85 OPENS PART OF W 38/85.
- O 26/85 OPENS PART OF W 38/85.
- O 27/85 OPENS PART OF W 38/85.
- O 28/85 OPENS PART OF W 38/85.
- O 29/85 OPENS PART OF W 38/85.
- O 30/85 OPENS PART OF W 38/85.
- O 31/85 OPENS PART OF W 38/85.

(R7) Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 7/86

- O 74/86 OPENS PART OF W 7/86.
- O 98/87 OPENS PART OF W 7/86.

(R8) Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 8/86

- O 64/87 OPENS PART OF W 8/86.
- O 23/88 OPENS PART OF W 8/86.

(R9) Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 9/86

(R10) Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 61/86

O 75/86 OPENS W 61/86.

(R11) Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W 50/86

- O 8/88 OPENS PART OF W 50/86.
- O 60/87 OPENS PART OF W 50/86.

NOTES

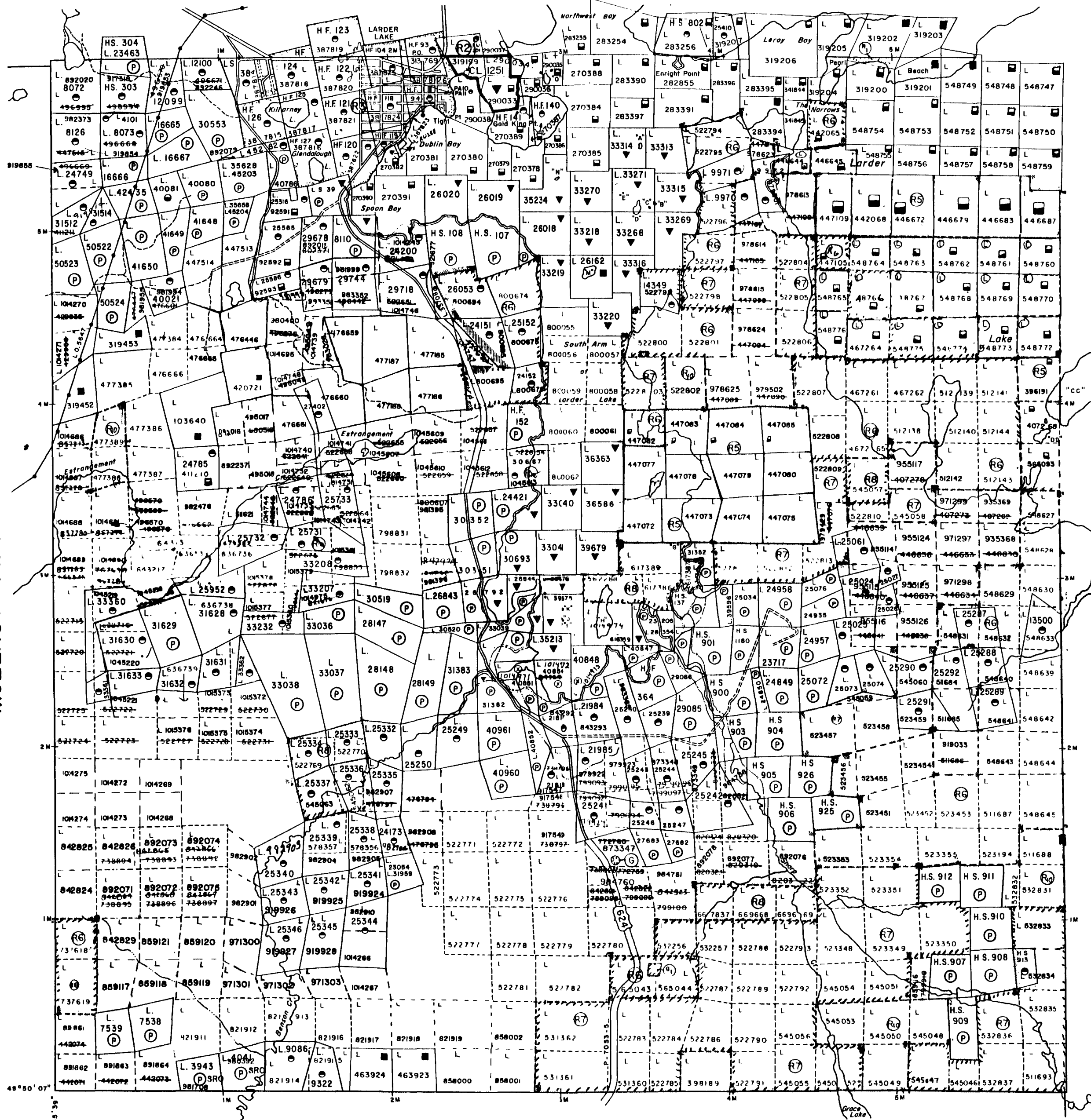
Township of Hearst lies entirely within the CORPORATION of the TOWNSHIP of LARDER LAKE File 29282

Staking of mining claims within the Town of Larder Lake shown thus _____ subject to Sec. 37(b) of the Mining Act (RSO1970)

NOTICE OF FORESTRY ACTIVITY

THIS TOWNSHIP / AREA FALLS WITHIN THE TIMISKAMING MANAGEMENT UNIT AND MAY BE SUBJECT TO FORESTRY OPERATIONS. THE MNR UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT: P.O. BOX 129 SWASTIKA, ONT. POK ITO 705-642-3222

McVITTIE TWP.



McELROY TWP.

McFADDEN TWP.

SKEAD TWP.



200

LEGEND

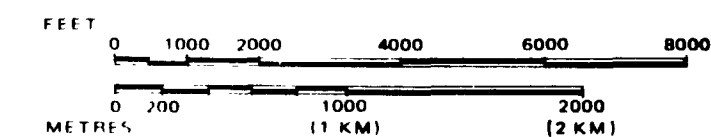
- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES
- TOWNSHIPS, BASE LINES, ETC.
- LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES
- LOT LINES
- PARCEL BOUNDARY
- MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION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

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. 1970, CHAP. 300, SEC. 63, SUBSEC. 1.

SCALE: 1 INCH = 40 CHAINS



Replaced on Aug 19, 1987

TOWNSHIP
HEARST
M.N.R. ADMINISTRATIVE DISTRICT
KIRKLAND LAKE
MINING DIVISION
LARDER LAKE
LAND TITLES / REGISTRY DIVISION
TIMISKAMING



Date FEBRUARY, 1985 Number

DATE OF ISSUE **G-3213**

2000N

1500N

1000N

500N

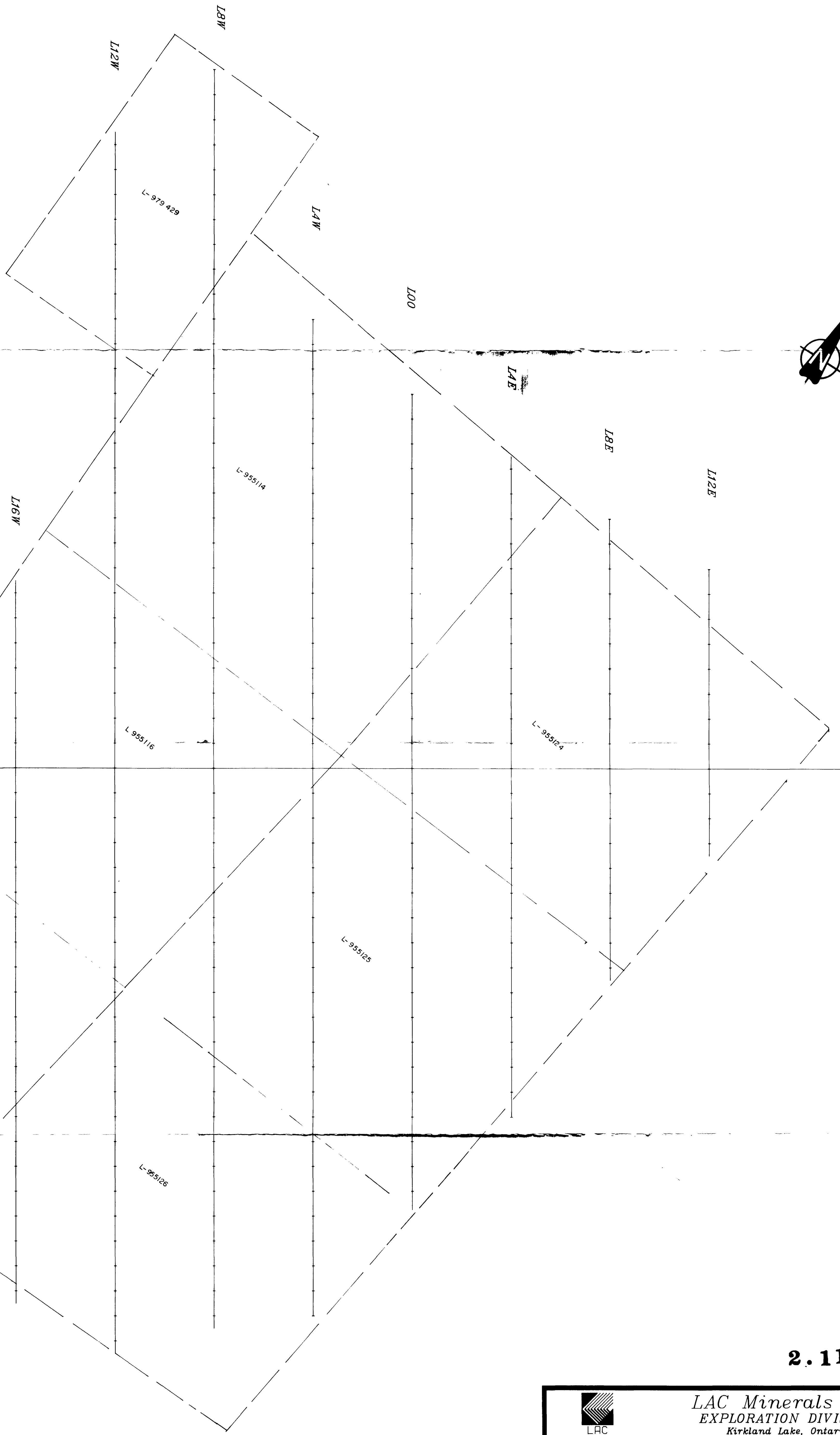
BLO

500S

1000S

1500S


2000S

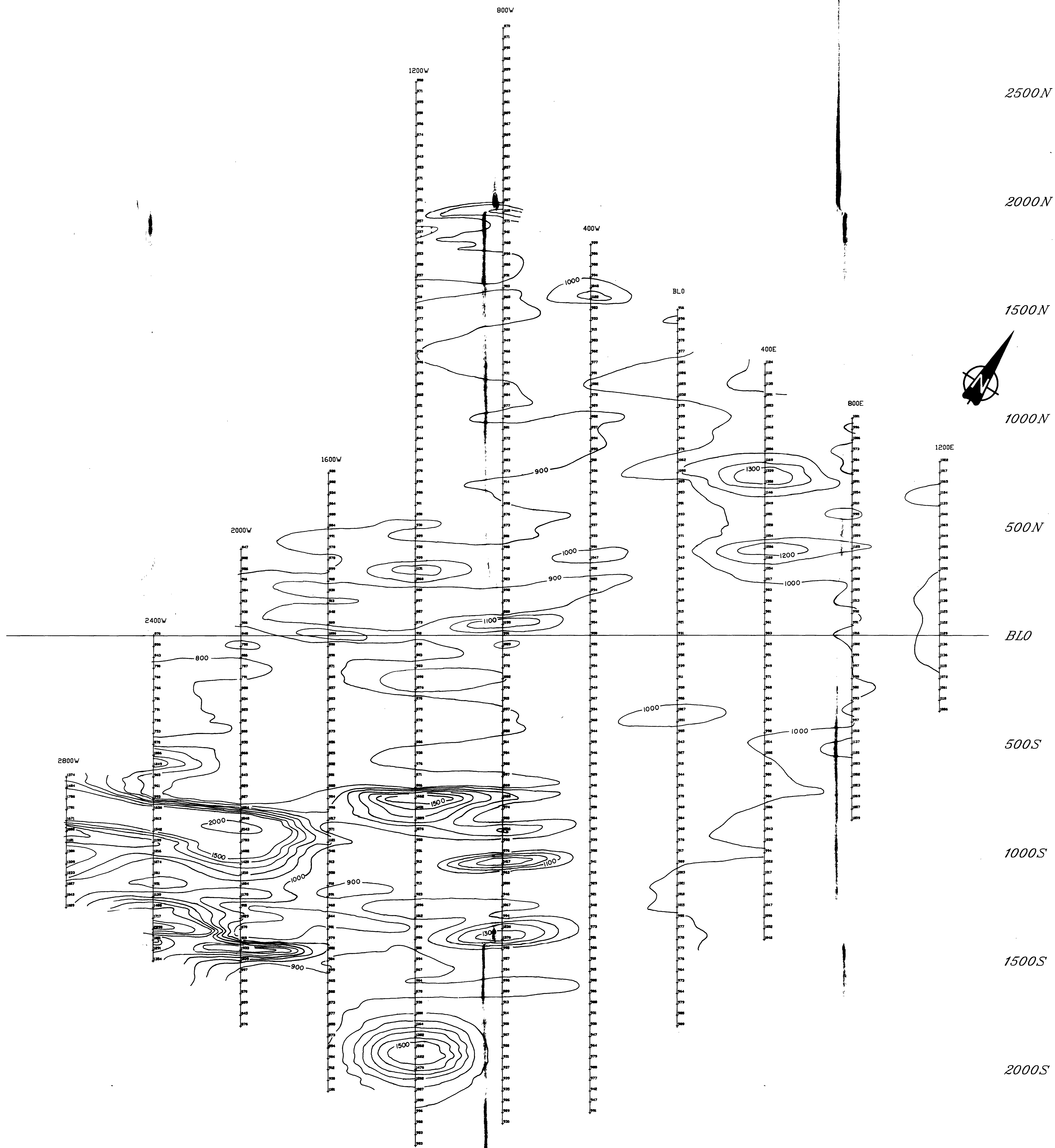


2.11228



210

 LAC	LAC Minerals Ltd. EXPLORATION DIVISION Kirkland Lake, Ontario		TITLE TWD Grid CLAIMS Scale : 1 inch = 200 feet
	DRAWN BY <i>Peter Hofman</i>		
	CHECKED BY <i>[Signature]</i>		
	APPROVED BY <i>[Signature]</i>		
REVISIED BY		DRAWING N ^o	



2500N

2000N

1500N

1000N

500N

BLO

500S

1000S

1500S

2000S

2.11228

LEGEND

Instrument : Scintrex MP-3
 Base Station : Scintrex MP-3
 800,900,1000,1100,1200,1300,1400,1500,2000
 AND 2500ft CONTOURS
 (57,000 subtracted from all readings)



LAC Minerals Ltd.
 EXPLORATION DIVISION
 Kirkland Lake, Ontario

DRAWN BY Peter Hoffman
 CHECKED BY
 APPROVED BY
 REVISED BY
 DRAWING N^o

TITLE
TWD Grid
 Total Field Magnetometer Survey
 Scale : 1 inch = 200 ft.



2000N

1500N

1000N

500N

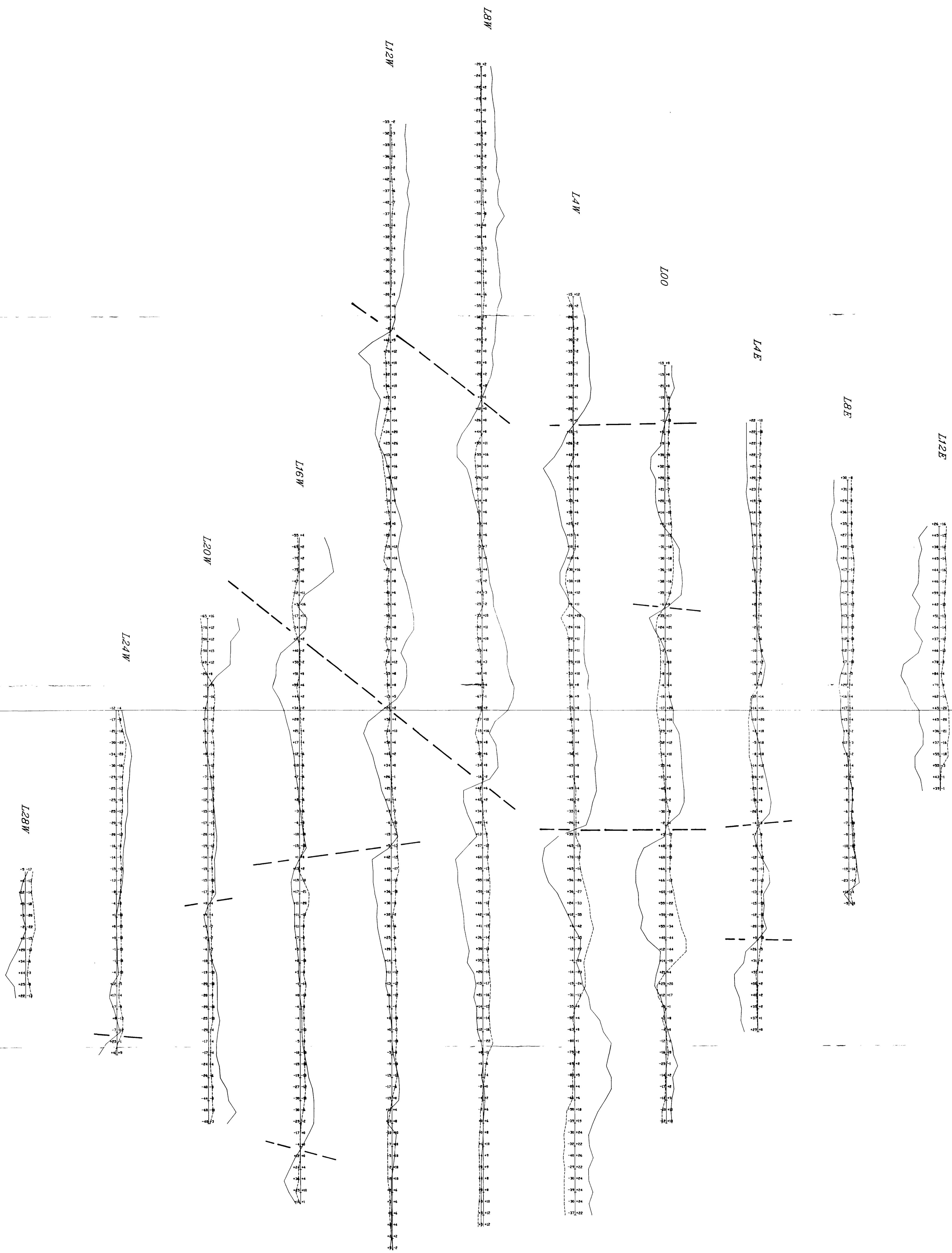
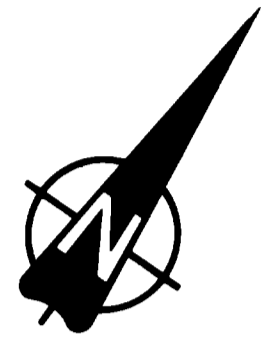
BLO

500S

1000S

1500S

2000S



IP GP



230

2.11228

LEGEND Instrument: Geonics EM-16 Tx: At Cutler, Main 24.0KHz Vertical Scale: 1" = 100% Inphase: ——— Quadrature: - - - - 	 LAC Minerals Ltd. EXPLORATION DIVISION Kirkland Lake, Ontario	DRAWN BY Peter Hofman CHECKED BY APPROVED BY <i>[Signature]</i> REVISED BY	TITLE TWD Grid VLF-Em Survey Scale: 1 inch = 200 feet
		DRAWING N ^o	