



41016SW0044 2.6001 HEENAN

010

KIDD CREEK MINES LTD.

REPORT ON GEOPHYSICAL WORK

HEENAN TOWNSHIP

NOVEMBER, 1983

M. W. ZANG

RECEIVED

NOV 9 1983

MINING LANDS SECTION

SUMMARY AND RECOMMENDATIONS

A single, poorly conductive zone was detected by a horizontal loop survey carried out on a group of four claims in Heenan Township. A concurrent magnetic survey carried out in April, 1983 failed to give a coincident anomaly.

Geologic mapping and a VLF survey was carried out in June, 1983. Geologic information indicates that the main conductor is found at the contact of a gabbro and basaltic to pyroxenitic komatiites.

Further geophysical work is not recommended until the geologic potential of this property is evaluated.



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INTRODUCTION

In April and June, 1983 a geophysical program consisting of proton precession magnetometer, horizontal loop electromagnetic and VLF electromagnetic surveys were carried out on four contiguous claims in Heenan Township. The claims (P 636213 to P 636216 inclusive) are located in the north central part of the township, about 105 kilometres southwest of Timmins.

Access to the property is available by helicopter or float equipped, fixed wing aircraft on Gowagamak Lake.

People involved in the field work included R. Daigle, M. Mageau, S. Ryan and K. Rye.

Previous work recorded for this property includes a hole drilled by Hollinger Mines in 1967 to test peridotitic komatiites for asbestos mineralization. The hole is located at 3+08W, 0+52N with an azimuth of 160°.

SURVEY DESCRIPTION

The base line of the property runs east-west with crosslines cut at 100 metre intervals and stations established every 20 metres.

The magnetic survey was carried out with an EDA PPM-350 proton precession magnetometer utilizing an EDA

PPM-400 base station magnetometer to monitor the diurnal drift. These instruments measure the earth's total magnetic field to an accuracy of ± 0.1 gamma. A total of 404 stations were sampled along 7.92 kilometres of line.

The horizontal loop survey was carried out with an Apex Parametrics MaxMin II using a coil separation of 120 metres. Readings were taken every 40 metres (20 metres in anomalous areas) at frequencies of 444 and 1777 Hz. A total of 198 stations were sampled along 6.84 kilometres of line.

The VLF survey was carried out with a Crone RADEM EM receiver. The transmitting station used in this survey was Cutler Maine which employs a frequency of 17.8 kHz. In this survey a total of 373 stations were sampled along 7.42 kilometres of line.

SURVEY RESULTS

The horizontal loop survey outlined a single, poorly conductive zone, labelled anomaly 'A'. The interpretation of this anomaly at the two survey frequencies is given in Table 1.

Conductor 'A' gave a good in-phase indication only on Lines 200 and 300 West. The remainder of the anomaly has mainly a quadrature response. The VLF survey results show a strong anomaly coincident with anomaly 'A'.

The horizontal loop results at the 1777 Hz frequency indicates a very weak anomaly on Lines 100 and 200 West at

6+40N and 6+85N respectively. This anomaly and the coincident VLF response is probably due to a surficial conductor.

Geologic mapping and the magnetic survey results indicate that conductor 'A' is located at the contact of a poorly magnetic gabbro to the north and highly magnetic basaltic to pyroxenitic komatiites to the south. The conductor itself failed to give a magnetic expression. The magnetic anomaly near the conductor on Line 200W at 3+60N appears to be due to a thin northwest striking diabase dike.

A zone of very high magnetic susceptibility located in the southeast corner of the claim block is caused by outcropping peridotitic komatiites. A similar response north of conductor 'A' is interpreted to be caused by the same rock type. The contact between the northern peridotites and the gabbro is marked by the VLF anomaly 'B'.

A north-northwest striking fault between Lines 400 and 600 W is interpreted as the cause of the rather abrupt termination of the major east-west magnetic trends. The possible location of this fault can be seen on the magnetic survey map.

Michael W. Zang
M. W. ZANG

TABLE 1 HEENAN 53 HORIZONTAL LOOP ANOMALY 'A' 120 METRE COIL SEPARATION

Line	Anomaly Center	Anomaly Width	Indicated Depth	I. P Max.	O. P Max.	Response Parameter	Conductivity Thickness	Remarks
<u>SURVEY FREQUENCY 444Hz</u>								Assume Dip 90°
0	4+40N	Thin	NC	?	-1	NC	NC	
100W	4+00N	Thin	12m	-2	-5	1	2 mhos	
200W	3+25N	10m	12m	-3	-9	1.5	3 mhos	
300W	2+85N	10m	36m	-11	-8	10	24 mhos	
400W	2+60N	Thin	36m	-2	-3	1.5	3 mhos	
<u>SURVEY FREQUENCY 1777Hz</u>								
0	4+40N	Thin	24m	-3	-6	2	1 mhos	
100W	4+35N	30m	12m	-7	-15	2.5	1.5 mhos	
200W	3+25N	10m	18m	-16	-16	7	4 mhos	
300W	2+85N	10m	24m	-21	-14	13	8 mhos	
400W	2+55N	10m?	36m	-5	-6	5	3 mhos	

Type of Survey(s)
GEOPHYSICAL

Claim Holder(s)
KIDD CREEK MINES LTD.

Address
571 Moneta Avenue, Box 1140, Timmins, Ontario P4N 7H9

Survey Company
KIDD CREEK MINES LTD.

Date of Survey (from & to)
SEP 08 | OCT 04 | NOV 03 | DEC 30 | JAN 06 | FEB 03

Total Miles of line Cut
8.1 km

Name and Address of Author (of Geo-Technical report)
MICHAEL W. ZANG, KIDD CREEK MINES LTD., BOX 1140, 571 Moneta Avenue, Timmins, Ontario



900

Credits Requested per Each Claim in Columns at right Mining Claims Traversed (List in numerical sequence)

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

Mining Claim			Mining Claim		
Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
P	636213	00			
	636214	00			
	636215	00			
	636216	00			

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures \$ ÷ 15 = 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.

RECORDED

SEP 13 1983

Receipt No.

Date
Sept. 12, 1983

Recorded Holder or Agent (Signature)
Michael W. Zang

For Office Use Only

Total Days Cr. Recorded 320

Date Recorded SEP 13 1983

Date Approved as Recorded FEB 6 1984

Total number of mining claims covered by this report of work 4

Branch Director *[Signature]*

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
Michael W. Zang, Kidd Creek Mines Ltd., 571 Moneta Avenue, Box 1140, Timmins, Ontario

Date Certified
Sept. 12, 1983

Certified by (Signature)
Michael W. Zang



Mining Lands Comments

To: Geophysics *Mr. R. Barlow*

Comments

Approved Wish to see again with corrections Date *Jan 3/83* Signature *RRLW*

To: Geology - Expenditures

Comments

Approved Wish to see again with corrections Date Signature

To: Geochemistry

Comments

NO

Approved Wish to see again with corrections Date Signature

To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)

260

1983 11 10

2.6001

Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4H 2S7

Dear Sir:

We have received reports and maps for a Geophysical
(Electromagnetic and Magnetometer) survey submitted under
Special Provisions (credit for Performance and Coverage)
on mining claims P 636213 to 16 inclusive in the Township
of Heenan.

This material will be examined and assessed and a statement
of assessment work credits will be issued.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416)965-1380

A. Barr:mc

cc: Kidd Creek Mines Ltd
571 Moneta Avenue
Box 1140
Timmins, Ontario
P4N 7H9
Attention: Michael W. Zang



Ministry of Natural Resources

File _____

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) Geophysical
Township or Area Heenan
Claim Holder(s) Kidd Creek Mines Ltd.
Box 1140, Timmins, Ontario
Survey Company Kidd Creek Mines Ltd.
Author of Report Michael W. Zang
Address of Author Box 1140, Timmins, Ontario
Covering Dates of Survey April 8 - June 12
(linecutting to office)
Total Miles of Line Cut 5.4 miles

MINING CLAIMS TRAVERSED
List numerically

P 636213
.....
P (prefix) 636214 (number)
.....
P 636215
.....
P 636216
.....

If space insufficient, attach list

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

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

DATE: Nov. 7/83 SIGNATURE: Michael W. Zang
Author of Report or Agent

Res. Geol. _____ Qualifications 2.4262

Previous Surveys

File No.	Type	Date	Claim Holder
.....
.....
.....
.....
.....
.....
.....

RECORDED
NOV 9 1983

TOTAL CLAIMS 4

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations Mag-395 VLF-371 HL-190 Number of Readings Mag-404 VLF-373 HL-396
 Station interval 20m Line spacing 100m
 Profile scale 1cm=10%
 Contour interval 100 gammas

MAGNETIC

Instrument EDA PPM-350 Proton Precession Magnetometer
 Accuracy – Scale constant + 0.1 gamma
 Diurnal correction method Base Station
 Base Station check-in interval (hours) 1 minute
 Base Station location and value Line 0, 5+80N 59689 gammas

ELECTROMAGNETIC

Instrument Apex Parametrics MaxMin II
 Coil configuration Horizontal Loop
 Coil separation 120m
 Accuracy + 1%
 Method: Fixed transmitter Shoot back In line Parallel line
 Frequency 444 and 1777 Hz
(specify V.L.F. station)
 Parameters measured Percent of 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 _____

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 _____ Electromagnetic

Instrument _____ Crone RADEM

Accuracy _____ ± 1°

Parameters measured _____ Dip Angle

Additional information (for understanding results) _____ Station used Cutler Maine at a
frequency of 17.8 kHz

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 _____

GEOCHEMICAL SURVEY - PROCEDURE RECORD

Numbers of claims from which samples taken _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

Drainage Development _____

Estimated Range of Overburden Thickness _____

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

General _____

ANALYTICAL METHODS

Values expressed in: per cent
p. p. m.
p. p. b.

Cu, Pb, Zn, Ni, Co, Ag, Mo, As, -(circle)

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____

Kidd Creek Mines Ltd.

Box 1140
571 Moneta Avenue,
Timmins, Ontario P4N 7H9
(705) 267-1188

Exploration Division

November 4, 1983

Mr. E.F. Anderson
Director, Land Management Branch
Whitney Block, Room 6450
Queen's Park
TORONTO, Ontario
M7A 1W3

Dear Sir:

Re: HEENAN TOWNSHIP

Enclosed please find duplicate copies of a report and maps covering claims in Heenan Township. The claims aforementioned are P-636213, P-636214, P-636215 and P-636216.

Your prompt attention to this matter would be greatly appreciated.

Yours very truly,

Michael W. Zang
MIKE ZANG

MZ/pp
Encls.

RECEIVED

NOV 9 1983

MINING LANDS SECTION

Kidd

NEWTON TWP.

THE TOWNSHIP
OF
HEENAN

DISTRICT OF
SUDBURY

PORCUPINE
MINING DIVISION

SCALE: 1-INCH 40 CHAINS

LEGEND

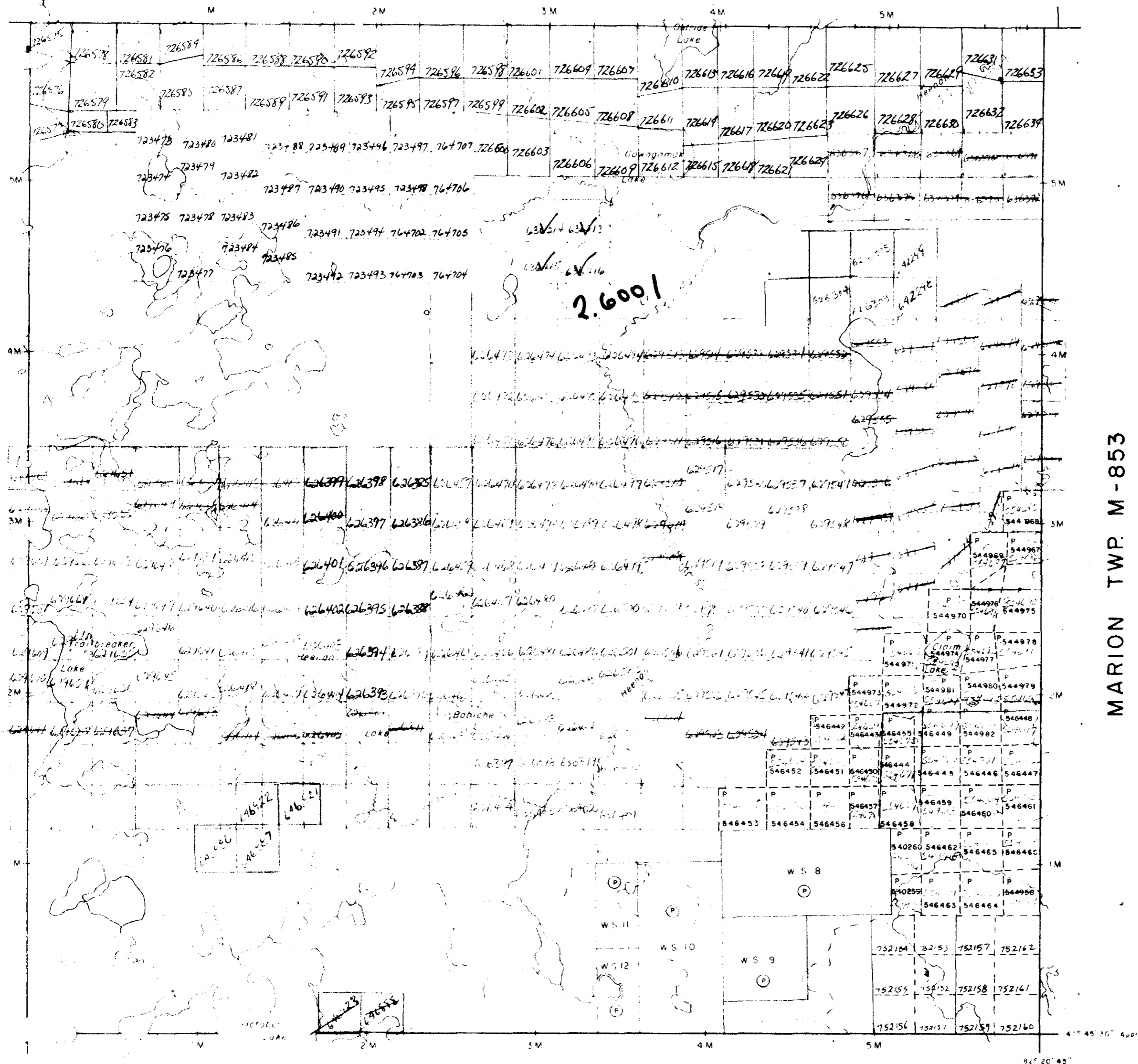
PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S
LEASES	Ⓞ
LOCATED LAND	L.O.C
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O
SURFACE RIGHTS ONLY	S.R.O
ROADS	—
IMPROVED ROADS	—
KING'S HIGHWAYS	—
RAILWAYS	—
POWER LINES	—
MARSH OR MUSKEG	—
MINES	Ⓧ
CANCELLED	C

NOTES

400' Surface rights reservation around the shores of all lakes and rivers.

PLAN NO. **M-925**

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

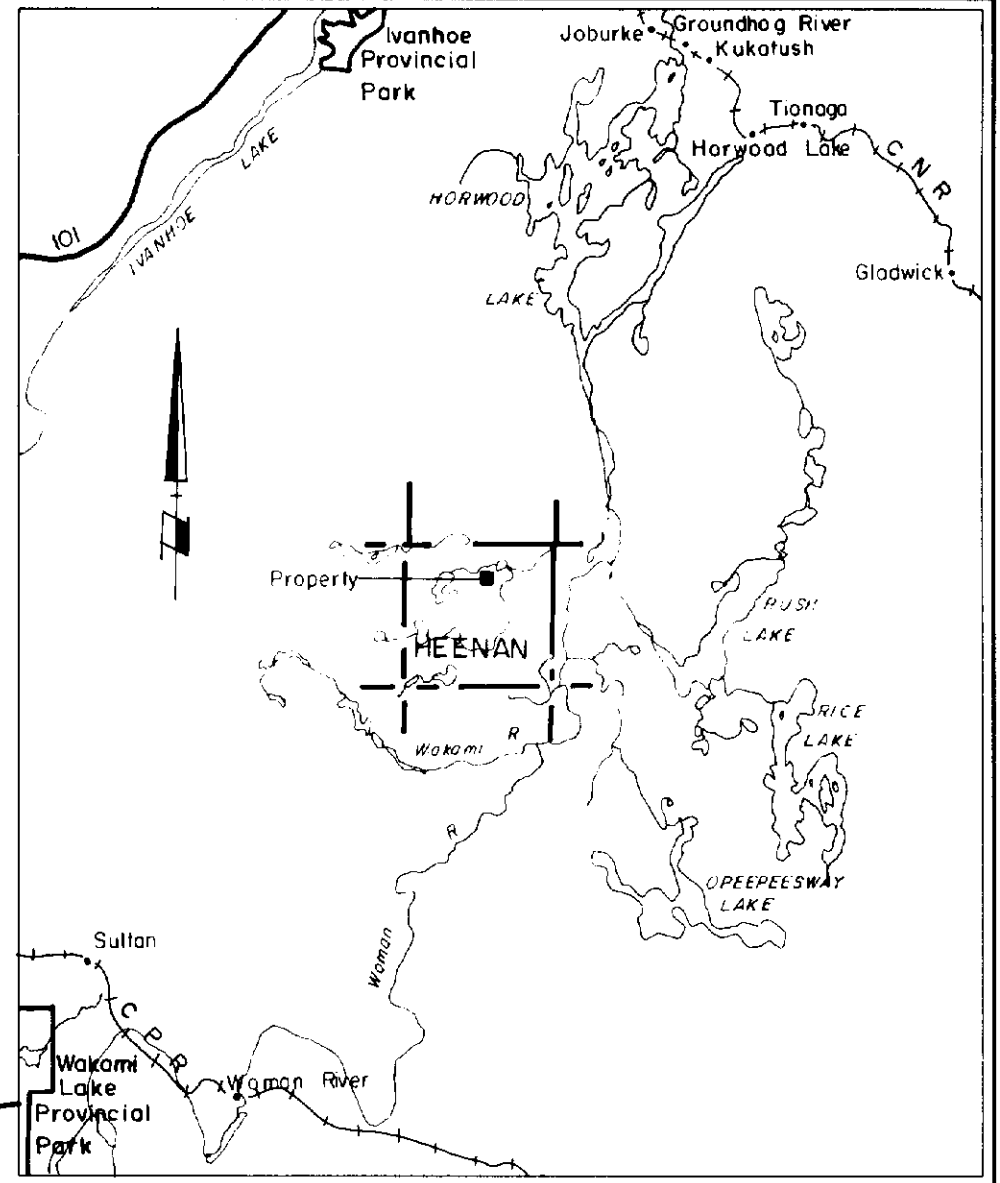
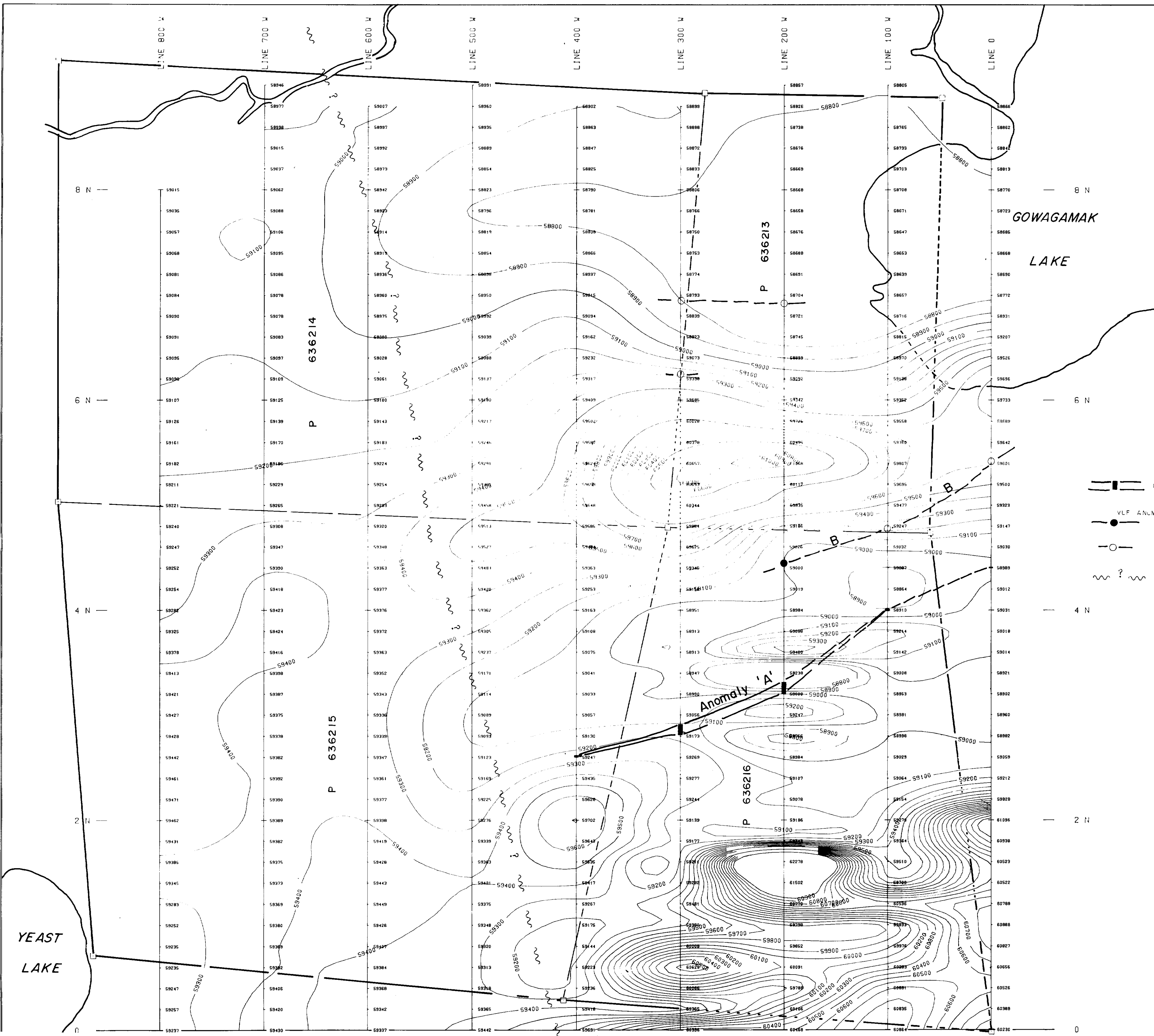


DORE TWP. M-763

MARION TWP. M-853

BENTON TWP. M-659





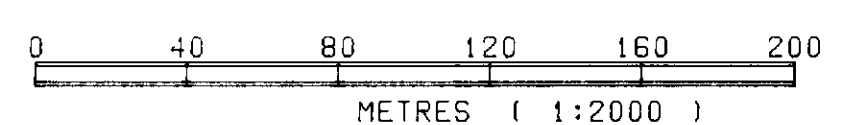
KEY MAP SCALE: 1" = 8 miles

- Horizontal loop anomaly
- VLF ANOMALY Strong
- Well
- Possible fault



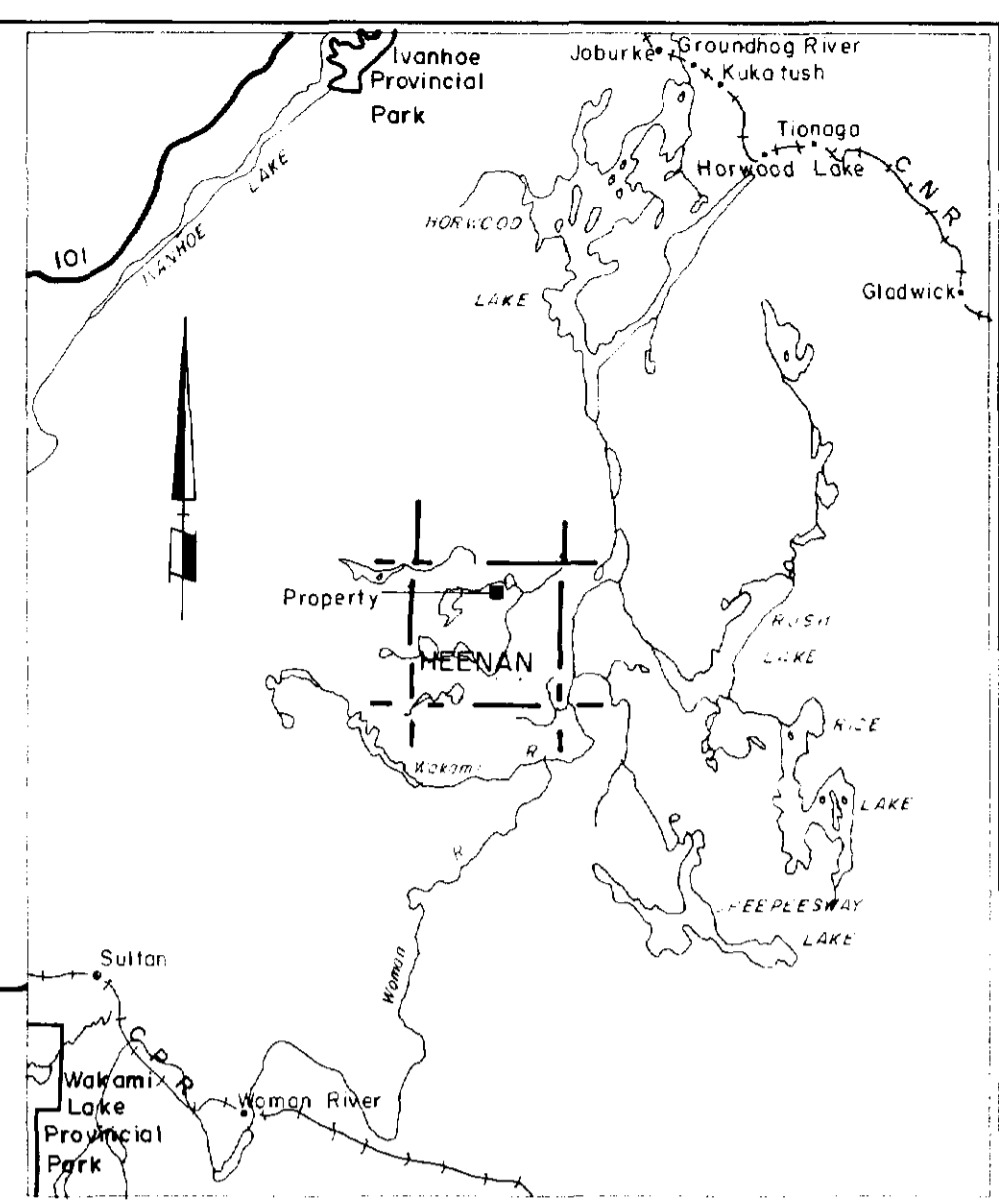
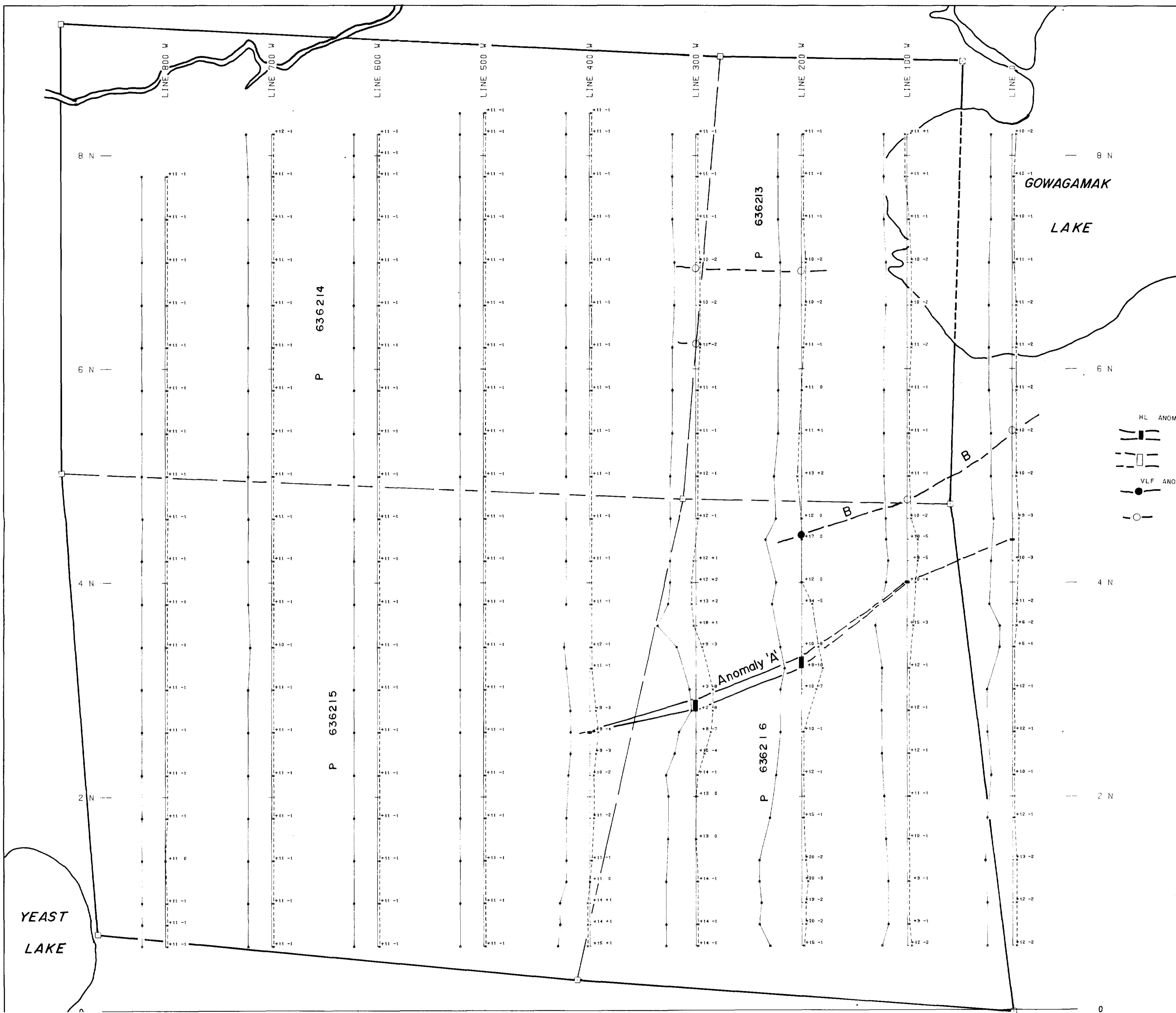
LEGEND

INSTRUMENT : EDA PPM-350
 TYPE : PROTON PRECESSION, TOTAL FIELD
 READINGS IN GAMMAS
 ▲ MAGNETIC BASE STATION

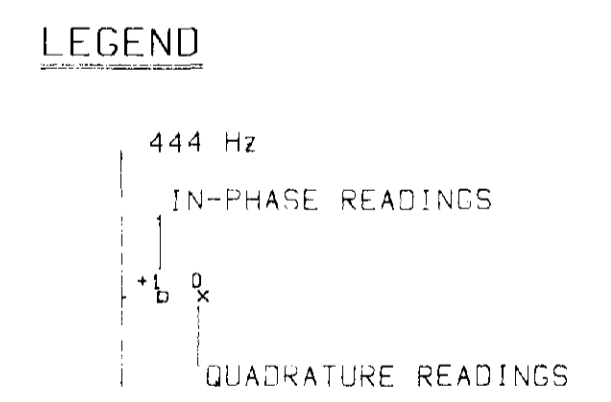


KIDD CREEK MINES LTD.	
MAGNETIC SURVEY	
SWAYZE BELT PROJECT	
HEENAN 53	
NTS:41-0-10	PROJ.#56
WORK BY <i>M. W. Goy</i>	DATE 1983





- HL ANOMALY**
- In phase
 - Quadrature
- VLF ANOMALY**
- Strong
 - Weak



INSTRUMENT : APEX PARAMETRICS MAXMIN II
 FREQUENCY : 444 Hz
 COIL SPACING : 120 METRES
 PROFILE SCALE : 1 CM = 10%

KIDD CREEK MINES LTD.

HORIZONTAL LOOP SURVEY

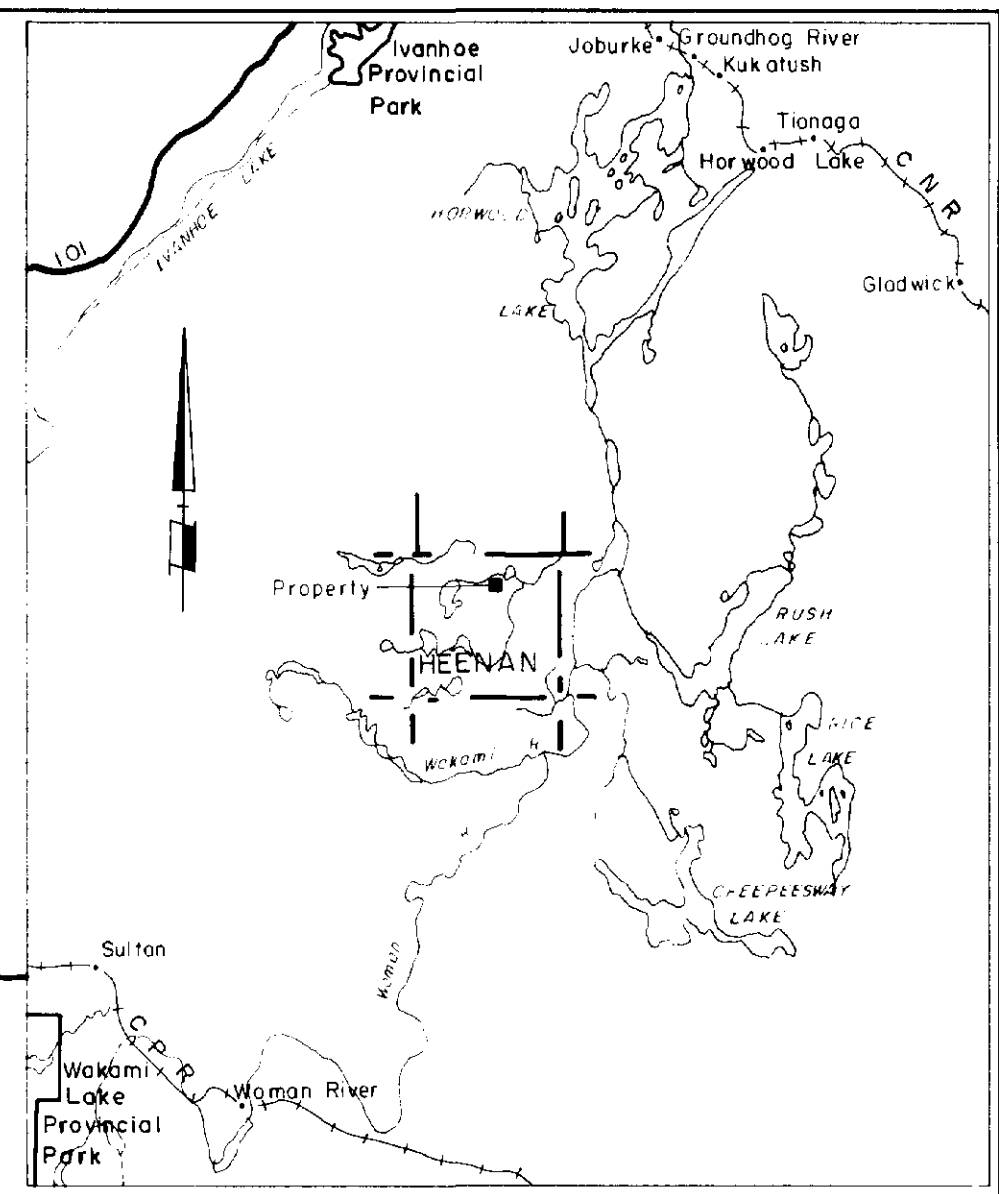
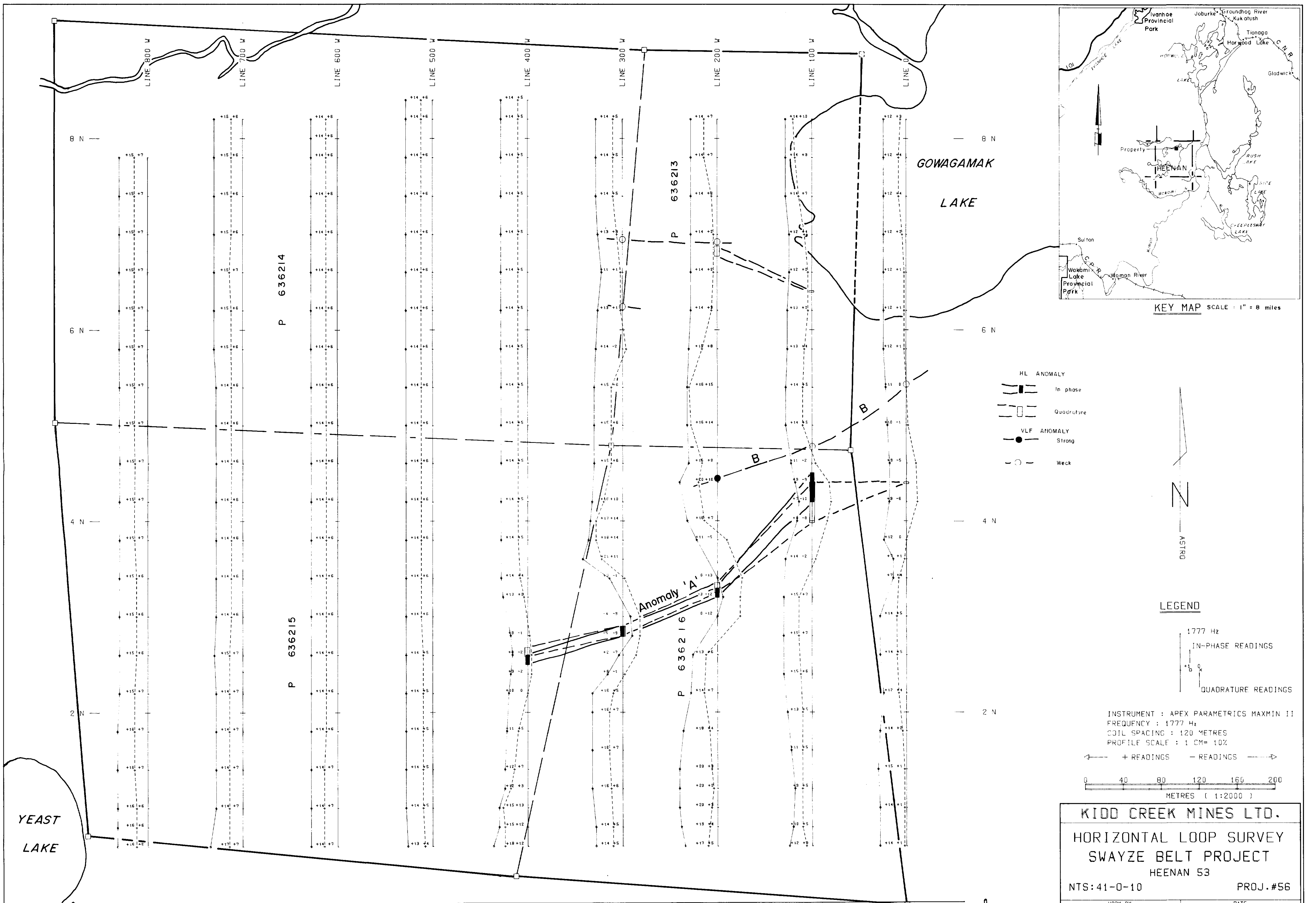
SWAYZE BELT PROJECT

HEENAN 53

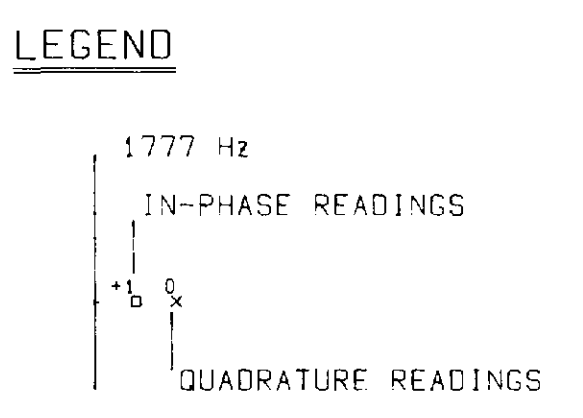
NTS:41-0-10 PROJ.#56

WORK BY	DATE
<i>M. W. G...</i>	1983





- LEGEND**
- HL ANOMALY
 - In phase
 - Quadrature
 - VLF ANOMALY
 - Strong
 - Well



INSTRUMENT : APEX PARAMETRICS MAXMIN II
 FREQUENCY : 1777 Hz
 COIL SPACING : 120 METRES
 PROFILE SCALE : 1 CM = 10X

+ READINGS - READINGS

0 40 80 120 160 200
 METRES (1:2000)

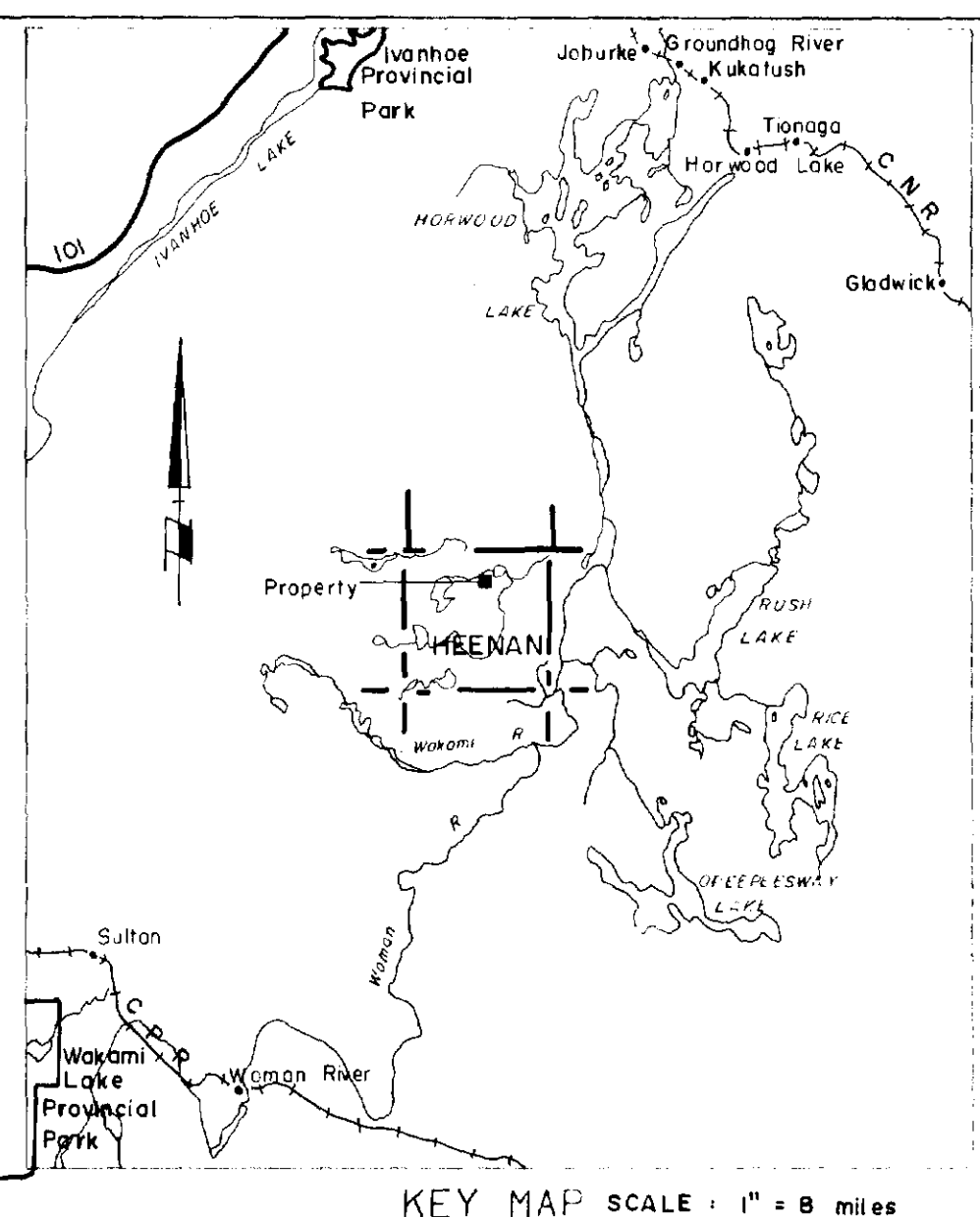
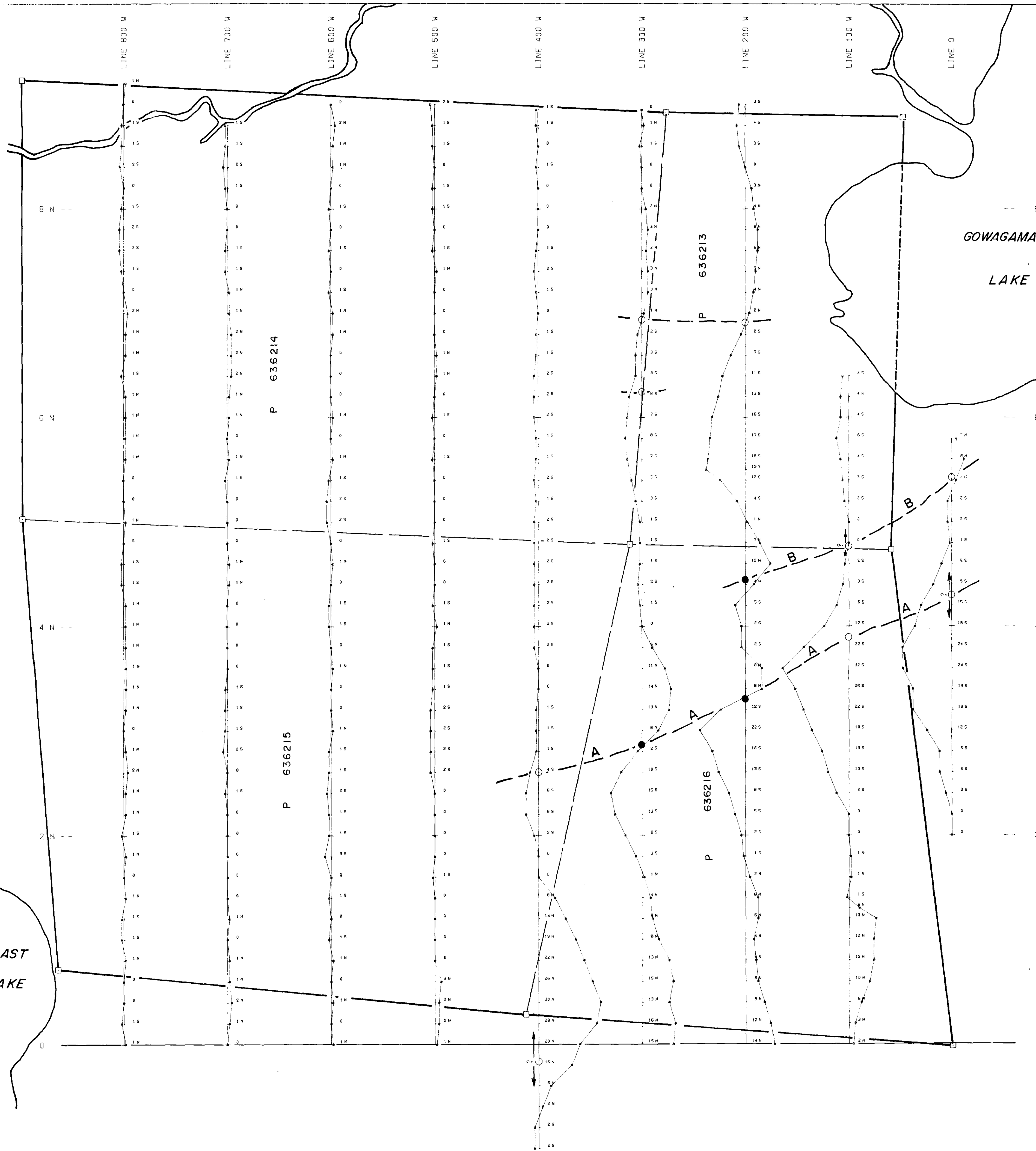
KIDD CREEK MINES LTD.

HORIZONTAL LOOP SURVEY
SWAYZE BELT PROJECT
 HEENAN 53

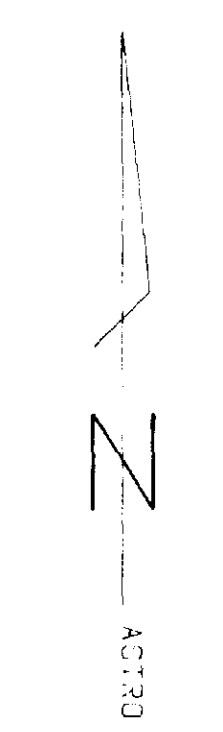
NTS: 41-0-10 PROJ. #56

WORK BY <i>M. W. Z...</i>	DATE 1983
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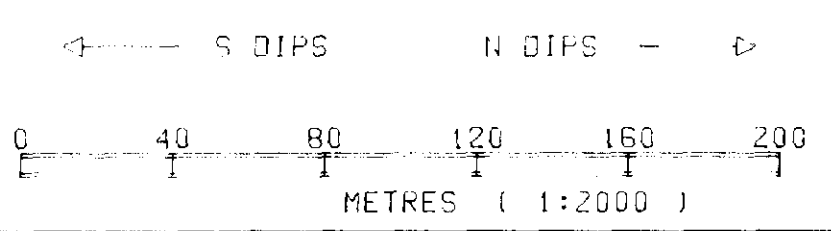


- VLF ANOMALY
- Strong
 - Weak
 - Questionable
 - Anomaly location uncertain



LEGEND
DIP ANGLE (DEGREES)

INSTRUMENT : CRONE RADEM
STATION : CUTLER, 17.8 KHz
PROFILE SCALE : DIP ANGLE 1 CM = 10°



KIDD CREEK MINES LTD.
V L F SURVEY
SWAYZE BELT PROJECT
HEENAN 53

NTS:41-0-10 PROJ.#56

WORK BY: *M. W. Z...* DATE: 1983

YEAST LAKE

GOWAGAMAK LAKE

