



42A07NW0005 2.9563 MACKLEM

010

KIDD CREEK MINES LTD.

REPORT
ON
GEOPHYSICAL WORK
MACKLEM 25

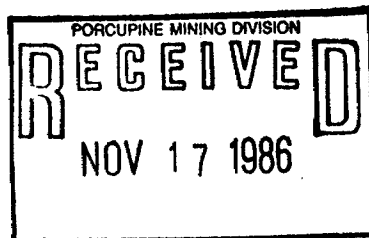
NTS: 42-A/7

PROJ# 8104

RECEIVED

NOV 19 1986

MINING LANDS SECTION



NOVEMBER, 1986

D. LONDRY

SUMMARY AND RECOMMENDATIONS

Horizontal loop EM and magnetic surveys were carried out on the Macklem 25 property in October, 1986.

The magnetic field over the property is uniform except in the area of two north-northwest striking diabase dikes which are defined by linear high magnetic anomalies.

The horizontal loop survey outlined a number of weak anomalies, some of which may reflect faults or shears. An IP survey would give a better definition of the sources of these anomalies.



42A07NW0005 2.9563 MACKLEM

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- 1. HLEM RESULTS, 444 Hz, 160 METRE CABLE (BACK POCKETS)
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INTRODUCTION

During September 1986, magnetic and horizontal loop electromagnetic (HLEM) surveys were carried out for Falconbridge Ltd. on the Macklem 25 property.

The property consists of 48 contiguous claims in the southeast corner of Macklem Township, Porcupine Mining Division. It is located on the west side of Nighthawk Lake, approximately 35 kilometres east of the city of Timmins (Figure 1).

Access to the property was made by driving east from Timmins along Highway 101 and then south on the Gibsons Lake Road. The northeast corner of the property is 8.0 kilometres down the Gibson Lake Road.

The field crew included R. Daigle, S. Ryan, B. Pigeon and D. Londry.

PREVIOUS WORK

Only one other company has filed geophysical work on the property.

In September 1983, a VLF-EM survey was carried for United Kingdom Energy Resources Inc. over the eastern claims (Boissoneault, 1983). Following recommendations from these initial results, magnetic and horizontal loop electromagnetic surveys were carried out in May of 1984 (Boissoneault, 1984).

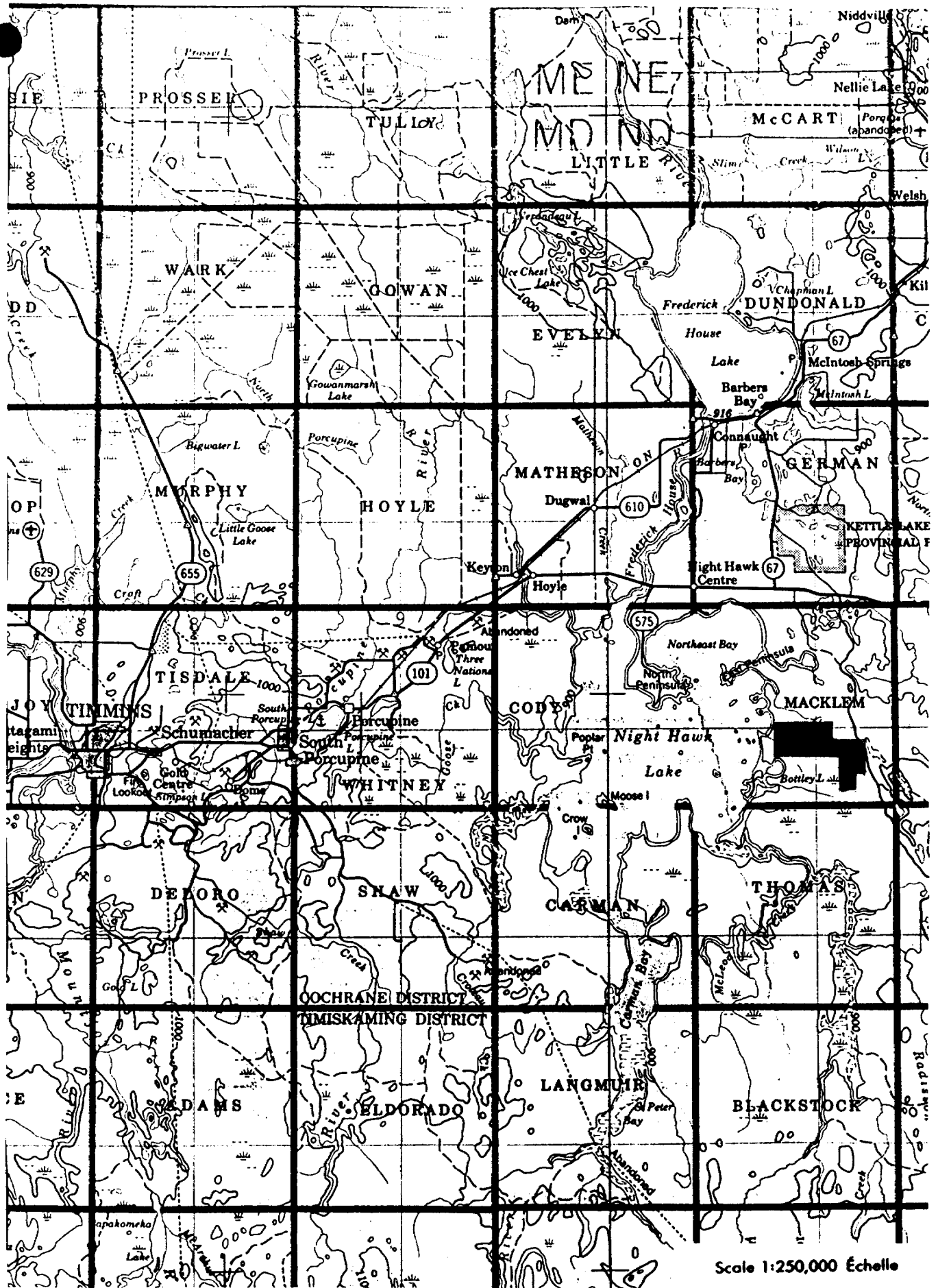


Figure 1. Location Map

SURVEY DESCRIPTIONS

An east-west base line was established and north-south grid lines were cut every 100 metres. Stations were picketed every 20 metres.

The horizontal loop EM survey was carried out with an Apex Parametrics Max Min I. This instrument measures the inphase and quadrature components of the secondary field as a percentage of the primary field. Readings were taken every 20 metres using a coil separation of 160 metres and frequencies of 444 and 1777 Hz.

The magnetic readings were taken with the Scintrex IGS-2/MP-4. This instrument is a proton precession magnetometer which measures the earth's total magnetic field to an accuracy of .1 gammas. The diurnal drift was monitored every 30 seconds with the Scintrex MP-3 base station magnetometer.

HLEM RESULTS

The horizontal loop results are plotted on maps 1 and 2 at a scale of 1:5000. The profile scale on the maps is 1 cm = 20%.

A number of poor conductors are reflected by weak quadrature anomalies in the results from both frequencies. The conductivity thickness of these zones is less than 2

mhos, within the range typical of surficial conductors. The anomalies on the east side of the property, however, do have a similar orientation as known faults in the area.

MAGNETIC RESULTS

The magnetic results are plotted on map 3 at a scale of 1:5000. The data is contoured every 50 gammas.

Two diabase dikes striking north-northwest through the middle of the property are reflected by linear magnetic high anomalies. The lower amplitude of the east dike may be partly due to deeper overburden.

The magnetic field over the rest of the property is quite uniform. A north-south contour between 500 and 600 East separates higher values to the east and lower values to the west. Boissoneault (1984) suggests that this coincides with the extension of the Whitefish River Lineament. A similar feature can be seen between 2100 and 2200 East, south of McGoshen Lake.


DOUGLAS LONDREY

REFERENCES

Boissoneault, J.R., 1983, Report on Electromagnetic (V.L.F.) Survey on Macklem Township Property of United Kingdom Energy Resources Inc., Porcupine Mining Division, Ontario. Timmins Assessment File T-2736.

Boissoneault, J.R., 1984, Report on Magnetic Survey, Electromagnetic (HLEM) Survey on Macklem Township Property of United Kingdom Energy Resources Inc., Porcupine Mining Division, Ontario. Timmins Assessment File T-2736.



42A07NW0005 2.9563 MACKLEM

900

December 31, 1986

Your File: 332/86
Our File: 2.9563

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

Dear Sir:

RE: Notice of Intent dated December 3, 1986
Geophysical (Electromagnetic & Magnetometer)
Surveys on Mining Claims P 805787, et al,
in Macklem 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,

J.C. Smith, Supervisor
Mining Lands Section

Whitney Block, 6th Floor
Queen's Park
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-4888

SH/mc

cc: Kidd Creek Mines Ltd
P.O. Box 1140
571 Moneta Avenue
Timmins, Ontario
P4N 7H9

Resident Geologist
Timmins, Ontario

Encl.

Douglas Londry
P.O. Box 1783
South Porcupine, Ontario
P0N 1H0

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



Ontario

Ministry of Northern Development and Mines

Technical Assessment Work Credits

File 2.9563

Date December 3, 1986

Mining Recorder's Report of Work No. 332/86

Recorded Holder KIDD CREEK MINES LTD

Township or Area MACKLEM TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic _____ days Magnetometer <u>20</u> 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.	P 849499 to 502 inclusive 852390 - 91 852394 to 413 inclusive 866752 to 758 inclusive 871609 to 611 inclusive

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

<u>5 DAYS</u>	<u>10 DAYS</u>	<u>15 DAYS</u>
P 805786 852393	P 871606-07-08	P 852392 866751 867792-96 871612-13

No credits have been allowed for the following mining claims

<input checked="" type="checkbox"/> not sufficiently covered by the survey	<input type="checkbox"/> insufficient technical data filed
P 805787	

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.



Recorded Holder
KIDD CREEK MINES LTD

Township or Area
MACKLEM TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic <u>40</u> days	P 849499 to 502 inclusive
Magnetometer _____ days	852391
Radiometric _____ days	852394 to 404 inclusive
Induced polarization _____ days	852406
Other _____ days	852408 to 413 inclusive
	866752 to 758 inclusive
	871609 to 611 inclusive
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.	

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

<u>20 DAYS</u>	<u>10 DAYS</u>	<u>30 DAYS</u>
P 852390	P 805786	P 852392
852405-07	852393	866751
871606-07-08		867792-96
		871612-13

No credits have been allowed for the following mining claims

not sufficiently covered by the survey insufficient technical data filed

P 805787

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.



Department of
Development
and
Economic
Affairs

Report of Work
(Geophysical, Geological,
Geochemical and Expenditures)

Mining Act

Instructions: -- Please type or print.
-- If number of mining claims traversed exceeds space on this form, attach a list.
Note: -- Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
-- Do not use shaded areas below.

page 1 of 2

Dec 11

Type of Survey(s) GEOPHYSICS		Township or Area MACKLEM TOWNSHIP	
Claim Holder(s) KIDD CREEK MINES LTD.		Prospector's Licence No. T-1848	
Address P. O. Box 1140, 571 Moneta Ave., Timmins, Ontario			
Survey Company, Timmins Geophysics		Date of Survey (from # to) 23 09 86 14 10 86 Day Mo. Yr. Day Mo. Yr.	Total Miles of line Cut 67.8 km.
Name and Address of Author (of Geo-Technical report) D. J. Londry, P.O. Box 1783, South Porcupine, Ontario PON 1H0			

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

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

Prefix	Mining Claim Number	Expend. Days Cr.	Prefix	Mining Claim Number	Expend. Days Cr.
P	805786			852406	
	805787			852407	
	849499			852408	
	849500			852409	
	849501			852410	
	849502			852411	
	852390			852412	
	852391			852413	
	852392			866751	
	852393			866752	
	852394			866753	
	852395			866754	
	852396			866755	
	852397			866756	
	852398			866757	
	852399			866758	
	852400			867792	
	852401			867796	
	852402			871606	
	852403			871607	
	852404			871608	
	852405			871609	

RECORDED
OCT 27 1986

RECEIVED
OCT 27 1986

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.

Total number of mining claims covered by this report of work. **48**

For Office Use Only		continued next page	
Total Days Cr. Recorded	Date Recorded	Mining Recorder	
2880	Oct. 27/86	<i>Wanley</i>	
	Date Approved as Recorded	Branch Director	
		<i>J. K. ...</i>	

Date
OCT 18, 1986

Recorded Holder or Agent (Signature)
Douglas Londry

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
DOUGLAS LONDREY, P.O. BOX 1783, SOUTH PORCUPINE, ONTARIO

PON 1H0

Date Certified
OCT 18, 1986

Certified by (Signature)
Douglas Londry

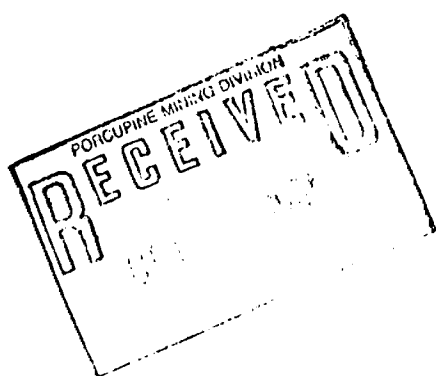
sim numbers continued:

871610

871611

871612

871613





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) Geophysics
Township or Area MACKLEM TOWNSHIP
Claim Holder(s) KIDD CREEK MINES LTD.
P.O. Box 1140, 570 Moneta Ave. Timmins
Survey Company TIMMINS GEOPHYSICS
Author of Report D.J. Londry
Address of Author P.O. Box 1783, South Porcupine, Ont.
Covering Dates of Survey Aug. 18, 1986 - Nov. 13, 1986
(linecutting to office)
Total Miles of Line Cut 67.8km.

Table with 2 columns: SPECIAL PROVISIONS CREDITS REQUESTED, DAYS per claim. Rows include Geophysical (Electromagnetic: 40, Magnetometer: 20, Radiometric, Other), Geological, and Geochemical.

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

Magnetometer Electromagnetic Radiometric
(enter days per claim)

DATE: Nov. 13, 1986 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. Qualifications 2.2289

Previous Surveys

Table with 4 columns: File No., Type, Date, Claim Holder. Multiple empty rows for data entry.

MINING CLAIMS TRAVERSED
List numerically
Table listing claim numbers from 805786 to 852405, with a total of 48 claims.

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 3396 Number of Readings MAG: 3396 HL: 2937
Station interval 20m. Line spacing 100m.
Profile scale HLEM: 1cm.=20%
Contour interval 50 gammas

MAGNETIC

Instrument Scintrex IGS-2/MP-4
Accuracy - Scale constant +/- .1 gamma
Diurnal correction method Scintrex MP-3 Base Station Magnetometer
Base Station check-in interval (hours) 30 sec.
Base Station location and value Line 300 WEST 0 NORTH
58880 gammas

ELECTROMAGNETIC

Instrument Apex Parametrics Max Min I
Coil configuration Horizontal Loop
Coil separation 160m.
Accuracy +/- 1%
Method: [] Fixed transmitter [] Shoot back [x] In line [] Parallel line
Frequency 444 and 1777 Hz. (specify V.L.F. station)
Parameters measured In-phase and quadrature components of secondary field
measured as a percentage of primary field.

GRAVITY

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

INDUCED POLARIZATION RESISTIVITY

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

claim numbers continued:

852406

852407

852408

852409

852410

852411

852412

852413

866751

866752

866753

866754

866755

866756

866757

866758

867792

867796

871606

871607

871608

871609

871610

871611

871612

871613

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 _____

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 _____

29563

m em

m em

805780

3/4 3/4

852411

✓ ✓

81

NC NC

12

✓ ✓

849499

✓ ✓

13

✓ ✓

500

✓ ✓

~~1/2~~ 866751

~~1/4~~ ~~1/4~~

1

✓ ✓

52

✓ ✓

2

✓ ✓

53

✓ ✓

852390

✓ 1/2

54

✓ ✓

91

✓ ✓

55

✓ ✓

92

1/4 1/4

56

✓ ✓

93

3/4 3/4

57

✓ ✓

94

✓ ✓

58

✓ ✓

95

✓ ✓

? 867792

1/4 1/4

96

✓ ✓

? 96

1/4 1/4

97

✓ ✓

871606

1/2 1/2

98

✓ ✓

87

1/2 1/2

99

✓ ✓

88

1/2 1/2

852400

✓ ✓

09

✓ ✓

1

✓ ✓

10

✓ ✓

2

✓ ✓

11

✓ ✓

3

✓ ✓

1/2

12

1/4 1/4

4

✓ ✓

1/2

13

1/4 1/4

5

✓ 1/2

6

✓ ✓

7

1/4 1/2

8

✓ ✓

9

✓ ✓

10

✓ ✓

P

MAP SYMBOLOLOGY

Aerial Cableway	Pipeline (above ground)
Boundary	Railroad
International	Single Track
Provincial	Double Track
District, Township	Abandoned
Indian Reserve	Township
Approximate	Township
Let, Concession	Road
Approximate	Highway, County
Peri Boundary	Tramway
Bridge	Access (Load of potential
Road, Railroad	significance of
Building	Trail, Bush Road
Chimney	(single alley)
Cliff, Pit, Pile	Rapids
Contours	Double line river
Interpreted	with multiple rapids
Approximate	Reservoir
Depression	River, Stream, Canal
Control Points	Approximate
horizontal	direction of flow
vertical	Approximate
Culvert	rock
Falls	significant
Double line river	hoop
with multiple rapids	Spot Elevation
(flow elevations)	(sea level)
300.0	Tower
Transmission Line	Pole
Pole	Pylon
Tunnel	Utility Poles
Flooded Land	Wharf, Dock, Pier
Lock	Wooded Area
Marsh or Swamp	
Mast	
Mine Head Frame	
Outcrop	

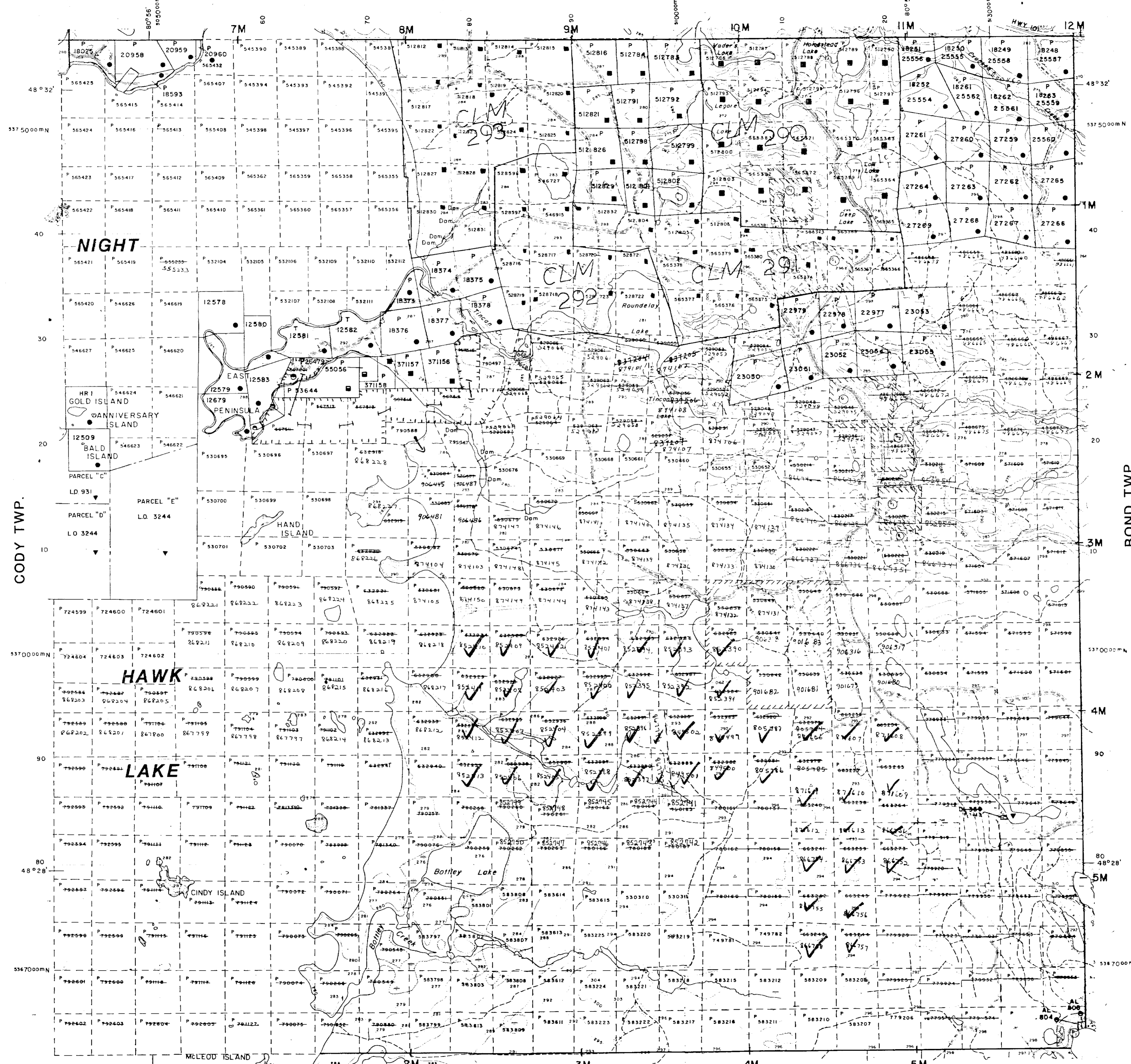
AREAS WITHDRAWN FROM DISPOSITION

M.R.O. - MINING RIGHTS ONLY				
S.R.O. - SURFACE RIGHTS ONLY				
M.+S. - MINING AND SURFACE RIGHTS				
Description	Order No.	Date	Disposition	File
Site Preparation	05/02/85			77094 V6

SAND and GRAVEL

- ① GRAVEL FILE 105381
- ② M.T.C. PIT 1121
- ③ QUARRY PERMIT

GERMAN TWP.



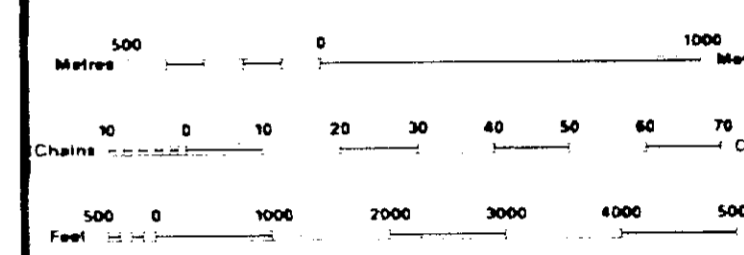
LEGEND

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 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	

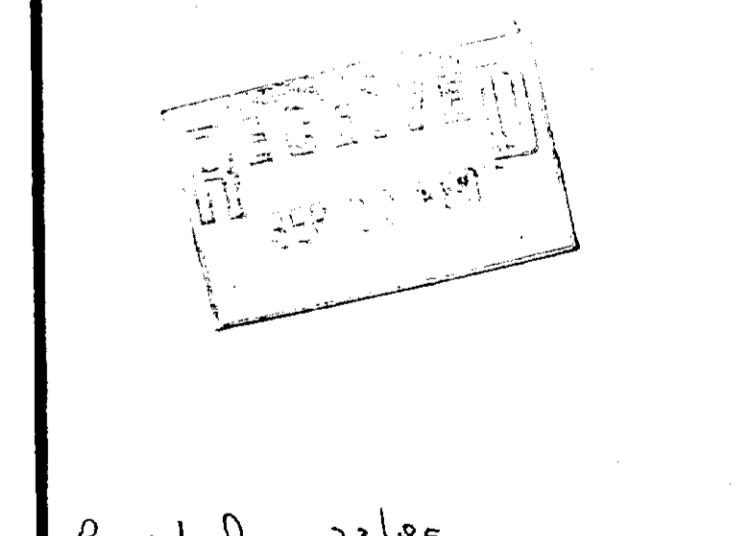
NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 8, 1913, VESTED IN ORIGINAL PATENTEES BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 43, SUBSEC. 1



SCALE 1:20 000
GRID ZONE 17

Reserve flooding rights on Night Hawk Lake to Ontario Hydro to elevation 903.5', T.B.N.D.Ry. datum

Area withdrawn (NR+SR) from Staking Section 36 Mining Act, R.S.O. 1980 See NR.W. 10/85

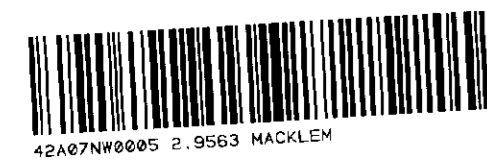


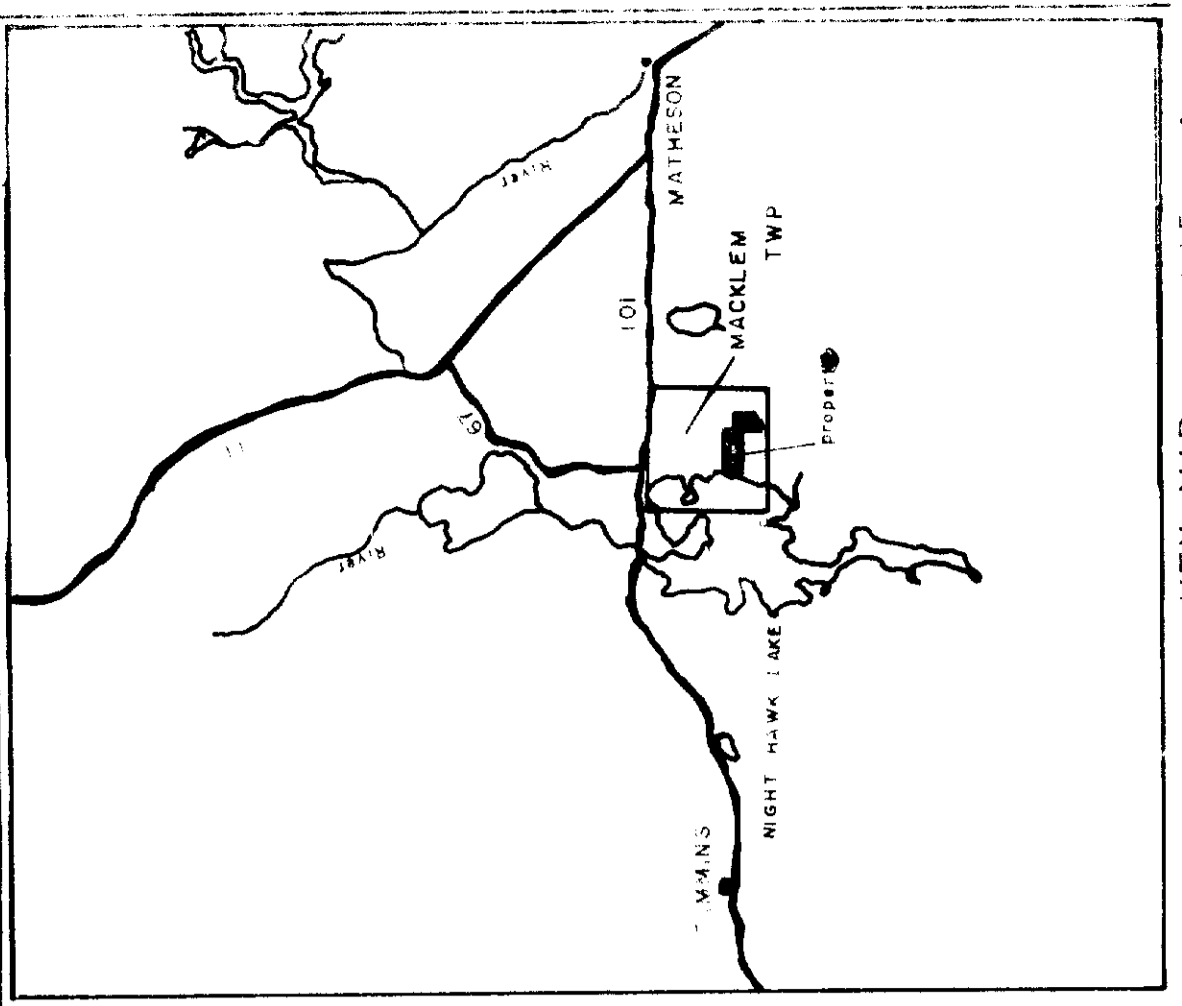
TOWNSHIP
MACKLEM
M.N.R. ADMINISTRATIVE DISTRICT
TIMMINS
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
COCHRANE

Ministry of Natural Resources
Land Management Branch
Ontario

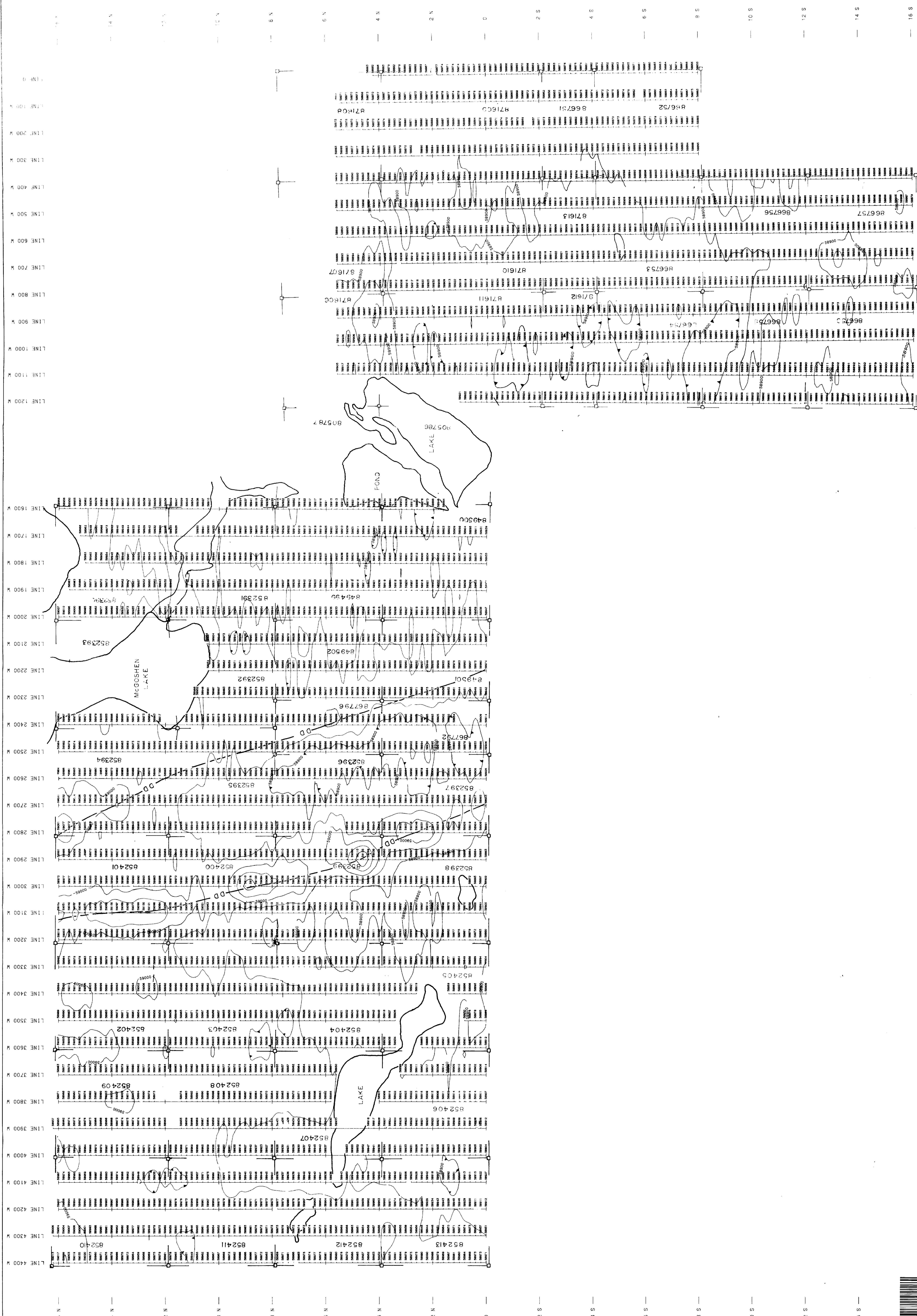
ORIGINAL COMPILED JULY 1984
REVISED

Number
G-3997

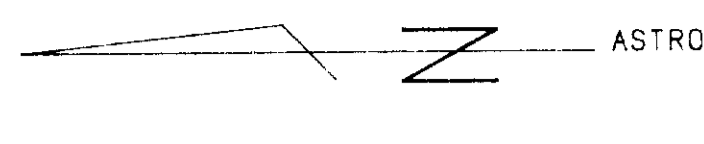




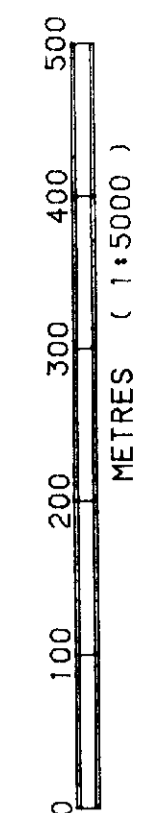
KEY MAP



DIABASE DIKE
---DD---

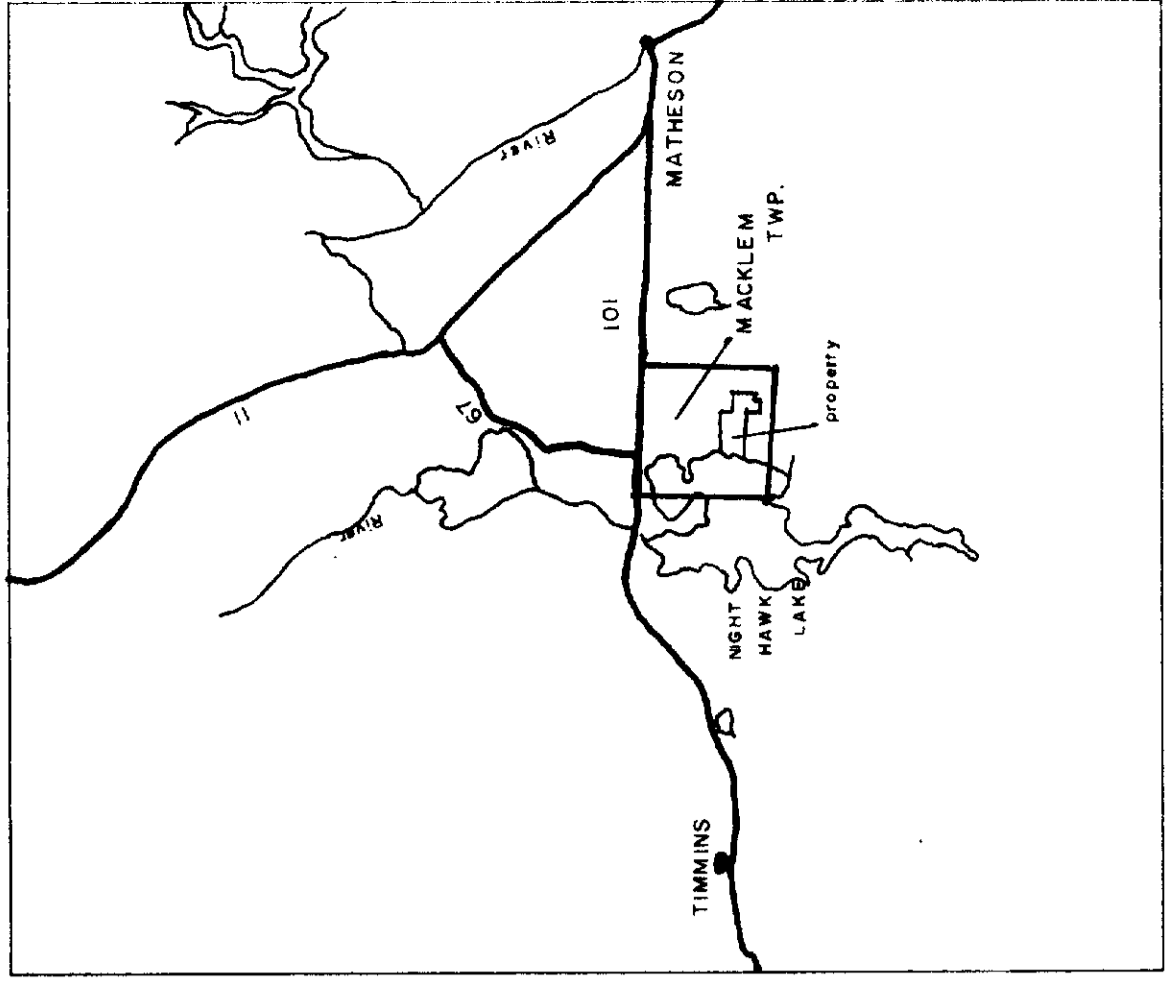


LEGEND
 INSTRUMENT - GAUSSMETER 105-2/MP-4
 TOTAL FIELD - METRES
 READINGS IN GAUSS
 ▲ MAGNETIC BASE STATION



KIDD CREEK MINES LTD.
 MAGNETIC SURVEY
 UNITED KINGDOM OPTION
 MACKLEN 25
 NTS 42-A-7
 PROJ# 104
 DATE 1986
 FILE NAME 86MAC25-11AC

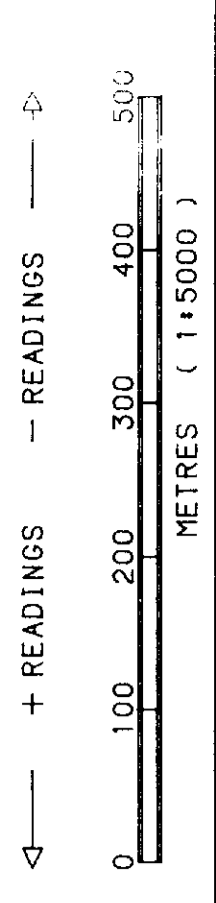




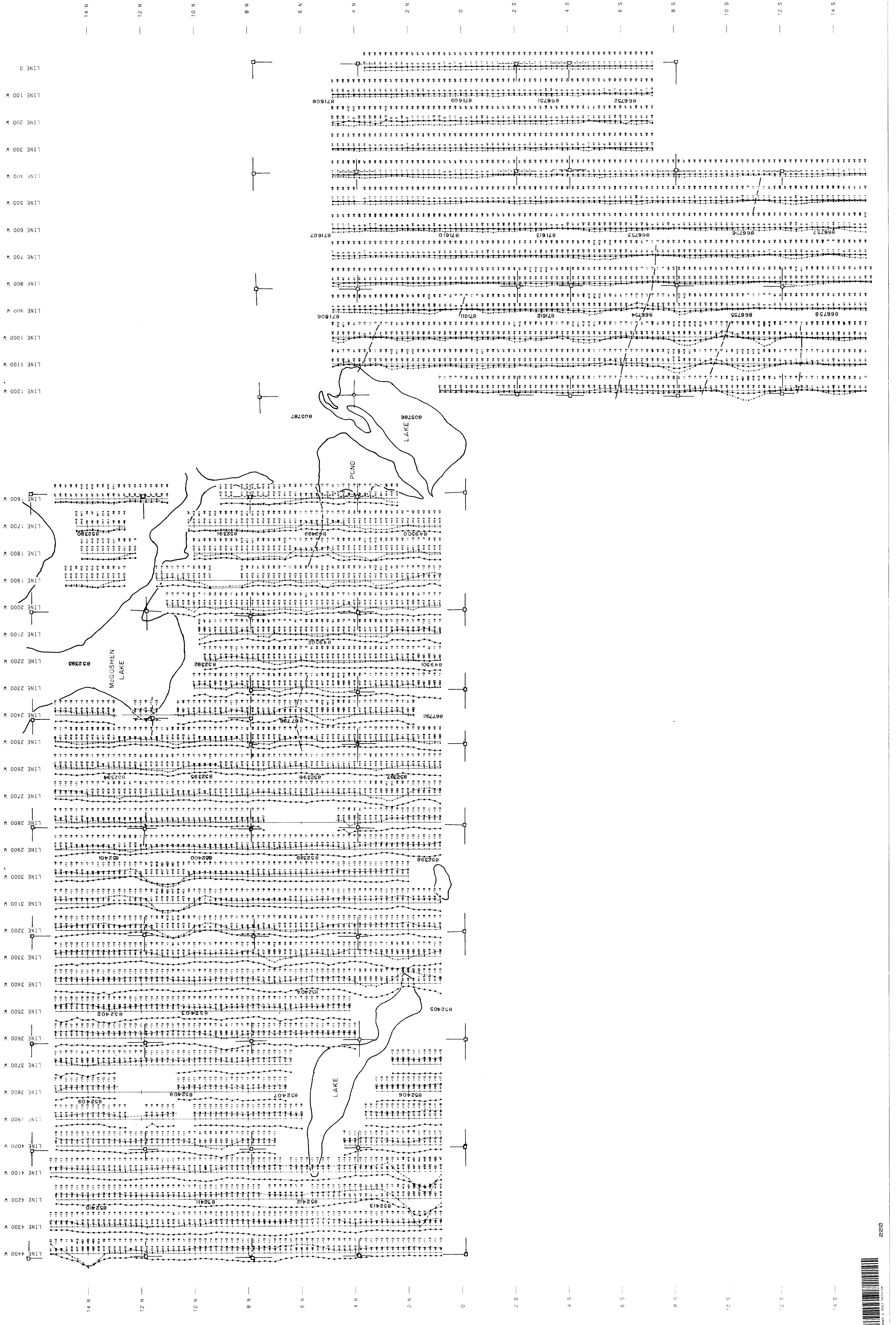
SCALE 1:100000
KEY MAP

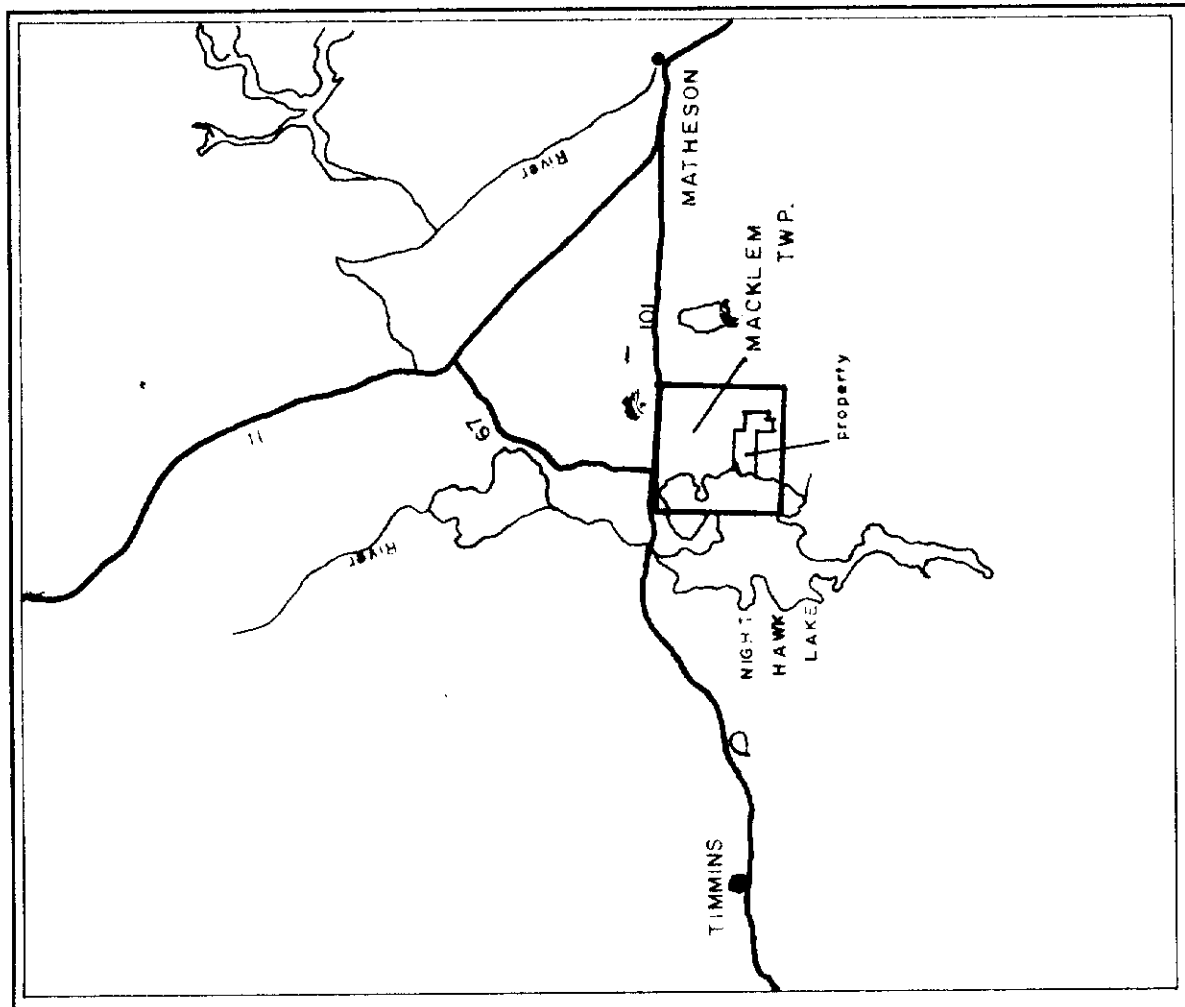
LEGEND
INSTRUMENT: APEX PARAMETRICS MAXIM 11
FREQUENCY: 1777 Hz
COIL SPACING: 160 METRES
PROFILE SCALE 1 CM = 302

1777 Hz
IN-PHASE READINGS
QUADRATURE READINGS
+ READINGS - READINGS
METRES (1:5000)

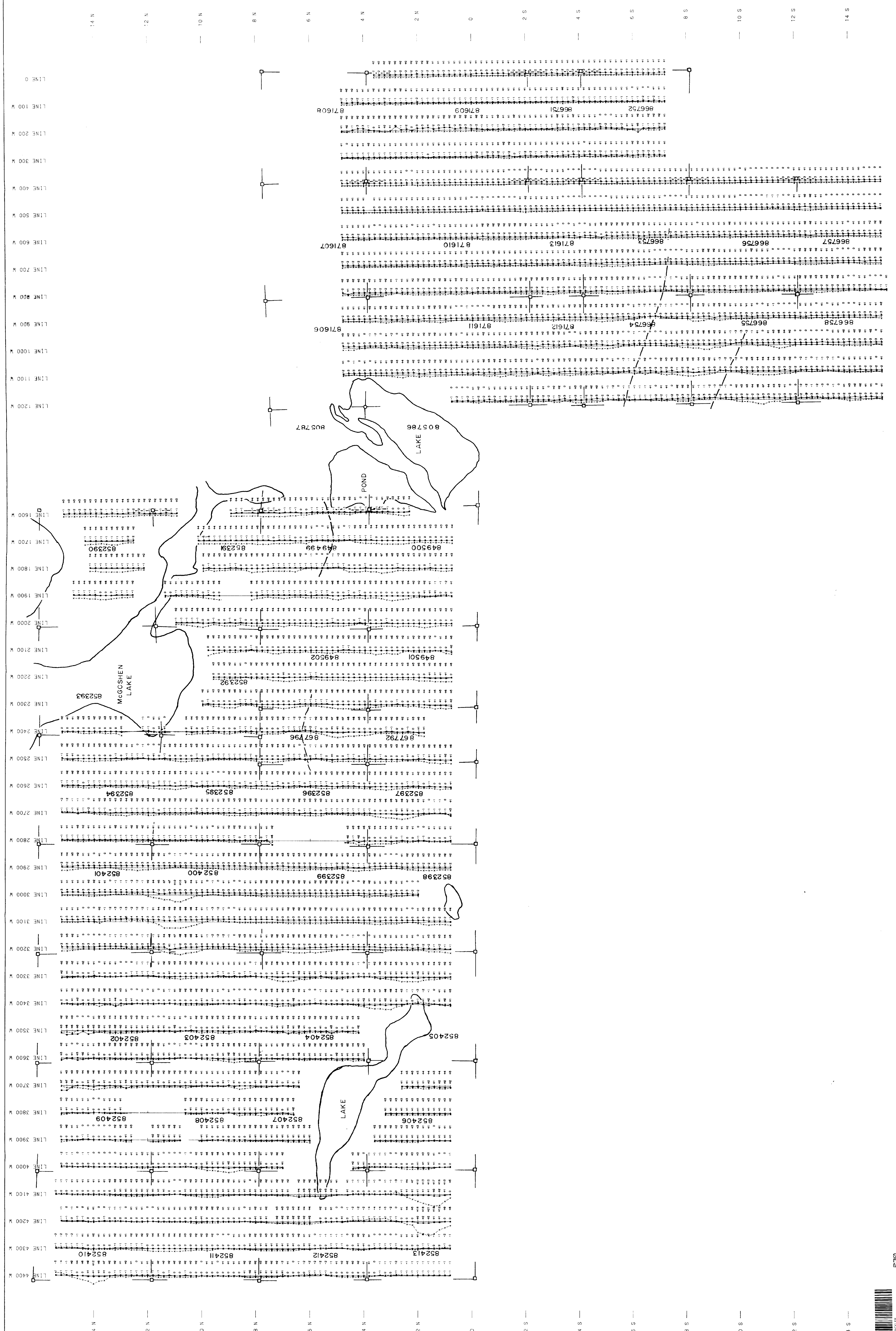


KIDD CREEK MINES LTD.
HORIZONTAL LOOP SURVEY
UNITED KINGDOM OPTION
MACKLEM 25
NTS: 42-A/7 PROJ# 104
DATE: 1986
FILE NAME: 86MAC25-HL

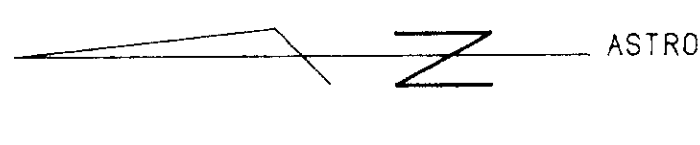




SCALE 1:60000

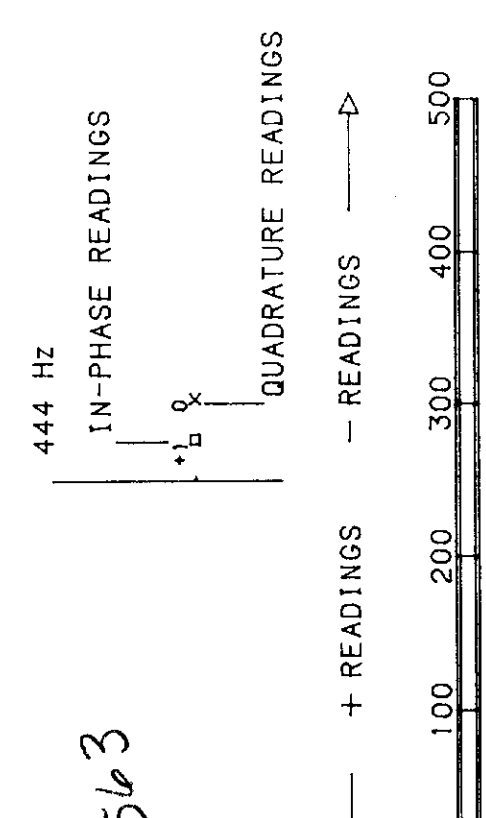


Conductor Axis

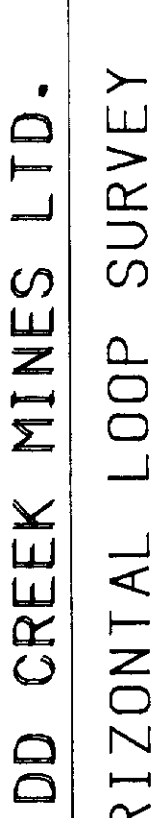


LEGEND

INSTRUMENT: APEX PARAMETRICS MAXMIN 11
 FREQUENCY: 444 Hz
 COIL SPACING: 150 METRES
 PROFILE SCALE: 1 CH- 20%



444 Hz
 11-PHASE READINGS
 QUADRATURE READINGS



KIDD CREEK MINES LTD.
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