010

REPORT ON THE MAGNETOMETER SURVEY ON THE WASHEIBEMAGA LAKE CLAIM GROUP, BOYER LAKE AREA, NORTHWESTERN ONTARIO, 52 F/7

E.P. MORETON
ESSO MINERALS CANADA
JUNE 1st,1986

TABLE OF CONTENTS

LIST OF MAPS

Introduction

A ground magnetometer survey was conducted over a group of four claims held by Esso Resources Canada Ltd covering a portion of the old Pelham Mines occurrence. The survey was conducted on a series of east-west trending lines spaced fifty metres apart covering all four claims.(Map # 2).

Location and Access

The property is located some 60 kilometers southeast of Dryden, Ontario (Map # 1). It can be reached via a well established bush trail leading from Washeibemaga Lake 1/2 mile to the east. Washeibemaga Lake is accessed by a 400 metre portage from the Snake Bay Road some 35 kilometers south of where it begins at Highway 17 (Map 1).

History

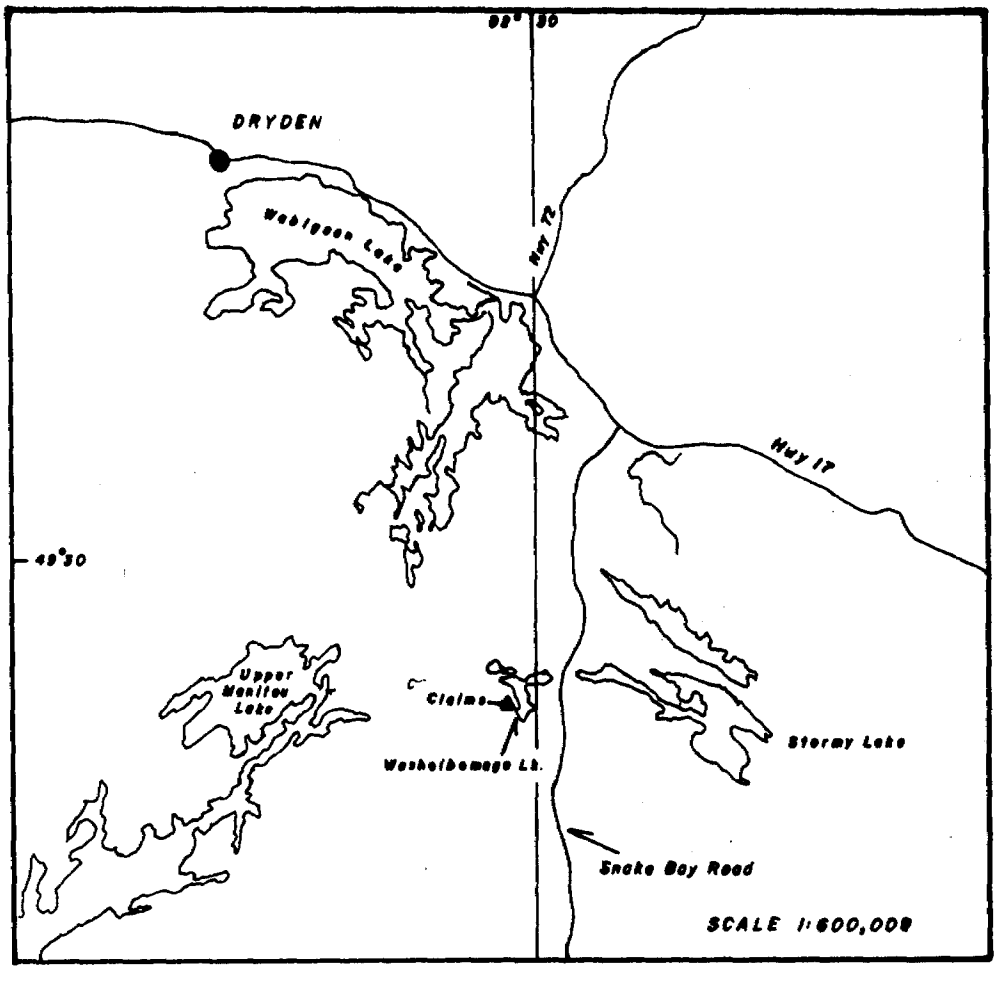
The original property which comprised 17 claims was staked by S.S. Forneri in 1937 (Blackburn, 1981). It was subsequently optioned to M.J. O'Brian Limited who conducted a trenching program and 1,856 feet of x-ray diamond drilling during the summer of 1938. Results of this program outlined a number of narrow "vein" zones which carried gold values as high as 5.62 oz/ton.

Pelham Gold Mines acquired the ground in 1948 and let the property remain idle until finally optioning it to New Calumet Mines Limited in 1959. The ground was held under option for the next ten years with no record of any work being preformed at this time.

In 1973, the property was examined by W.G. Wahl, on behalf of Osisko Lake Mines Limited. Detailed channel sampling conducted over the old showings substantiated the O'Brian sampling results. A limited amount of magnetic and electromagnetic (VLF-EM) surveying was apparently undertaken in close proximity to the showings. Neither method was able to detect the showings. A cut grid composed of east-west lines spaced every 200' was established on the property. No recorded work was carried out on the grid.

Geology

The entire property is underlain by mafic to felsic metavolcanics and gabbros of the Wapageisi Lake Group intruded in the west by the main body and apophyses of the Taylor Lake Stock. The south-central portion of the property is underlain by a medium-grained quartz-bearing



MAP No 1 GENERAL LOCATION

gabbro which has intruded into mafic metavolcanic flows to the west and felsic to intermediate metavolcanic tuffs, lapilli tuffs and tuff-breccias to the east.
To the north and east the property is underlain by a complex succession of intermediate to felsic metavolcanics. Adjacent to the gabbro the series is composed of interbedded felsic volcanic flows and cherty sediments which grade to the north and the east into intermediate to felsic lapilli-tuffs and breccias which contain upto 50% chloritic bands and fragments. Bedding in the sediment lenses and the volcanics strikes just west of north and dips from 65 to 85 degrees to the east. The northern two claims of the property are underlain by a westerly tapering wedge of distinctive felsic quartz-bearing tuffs and lapilli-tuffs representing the extrusive phase of the Thundercloud Porphyry which lies some 3 kilometers southeast of the property. No mafic or non quartz-bearing material is found within this massive sequence of volcanics which makes it very distinct from the mixed metavolcanic sequence to the south. Numerous dykes upto 5.0 metres in width of the Thundercloud porphyry are found intruding the mafic volcanics in the western portion of the property. These dykes invariably trend north-south and are characteristically intensely foliated and altered.

Along the western boundary the north-south trending eastern contact of intermediate Taylor Lake Stock intrudes into the mafic and quartz-bearing felsic volcanics. One large, northeasterly striking, dyke of the Taylor Lake Stock is found cutting through the quartz-bearing felsic tuffs in the northwestern portion of the property.

Magnetometer Survey

The total field magnetometer survey was conducted using an Exploranium G-816 proton precession magnetometer which has an accuracy of +/- 10 gammas and a sensitivity of +/- 0.1 gammas. The survey was conducted by using a base-station method consisting of readings taken at an established base-station a maximum of every two hours. Corrections for diurnal drift were not nescessary as fluctuations in the total field base station readings varied by less than 20 gammas over the three days it took to complete the survey. A 10' staff was used to elevate the sensor away from the ground to counter the effects of any possible cultural material on the property. The survey consisted of taking readings every 12.5 metres on an east-west grid with 50 metre line spacings. The raw data is presented on Map #2 and a contoured version is presented on Map #3, both located in the back pockets of the report.

Overall the total magnetic field on the property ranged from a low of approximately 58,500 gammas to a high in

excess of 64,500 gammas. The following table shows the approximate range in values encountered for the various rock types on the property.

Rock Type	Response (Gammas)
Mafic Volcanics	60,100 - 60,500
Gabbro	60,100 - 64,500
Felsic Volcanics	59,000 - 60,100

Interpretation - The contoured magnetic data (Map # 3, in back pocket) distinctly shows the contact between the mafic metavolcanics and gabbros to the south and the felsic metavolcanics to the north and east. This contact is approximated by the 60,300 gamma contour line. The total field susceptibility of the felsic metavolcanic package to the north is very quite forming a broad plateau with a maximum relief of 200 gammas in total field variation.

The gabbro body shows a wide range in total field values. This variation reflects the presence of internal variations in the gabbro itself as well as included sediments and the effects of later alteration. Portions of masssive, unaltered gabbro have a total field response which generally fall between 60,200 and 61,800 gammas presumably reflecting variation in primary magnetite content.

On lines 1+00, 1+50, and 2+00 N, just east of the baseline a north-south trending magnetic low with values < 60,000 gammas is present in the gabbro. This low coincides with an included band of intercalated felsic volcanics and chert which have been intruded and possibly rafted by the gabbro. A large, north-south trending positive magnetic anomaly is present on lines 0+50, 1+00, 1+50 and 2+00 N, some 250 metres west of the baseline. This anomaly is defined by values ranging from 60,500 gammas to in excess of 64,500 gammas. Scattered outcrops in this area are composed of thermally metamorphosed "hornfelsed" gabbro which contain locally upto 10 % disseminated pyrite and pyrrhotite.

The contact between the gabbro and the mafic volcanics to the west is marked by a distinct north-south trend to the total field evident on lines 0+50, 1+00, 1+50, and 2+00 N at approximately 375 west.

On the very eastern margin of the claim group on lines 1+00 and 1+50 N at approximately 284 east, a distinct positive anomaly marks the presence of a lens of intensely hornfelsed mafic volcanics within the lower sequence of felsic volcanics which contains upto 3% pyrrhotite.

REFERENCES

Blackburn, C.E., 1976: Geology of the Boyer Lake - Meggisi Lake Area, District of Kenora, Ontario Geological Survey, Report 202, 107p.

AUTHORS DECLARATION

I hereby declare that I the author witnessed and supervised the work recorded in this report between the dates of May 25 and May 28, 1986 and state that all the data has been accurately presented as collected.

I have been granted a BSc. (1981), and an MSc (1984) in geological sciences from Queen's University at Kingston, Ontario. From Feb. 1, 1984 to the present I have been employed full-time as a project geologist by Esso Minerals Canada Ltd. and submit this report of work in that capacity.

Ministry of Northern Development and Mines

Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

#73-86

52F07NE0042 2.9203 BOYER LAKE 900

Do not use shaded areas below.

Type of Survey(s): MAGNETOMETER

Township or Area: BOYER LAKE G.2572

Claim Holder(s): ESSO RESOURCES CANADA

Prospector's Licence No.: T-872

Address: 120 ADELAIDE ST W, TORONTO ONT

Survey Company: ESSO RESOURCES

Date of Survey (from & to): Day 20 Mo. 5 Yr. 86 / Day 23 Mo. 5 Yr. 86

Total Miles of line Cut: 12

Name and Address of Author (of Geo Technical report): E.P. MORTON % ESSO RESOURCES CANADA

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	· Electromagnetic	
	· Magnetometer	40
	· Radiometric	
For each additional survey: using the same grid: Enter 20 days (for each)	· Other	
	Geological	
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	· 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)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
K-	850299	
	850292	
	850300	
	850291	

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.

RECEIVED
JUN 13 1986
MINING LANDS SECTION

KENORA MINING DIV.
RECEIVED
MAY 29 1986
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

Expenditures (excludes power stripping)

Type of Work Performed:

Performed on Claim(s): 850291

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: 4

For Office Use Only

Total Days Cr. Recorded: 160

Date Recorded: MAY 29/86

Date Approved: 86.6.25

Mining Recorder

Director

Date: May 30/1986

Recorded Holder or Agent (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: E.P. MORTON % ESSO RESOURCES CANADA P.O. BOX 4029 STATION "A" TORONTO M5W 1K3

Date Certified: MAY 30/1986

Certified by (Signature)

1362 (85/12)

Ontario

Ministry of Northern Development and Mines

Geophysical-Geological-Geochemical Technical Data Statement

File _____

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 BOYER LAKE (G2575)

Claim Holder(s) ESSO RESOURCES CANADA LIMITED

Survey Company _____

Author of Report E.P. MORETON

Address of Author C/O ESSO MINERALS CANADA, TORONTO

Covering Dates of Survey MAY 25 → MAY 28 (linecutting to office)

Total Miles of Line Cut 10

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	
–Magnetometer	
–Radiometric	
–Other	
Geological	
Geochemical	

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

Magnetometer 40 Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: JUNE - 1986 SIGNATURE: _____
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix) (number)

K - 850291
- 850292
- 850299
- 850300

RECEIVED
JUN 25 1986
MINING LANDS SECTION

If space insufficient, attach list

TOTAL CLAIMS 4

OFFICE USE ONLY

837 (85/12)

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 850 Number of Readings 845

Station interval 12.5 METRES Line spacing ~~25~~ 50 METRES

Profile scale

Contour interval 100 GAMMAS

MAGNETIC

Instrument EXPLORANIUM G-816

Accuracy – Scale constant 0.1 GAMMAS

Diurnal correction method BASE STATION

Base Station check-in interval (hours) 1-2 HOURS

Base Station location and value L0+00N 0+00E MEAN VALUE 60,410

ELECTROMAGNETIC

Instrument

Coil configuration

Coil separation

Accuracy

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency (specify V.L.F. station)

Parameters measured

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 _____

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 _____

Mining Lands Section

File No 2.9203

Control Sheet

TYPE OF SURVEY

✓ GEOPHYSICAL

____ GEOLOGICAL

____ GEOCHEMICAL

____ EXPENDITURE

MINING LANDS COMMENTS:

P. Hurst

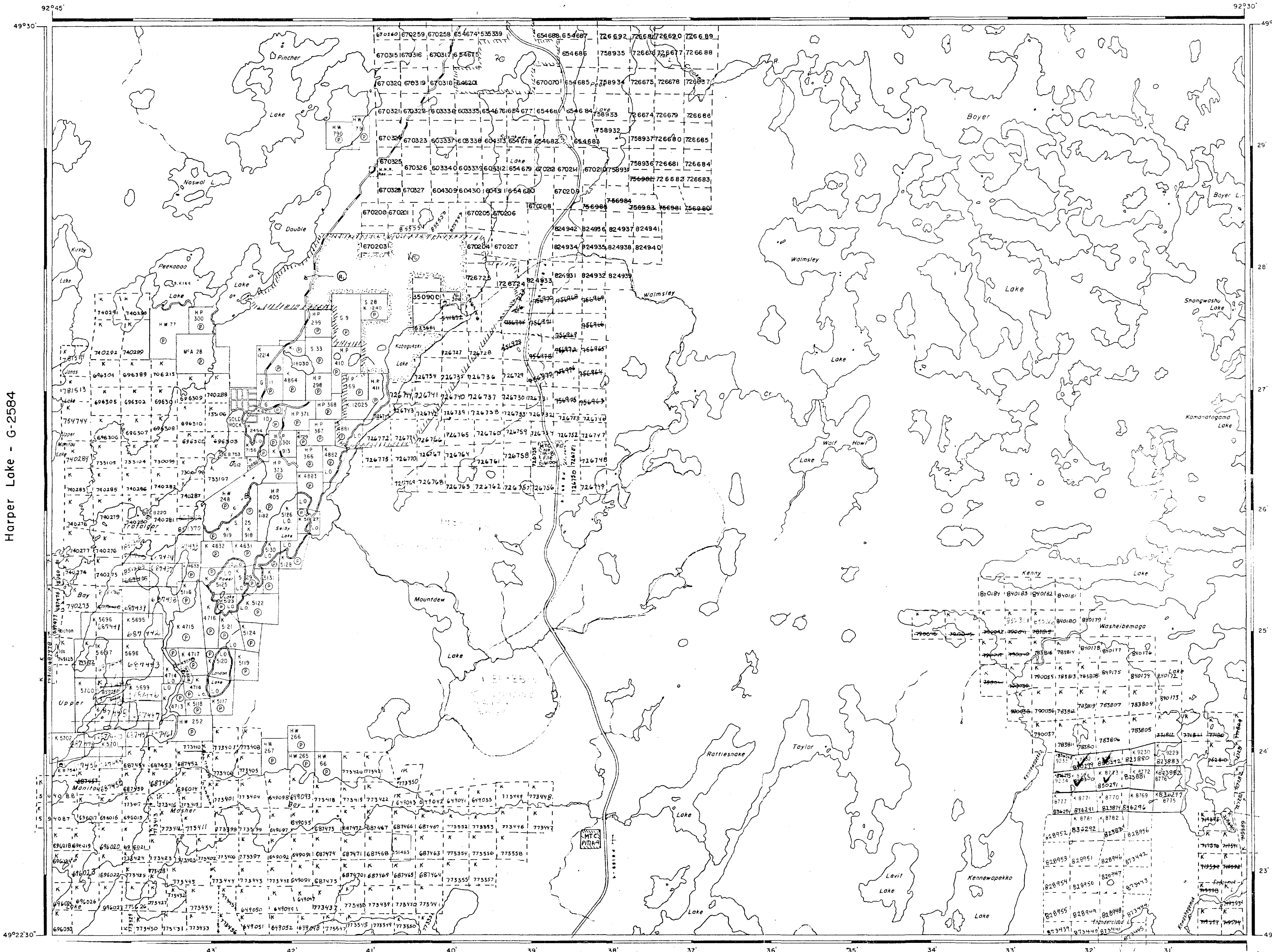
Signature of Assessor

June 24/86

Date

Lpd

Turtlepond Lake - G-2595



52F07NE0042 2.9203 BOYER LAKE

200

Meggisi Lake - G-2688

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	Ⓟ or ●
" , SURFACE RIGHTS ONLY	◓
" , MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	⬒
" , MINING RIGHTS ONLY	⬓
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
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. 380, SEC. 63, SUBSEC. 1

REFERENCES

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

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000

METRES 0 200 1000 (1 KM) 2000 (2 KM)

AREA

BOYER LAKE

M.N.R. ADMINISTRATIVE DISTRICT

DRYDEN

MINING DIVISION

KENORA

LAND TITLES / REGISTRY DIVISION

KENORA

Ontario Ministry of Natural Resources — Land Management Branch

Date JANUARY, 1984

Number G-2572

494923

5+00 W | 4+50 W | 4+00 W | 3+50 W | 3+00 W | 2+50 W | 2+00 W | 1+50 W | 1+00 W | 0+50 W | BL 0+00 | 0+50 E | 1+00 E | 1+50 E | 2+00 E | 2+50 E | 3+00 E

L 6+50 N

L 6+00 N

L 5+50 N

L 5+00 N

L 4+50 N

L 4+00 N

L 3+50 N

L 3+00 N

L 2+50 N

L 2+00 N

L 1+50 N

L 1+00 N

L 0+50 N

L 0+00

K 850299

K 850292

K 850300

K 850291

□ *Claim Post Location*

ALL VALUES IN GAMMAS

REFER TO CLAIM MAP No. G 2572 "BOYER LAKE"

PELHAM OPTION

TOTAL FIELD MAGNETICS

ONT. 81

E.P. MORETON — June '86 — 52 F/7

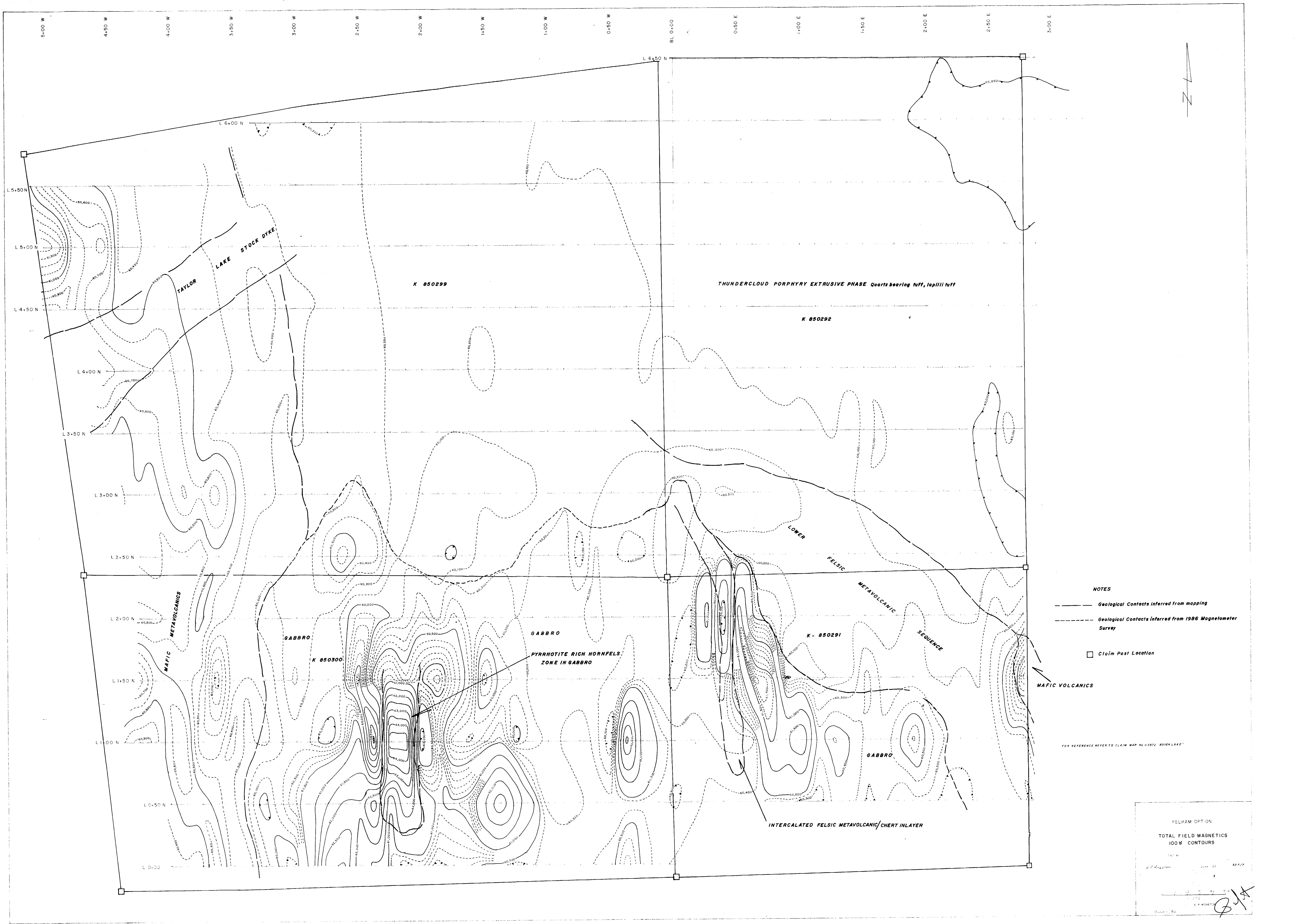
0 10 20 30 40 50

1:1,000

E. P. MORETON

June 1 80

29203


PELHAM OPTION
TOTAL FIELD MAGNETICS
100 γ CONTOURS
NOTES
Geological Contacts inferred from mapping
Geological Contacts inferred from 1986 Magnetometer Survey
Claim Post Location
FOR REFERENCE REFER TO CLAIM MAP No. G2972 "BOYER LAKE"
THUNDERCLOUD PORPHYRY EXTRUSIVE PHASE Quartz bearing tuff, lapilli tuff
K 850292
K 850299
K 850300
K - 850291
TAYLOR LAKE STOCK DYKE
LOWER FELSIC METAVOLCANIC SEQUENCE
GABBRO
MAFIC METAVOLCANICS
MAFIC VOLCANICS
PYRRHOTITE RICH HORNFELS ZONE IN GABBRO
INTERCALATED FELSIC METAVOLCANIC/CHERT INLAYER
5+00 W
4+50 W
4+00 W
3+50 W
3+00 W
2+50 W
2+00 W
1+50 W
1+00 W
0+50 W
BL 0+00
0+50 E
1+00 E
1+50 E
2+00 E
2+50 E
3+00 E
L 6+50 N
L 6+00 N
L 5+50 N
L 5+00 N
L 4+50 N
L 4+00 N
L 3+50 N
L 3+00 N
L 2+50 N
L 2+00 N
L 1+50 N
L 1+00 N
L 0+50 N
L 0+00
N
220