GEOPHYSICAL SURVEY

on the

SHAW #1 GROUP

Hollinger Mines Limited
Shaw Township, Ontario

Timmins, Ontario
October 22, 1981

J.E. Mountjoy

INTRODUCTION

Line cutting was carried out during the period May 5, 1980 to June 20, 1980 over 43 contiguous claims in Shaw Township, District of Cochrane, in the Porcupine Mining Division, Province of Ontario.

An electromagnetic survey was filed for assessment credits on October 27, 1980 by Hollinger Argus Limited.

During the period February 27 - June 19, 1981, a magnetic survey was carried out over 30 contiguous claims in Shaw Township.

PROPERTY, LOCATION and ACCESS

The portion of Group #1, Shaw Township, consists of 30 contiguous claims covered by the survey. The claims extend west from the township line in Carman Township and lie in the surveyed portion of the township of Shaw and include lots 1, 2, and 3 in Concessions IV and V of Shaw Township.

The claims are located approximately 12 miles S.E. of the city of Timmins and can be reached by car or an all-weather road from South Porcupine.

TOPOGRAPHY

The claims are located in a hilly outcrop area with local swamp and sand cover. Numerous logging roads extend over part of the claim group.

GEOLOGY

The chief rock outcrop is pillowed and amygdaloidal andesite locally bleached and carbonitized. Numerous narrow iron formations are known to outcrop along the entire length of the claim group.

Local diabase dykes and intrusives such as diorite and porphyry are present on the claim group.

Most of the formations strike northwest and dip 20°-45° southeast. These rocks appear to be part of the Shaw domal structure.

SURVEY METHOD

Using a Geometrics G-816 Proton magnetometer, readings were taken at 25 meter intervals along existing grid lines which were cut at 100 meter intervals.

Repeated base stations were established along the base line and tie lines at the intersections with the cross lines. Loops were then read between the bases and the drift applied to all the readings. The operators were H.Z. Tittley, D. Laforest, as well as the author, all of the city of Timmins in the province of Ontario.

SURVEY RESULTS

Results of the survey are plotted and contoured on the accompanying map entitled Magnetic Survey, Shaw No. 1, on a scale of 1:2400 (1 inch = 200 feet).

With a background of 59,000 gammas, the magnetic relief varies between minus 2000 and plus 5000 gammas.

As a result of the magnetic survey, seventeen anomalies have been outlined. The anomalies are lettered A-Q.

Anomalies A and B are interpreted to be caused by sulphide-rich siliceous iron formation found in the mafic metavolcanics of the Deloro Group (Redstone Formation). Both anomalies have conductors closely associated with them.

Anomalies C,D,E,F,G,H,I,J,K,L,M and N are interpreted to represent Iron Formation.

Electromagnetic conductors are known to correspond with magnetic anomalies C to N inclusive. Anomalies C to N inclusive are interpreted to be in the intermediate metavolcanics of the Deloro Group (Boomerang Formation).

The Goose Lake fault zone has been outlined by the magnetic survey (see Figure #1). The fault zone follows the magnetic lows roughly from west north west to east south east across the entire property. The location of the fault zone is supported or confirmed by the electromagnetic survey previously filed by Hollinger Argus Limited.

The Goose Lake fault has also been mapped by Carlson (1966). The Goose Lake fault is believed to separate the Deloro Group to the south and the younger Tisdale Group to the north.

Anomalies O, P and Q are interpreted to be the ultramafic metavolcanics of the Tisdale Group (Goose Lake Formation).

From previous mapping by Carlson (1966), a diabase dyke trending north north west to south south east across the entire property has been shown. From our magnetic survey this diabase dyke is not clearly defined.

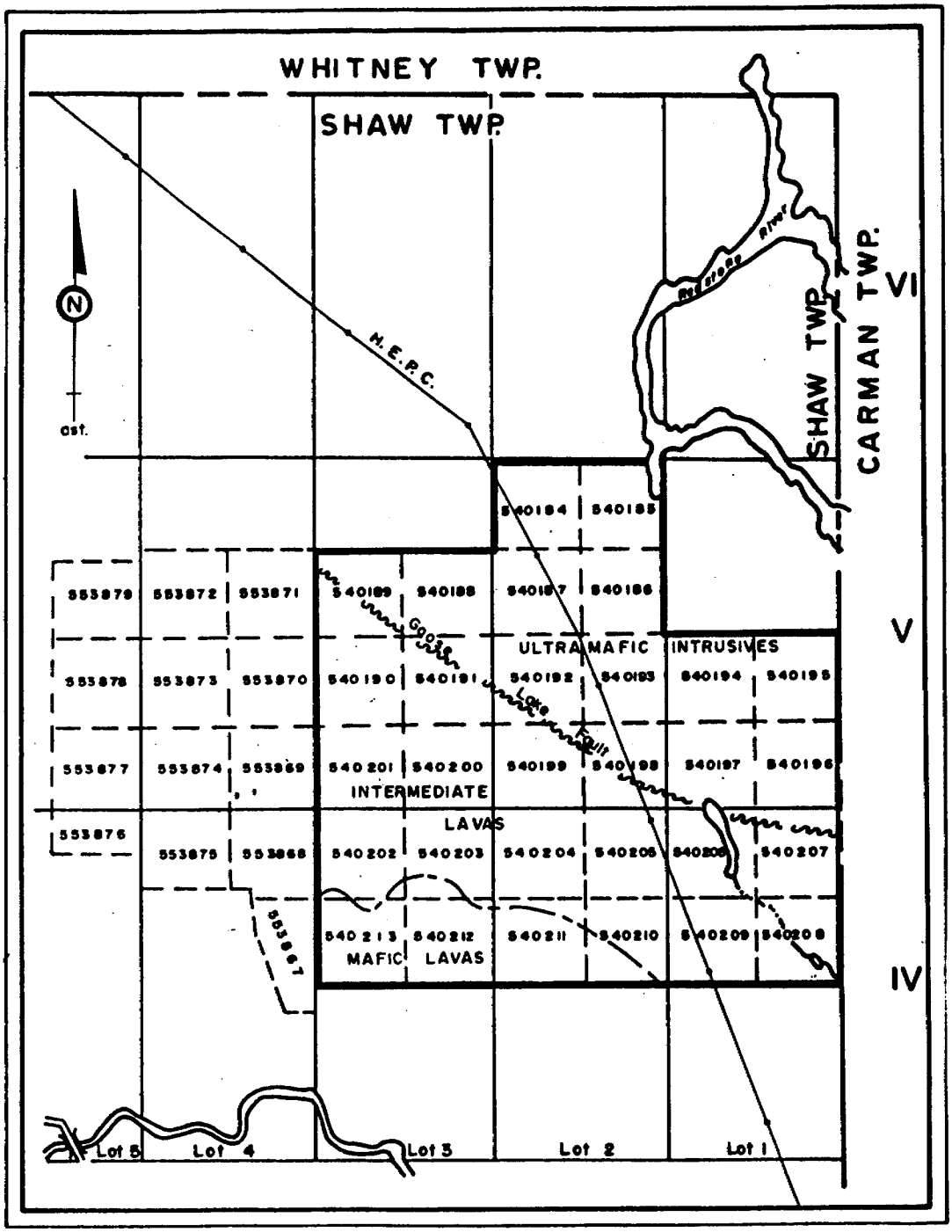
CONCLUSIONS and RECOMMENDATIONS

The survey successfully outlined the geological units and their extent under the overburden. However, detailed

mapping using existing grid lines is recommended.

Respectfully submitted,

J. E. Mountjoy.



Scale : 1 inch to 40 chains

FIG. No. 1

Ontario

Ministry of Natur

GEOPHYSICAL – GEOLOGI(
TECHNICAL DATA

42A06NE0380 2.4251 SHAW

900

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 Magnetic

Township or Area Shaw Township

Claim Holder(s) Hollinger Argus Limited
Box 320, Timmins, Ontario P4N 7E2

Survey Company Hollinger Argus Limited

Author of Report J. E. Mountjoy

Address of Author c/o Box 320, Timmins, Ont.

Covering Dates of Survey Feb.27-June 19, 1981
(linecutting to office)

Total Miles of Line Cut

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	20
–Radiometric	
–Other	
Geological	
Geochemical	

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

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

DATE: Oct.22,1981 SIGNATURE: _____
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
P.540184,	P.540204,
P.540185,	P.540205,
P.540186,	P.540206,
P.540187,	P.540207,
P.540188,	P.540208,
P.540189,	P.540209,
P.540190,	P.540210,
P.540191,	P.540211,
P.540192,	P.540212,
P.540193,	P.540213,
P.540194,	
P.540195,	
P.540196,	
P.540197,	
P.540198,	
P.540199,	
P.540200,	
P.540201,	
P.540202,	
P.540203,	

TOTAL CLAIMS 30

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 1797 Number of Readings 2364

Station interval 25 metres Line spacing 120 metres

Profile scale N/A

Contour interval 0-1000 gammas = 100 gammas, 1000-5000 gammas = 1000 gammas, greater than 5000 gammas = 5000 gammas, less than 0 gammas = 500 gammas.

MAGNETIC

Instrument Geometrics G-816 Proton magnetomer No. EC001

Accuracy – Scale constant ± 1 gamma

Diurnal correction method Closed Loops

Base Station check-in interval (hours) 0.5

Base Station location and value L 1440E/0+00 Base Line = 59256 gammas, L 960E/700N T.L. = 59286 gammas, L 120E/700N T.L. = 59425 gammas.

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

Ontario

Ministry of Natural Resources

File _____

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

RECEIVED
OCT 30 1981
MINING LANDS SECTION

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 Magnetic
Township or Area Shaw Township
Claim Holder(s) Hollinger Argus Limited
Box 320, Timmins, Ontario P4N 7E2
Survey Company Hollinger Argus Limited
Author of Report J. E. Mountjoy
Address of Author c/o Box 320, Timmins, Ont.
Covering Dates of Survey Feb.27-June 19, 1981
(linecutting to office)
Total Miles of Line Cut _____

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	20
–Radiometric	
–Other	
Geological	
Geochemical	

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

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

DATE: Oct.22,1981 SIGNATURE: _____
Author of Report or Agent

Res. Geol. _____ Qualifications 2.3975

Previous Surveys

File No.	Type	Date	Claim Holder
			L.D.

MINING CLAIMS TRAVERSED
List numerically

(prefix) (number)		(prefix) (number)	
P.540184	✓	P.540204	✓
P.540185	✓	P.540205	✓
P.540186	✓	P.540206	✓
P.540187	✓	P.540207	✓
P.540188	✓	P.540208	✓
P.540189	✓	P.540209	✓
P.540190	✓	P.540210	✓
P.540191	✓	P.540211	✓
P.540192	✓	P.540212	✓
P.540193	✓	P.540213	✓
P.540194	✓		
P.540195	✓		
P.540196	✓		
P.540197	✓		
P.540198	✓		
P.540199	✓		
P.540200	✓		
P.540201	✓		
P.540202	✓		
P.540203	✓		

TOTAL CLAIMS 30

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 1797 Number of Readings 2364

Station interval 25 metres Line spacing 120 metres

Profile scale N/A

Contour interval 0-1000 gammas = 100 gammas, 1000-5000 gammas = 1000 gammas, greater than 5000 gammas = 5000 gammas, less than 0 gammas = 500 gammas.

MAGNETIC

Instrument Geometrics G-816 Proton magnetomer No. EC001

Accuracy – Scale constant ± 1 gamma

Diurnal correction method Closed Loops

Base Station check-in interval (hours) 0.5

Base Station location and value L 1440E/0+00 Base Line = 59256 gammas, L 960E/700N T.L. = 59286 gammas, L 120E/700N T.L. = 59425 gammas.

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

MAP SYMBOLOGY

Aerial Cableway	Pipeline (above ground)
Boundary	Railroad
International	Single Track
Interprovincial	Double Track
District, Township, Indian Reserve	Abandoned
Approximate	Turntable
Lot, Concession	Road
Approximate	Highway, County, Township
Park Boundary	Access (road of doubtful maintenance or significant driveway)
Bridge	Trail, Bush Road (portage alley)
Road, Railroad	Rapids
Building	Double line river with multiple rapids
Chimney	Double line river with multiple rapids
Cliff, Pit, Pile	Reservoir
Contours	River, Stream, Canal
Interpolated	Approximate, Seasonal, Direction of flow
Approximate	Rock, significant
Depression	Shoal
Control Points	Spot Elevation (lake elevations) 300.0
Horizontal △ 01774051	Tower
Vertical ○ 300.02	Transmission Line
Culvert	Poles, Pylons
Falls	Tunnel
Double line river — Falls	Utility Poles
Fence, Hedge, Wall	Wharf, Dock, Pier
Feature Outline (Construction features, etc.)	Wooded Area
Flooded Land	
Lock	
Marsh or Swamp	
Mast	
Mine Head Frame	
Outcrop	

AREAS WITHDRAWN FROM DISPOSITION

S.R. – SURFACE RIGHTS M.R. – MINING RIGHTS

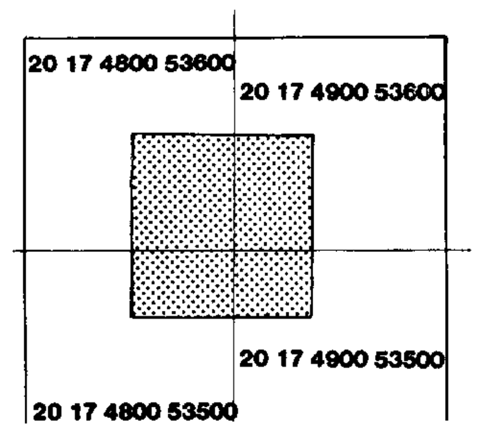
	Description	Order No.	Date	Disposition	File
(R1)	Rec. Purp	Sec 3 PLA			188543
(R2)		W. 97/77	15/12/77	S.R.O.	86555

SAND AND GRAVEL

(G1) GRAVEL 53666

(G2) GRAVEL 68760

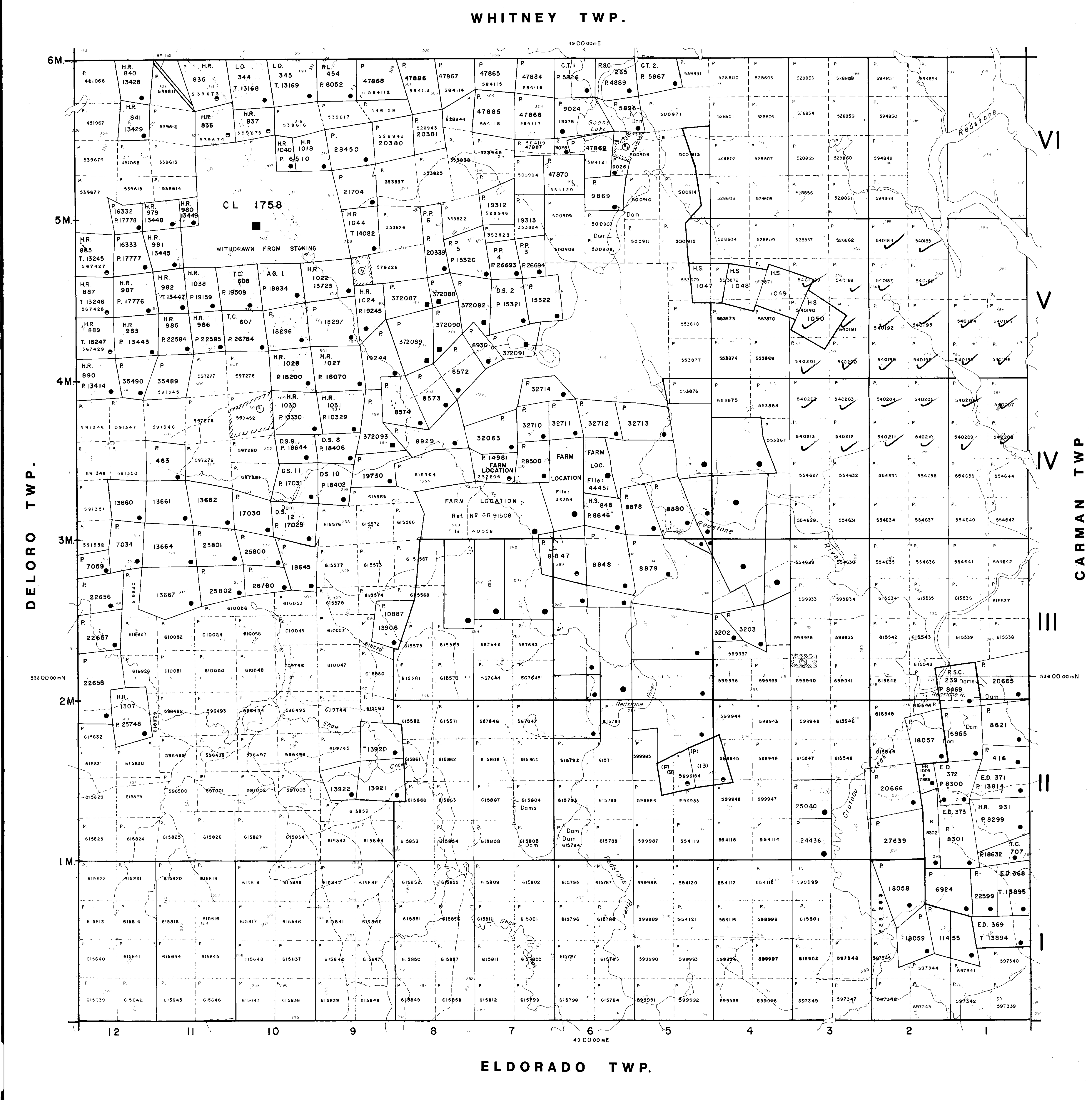
KEY PLAN
For O.B.M. Map



42A06NE0380 2.4251 SHAW

200

not to scale



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	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.

Metres 500 0 1000 Metres
Chains 10 0 10 20 30 40 50 60 70 Chains
Feet 500 0 1000 2000 3000 4000 5000 Feet

SCALE 1:20 000

DATE OF ISSUE
DEC - 3 1981
Ministry of Natural Resources
TORONTO

2.4251.

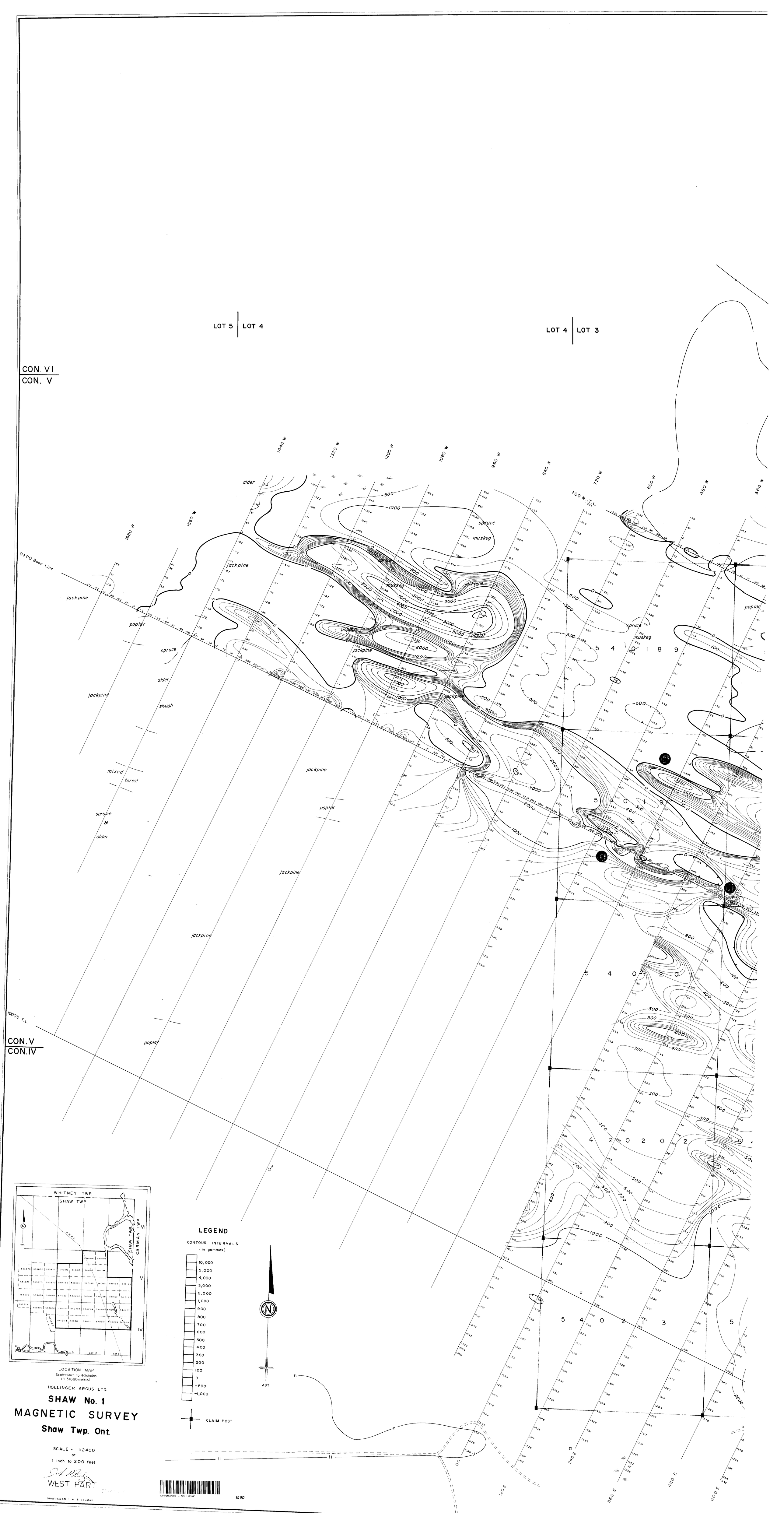
TOWNSHIP

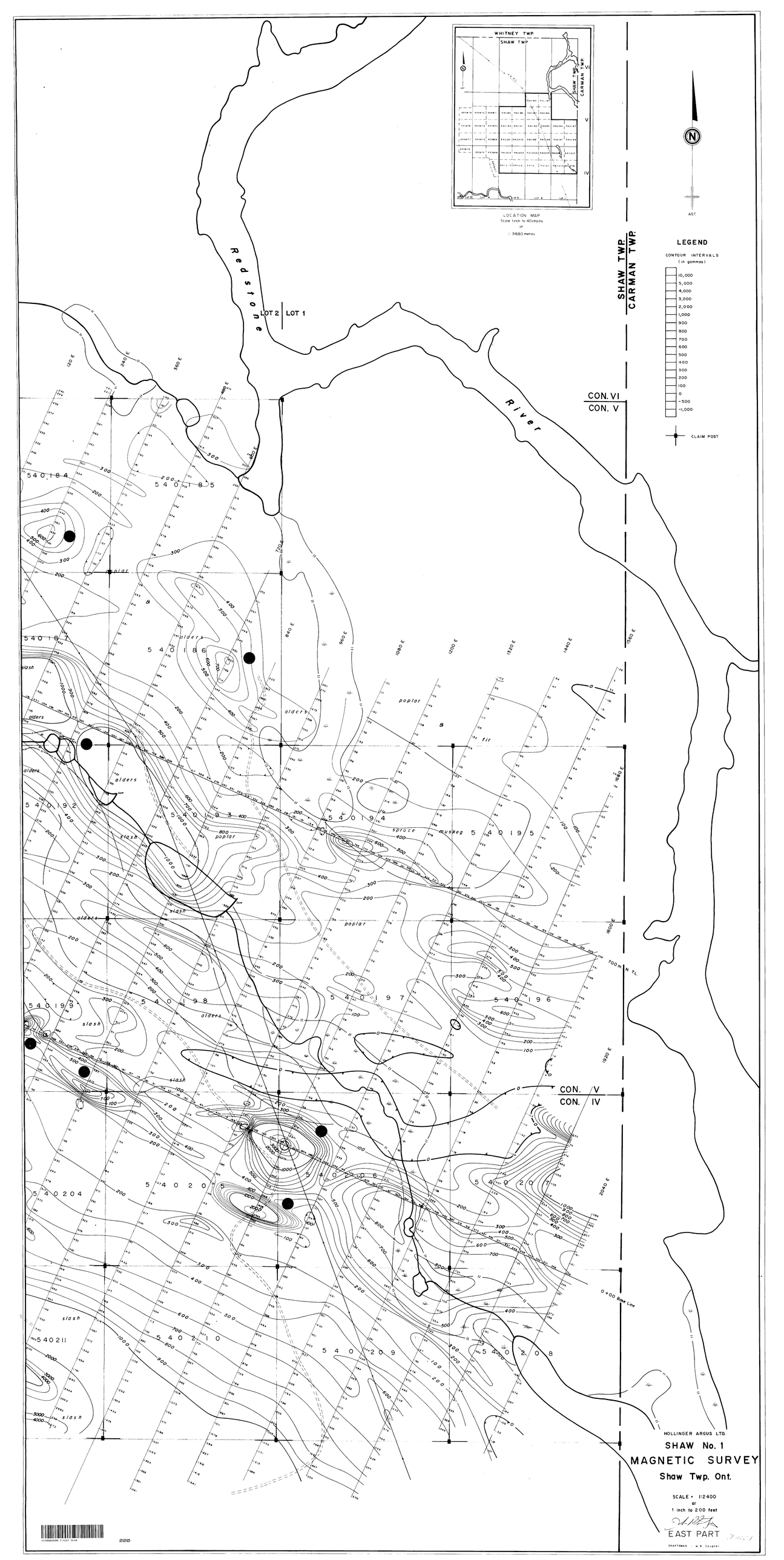
SHAW

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

Ministry of Natural Resources — Land Management Branch
Ontario

Date SEPT. 1981 Number **G-3999**


LOT 5
LOT 4
LOT 4
LOT 3
CON. VI
CON. V
CON. V
CON. IV
0+00 Base Line
700 N. T.L.
5000 S. T.L.
1440 W
1320 W
1200 W
1080 W
960 W
840 W
720 W
600 W
480 W
360 W
1680 W
1560 W
alder
jackpine
poplar
spruce
muskeg
slough
mixed
forest
5 4 0 1 8 9
5 4 0 1 3 0
5 4 0 2 0 2
4 2 0 2 0 2
5 4 0 2 3
LEGEND
CONTOUR INTERVALS
(in gammas)
10,000
5,000
4,000
3,000
2,000
1,000
900
800
700
600
500
400
300
200
100
0
-500
-1,000
CLAIM POST
AST.
WHITNEY TWP.
SHAW TWP.
CARMAN TWP.
LOCATION MAP
Scale-1inch to 40chains
(1:31680/mm)
HOLLINGER ARGUS LTD.
SHAW No. 1
MAGNETIC SURVEY
Shaw Twp. Ont.
SCALE - 1:2400
or
1 inch to 200 feet
WEST PART
DRAFTSMEN W. R. Coughlan
210


WHITNEY TWP.
SHAW TWP.
CARMAN TWP.
LOCATION MAP
Scale 1 inch to 40 chains
or
1:31680 metres
LEGEND
CONTOUR INTERVALS
(in gammas)
10,000
5,000
4,000
3,000
2,000
1,000
900
800
700
600
500
400
300
200
100
0
-500
-1,000
CLAIM POST
AST.
Redstone River
LOT 2
LOT 1
SHAW TWP.
CARMAN TWP.
CON. VI
CON. V
CON. V
CON. IV
700 N. TL.
0+00 Base Line
540184
540185
540186
540187
540192
540193
540194
540195
540196
540197
540198
540204
540205
540206
540207
540208
540209
540210
540211
poplar
alders
slash
spruce
muskeg
fir
HOLLINGER ARGUS LTD.
SHAW No. 1
MAGNETIC SURVEY
Shaw Twp. Ont.
SCALE 1:2400
or
1 inch to 200 feet
EAST PART
DRAFTSMAN W.B. Caughell


LOT 4 | LOT 3
LOT 3 | LOT 2
840 W
720 W
600 W
480 W
360 W
240 W
120 W
00
700 N.T.L.
5 4 0 1 8 4
5 4 0 1 8 9
5 4 0 1 8 8
5 4 0 1 8 7
5 4 0 1 9 0
5 4 0 1 9 1
5 4 0 1 9 2
5 4 0 2 0 1
5 4 0 2 0 0
5 4 0 1 9 9
4 2 0 2 0 2
5 4 0 2 0 3
5 4 0 2 0 4
5 4 0 2 1 3
5 4 0 2 1 2
5 4 0 2 1 1
spruce
muskeg
poplar
slash
alders
alder
mixed
forest
birch
1000 m S.T.L.
120 E
240 E
360 E
480 E
600 E
720 E
840 E
960 E