REPORT ON COMBINED HELICOPTER BORNE MAGNETIC, ELECTROMAGNETIC AND VLF SURVEY MISSING LAKE CLAIMS SAULT STE MARIE MINING DIVISION, ONTARIO

for

HARBINSON MINING AND OIL GROUP

by

AERODAT LIMITED

RECEIVED
APR 25 1988
MINING LANDS SECTION

March 15, 1988

J-Q508

George Podolsky, P. Eng.
Geophysical Consultant

Dual
63.2038

TABLE OF CONTENTS

LIST of MAPS

(Scale 1:15,840)

1. **PHOTOMOSAIC BASE MAP;** prepared from an uncontrolled photo laydown, showing registration crosses corresponding to UTM co-ordinates on topographic survey maps.

2. **FLIGHT LINE MAP;** showing all flight lines, manual and camera fiducials.

3. **AIRBORNE ELECTROMAGNETIC SURVEY INTERPRETATION MAP;** showing principal conductor axes and magnetic trends, along with inferred faults and contacts, where possible.

4. **TOTAL FIELD MAGNETIC CONTOURS;** showing magnetic values contoured at 5 nanoTesla intervals, flight lines, fiducials and anomaly peaks.

5. **VERTICAL MAGNETIC GRADIENT CONTOURS;** showing magnetic gradient values contoured at intervals of 0.5 nanoTeslas per metre.

6. **VLF-EM TOTAL FIELD CONTOURS;** showing relative contours of the VLF Total Field response, flight lines, fiducials and anomaly peaks.

1. INTRODUCTION

This report describes an airborne geophysical survey carried out on behalf of Harbinson Mining and Oil Group (Harbinson) by Aerodat Limited. Equipment operated included a three frequency electromagnetic system, a proton precession magnetometer, a two frequency VLF-EM system, a continuous strip film tracking camera and an altimeter. Electromagnetic, magnetic and altimeter data were recorded both in digital and analog form. Positioning data were recorded by the continuous strip flight path camera as well as being marked on the flight path mosaic by the operator while in flight.

The airborne survey, comprising a block of ground in the Sault Ste Marie Mining Division (Wawa District) of northeastern Ontario and situated about 50 kilometres west of Wawa, was flown during the period of February 10 to 22, 1983. Two flights or portions thereof were required to complete the survey with flight lines oriented at Azimuths of 000-180 degrees and flown at a nominal spacing of 200 metres. Coverage and data quality were considered to be well within the specifications described in the contract.

The purpose of the survey was to record airborne geophysical data over and around ground that is of interest to Harbinson. This report is essentially an interpretation of the geophysical data and supplements the logistic report previously submitted to Harbinson. No recommendations have been included.

Approximately 280 kilometres of the recorded data were compiled in map form and are presented as part of this report.

2. SURVEY AREA LOCATION

The survey area is depicted on the index map shown on the accompanying maps (see also previous reports). It is centred at Latitude 48 degrees 01 minutes north, Longitude 85 degrees 27 minutes west, approximately 50 kilometres west of the town of Wawa in the Sault Ste Marie Mining Division (Wawa District) of northeastern Ontario (NTS Reference Map Nos. 41 N/14, 42 C/3). The area is accessed by float/ski plane (into Mishibishu Lake) from Wawa or by bush roads and trails into the mining camp under development at Mishibishu Lake.

3. INTERPRETATION

3.1 GEOLOGY

The 1:253,440 Geologic Compilation Series Map No. 2220 shows the area to be underlain largely by an assemblage of Archean metasediments and metavolcanics. The metasediments have been identified as greywackes and quartzites; the metavolcanics are largely mafic flows and tuffs with a band of felsic rocks protruding onto the area in the vicinity of Missing Lake. A band of iron formation has been indicated within the metasediments to the north of Missing Lake and north-south trending diabase dikes were mapped in the southwest corner. Younger granitic intrusives occur in the southeast portion.

Regional faulting is generally northwesterly and northeasterly to north northeasterly. Diabase dikes follow similar directions, tending to be slightly more north northeasterly than the faults. The photomosaic map suggests intensive block faulting along the principal fault directions.

No geologic data were supplied to Aerodat by Harbinson and no other published data was available to the writer. Also, types of targets sought have not been discussed or identified by Harbinson although it is generally assumed that the primary interest is in gold mineralization. The survey occurs just to the south of Mishibishu Lake, an area that is the site of at least one recently discovered gold deposit and that is currently receiving considerable exploration attention.

3.2 MAGNETICS

The Total Field magnetic map shows a maximum magnetic relief over the survey area of about 9,000 nanoTeslas (nT) with most of the magnetic activity from the strong magnetic highs (and lows) in the west central part of the area. These magnetic highs consist of as many as four (in the western part) narrow magnetic bands that appear to be quite highly contorted and possibly offset by northwesterly trending faults. Weaker, east-west to west northwest trends, of the order of a few hundred nT, occur toward the southwest and northeast corners of the area. A negative northwest trending linear, through the centre of the northern third of the area, is probably a diabase. It conforms to one of the regional diabase trends although no corresponding diabase, along strike, is shown on the geologic map.

The strong magnetic anomalies across the north central part and in the extreme northeast corner of the survey are characteristic of iron formation responses and correlate with the mapped zone of iron formation. However, the zone is far more contorted than is depicted on the geologic map and appears to have been offset along northwesterly faults and, possibly, north northeasterly faults. The strong dipole effects along the north edge of this zone, between Lines 317 to 336, are characteristic of relatively shallow dipping - to the south- formations, probably accentuated by the northwest fault structures.

Weaker magnetic trends, both to the north and south of the strong central zone, denote narrow bands within the metavolcanics, probably tuff/sediment bands grading into lean iron formations. Apparent dips along these trends are either vertical or steep to the north.

Although a detailed geologic map would be desirable for proper correlation of the magnetics to geology and a possible extrapolation of the geology into unmapped areas, a few generalizations may be made: a) The granitic intrusive is apparently more limited in extent - at least within the boundaries of the survey. b) An east-west trending iron formation band, not shown on the regional geologic map, cuts across the north-east tip of the survey area. c)Two bands of metasediments, in addition to that shown on the geologic map, occur across the southern half of the area.

In view of the line spacing employed in this survey, the magnetic details have been brought out remarkably well. Had a 100 metre line spacing been flown, the structural detail would undoubtedly have been enhanced.

3.3 VERTICAL GRADIENT MAGNETICS

The Vertical Gradient map shows that a set of weak northwesterly trends overprint the general west northwesterly (to east-west) formational trends. These northwesterly trends are believed to be due to structure, possibly arising from the granitic intrusive to the southeast. These data show the (inferred) fault trends somewhat more clearly than does the Total Field map.

3.4 ELECTROMAGNETICS

The electromagnetic conductors mapped by this survey correlate quite well with the mapped magnetic trends. That is, the conductors that have been detected fall along portions of the magnetic trends - see particularly the Vertical Gradient map - but are not consistent over the length of the magnetic zones. The strong negative inphase anomalies are due to inversion of the inphase electromagnetic response from the high permeability magnetic (iron formation) zones. This phenomenon tends to reduce the apparent conductance values (i.e., conductivity-thickness products) particularly for relatively weak conductors. However, the quadrature responses are not affected.

Electromagnetic responses cover the full spectrum of conductance values. The strongest of these fall along and to the north of the northern most of the central iron formation bands. The correlation with the iron formation is quite erratic but is somewhat better over the weaker, secondary magnetic trends to the north that are evident on the Vertical Gradient map. Correlation of EM and magnetics over the weak magnetic zones along the north and south boundaries is sporadic but still confined to the magnetic bands.

Apparent dip, from the electromagnetic data, is generally steep to the north except for short, isolated trends (e.g., Line 333 at 07:25:45 and Line 312 at 14:14:13), where south dips are indicated.

3.5 VLF - EM TOTAL FIELD

The VLF data shows broad correlation with the electromagnetic trends and gives the appearance of having outlined general stratigraphic units. There are a few discrepancies with the magnetic data (e.g., the northern most magnetic band) but generally, the overall correlation is good.

Several of the VLF trends can be attributed to surficial drainage patterns and to features on the photomosaic that may be due to structure. In all, the VLF definition is surprisingly good, due probably to the relatively high surficial resistivities resulting from little or no overburden.

3.6 CONCLUSIONS

The central iron formation zone has been deformed by a complex system of faulting (and folding?) in the immediate area of a granitic intrusive mass to the southeast. This intrusive has probably given rise to the structural complexities apparent- primarily - on the magnetic maps.

The conductive bands along this iron formation coincide with zones of greatest structural complexity. This may suggest sulphide facies iron formation from the alteration of and /or replacement along discrete stratigraphic units within the normally oxide facies iron formation in the immediate vicinity of the fault systems.

Weaker magnetic zones that are conductive are likely due to graphites/argillites along lean iron formation or narrow mafic volcaniclastic bands.

Structures inferred from the magnetics are not necessarily apparent on the photomosaic although a good quality mosaic copy should be used for any such comparison. Conversely, the strong photomosaic linears are not supported universally by the magnetic data. Again, a more detailed interpretation, in conjunction with available detailed geology, is required.

REGISTERED PROFESSIONAL ENGINEER
G. PODOLSKY
PROVINCE OF ONTARIO

George Podolsky, P. Eng.
Consulting Geophysicist

for

AERODAT LIMITED

March 15, 1988

J-Q508

APPENDIX I

CERTIFICATE OF QUALIFICATIONS

I, GEORGE PODOLSKY, certify that:

1. I am registered as a Professional Engineer in the Province of Ontario and work as a Professional Geophysicist.

2. I reside at 172 Dunwoody Drive in the town of Oakville, Halton County, Ontario.

3. I hold a B. Sc. in Engineering Physics from Queen's University, having graduated in 1954.

4. I have been continuously engaged in both professional and managerial roles in the minerals industry in Canada and abroad for the past thirty two years.

5. I have been an active member of the Society of Exploration Geophysicists since 1960 and hold memberships on other professional societies involved in the minerals extraction and exploration industry.

6. The accompanying report was prepared from material supplied by the Harbinson Mining and Oil Group and from a review of the proprietary airborne geophysical survey flown by Aerodat Ltd. for the Harbinson Mining and Oil Group. I have not visited the property.

7. I have no interest in the property described nor in the immediate area of the claims. I own no equity interest in the Harbinson Group or any affiliate thereof.

Signed,

Oakville, Ontario

March 15, 1988

George Podolsky, P. Eng.

GEOPOD ASSOCIATES INC.

AIRBORNE MAGNETIC, ELECTROMAGNETIC AND VLF SURVEY

MISSING LAKE CLAIMS,

SAULT STE. MARIE MINING DIVISION, ONTARIO

for

DOMINION EXPLORERS INC.

by

AERODAT LIMITED

MARCH, 1988

Technical information concerning the logistics of the combined helicopter borne magnetic, electromagnetic and VLF survey completed on the Missing Lake Claims as reported by G. Podolsky, P. Eng of Aerodat Limited, March 15, 1988 follows.

TABLE OF CONTENTS

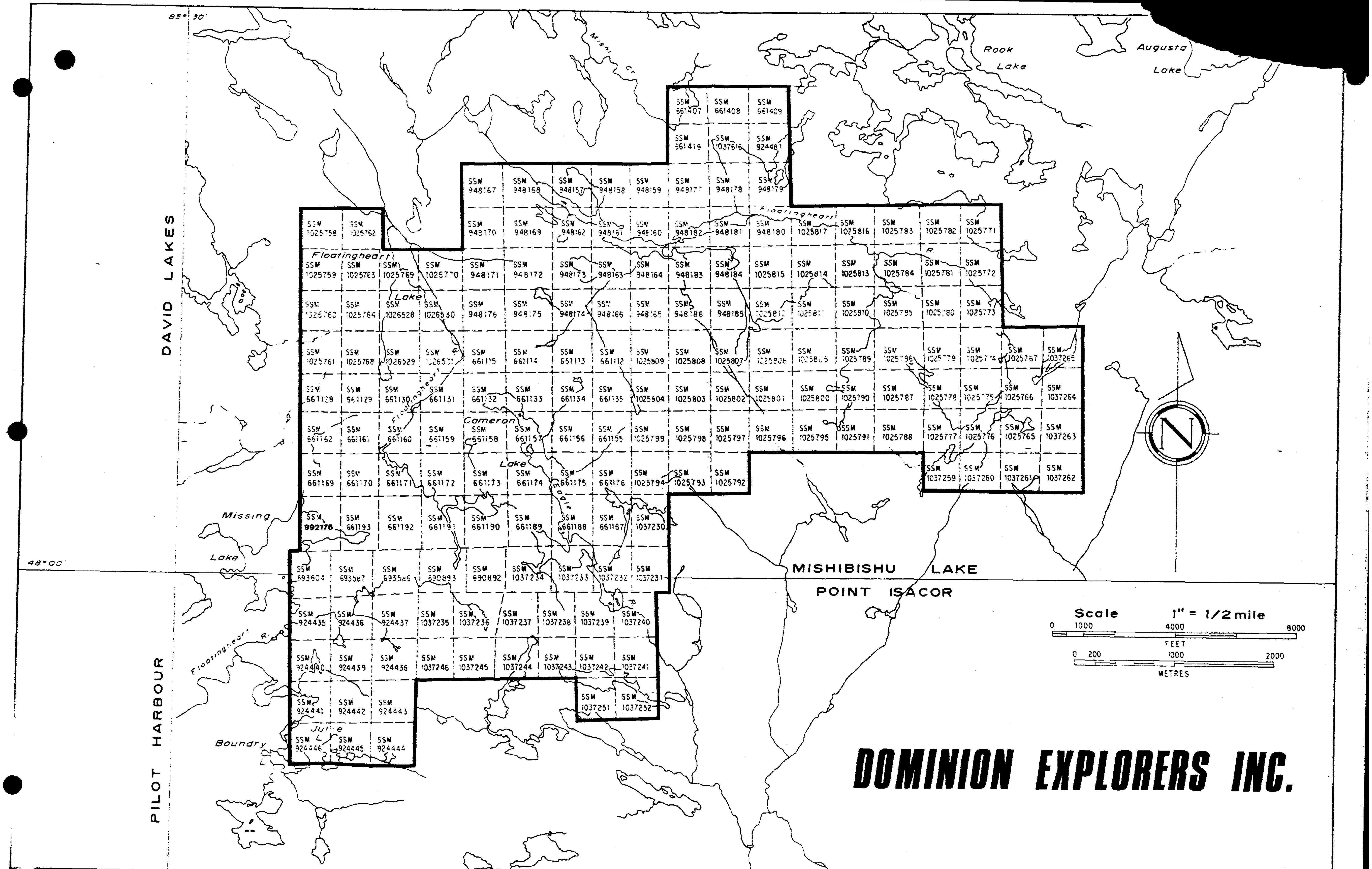
1. INTRODUCTION

This report describes an airborne geophysical survey carried out on behalf of Harbinson Mining and Oil Group by Aerodat Limited. Equipment operated included a 3 frequency electromagnetic system, a VLF-EM system, and a magnetometer.

The survey was flown on February 10 to February 22, 1983 from an operations base at Wawa Ontario. A total of 317 line miles were flown, at a nominal line spacing of 660 feet. Of the total flown, this report describes 134 line miles.

2. SURVEY AREA/CLAIM NUMBERS AND LOCATIONS

The mining claim numbers and locations covered by this survey are indicated on the map on the following page.


85° 30'
48° 00'
Mishi Cr
Rook Lake
Augusta Lake
DAVID LAKES
PILOT HARBOUR
Missing Lake
Boundry
Floatingheart Lake
Floatingheart R
Floatingheart R
Cameron Lake
Eagle R
Julie L
MISHIBISHU LAKE
POINT ISACOR
SSM 661407 SSM 661408 SSM 661409
SSM 661419 SSM 1037616 SSM 924481
SSM 948167 SSM 948168 SSM 948157 SSM 948158 SSM 948159 SSM 948177 SSM 948178 SSM 948179
SSM 1025758 SSM 1025762 SSM 948170 SSM 948169 SSM 948162 SSM 948161 SSM 948160 SSM 948182 SSM 948181 SSM 948180 SSM 1025817 SSM 1025816 SSM 1025783 SSM 1025782 SSM 1025771
SSM 1025759 SSM 1025763 SSM 1025769 SSM 1025770 SSM 948171 SSM 948172 SSM 948173 SSM 948163 SSM 948164 SSM 948183 SSM 948184 SSM 1025815 SSM 1025814 SSM 1025813 SSM 1025784 SSM 1025781 SSM 1025772
SSM 1025760 SSM 1025764 SSM 1026528 SSM 1026530 SSM 948176 SSM 948175 SSM 948174 SSM 948166 SSM 948165 SSM 948186 SSM 948185 SSM 1025812 SSM 1025811 SSM 1025810 SSM 1025795 SSM 1025780 SSM 1025773
SSM 1025761 SSM 1025768 SSM 1026529 SSM 1026531 SSM 661115 SSM 661114 SSM 661113 SSM 661112 SSM 1025809 SSM 1025808 SSM 1025807 SSM 1025806 SSM 1025805 SSM 1025789 SSM 1025786 SSM 1025779 SSM 1025774 SSM 1025767 SSM 1037265
SSM 661128 SSM 661129 SSM 661130 SSM 661131 SSM 661132 SSM 661133 SSM 661134 SSM 661135 SSM 1025804 SSM 1025803 SSM 1025802 SSM 1025801 SSM 1025800 SSM 1025790 SSM 1025787 SSM 1025778 SSM 1025775 SSM 1025766 SSM 1037264
SSM 661162 SSM 661161 SSM 661160 SSM 661159 SSM 661158 SSM 661157 SSM 661156 SSM 661155 SSM 1025799 SSM 1025798 SSM 1025797 SSM 1025796 SSM 1025795 SSM 1025791 SSM 1025788 SSM 1025777 SSM 1025776 SSM 1025765 SSM 1037263
SSM 661169 SSM 661170 SSM 661171 SSM 661172 SSM 661173 SSM 661174 SSM 661175 SSM 661176 SSM 1025794 SSM 1025793 SSM 1025792 SSM 1037259 SSM 1037260 SSM 1037261 SSM 1037262
SSM 992176 SSM 661193 SSM 661192 SSM 661191 SSM 661190 SSM 661189 SSM 661188 SSM 661187 SSM 1037230
SSM 693504 SSM 693567 SSM 693566 SSM 690893 SSM 690892 SSM 1037234 SSM 1037233 SSM 1037232 SSM 1037231
SSM 924435 SSM 924436 SSM 924437 SSM 1037235 SSM 1037236 SSM 1037237 SSM 1037238 SSM 1037239 SSM 1037240
SSM 924440 SSM 924439 SSM 924438 SSM 1037246 SSM 1037245 SSM 1037244 SSM 1037243 SSM 1037242 SSM 1037241
SSM 924441 SSM 924442 SSM 924443 SSM 1037251 SSM 1037252
SSM 924446 SSM 924445 SSM 924444
N
Scale 1" = 1/2 mile
0 1000 4000 8000
FEET
0 200 1000 2000
METRES
DOMINION EXPLORERS INC.

3. AIRCRAFT EQUIPMENT

3.1 Aircraft

The helicopter used for the survey was an Aerospatial Astar 350D owned and operated by North Star Helicopters. Installation of the geophysical and ancillary equipment was carried out by Aerodat. The survey aircraft was flown at a nominal altitude at 60 meters.

3.2 Equipment

3.2.1 Electromagnetic System

The electromagnetic system was an Aerodat/ Geonics 3 frequency system. Two vertical coaxial coil pairs were operated at 955 and 4130 Hz and a horizontal coplanar coil pair at 4500 Hz. The transmitter-receiver separation was 7 meters. In-phase and quadrature signals were measured simultaneously for the 3 frequencies with a time-constant of 0.1 seconds. The electromagnetic bird was towed 30 meters below the helicopter.

3.2.2 VLF-EM System

The VLF-EM System was a Herz 2A. This instrument measures the total field and vertical quadrature component of two selected frequencies. The sensor was towed in a bird 15 meters below the helicopter.

The sensor aligned with the flight direction is designated as "LINE", and the sensor perpendicular to the line direction as "ORTHO". The "LINE" station used was NAA, Cutler Maine, 17.8 KHz or NLK, Jim Creek Washington, 24.8 KHz. The "ORTHO" station was NSS, Annapolis Maryland, 21.4 KHz. The NSS transmitter was operating on a very limited schedule and was not available during a large part of the survey.

3.2.3 Magnetometer

The magnetometer was a Geometrics G-803 proton precession type. The sensitivity of the instrument was 1 gamma at a 1.0 second sample rate. The sensor was towed in a bird 15 meters below the helicopter.

3.2.4 Magnetic Base Station

An IFG proton precession type magnetometer was operated at the base of operations to record diurnal variations of the earths magnetic field. The clock of the base station was synchronized with that of the airborne system to facilitate later correlation.

3.2.5 Radar Altimeter

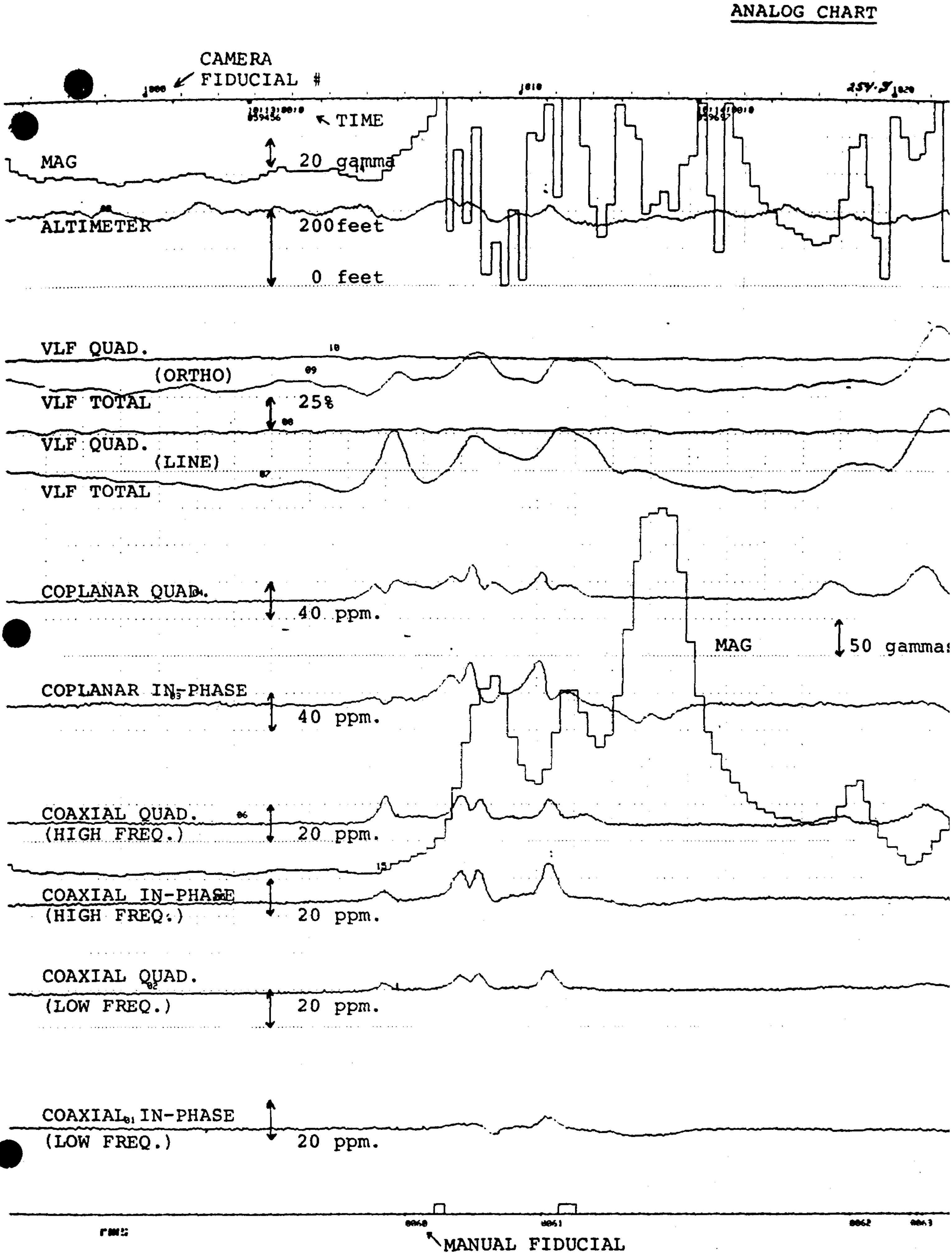
A Hoffman HRA-100 radar altimeter was used to record terrain clearance. The output from the instrument is a linear function of altitude for maximum accuracy.

3.2.6 Tracking Camera

A Geocam tracking camera was used to record flight path on 35 mm film. The camera was operated in strip mode and the fiducial numbers for cross reference to the analog and digital data were imprinted on the margin of the film.

3.2.7 Analog Recorder

A RMS dot-matrix recorder was used to display the data during the survey. A sample record with channel identification and scales is presented on the following page.


ANALOG CHART
CAMERA
FIDUCIAL #
TIME
MAG
20 gamma
ALTIMETER
200feet
0 feet
VLF QUAD.
(ORTHO)
VLF TOTAL
25%
VLF QUAD.
(LINE)
VLF TOTAL
COPLANAR QUAD.
40 ppm.
MAG
50 gammas
COPLANAR IN-PHASE
40 ppm.
COAXIAL QUAD.
(HIGH FREQ.)
20 ppm.
COAXIAL IN-PHASE
(HIGH FREQ.)
20 ppm.
COAXIAL QUAD.
(LOW FREQ.)
20 ppm.
COAXIAL IN-PHASE
(LOW FREQ.)
20 ppm.
MANUAL FIDUCIAL

3.2.8 Digital Recorder

A Perle DAC/NAV data system recorded the survey data on cassette magnetic tape. Information recorded was as follows:

Equipment	Interval
EM	0.1 second
VLF-EM	0.5 second
magnetometer	0.5 second
altimeter	1.0 second
fiducial (time)	1.0 second
fiducial (manual)	0.2 second

4. DATA PRESENTATION

4.1 Base Map and Flight Path Recovery

The base map photomosaic at a scale of 1/15,840 was constructed from available aerial photography. The flight path was plotted manually on this base and digitized for use in the computer compilation of the maps. The flight path is presented with fiducials for cross reference to both the analog and digital data.

4.2 Electromagnetic Profile Maps

The electromagnetic data was recorded digitally at a high sample rate of 10/second with a small time constant of 0.1 second. A two stage digital filtering process was carried out to reject major sferic events, and reduce system noise.

Local atmospheric activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with a geological phenomenon. To avoid this possibility, a computer algorithm searches out and rejects the major "sferic" events.

The signal to noise was further enhanced by the application of a low pass filter. The filter was applied digitally. It has zero phase shift which prevents any lag or peak displacement from occurring and it suppresses only variation with a wavelength less than about 0.25 seconds. This low effective time constant permits maximum profile shape resolution.

Following the filtering processes, a base level correction was made. The correction applied is a linear function of time that ensures that the corrected amplitude of the various inphase and quadrature components is zero when no conductive or permeable source is present. This filtered and levelled data was then presented in profile map form.

The in-phase and quadrature responses of the coaxial 955 Hz configuration are plotted with the flight path and presented on the photomosaic base.

The in-phase and quadrature responses of the coaxial 4500 Hz and the coplanar 4130 Hz configuration are plotted with flight path and are available as a two colour overlay.

4.3 Magnetic Contour Maps

The aeromagnetic data was corrected for diurnal variations by subtraction of the digitally recorded base station magnetic profile. No correction for regional variation is applied.

The corrected profile data was interpolated onto a regular grid at a 2.5 mm interval using a cubic spline technique. The grid provided the basis for threading the presented contours at a 10 gamma interval.

4.4 VLF-EM Contour and Profile Maps

The VLF-EM "LINE" signal, was compiled in map form. The mean response level of the total field signal was removed and the data was gridded and contoured at an interval of 2%. When the "ORTHO" signal was available it was compiled in a similar fashion.

4.5 Electromagnetic Conductor Symbolization

The electromagnetic profile maps were used to identify those anomalies with characteristics typical of bedrock conductors. The in-phase and quadrature response amplitudes at 4130 Hz were digitally applied to a phasor diagram for the vertical half-plane model and estimates of conductance (conductivity thickness) were made. The conductance levels were divided into categories as indicated in the map legend; the higher the number, the higher the estimated conductivity thickness product.

As discussed in Appendix I the conductance should be used as a relative rather than absolute guide to conductor quality. A conductance value of less than 2 mhos is typical for conductive overburden material and electrolytic conductors in faults and shears. Values greater than 4 mhos generally indicate some electronic conduction by certain metallic sulphides and/or graphite. Gold, although highly conductive, is not expected to occur in sufficient concentration to directly produce an electromagnetic anomaly; however, accessory mineralization such as pyrite or graphite can produce a measurable response.

With the aid of the profile maps, responses of similar characteristics may be followed from line to line and conductor axes identified.

The distinction between conductive bedrock and overburden anomalies is not always clear and some of the symbolized anomalies may not be of bedrock origin. It is also possible that a response may have been mistakenly attributed to overburden and therefore not included in the symbolization process. For this reason, as geological and other geophysical information becomes available, reassessment of the significance of the various conductors is recommended.

Ministry of Northern Development and Mines

Ontario

Ministère du Développement du Nord et des Mines

May 26, 1988

Your File: W8805-75
Our file: 2.11081

Mining Recorder
Ministry of Northern Development and Mines
875 Queen Street East
Box 669
Sault Ste. Marie, Ontario
P6A 2B3

Dear Madam:

RE: Notice of Intent dated May 6, 1988
Airborne Geophysical (Magnetometer, Electromagnetic and VLF) Survey submitted on Mining Claims SSM 661112 et al in the Area of Mishibishu Lake

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,

W.R. Cowan, Manager
Mining Lands Section
Mines and Minerals Division

Whitney Block, Room 6610
Queen's Park
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-4888

DK:pl
Enclosure: Technical Assessment Work Credits

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

Resident Geologist
Wawa, Ontario

Dominion Explorers Inc.
Suite 916
111 Richmond Street West
Toronto, Ontario
M5H 2G4
Attention: Ms Mary K. Kearney

Ministry of Northern Development and Mines
Ontario

Technical Assessment Work Credits

File
2.11081

Date	Mining Recorder's Report of Work No.
May 6, 1988	W8805-75

Recorded Holder
Dominion Explorers Inc.

~~Township~~ or Area
Mishibishu Lake

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic 20 days Magnetometer 20 days Radiometric ____ days Induced polarization ____ days Other VLF 20 days Section 77 (19) See "Mining Claims Assessed" column Geological ____ days Geochemical ____ days Man days ☐ Airborne ☒ Special provision ☐ Ground ☐ ☐ Credits have been reduced because of partial coverage of claims. ☐ Credits have been reduced because of corrections to work dates and figures of applicant.	SSM-1037616 924435 to 46 inclusive 924481 948157 to 86 inclusive 1025758 to 817 inclusive 1026528 to 31 inclusive 1037230 to 46 inclusive 1037251-52 1037259 to 65 inclusive 661112 661407 to 09 inclusive 661419 690892 693587 693604

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

No credits have been allowed for the following mining claims

☐ not sufficiently covered by the survey ☐ insufficient technical data filed

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; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

828 (85/12)

Ministry of Northern Development and Mines

Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

DOCUMENT NO. W8805·075

Mining Act 2.11081

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.

Type of Survey(s): AIRBORNE MAGNETIC, ELECTROMAGNETIC AND VLF	Township or Area: NISHIBISHU LAKE AREA
Claim Holder(s): DOMINION EXPLORERS INC	Prospector's Licence No.: A 35056
Address: 916 – 111 RICHMOND ST. WEST, TORONTO, ONT. M5H 2G4	
Survey Company: AERODAT LIMITED	Date of Survey (from & to): 10 Day 02 Mo. 83 Yr. – 22 Day 02 Mo. 83 Yr.
	Total Miles of line Cut:
Name and Address of Author (of Geo-Technical report): MR. G. PODOLSKY, P.ENG., AERODAT LIMITED, 3883 NASHUA DRIVE, MISSISSAUGA, ONT. L4V 1R3	

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	~~25~~
	· Magnetometer	~~53~~
For each additional survey: using the same grid: Enter 20 days (for each)	· ~~VLF-EM~~ ~~Radiometric~~	~~26~~
	· Other	
	Geological	
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	· Electromagnetic	
	· Magnetometer	
	· Radiometric	
	· Other	
	Geological	
	Geochemical	
Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	27
	Magnetometer	27
	VLF-EM ~~Radiometric~~	26

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Number	Expend. Days Cr.
SSM		
[redacted]	621919 / 1037616*	80 / 80 ✓
[redacted]	661112-661115	320
[redacted]	61128-661135	640
[redacted]	61155-661162	640
[redacted]	61169-661176	640
[redacted]	61187-661194	640
[redacted]	61407-661409	240
[redacted]	90892-690893	160
[redacted]	93586-693587	160
[redacted]	693604	80
[redacted]	24435-924446*	960 ✓
[redacted]	924481 *	80 ✓
[redacted]	18157-918186*	2400 ✓
[redacted]	25758-1025817*	4800 ✓
[redacted]	26528-1026531*	320 ✓
[redacted]	37230-1032246*	1360 ✓
[redacted]	37251-1037252*	160 ✓
[redacted]	37259-1037265*	80 ✓
[redacted]		
[redacted]		
[redacted]		
[redacted]	...ims eligible for	

Mining Claim Prefix	Number	Expend. Days Cr.
	Only	
[redacted]	8 of the remaining claims are eligible for 17 days credit which will bring them to the 80 day maximum for Geophysical.	
[redacted]	...credits	

SAULT STE. MARIE MINING DIV RECEIVED APR 26 1988 P.M. 9,10,11,12,1,2,3,4,5,6

RECORDED APR 26 1988 ...l No. ______

Total number of mining claims covered by this report of work: 142

Expenditures (excludes power stripping)

Type of Work Performed:

Performed on Claim(s):

Calculation of Expenditure Days Credits

Total Expenditures				Total Days Credits
$	÷	15	=	

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: 10,856	Date Recorded: Apr. 26/88	ACTING Mining Recorder: C. A. Kurylo
	Date Approved as Recorded:	Branch Director: See revised work statement.

Date	Recorded Holder or Agent (Signature)
April 22/88	M. Kearney / Dominion

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: MARY K. KEARNEY, EXPLORATION MANAGER, DOMINION EXPLORERS INC., 916-111 RICHMOND ST. W., TORONTO, ONTARIO M5H 2G4

Date Certified: April 22, 1988.

Certified by (Signature): M.K. Kearney

1362 (86/12)

Ministry of Northern Development and Mines
Ontario

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) AIRBORNE Magnetic, Electromagnetic + VLF
Township or Area MISSING LAKE, MISHIBISHUA LAKE AREA, WAWA, ONTARIO.
Claim Holder(s) DOMINION EXPLORERS INC.

Survey Company AERODAT LIMITED
Author of Report G. PODOLSKY, P.ENG.
Address of Author c/o AERODAT, 3883 NASHUA DRIVE, MISSISSAUGA, ONT. L4V 1R3
Covering Dates of Survey Feb. 10 to 22/83.
(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	27
–Magnetometer	27
–~~Radiometric~~ VLF-EM	26
–Other	
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
Magnetometer ✓ Electromagnetic ✓ ~~Radiometric~~ VLF-EM ✓
(enter days per claim)

DATE: April 22/88 SIGNATURE: M.K. Kearney
Author of ~~Report or Agent~~

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)

If space insufficient, attach list

TOTAL CLAIMS ______

OFFICE USE ONLY

Res. Geol. ______ Qualifications ______

Previous Surveys

File No.	Type	Date	Claim Holder

837 (85/12)

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations ______ Number of Readings ______

Station interval ______ Line spacing ______

Profile scale ______

Contour interval ______

MAGNETIC

Instrument ______

Accuracy – Scale constant ______

Diurnal correction method ______

Base Station check-in interval (hours) ______

Base Station location and value ______

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) HELICOPTER BORNE MAGNETIC, ELECTROMAGNETIC & VLF

Instrument(s) 3 FREQUENCY EM SYSTEM, PROTON PROCESSION MAGNETOMETER, 2 FREQUENCY VLF-EM SYSTEM

(specify for each type of survey)

Accuracy As per attached information sheets

(specify for each type of survey)

Aircraft used Aerospatial Astar 350D

Sensor altitude 15 meters

Navigation and flight path recovery method as per attached information sheets

____

Aircraft altitude 60 meters Line Spacing 200 metres

Miles flown over total area 280 km. of recorded data 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 ______________________________

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____

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 ______________________________

____

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____

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____

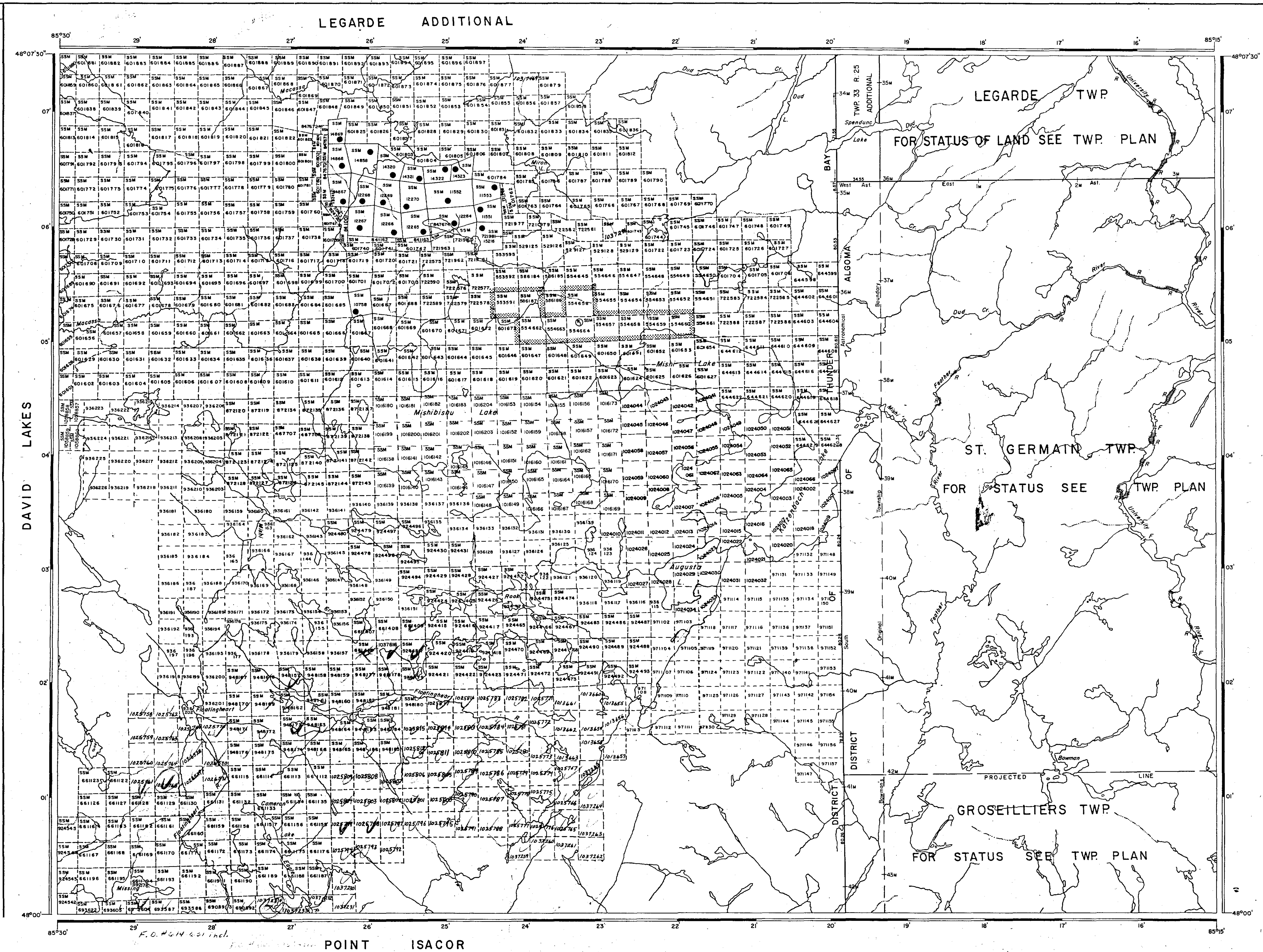
____

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
(S)	W. 50/86	21/5/86	M & S	



REFERENCES

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.

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000
METRES 0 200 1000 (1 KM) 2000 (2 KM)

DATE OF ISSUE
MAR 25 1988
SAULT STE. MARIE MINING RECORDER'S OFFICE

AREA

MISHIBISHU LAKE

M.N.R. ADMINISTRATIVE DISTRICT
WAWA

MINING DIVISION
SAULT STE. MARIE

LAND TITLES / REGISTRY DIVISION
ALGOMA

Ontario — Ministry of Natural Resources — Ministry of Northern Development and Mines

Date FEBRUARY, 1987 — Number G-3772

RECEIVED

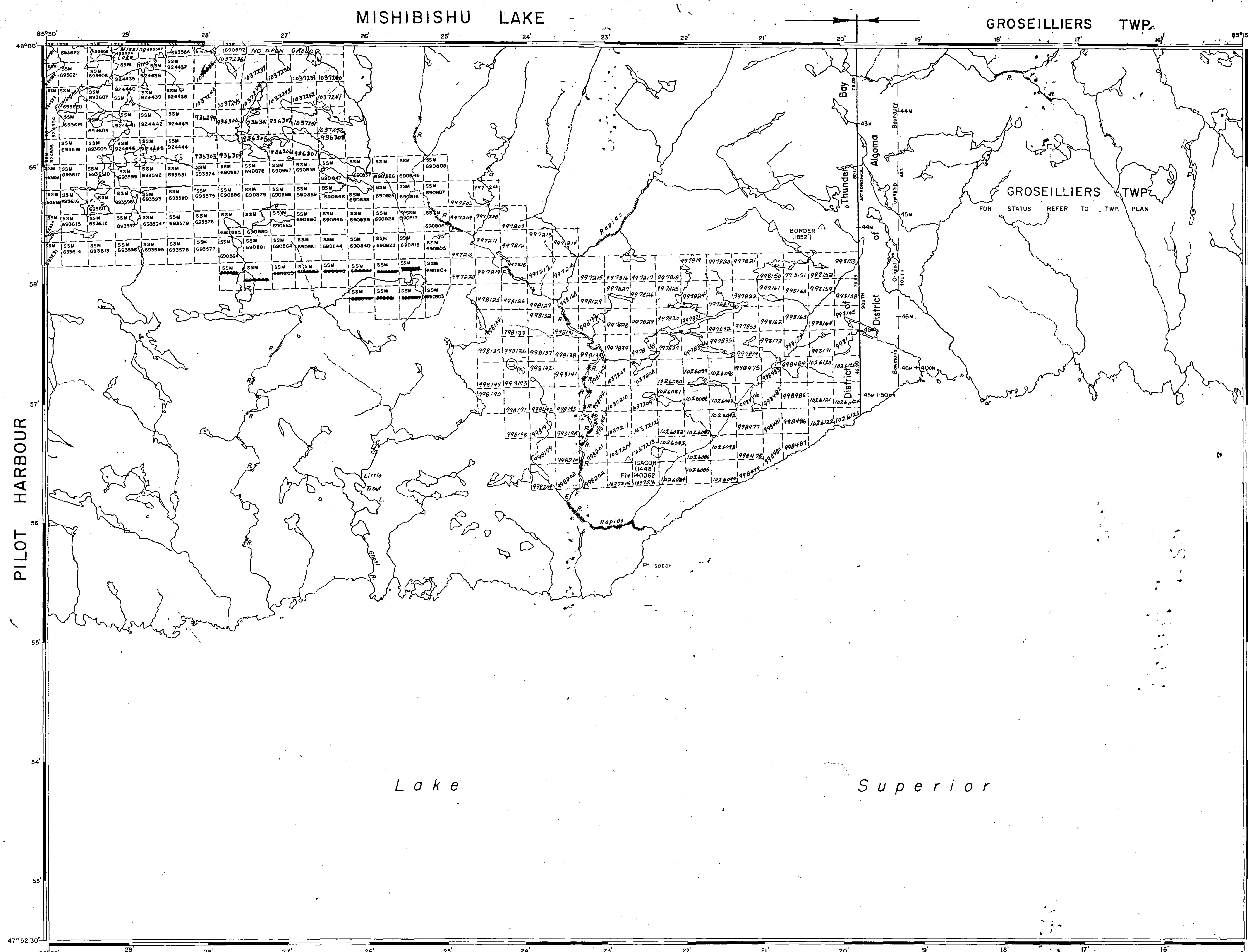
42C03SW0066 2.11081 MISHIBISHU LAKE 200

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
(R1) SEC 34D MG ACT GAP RADAR STATION DEPT. OF NATIONAL DEFENCE WITHDRAWN FROM STAKING		23/10/61		169051



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	(R)
CANCELLED	
SAND & GRAVEL	(S)

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.

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000
METRES 0 200 1000 (1 KM) 2000 (2 KM)

DATE OF ISSUE
DEC 23 1987
SAULT STE. MARIE
MINING RECORDER'S OFFICE

AREA
POINT ISACOR

M.N.R. ADMINISTRATIVE DISTRICT
WAWA
MINING DIVISION
SAULT STE. MARIE
LAND TITLES / REGISTRY DIVISION
THUNDER BAY

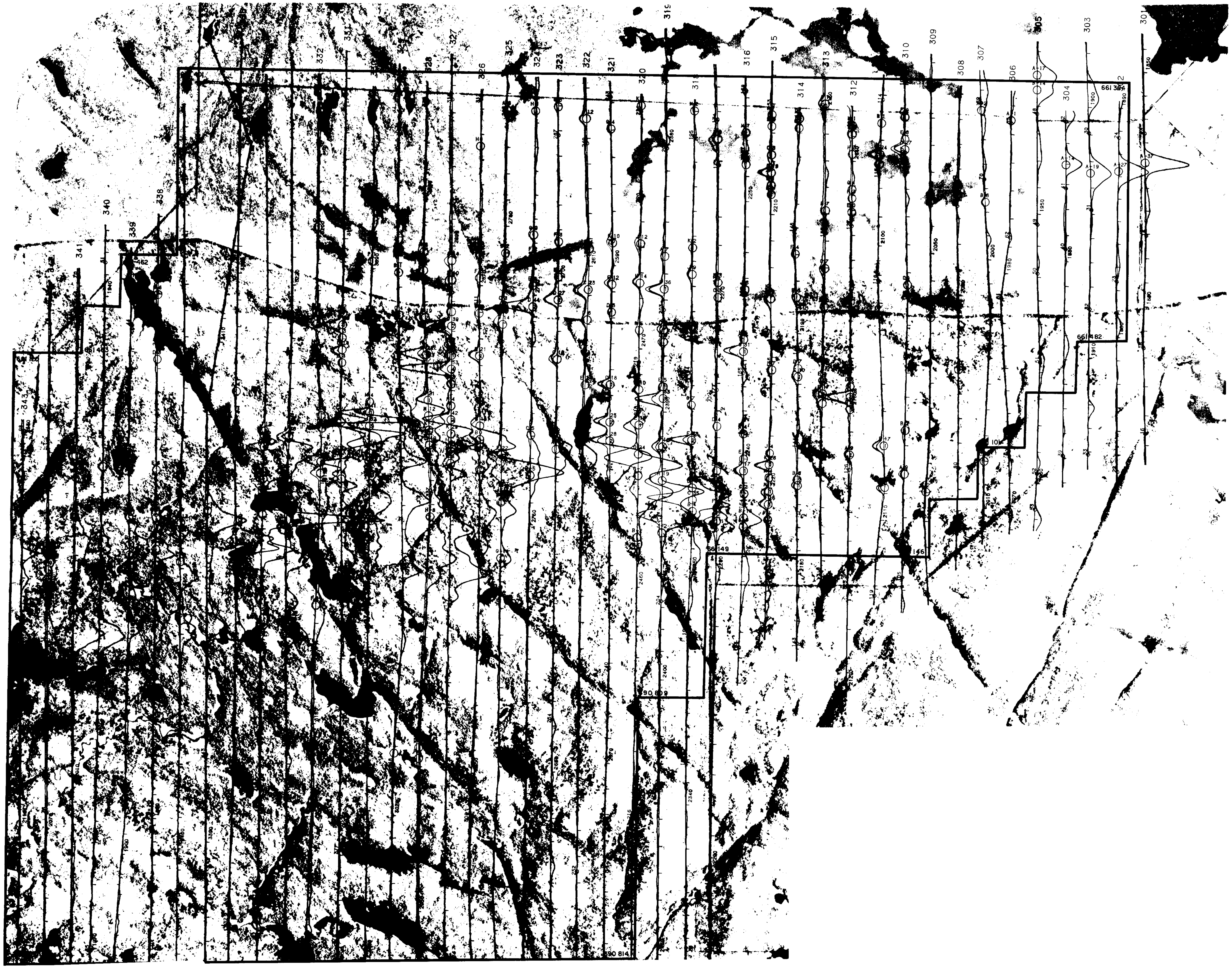
Ontario
Ministry of Natural Resources
Ministry of Northern Development and Mines

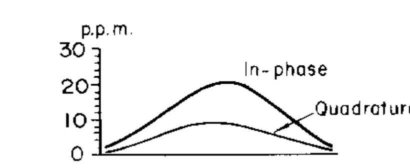
Date FEBRUARY 1987
Number G-3778

42C03SW0066 2.11081 MISHIBISHU LAKE

210

478852





PROSPECTING GEOPHYSICS LTD.

AIRBORNE ELECTROMAGNETIC SURVEY PROFILES

HARBINSON MINING AND OIL GROUP

MISSING LAKE CLAIMS

ONTARIO

SCALE 1/15,840

1/2 0 1/2 Mile

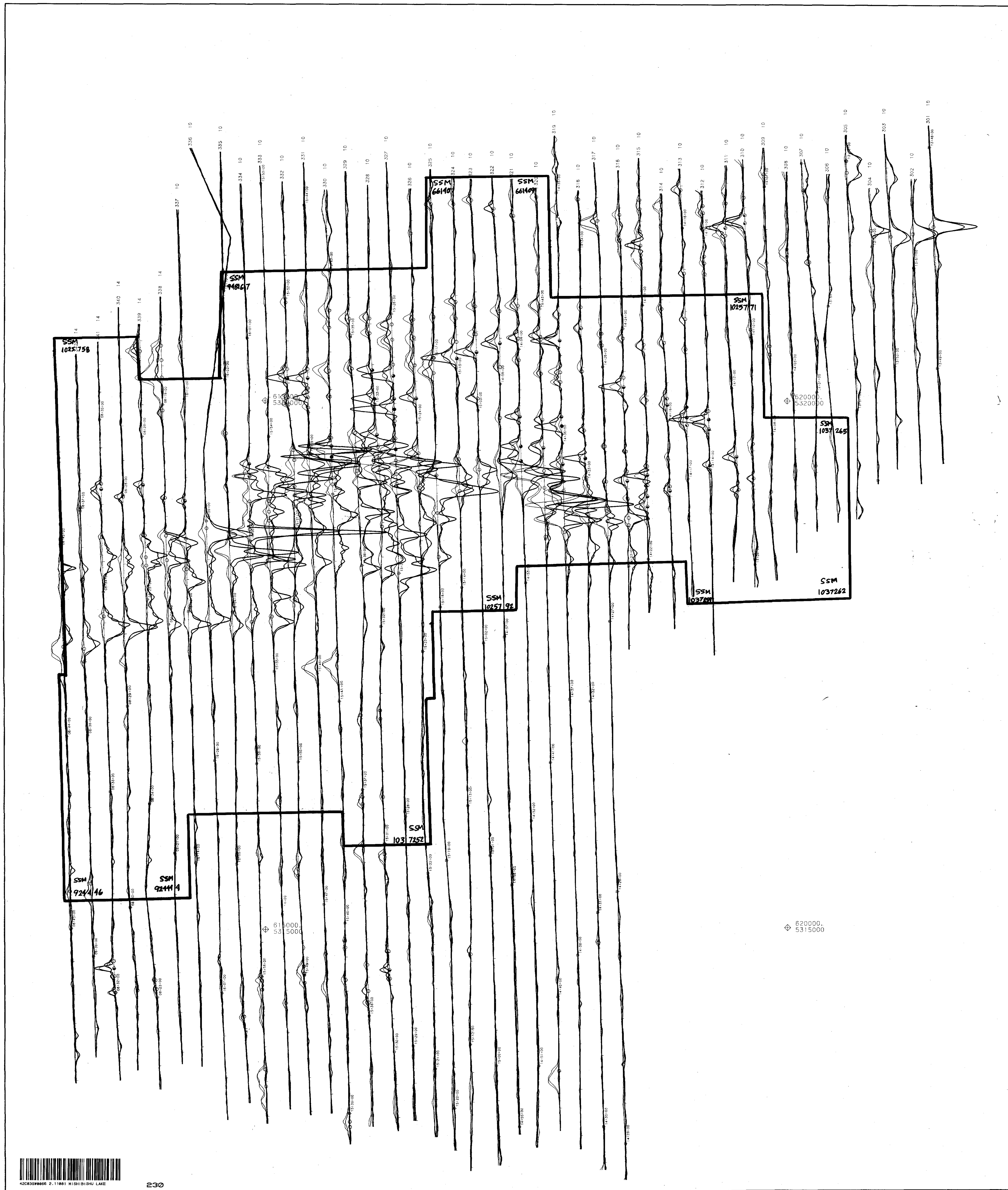
1 0 1 Kilometre

▼ AERODAT LIMITED	DATE:
	N.T.S. No: 41N, 42C
	MAP No: 2

2.11081

42C03SW0066 2.11081 MISHIBISHU LAKE

220



PROSPECTING GEOPHYSICS LTD.

ELECTROMAGNETIC PROFILES

HARBINSON MINING AND OIL GROUP
MISSING LAKE CLAIMS
ONTARIO

SCALE 1:15,840

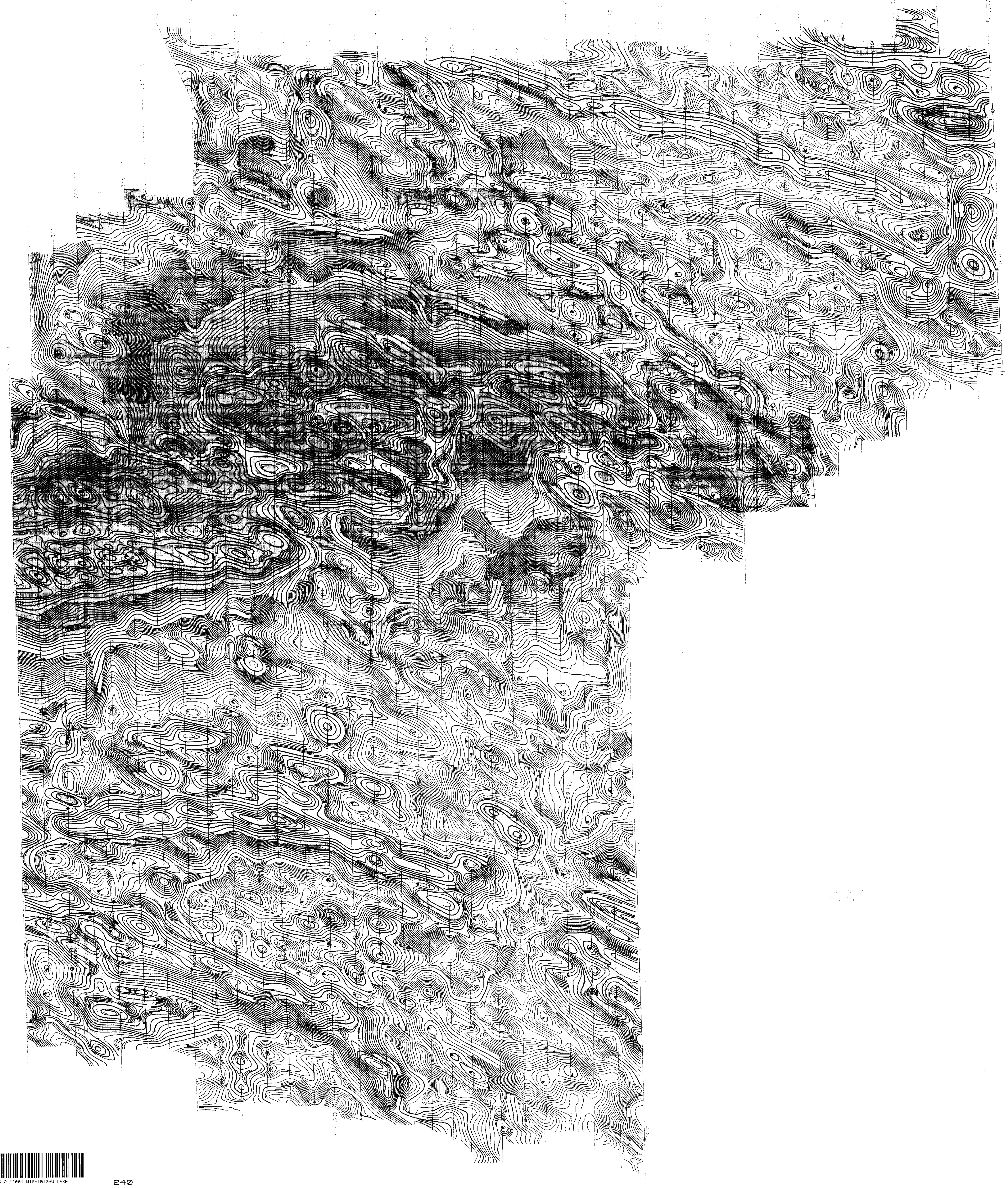
1/2 0 1/2 MILE

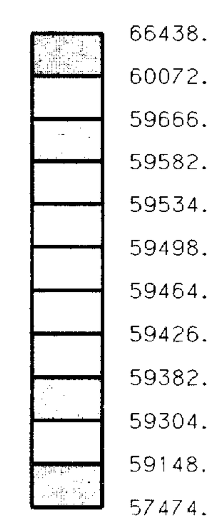
1 0 1 KILOMETRE

AERODAT LIMITED	DATE: FEB 1988
	NTS No: 41N.42C
	MAP No: 2 J8799C94

230

2.11081





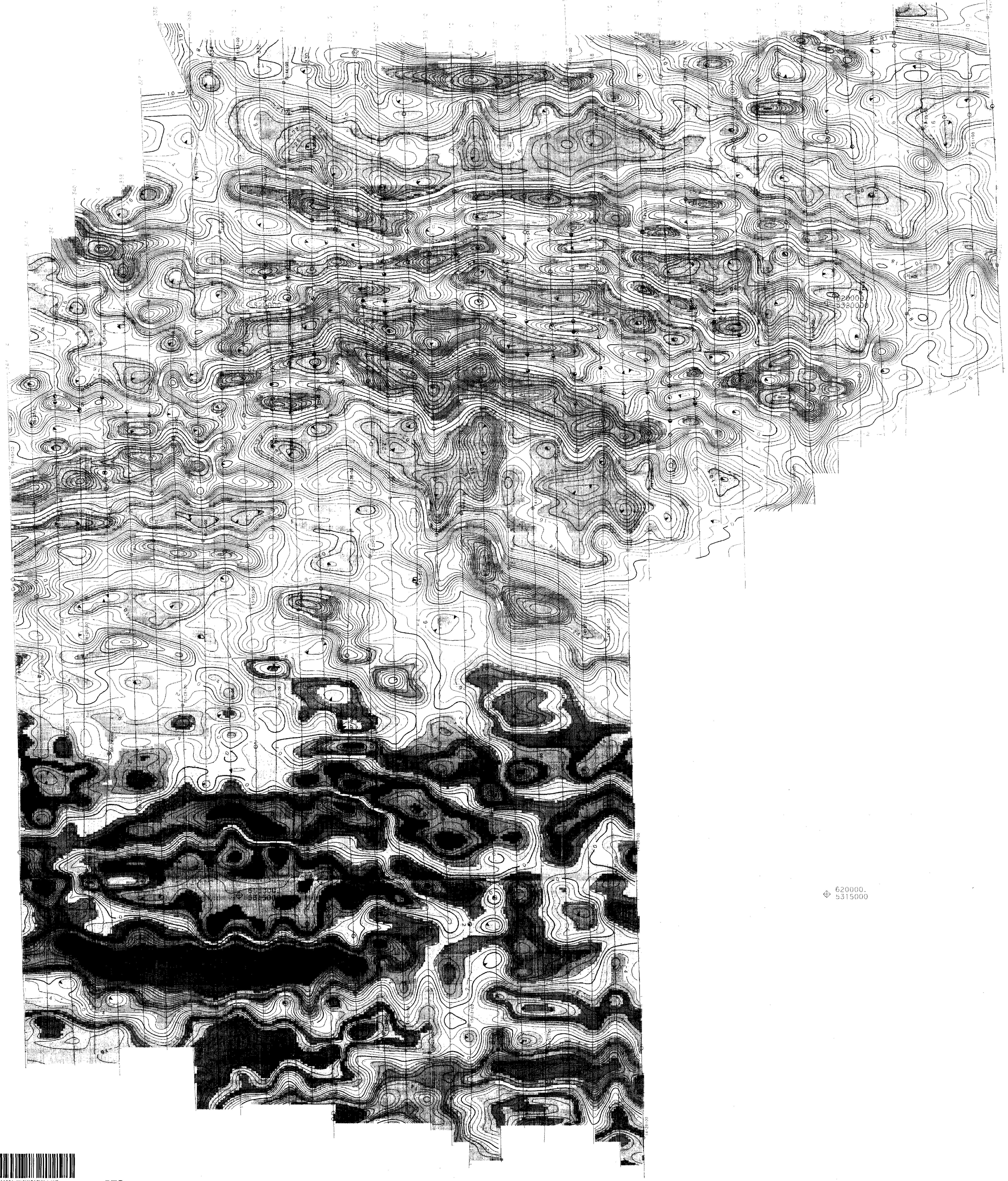
PROSPECTING GEOPHYSICS LTD.

TOTAL FIELD MAGNETIC CONTOURS

HARBINSON MINING AND OIL GROUP
MISSING LAKE CLAIMS
ONTARIO

AERODAT LIMITED

DATE:	FEB 1988
NTS No:	41N, 42C
MAP No:	3 J8799C94



N

89.00
23.00
13.00
8.00
4.00
0.00
-2.00
-5.00
-9.00
-13.00
-18.00
-54.00

PROSPECTING GEOPHYSICS LTD.

VLF-EM TOTAL FIELD CONTOURS

HARBINSON MINING AND OIL GROUP

MISSING LAKE CLAIMS
ONTARIO

SCALE 1:15,840

1/2 0 1/2 MILE

1 0 1 KILOMETRE

AERODAT LIMITED

DATE: FEB 1988

NTS No: 41N, 42C

MAP No: 5 J8799C94

2.11081