2.32059

Final Report on a Helicopter-borne Magnetic Survey Dumas Project Wawa, Ontario, Canada

For

Dianor Resources Inc.
649 3rd Avenue, Floor 2
Val d'Or, PQ, Canada
J9P 1S7

By

McPhar Geosurveys Ltd.
1256B Kerrisdale Blvd.
Newmarket, Ontario
Canada, L3Y 8Z9

April 2006

McPhar 0607

TABLE OF CONTENTS

LIST of FIGURES

LIST of TABLES

APPENDICES

APPENDIX 1 **Statement of Qualifications**

APPENDIX 2 **System Tests and Reports**

- Lag Test
- Altimeter Test
- Heading Correction Test
- Magnetic Base Station Form
- Daily Reports
- Flight Logs

APPENDIX 3 **Equipment Documentation**

- Geometrics G822-A Cesium Magnetometer
- Gem GSM-19 Overhauser Magnetometer
- Fugro Omnistar DGPS System
- Free Flight 3000 Radar Altimeter
- Geosoft Montaj Processing Software
- Field Data Processing Workstations

APPENDIX 4 **Personnel Resumes**

- Rob Hearst
- John Currie
- Tonia Bojkova
- Alain Tremblay

APPENDIX 5 **Page Size Maps**

- Flight Path with Planimetry
- Total Magnetic Intensity
- Geophysical Interpretation

SUMMARY

An airborne magnetic survey program was completed over the Dumas Project Area, near Wawa, Ontario, under contract to Dianor Resources Inc., signed 23 March 2006. The program consisted of a high-resolution helicopter magnetic survey.

The McPhar crew was mobilized and arrived in the survey area on 29 March 2006. First tests, calibrations and data acquisition were also initiated on 29 March 2006, and completed on 5 April 2006. A total of 1, 296.03 line-kilometres of data were acquired, covering an area of approximately 135.5 square kilometres. The survey area was flown with a nominal mean terrain clearance of 30 metres for the magnetic bird on flight lines oriented north-south (0°) at a spacing of 100 metres and tie lines oriented east-west (90°) at a spacing of 500 metres.

The purpose of the survey was to acquire high-resolution magnetic data to map the geophysical characteristics of the geology and structure in an effort to provide an insight into geologic and geophysical settings conducive to economic mineralization.

Figure 1: Helicopter with mag bird

1. INTRODUCTION

A detailed high-resolution helicopter-borne magnetic survey was carried out during the period of 29 March 2006 to 5 April 2006 on behalf of Dianor Resources Inc., hereinafter referred to as "Dianor", and 3814793 Canada Inc. by McPhar Geosurveys Ltd, hereinafter referred to as "McPhar", over the survey area located approximately 40 kilometres north of Wawa, Ontario.

The purpose of the survey was to acquire high-resolution magnetic data to map the geophysical characteristics of the geology and structure in an effort to provide an insight into geologic and geophysical settings conducive to economic mineralization.

Table 1: Wawa Area Descriptions

AREA NAME	APPROX AREA KM²	LINE / TIE SPACING	FLIGHT LINE-KM	TIE-LINE KM	TOTAL LINE-KM	PRIMARY FLIGHT DIRECTION
Dumas Block	135.5	100m x 500m	1,083.06	212.97	1296.03	$0^0 - 90^0$
Total	**135.5**		**1,083.06**	**212.97**	**1,296.03**	

The data acquisition involved the use of precision differential GPS positioning and a high sensitivity magnetometer system towed beneath a helicopter to measure the magnetic gradient of the Earth's magnetic field.

Mobilization of the helicopter, equipment and personnel from Gatineau, Quebec to Wawa, Ontario was completed on 29 March 2006. Installation of the survey equipment into the helicopter and pre-survey test and calibration flights were completed on 29 March 2006 through 1 April 2006. The final survey flight was completed on 5 April 2006.

The survey was flown over claims in Dahl, Dambrossio and Dumas Townships. The claims covered are summarised in the Table 2:

Table 2: Claims covered by the survey

Claim	Township	G Plan #	Assessment Due Date	Expenditure Required	Claim Units	Owner
1243412	Dambrossio	G-2382	2006-APR-26	$6,400	16	3814793 Canada Inc.
1243417	Dambrossio	G-2382	2006-APR-26	$6,400	16	3814793 Canada Inc.
1243420	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243421	Dambrossio	G-2382	2006-APR-26	$6,400	16	3814793 Canada Inc.
1243423	Dambrossio	G-2382	2006-APR-26	$6,400	16	3814793 Canada Inc.
1243438	Dambrossio	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243440	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243448	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243463	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243464	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243489	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.

Claim	Township	G Plan #	Assessment Due Date	Expenditure Required	Claim Units	Owner
1243490	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243491	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243492	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243493	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243494	Dambrossio	G-2382	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243495	Dambrossio	G-2382	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243496	Dambrossio	G-2382	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243497	Dambrossio	G-2382	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243498	Dambrossio	G-2382	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243499	Dambrossio	G-2382	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243500	Dambrossio	G-2382	2006-AUG-17	$6,400	16	3814793 Canada Inc.
1243573	Dambrossio	G-2382	2006-APR-26	$6,400	16	3814793 Canada Inc.
1243584	Dambrossio	G-2382	2006-APR-26	$6,400	16	3814793 Canada Inc.
1243585	Dambrossio	G-2382	2006-APR-26	$6,400	16	3814793 Canada Inc.
1243593	Dambrossio	G-2382	2006-APR-26	$6,400	16	3814793 Canada Inc.
1243594	Dambrossio	G-2382	2006-APR-26	$6,400	16	3814793 Canada Inc.
3002701	Dambrossio	G-2382	2006-AUG-17	$6,400	16	3814793 Canada Inc.
3015557	Dahl	G-2419	2007-APR-08	$6,400	16	3814793 Canada Inc.
3015579	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
3015580	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
3015581	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
3015582	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
3015583	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
3015584	Dumas	M-1550	2006-AUG-17	$6,400	16	3814793 Canada Inc.
3015587	Dambrossio	G-2382	2006-SEP-07	$6,400	16	3814793 Canada Inc.
3015588	Dambrossio	G-2382	2006-SEP-07	$6,400	16	3814793 Canada Inc.
3015590	Dambrossio	G-2382	2006-SEP-07	$6,400	16	3814793 Canada Inc.
3015591	Dambrossio	G-2382	2006-SEP-07	$6,400	16	3814793 Canada Inc.
3015592	Dambrossio	G-2382	2006-SEP-07	$6,400	16	3814793 Canada Inc.
3015607	Dambrossio	G-2382	2006-SEP-07	$6,400	16	3814793 Canada Inc.

2. SURVEY AREA

The survey consisted of one irregular block identified by Dianor as the Dumas Project.

The Dumas Project Area was located approximately 40 kilometres to the north of the town of Wawa, Ontario.

The topography of the survey areas consist of rolling hills and many small lakes, with the topography ranging from 400 to 600m elevation. Vegetation is mainly coniferous forest. There are some cottages located throughout the areas. Weather conditions during the survey were variable with occasional snow and fog, and temperatures ranging from -3 ° C to +10° C and moderate winds.

The survey block corner coordinates were provided by Dianor in NAD83, Zone 16N UTM easting and northing. Final maps were also presented in NAD83, Zone 16N UTM easting and northing. The following table contains the survey block corner coordinates in NAD83.

Table 3: Wawa Area, Dumas Block Survey Area Coordinates

Dumas Block, Ontario, Canada		
Corner	UTM Easting	UTM Northing
1	650592	5352631
2	652408	5352670
3	652389	5354351
4	654051	5354351
5	654013	5355975
6	661859	5355975
7	661879	5354371
8	668256	5354467
9	668295	5352863
10	673107	5352999
11	673243	5348901
12	650746	5348051

The high-resolution magnetic survey lines were flown in a north – south direction with flight line spacing of 100 metres with tie lines flown perpendicular to the main survey lines at line spacing of 500 metres.

The Dumas Project Area covered a total of approximately 135.5 km².

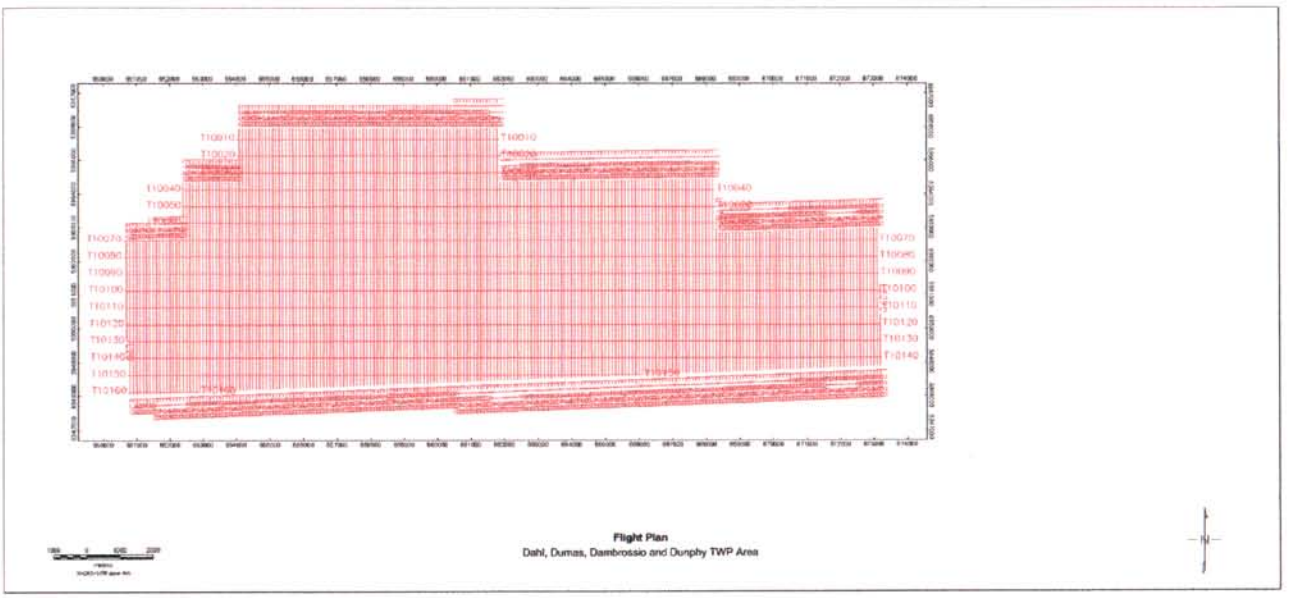


Figure 2: Planned Flight Path –Dumas Project, Ontario.

3. SURVEY OPERATIONS

3.1 Operations Base

Survey operations were based out of Wawa, located approximately 40 kilometres from the survey area. Permission was obtained to operate the helicopter; park and to locate and operate the magnetometer base station at the airport in Wawa.

3.2 Survey Conditions

Weather conditions during the survey were variable with some clear and overcast days, and also some snow and fog. Generally the temperatures ranged from $^{-}3^{\circ}$ C to $^{+}10^{\circ}$ C.

Sunspot activity, and hence diurnal geomagnetic activity, was quiet during the entire data acquisition period. No data were lost due to the geomagnetic activity.

3.3 Navigation

The nominal data acquisition speed was approximately 120 kilometres per hour. Scan rates for magnetic data acquisition were 0.05 second, and 1.0 second for the GPS navigation/positioning system. Therefore, a magnetic value was recorded approximately every 1.6 meters and a position fix every 33 meters along the flight track.

Navigation was assisted by a GPS receiver system that reported GPS coordinates in WGS-84 latitude and longitude and directed the pilot over a pre-programmed two-dimensional (2-D) survey grid. The x-y position of the aircraft as reported by the GPS system was recorded together with the terrain clearance reported by the radar altimeter.

Vertical navigation along flight lines was established using the radar altimeter. The optimum terrain clearance during normal survey flying was 50 metres for the helicopter, 30 metres for the towed-bird magnetometer. However, due to rugged terrain in some areas, and the pilot's judgment of safe flying conditions in these areas, these terrain clearances were not possible 100% of the time.

The final vertical and horizontal survey positions were corrected in real time to a precision of approximately +/- 1.5 metre.

3.4 Field Processing & Quality Control

The survey data was transferred to portable magnetic media on a flight-by-flight basis, than copied to the field data processing workstation. Field data processing included reduction of the data to

GEOSOFT GDB database format and inspection of the magnetometer data for adherence to contract specifications. Survey lines that exhibited excessive deviation after GPS post processing correction, or that were considered to be of inferior quality, were marked to be reflown.

No reflights were required.

3.5 Survey Statistics and Project Diary

The survey entailed a total of 11 production flights. The first production flight was on 29 March 2006, with the final production flight completed on 5 April 2006.

Table 4: Project Diary

Date	Flt #	Hours Flown	Line-Km Accepted	Comments
29 March	1	0:50	40.0	Helicopter ferried to Wawa. Installation of the base station at the Wawa airport. 1 production flight. Radar altimeter test flown. Tie lines 10140 – 10160 flown in Dumas block.
30 March	2	2:58	128.3	Magnetometer lag test flown and production flying. Too windy to fly in afternoon. Tie lines 10010 – 10020, 10090 – 10130 flown in Dumas block.
31 March	3	0:30	0.0	Flight aborted due to poor visibility in fog. No production possible.
1 April	4,5,6	8:00	872.6	Survey lines 20 – 1290 flown in Dumas block. Also magnetometer heading test flown.
2 April	7,8	5:39	482.7	Survey lines 1300 - 2270 flown in Dumas block. No more flying possible due to strong winds.
3 April	9	3:01	126.2	Survey lines 10 – 490 and tie lines 10010 to 10070 flown in LeClaire block. LeClaire block complete.
4 April	10	1:31	55.5	Tie lines 10030 – 10060 flown in Dumas block. No more flying possible due to poor visibility in snow.
5 April	11	1:23	45.1	Tie lines 10070 – 10080 flown in Dumas block. Survey complete.
Totals		**23:52**	**1750.4**	

The following personnel were the crew on the project in Wawa, Ontario:

Table 5: Onsite Personnel

Title	Name	Days Onsite
QC Geophysicist	John Currie	8
Helicopter Pilot / Operator	Alain Tremblay	8

McPhar Geosurveys Ltd. of Newmarket, Ontario, Canada, was responsible for the field operations, all geophysical matters and the overall coordination and management of the survey.

4. HELICOPTER AND EQUIPMENT

4.1 The Helicopter

The survey was flown using a Robinson R-44 Raven helicopter, with Canadian registration C-GLMD provided by Prospectair of Gatineau, Quebec. This helicopter featured up to 3.3 hours flight duration with the geophysical system onboard.

The installation of the geophysical and ancillary equipment was carried out by Prospectair personnel in Gatineau, Quebec with final adjustments and testing completed in Wawa, Ontario.

Aircraft Registration:	-	Canadian, C-GLMD
Engine:	-	260hpTextron Lycoming O-540 flat six piston engine
Empty weight:	-	1,442 lbs / 655 kg
Gross weight:	-	2,400 lbs / 1,090 kg
Max cruise:	-	113 knots / 206 kph
HIGE:	-	6,400 ft / 1,950 m
HOGE:	-	5,100 ft / 1,550 m
Service ceiling:	-	14,000 ft / 4,260 m
Standard fuel:	-	30.6 gal / 115 litres
Survey duration:	-	3.0 hours

Figure 3: Helicopter C-GLMD with mag bird.

4.2 The Survey Instrumentation

4.2.1 Survey System Overview

The instrumentation installed in the helicopter included:

- A Geometrics G822-A high-sensitivity Cesium magnetometer mounted in a towed-bird airfoil, 0.001 nT / 20 Hz resolution
- A navigation system, comprising a Fugro Omnistar DGPS receiver and a GPS computer with pilot steering indicator (PSI)
- A Fluxgeo Data Acquisition System (DAS)
- Free Flight 3000 Radar Altimeter

The processing and base stations comprised:

- A Gem GSM-19 Overhauser Base Station Magnetometer

A complement of spare parts and test equipment were maintained at the survey site.

4.2.2 Airborne Magnetometer

A Geometrics G822-A cesium split-beam total-field magnetometer was employed installed in the kevlar airfoil. Sampling rate was ten (20) times per second with an in-flight sensitivity of 0.01 nT. Aerodynamic magnetometer noise was 0.25 nT or less. The sensitivity of the magnetometer is documented at 0.001 nT when operated at a sampling rate of 0.1 second.

The Geometrics G822-A magnetometer is described in Appendix 3.

Figure 4: Geometrics G822-A cesium magnetometer

4.2.3 The Towed-Bird Airfoil and Tow-Cable

The towed-bird airfoil is essentially a hollow Kevlar tube, 2.0 meters long, with a bulbous nose into which the cesium magnetometer sensor is mounted in a 3D hand-aligned gimbal. Fins are used at the tail of the airfoil to stabilize the bird in flight.

The tow cable is constructed of coaxial cables complete with a strain member. The length of the tow cable is nominally 22 metres. The tow cable was attached to the helicopter by means of a weak link assembly. The on-board section of the tow cable consists of coaxial cable, the length customized to suit the helicopter.

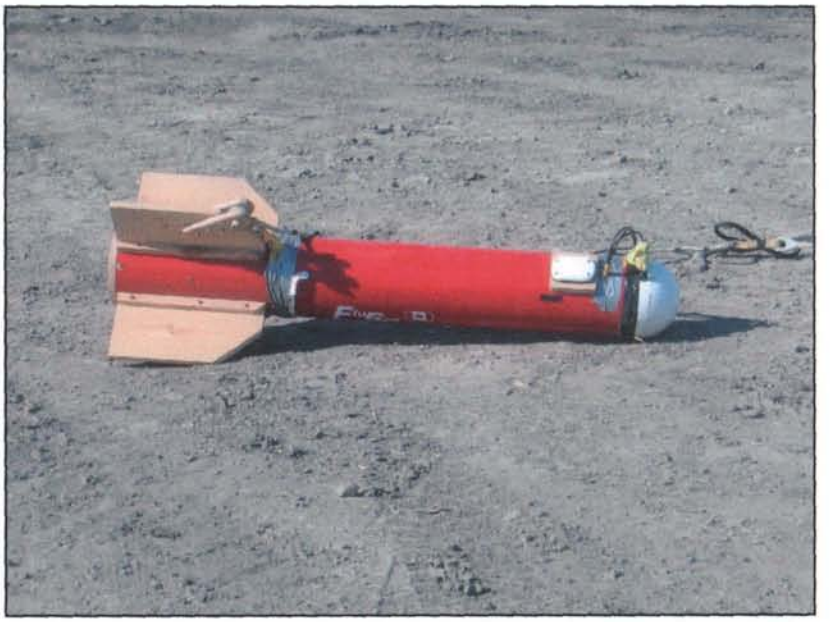


Figure 5: Geometrics cesium magnetometer mounted in the towed-bird airfoil.

4.2.4 The Base Station Magnetometer

The magnetometer base station was a Gem GSM-19 Overhauser Magnetometer, used to monitor and record diurnal variations of the Earth's magnetic field. The base station magnetometer was set up at the Wawa airport. Every effort was made to ensure that the magnetometer sensor was placed in a location of low magnetic gradient and sited away from electric transmission lines, and moving ferrous objects, such as motor vehicles and aircraft, without compromising safety and airport operations.

Figure 6: Magnetometer base station

The base-station magnetometer, with digital recording, was operated continuously throughout the airborne data acquisition work with a sensitivity of 0.01 nT. The ground and airborne system clocks were synchronised using GPS time, to an accuracy of 1 second or better. The sample rate of the base station was once per second. A continuously updated profile plot of the base station values was presented on the base station screen. At the end of the day, the digital data was transferred from the base station's data-logger to the fieldwork station.

Figure 7: GSM-19 Base Station Magnetometer

4.2.5 Altimeter

A Terra TRA-3000 radar altimeter was used to record terrain clearance to an accuracy of about 1 ft (30 cm), over a range of 12 metres to 762 metres. The antenna was mounted on the towed bird airfoil.

The altimeter was interfaced to the data acquisition system with an input sample rate of 0.1 second, and digitally recorded.

The altimeter specifications are further described in Appendix 3.

4.2.6 The GPS Satellite Navigation System

A DGPS navigation system provided the in-flight navigation control. This GPS navigation system will operate on 12-channels. The receiver used on the helicopter was a Fugro Omnistar DGPS model. The pilot steering indicator (PSI) installed on top of the cockpit dashboard, in front of the pilot provided steering and cross-track guidance to the pilot.

This navigation system yielded a post processed positional accuracy of better than ± 1.5 metre.

Survey coordinates were set-up prior to commencement of the survey, the information loaded into the airborne navigation system. The coordinate system employed in the survey design and digital recording was NAD83 latitude and longitude. The GPS positional data was recorded at one-second intervals and used with the base station data to calculate differentially corrected locations.

The GPS receiver is fully described in Appendix 3.

4.2.7 Data Acquisition/Recording System

A PC-based data acquisition system (DAS) was used to record the geophysical and navigation survey data on an internal hard disk drive. Data was displayed on an LCD screen as traces to allow the operator to monitor the integrity of the system. The DAS provided for:

- System control and monitoring
- Data acquisition recording
- Real-time data processing
- Navigation processing, and
- Post flight data playback and analysis

All data collection routines, verification, buffering, and recording were software controlled for maximum flexibility both during and after the survey flight. The DAS is fully described in Appendix 3.

In this system, survey data is digitally recorded directly onto the DAS' internal hard disk. On completion of the days flying, the survey data which has been stored on the hard disk is backed-up to FLASH card and then copied to the Field Workstation.

4.2.8 Spares

A normal compliment of spare parts, tools, back-up software, and necessary test instrumentation was available at the operation base.

4.2.9 Field Computer Workstations

A Data Processing Field Workstation (FWS) comprised of a dedicated PC-based notebook computer for use at the technical base in the field, was used on this project. The FWS is designed for use with Geosoft OASIS/Montaj Data Processing Software. The FWS has a data replot capability, and may be used to produce pseudo-analogue charts from the recorded digital data within 12 hours after the completion of a survey flight, if this is necessary. It was also capable of processing and imaging all geophysical and navigation data acquired during the survey and producing semi-final, preliminary-levelled maps.

The FWS was used to accomplish the following:

- **Quality Control/Digital Data Verification** - flight data quality and completeness were assured by both statistical and graphical means on a daily basis
- **Flight Path Plots** - flight path plots were generated from the GPS satellite data to verify the completeness and accuracy of each day's flying
- **Preliminary Maps** - the Geosoft software system permitted preliminary maps to be quickly and efficiently created for noise and coherency checks.

The FWS is fully described in Appendix 3.

The Geosoft Oasis/Montaj software is designed for airborne data editing, compilation, processing and plotting. The software reads the portable data media from the airborne system and allows for checking for gaps, spikes or other defects and permits the data to be edited where necessary. The base station GPS/magnetometer data is checked, edited, processed and then merged with the airborne data. GPS flight path plots are created and plotted for both flight planning and flight path verification.

5. INSTRUMENT CHECKS AND CALIBRATIONS

5.1 Airborne Magnetic System Tests and Calibrations

5.1.1 Magnetic Heading Effect

The magnetic heading effect was determined by flying a cloverleaf pattern oriented in the same direction as the survey lines and tie lines. Two passes in each direction were flown over a recognizable feature on the ground in order to obtain sufficient statistical information to estimate the heading error. The heading error was determined from a test completed on 1 April 2006.

5.1.2 Lag Tests

A Lag Test was performed to ascertain the time difference between the magnetometer readings and the operation of the GPS System. The test was flown over an identifiable magnetic anomaly by flying the same line in opposite directions at survey altitude. The lag test results indicated that a shift lag of 1.85 seconds was present in the system, determined from a test completed on 1 April 2006.

5.2 Altimeter Calibration Checks

An altimeter test was performed over a lake near the survey area on 30 March 2006. The radar altimeter was calibrated by comparing the radar altitudes with a suitable reading from the GPS navigation system during a radar "stack" flown over the lake. The ellipsoidal height at this location was determined by GPS. The procedure employed involved having the helicopter fly horizontally at various altitudes above the ground (100, 150, 200, 250, 300, 350, 400 feet) and recording the values of the radar altimeter and GPS altimeter which were then plotted and compared.

6. QC AND DATA PROCESSING

Daily quality control, initial processing and archiving of the data were completed on-site at the base of operations in Dawson City, Yukon using Geosoft MONTAJ software and a notebook PC computer. All data were verified upon receipt, and checked against the operator's flight logs.

The pre-processing or infield processing sequence included the following quality control measures:

a) Examination and checking of all incoming data to ensure completeness of data sets.
b) The production of preliminary flight path maps, speed checks, and terrain clearance checks.
c) Full profile quality control of all acquired traces for noise levels, data completeness, spike editing, and adherence to contract specifications.

The final data processing, map generation and report was completed by McPhar at the Newmarket, Ontario office.

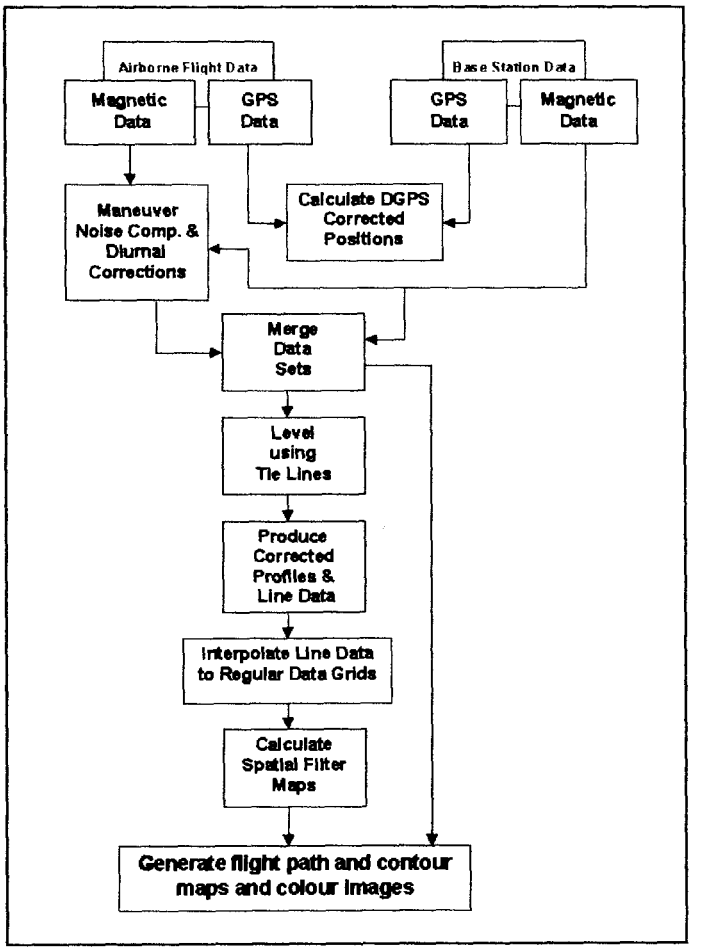


Figure 8: Data Processing Flow Chart

6.1 Flight Path Compilation

The flight path was derived from differentially corrected GPS positions using the post-processed airborne GPS data. A position was calculated each 1.0 second (approx. each 33 meters along the flight path) to an accuracy of better than +/- 1.5 meter. These position data were the merged into magnetic and ancillary data in the Geosoft GDB database.

As part of the QA/QC process, the following GPS parameters were checked on a daily basis:

- Number of satellites under observation (average of 10, minimum of 4 allowed)
- PDOP (position dilution of precision; maximum value of 3 allowed)
- Flight path deviation in X, Y and Z (maximum deviation in X and Y of 30% of line spacing over a linear distance of 2000 metres)

If the above specifications were not met, a reflight was necessary.

All positional data was maintained in NAD83 coordinates.

6.2 Base Station Magnetic Data

The base station magnetometer data was edited, plotted and merged into the GDB database on a daily basis.

The QA/QC procedure to determine acceptable magnetic base station data involved:

- Despiking of the base station data resulting from cultural activities not associated with the performance of the survey.
- Determination of the maximum noise of the observed total magnetic intensity (TMI; 1 nT maximum allowable).
- Determination of the average 4th difference noise of the signal (maximum of 0.2 nT allowable)
- Determination of the rate of diurnal change (maximum gradient of 25 nT for a 5 minute chord).

6.3 Corrections to the Magnetic Data

The processing of the data involved the application of the following corrections:

- Correction for diurnal variation using the digitally recorded ground base station magnetic values.
- Adjustment of the data for the time lag between the GPS position and the position of the magnetic sensor.
- Correction for the heading effect and
- Network adjustment using the flight line and tie line information to level the survey data set.

The corrected data was then used to generate the Total Magnetic Intensity grid.

6.3.1 Additional Corrections Applied to Profile Data

After applying the above corrections to the profile data residual line-direction-related noise was removed through application of microlevelling. The microlevelling technique consists of applying directional and high pass filters to produce a grid containing noise-only in the line direction. In order to differentiate between the two of them, the grid is extracted to the profile database, and an amplitude limit and a filter length are determined, so that the final error channel reflects only noise present on the grid without removing or changing geological signal. This error channel is then subtracted from the initial data channel in order to obtain the final microlevelled channel. The resulting grid is free of line direction noise.

6.3.2 Gridding

The corrected magnetic line data was interpolated between survey lines using a random point minimum curvature gridding algorithm to yield x-y grid values for a standard grid cell size of 1/4th of the line spacing.

7. GEOPHYSICAL INTERPRETATION

7.1 Magnetic Interpretation

The Dumas Property can be subdivided into to three (3) major magnetic units designated Magnetic Unit A, Magnetic Unit B, and Magnetic unit C.

Unit A is defined as a transition unit, primarily low magnetic activity, and probably represents a relatively thick section of metamorphosed sediments. The general strike as can be defined from the survey is northwest-southeast.

Unit B is defined by a series of long linear high positive amplitude magnetic features that are best described as intrusives or magnetic dykes. Pinching and swelling of the width of the magnetic feature is common along the strike length. There appear to be two distinct families of magnetic dykes, possibly members of the Matchewan Dyke Swarm (striking north-northwest) and those of the Nipissing Dyke Swarm (striking east-northeast). There are several smaller strike length, high amplitude bodies associated with this unit, particularly in areas which appear to have undergone significant faulting as observed from the TMI. Also identified are a series of what appears to be stratigraphically controlled magnetic features labelled as Iron Formation on the interpretation map.

Unit C is located on the southern boundary of the survey area and is composed of what appear to be high amplitude magnetic anomalies. This Unit contains the most active magnetic material in the survey area.

Geological input is required to further define the magnetic interpretation of these units and the economic viability.

Additionally there numerous small circular to elliptical shaped magnetic anomalies of "average" amplitude are observed throughout the survey block. These targets have not been individually interpreted, but appear to be vertical pipe-like magnetic intrusives. These anomalous entities are dotted across all magnetic units and may indicate a possible field of intrusive bodies. Common to the majority of the targets is that they appear to be fault bounded and / or lie within a fault zone.

The survey area is dominated by three (3) families of faults. The dominant and presumed younger fault family strikes northwest-southeast and appears to crosscut and offset the linear magnetic features defined by the TMI and the older faults. The remaining fault families appear to be older, but contemporaneous and strike northeast-southwest and east-west. The possible vertical magnetic intrusives tend to be more closely associated to the younger rather than the older series of faults.

7.2 Conclusions and Recommendations

It is recommended that detail geologic mapping be completed on all claims as the magnetic activity is very high and the number of potential magnetic targets very high. Geological and geochemical input is required to better evaluate the numerous magnetic features that are potentially of interest. It is anticipated that a significant amount of the magnetic features are visible in the near surface. If

there is no geologic surface expression, then surveying with suitable ground geophysics methods including ground magnetics and in loop time domain EM or IP should be considered.

If the mineralisation being explored for is diamond, then a program of heavy mineral sampling should be initiated if not already completed.

8. DELIVERABLE PRODUCTS

The survey data are presented as colour/contour maps on paper, produced at a scale of 1:10,000. A set of report-sized colour/contour images, on paper, are included as Appendix 5. The basic co-ordinate system used is NAD83, Universal Transverse Mercator Zone 16N. All digital data are also presented on CD-ROM in ASCII format.

The deliverable items of this survey are:

8.1 Maps

The following maps, at a scale of 1:10,000, are delivered in three (3) paper copies.

- Flight Path with Planimetry
- Total Magnetic Intensity
- Geophysical Interpretation
-

8.2 Digital Data

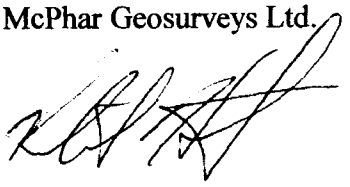
Digital data was supplied to Dianor and has not been included in the Assessment submission.

The edited field and processed digital data are delivered in three (3) copies, in ASCII code, on CD-ROM. The final processed line and grid data, in GEOSOFT format, are also delivered in three (3) copies on CD-ROM. Full descriptions of the digital data formats are included in this final report (see below) and as text files on each CD-ROM. Each CD-ROM has a README.TXT file describing the contents and the file formats.

8.3 Report

Three (3) copies of a survey report were delivered, complete with all final maps as page size maps. This report provides information about the acquisition, processing and presentation of the survey data.

Respectfully submitted,
McPhar Geosurveys Ltd.



Robert Hearst, M.Sc., P.Geoph. (NAPEG)
General Manager - Operations

APPENDIX 1

- **Statement of Qualifications**

Robert Bruce Hearst
19 Beethoven Court
Toronto, ON, Canada, M2H 1W1
Telephone: 416-407-6355
Facsimile: 416-492-7132
E-mail: rhearst@mgssurveys.com

Statement of Qualifications

I, Robert Bruce Hearst, P.Geoph. do hereby certify that:

1. I am currently employed as *Geophysical Consultant* by:

   McPhar Geosurveys Ltd.
   1256B Kerrisdale Blvd.
   Newmarket, Ontario
   Canada, L3Y 8Z9

2. I graduated with a H.Bsc. degree in Geophysics, Geology and Geophysics option from the University of Western Ontario in 1983. In addition, I have obtained an M.Sc. Geology and Geophysics from McMaster University in 1996.

3. I am a member of the CIM (Toronto and National Branches), KEGS (Canadian Exploration Geophysical Society, Past President), SEG (Society of Exploration Geophysicists), EEGS (Environmental and Engineering Geophysicists Society), PDAC (Prospectors and Developers Association of Canada) and a Licensee of NAPEGG (Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories).

4. I have worked as a geophysicist for a total of 22 years since graduation from the University of Western Ontario.

5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined by NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

6. I am responsible for the preparation of the *Final Report on a Helicopter-borne Magnetic Survey, Dumas Project, Wawa, Ontario* dated April 2006 (THE "Technical Report") relating to the Dumas Project, Wawa, of Dianor Resources Inc. and 3814793 Canada Inc. I have not visited the property.

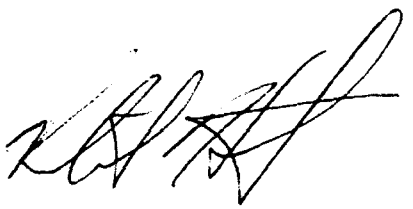
7. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.

8. I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.

9. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

10. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 23rd day of April, 2006



Robert Bruce Hearst

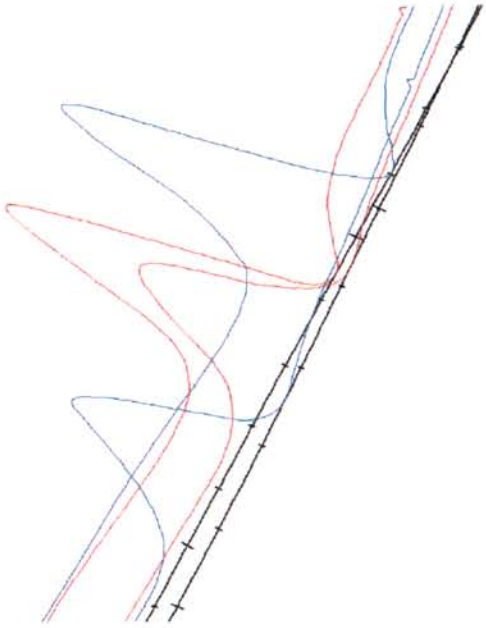
APPENDIX 2

System Tests and Reports

- Lag Test
- Altimeter Test
- Heading Correction Test
- Magnetic Base Station Form
- Daily Reports
- Flight Logs

McPhar Geosurveys Ltd.
Lag Test

Project:	0607 - Dianor Resources Inc.
Location:	x = 665630 y= 5315400
Date:	01-Apr-06
Flight:	4
Test No.	1
Aircraft:	C-GLMD
Lines:	SLAG01, SLAG02



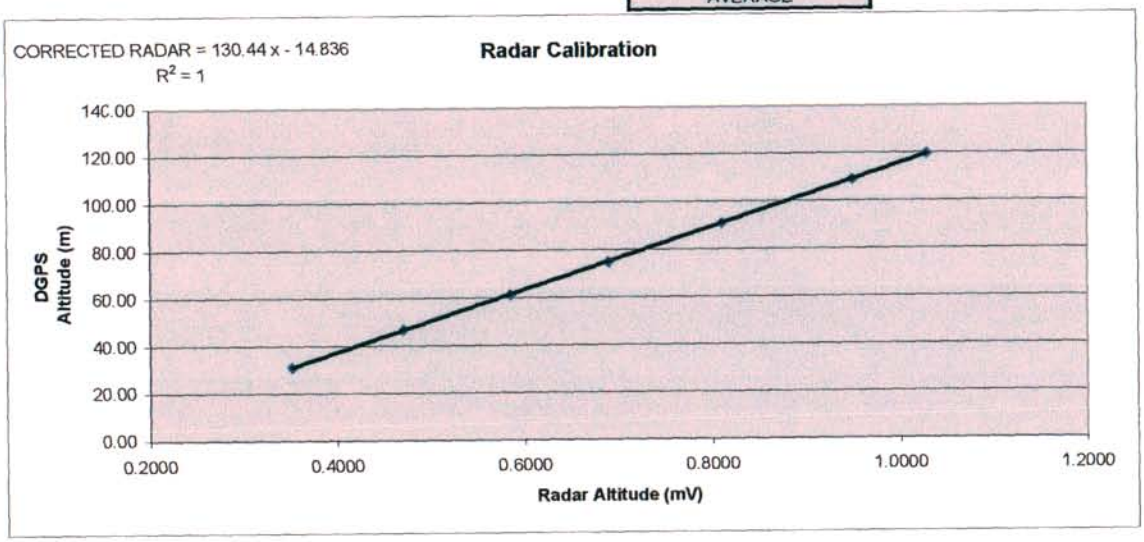
LAG = 1.85 seconds

Pilot:	Alain Tremblay
Operator:	Alain Tremblay
QC:	John Currie
PM:	Alain Tremblay

McPhar Geosurveys Ltd.
Altimeter Calibration Test

Project:	**0607 - Dianor Resources Inc.**
Location:	Wawa, Ontario, Canada
Date:	20060330
Flight:	2
Test No.	1
Aircraft:	C-GLMD

Line	Nominal Altitude above ground (m)	Nominal Altitude above ground (ft)	Radar Altitude Raw Data (mV)	DGPS Altitude Ellipsoidal Height (m)	DTM = DGPS - Radar Alt Ellipsoidal Height WGS84 (m)	DGPS Altitude (ALT) ALT=DGPS - AVERAGE(DTM) (m)
SRADAR01	30.48	100	0.3512	340.2	309.72	31.09
SRADAR02	45.72	150	0.4700	355.8	310.08	46.69
SRADAR03	60.96	200	0.5848	370.4	309.44	61.29
SRADAR04	76.20	250	0.6892	383.9	307.70	74.79
SRADAR05	91.44	300	0.8105	399.9	308.46	90.79
SRADAR06	106.68	350	0.9500	418.2	311.52	109.09
SRADAR07	121.92	400	1.0295	428.8	306.88	119.69
					309.11	
					AVERAGE	



Pilot:	Alain Tremblay
Operator:	Alain Tremblay
QC:	John Currie
PM:	Alain Tremblay

McPhar Geosurveys Ltd.
MAGNETIC HEADING EFFECT TEST

Project:	**0607 - Dianor Resources Inc.**
Location:	x = 663800 y = 5341960
Altitude:	900m
Date:	01-Apr-06
Flight:	6
Test No.	1
Aircraft:	C-GLMD

RAW DATA

(note: MAG1 is diurnal corrected value of Total Magnetic Intensity)

	Direction	Line #	Fiducial	lag corrected mag Magl	diurnal Magd	Mag1
	270	SHEAD01	3987.0	57338.8	57189.9	148.9
	90	SHEAD01	7944.0	57338.4	57189.8	148.6
	180	SHEAD01	479.0	57339.3	57189.3	150.0
	0	SHEAD01	13354.0	57338.0	57189.5	148.5

HEADING EFFECT CALCULATION

Direction:	MAG1	offset 1	corrected MAG1	offset 2	corrected MAG1	offset 1+2 = offset 3
270	148.9	-0.15	148.75	0.25	149.00	0.10
90	148.6	0.15	148.75	0.25	149.00	0.40
180	150.0	-0.75	149.25	-0.25	149.00	-1.00
0	148.5	0.75	149.25	-0.25	149.00	0.50

HEADING EFFECT COEFFICIENTS

Direction	Heading Correction
270	0.10
90	0.40
180	-1.00
0	0.50

HEADING CORRECTED DATA

Direction	Line #	Fiducial	Mag1 Corr
270	SHEAD01	3987.0	149.0
90	SHEAD01	7944.0	149.0
180	SHEAD01	479.0	149.0
0	SHEAD01	13354.0	149.0

Pilot: Alain Tremblay
Operator: Alain Tremblay
QC: John Currie
PM: Alain Tremblay

Magnetic Base Station Form

Station	Number:	MB01	Location:	Wawa Airport		Type:	Base Station
	City:	Wawa	Province:	Ontario	Country:	Canada	
Position	System:	Latitude:	SD	Longitude:	SD	Ellipsoidal Height	SD
	WGS-84	N 47° 58' 29.2'	3 m	W 84° 46' 50.7"	3 m	289.5 m	
	System:	Easting	SD	Northing	SD	Sensor Height	SD
	UTM zone 16N	665622	3 m	5315880	3 m	90 cm	
Magnetic	System:	Total Magnetic Field	SD	Inclination Declination			
	IGRF 2000	57716 nT		I=74.6°; D= -7.97°			
	Av.Total Filed	nT					
Info	Topographic description / Notes:						
	The base station is located at the Wawa airport installed at the top of a pile of gravel. The position was surveyed by handheld GARMIN 12 GPS The value of Total magnetic field was averaged from all data acquired during the survey, from March 29 until April 5, 2006.						
	Date of establishment:	29.03.2006	By:	McPhar Geosurveys Ltd.			
	Date of measurement:	29.03.2006	By:	McPhar Geosurveys Ltd.			

Project #:	0607	Daily Field Report - Wawa Block					
Report Date:	29-Mar-06	Aircraft:	C-GLMD	SURVEY PERSONNEL			
Report Number:	1	Ops Base:	Wawa	Pilot	Alain Tremblay		
Client:	Dianor Resources Inc	Country:	CANADA	Operator	Alain Tremblay		
Survey Type:	Helimag survey			Field Data QC:	John Currie		
Survey Area:	Wawa Block			Helicopter Engineer	Alain Tremblay		
Project Km:	1,624.2	Total Flown	Total Accepted				
Km flown today:		40.00	40.00				
Accumulated km:		40.00	40.00				
Percent Completed:		2.5%	2.5%				
Lines flown:							

Flight #	Comments	Take off (GPS time)	Land (GPS time)	Hours Flown
1	Radar altimeter test and 4 tie lines flown	17:10	18:00	0:50

Weather:	Clear, 10 C			Hours Flown Today.		0:50
Accum. Standby:		Accumulated Survey Days:	1	Accumulated Project Hours:		0.83

COMMENTS

Helicopter ferried to Wawa, Ontario. Base station established at airport.
Radar altimeter test and 4 tie lines flown.

CONTROL	Flight # :		Flight date:	
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection	

REFLIGHTS		OBSERVATIONS.	LINES REFLOWN
Rejected km			
Kms today			
Accumulated km			
Percent Completed			

Operations Base: Wawa, Ontario				
Geophy Co-ordinator:	Dr. Tomas Grand		1-905-830-6880	tgrand@mgssurveys.com
General Manager	Tim Bodger		1-905-830-6880	tbodger@mgssurveys.com
Project Manager:	John Currie		1-905-830-6880	jcurrie@mgssurveys.com
Systems Engineer	Keith W. Hall		1-905-954-5212	khall@mgssurveys.com
HSE Manager:	Victor Oetke		1-905-830-6880	vho@mgssurveys.com

McPhar Geosurveys Ltd.
1256B Kerrisdale Boulevard, Newmarket, Ontario, Canada L3Y 7V1
Tel: (905) 830-6880, Fax: (905) 898-0336, E-mail: info@mgssurveys.com

McPHAR

*Please note that kilometres flown are estimates.
*Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries

Project #: 0607	Daily Field Report - Wawa Block					
Report Date:	30-Mar-06	Aircraft:	C-GLMD	SURVEY PERSONNEL		
Report Number:	2	Ops Base:	Wawa	Pilot	Alain Tremblay	
Client:	Dianor Resources Inc	Country:	CANADA	Operator	Alain Tremblay	
Survey Type:	Helimag survey			Field Data QC:	John Currie	
Survey Area:	Wawa Block			Helicopter Engineer	Alain Tremblay	
Project Km:	1,624.2	Total Flown	Total Accepted			
Km flown today:		128.30	128.30			
Accumulated km:		168.30	168.30			
Percent Completed:		10.4%	10.4%			
Lines flown:						

Flight #	Comments	Take off (GPS time)	Land (GPS time)	Hours Flown
2	Magnetometer Lag test and 7 tie lines flown	15:00	17:58	2:58
Weather:	Overcast, 5 degrees. Winds increased in afternoon above 15 knots.	Hours Flown Today.		2:58
Accum. Standby:	Accumulated Survey Days: 2	Accumulated Project Hours:		3.80

COMMENTS

Magnetometer lag test completed. 7 Tie lines flown.
Winds became too strong by midday, so no flying was possible in the afternoon.

CONTROL	Flight # :		Flight date:	
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection	

REFLIGHTS		OBSERVATIONS.	LINES REFLOWN
Rejected km			
Kms today			
Accumulated km			
Percent Completed			

Operations Base: Wawa, Ontario				
Geophy Co-ordinator:	Dr. Tomas Grand		1-905-830-6880	tgrand@mgssurveys.com
General Manager	Tim Bodger		1-905-830-6880	tbodger@mgssurveys.com
Project Manager:	John Currie		1-905-830-6880	jcurrie@mgssurveys.com
Systems Engineer	Keith W. Hall		1-905-954-5212	khall@mgssurveys.com
HSE Manager:	Victor Oetke		1-905-830-6880	vho@mgssurveys.com

McPhar Geosurveys Ltd.
1256B Kerrisdale Boulevard, Newmarket, Ontario, Canada L3Y 7V1
Tel: (905) 830-6880, Fax: (905) 898-0336, E-mail: info@mgssurveys.com

McPHAR

*Please note that kilometres flown are estimates.
*Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries

Project #:	0607	Daily Field Report - Wawa Block					
Report Date:	31-Mar-06	Aircraft:	C-GLMD	SURVEY PERSONNEL			
Report Number:	3	Ops Base:	Wawa	Pilot	Alain Tremblay		
Client:	Dianor Resources Inc	Country:	CANADA	Operator	Alain Tremblay		
Survey Type:	Helimag survey			Field Data QC:	John Currie		
Survey Area:	Wawa Block			Helicopter Engineer	Alain Tremblay		
Project Km:	1,624.2		Total Flown	Total Accepted			
Km flown today:							
Accumulated km:			168.30	168.30			
Percent Completed:			10.4%	10.4%			
Lines flown:							

Flight #	Comments	Take off (GPS time)	Land (GPS time)	Hours Flown
3	Flight aborted due to thick fog in area.	17:35	18:05	0:30

Weather:	Rain, fog in area all day. 4C	Hours Flown Today.		0:30
Accum. Standby:	1	Accumulated Survey Days:	3	Accumulated Project Hours:		4.30
---	---	---	---	---	---	---

COMMENTS

New alternator installed in helicopter in early morning.
Rain and fog all day. One flight was attempted but aborted 5 km south of the area due to pery poor visibility in thick fog.
Weather standby day.

CONTROL	Flight # :		Flight date:	
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection	

REFLIGHTS		OBSERVATIONS.	LINES REFLOWN
Rejected km			
Kms today			
Accumulated km			
Percent Completed			

Operations Base: Wawa, Ontario

Geophy Co-ordinator:	Dr. Tomas Grand		1-905-830-6880	tgrand@mgssurveys.com
General Manager	Tim Bodger		1-905-830-6880	tbodger@mgssurveys.com
Project Manager:	John Currie		1-905-830-6880	jcurrie@mgssurveys.com
Systems Engineer	Keith W. Hall		1-905-954-5212	khall@mgssurveys.com
HSE Manager:	Victor Oetke		1-905-830-6880	vho@mgssurveys.com

McPhar Geosurveys Ltd.
1256B Kerrisdale Boulevard, Newmarket, Ontario, Canada L3Y 7V1
Tel: (905) 830-6880, Fax: (905) 898-0336, E-mail: info@mgssurveys.com

McPHAR

*Please note that kilometres flown are estimates.
*Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries

Daily Field Report - Wawa Block

Project #:	0607				
Report Date:	01-Apr-06	Aircraft:	C-GLMD	SURVEY PERSONNEL	
Report Number:	4	Ops Base:	Wawa	Pilot	Alain Tremblay
Client:	Dianor Resources Inc	Country:	CANADA	Operator	Alain Tremblay
Survey Type:	Helimag survey			Field Data QC:	John Currie
Survey Area:	Wawa Block			Helicopter Engineer	Alain Tremblay
Project Km:	1,624.2	Total Flown	Total Accepted		
Km flown today:		872.60	872.60		
Accumulated km:		1,040.90	1,040.90		
Percent Completed:		64.1%	64.1%		
Lines flown:					

Flight #	Comments	Take off (GPS time)	Land (GPS time)	Hours Flown
4	Production	7:45	10:28	2:43
5	Production	11:05	13:48	2:43
6	Production	15:25	17:59	2:34
		Hours Flown Today.		8:00
Weather:	Clear. 2C. North wind @10 knots.	Accumulated Project Hours:		12.30
Accum. Standby:	1	Accumulated Survey Days:	4	

COMMENTS

3 production flights. Magnetometer heading test also flown.

CONTROL	Flight # :		Flight date:	
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection	

REFLIGHTS		OBSERVATIONS.	LINES REFLOWN
Rejected km			
Kms today			
Accumulated km			
Percent Completed			

Operations Base: Wawa, Ontario

Geophy Co-ordinator:	Dr. Tomas Grand		1-905-830-6880	tgrand@mgssurveys.com
General Manager	Tim Bodger		1-905-830-6880	tbodger@mgssurveys.com
Project Manager:	John Currie		1-905-830-6880	jcurrie@mgssurveys.com
Systems Engineer	Keith W. Hall		1-905-954-5212	khall@mgssurveys.com
HSE Manager:	Victor Oetke		1-905-830-6880	vho@mgssurveys.com

McPhar Geosurveys Ltd.
1256B Kerrisdale Boulevard, Newmarket, Ontario, Canada L3Y 7V1
Tel: (905) 830-6880, Fax: (905) 898-0336, E-mail: info@mgssurveys.com

*Please note that kilometres flown are estimates.

*Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries

Project #:	0607	Daily Field Report - Wawa Block					
Report Date:	02-Apr-06	Aircraft:	C-GLMD	SURVEY PERSONNEL			
Report Number:	5	Ops Base:	Wawa	Pilot	Alain Tremblay		
Client:	Dianor Resources Inc	Country:	CANADA	Operator	Alain Tremblay		
Survey Type:	Helimag survey			Field Data QC:	John Currie		
Survey Area:	Wawa Block			Helicopter Engineer	Alain Tremblay		
Project Km:	1,750.4	Total Flown	Total Accepted				
Km flown today:		482.70	482.70				
Accumulated km:		1,523.65	1,523.65				
Percent Completed:		87.0%	87.0%				
Lines flown:							

Flight #	Comments	Take off (GPS time)	Land (GPS time)	Hours Flown
7	Production	15:01	18:00	2:59
8	Production	21:15	23:55	2:40
Weather:	Clear. 5C. NW wind @5 knots.	Hours Flown Today.		5:39
Accum. Standby:	1	Accumulated Survey Days: 5	Accumulated Project Hours:		17.95

COMMENTS

2 Production flights flown.
Total project km modified to include LeClaire TWP block (126.24 km)

CONTROL	Flight # :		Flight date:	
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection	

REFLIGHTS		OBSERVATIONS.	LINES REFLOWN
Rejected km			
Kms today			
Accumulated km			
Percent Completed			

Operations Base: Wawa, Ontario

Geophy Co-ordinator:	Dr. Tomas Grand		1-905-830-6880	tgrand@mgssurveys.com
General Manager	Tim Bodger		1-905-830-6880	tbodger@mgssurveys.com
Project Manager:	John Currie		1-905-830-6880	jcurrie@mgssurveys.com
Systems Engineer	Keith W. Hall		1-905-954-5212	khall@mgssurveys.com
HSE Manager:	Victor Oetke		1-905-830-6880	vho@mgssurveys.com

McPhar Geosurveys Ltd.
1256B Kerrisdale Boulevard, Newmarket, Ontario, Canada L3Y 7V1
Tel: (905) 830-6880, Fax: (905) 898-0336, E-mail: info@mgssurveys.com

McPHAR

***Please note that kilometres flown are estimates.**

***Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries**

Daily Field Report - Wawa Block

Project #:	0607			SURVEY PERSONNEL	
Report Date:	03-Apr-06	Aircraft:	C-GLMD	Pilot	Alain Tremblay
Report Number:	6	Ops Base:	Wawa	Operator	Alain Tremblay
Client:	Dianor Resources Inc	Country:	CANADA	Field Data QC:	John Currie
Survey Type:	Helimag survey			Helicopter Engineer	Alain Tremblay
Survey Area:	Wawa Block				

		Total Flown	Total Accepted
Project Km:	1,750.4		
Km flown today:		126.24	126.24
Accumulated km:		1,649.89	1,649.89
Percent Completed:		94.3%	94.3%

Lines flown:				
Flight #	Comments	Take off (GPS time)	Land (GPS time)	Hours Flown
9	Production in LeClaire TWP block	18:54	21:55	3:01
Weather:	Overcast. 0C. N wind @15 knots.	Hours Flown Today.		3:01
Accum. Standby:	1	Accumulated Survey Days: 6	Accumulated Project Hours:		20.97

COMMENTS

1 Production flight flown, LeClaire TWP block completed.

CONTROL	Flight # :		Flight date:	
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection	

REFLIGHTS		OBSERVATIONS.	LINES REFLOWN
Rejected km			
Kms today			
Accumulated km			
Percent Completed			

Operations Base: Wawa, Ontario

Geophy Co-ordinator:	Dr. Tomas Grand		1-905-830-6880	tgrand@mgssurveys.com
General Manager	Tim Bodger		1-905-830-6880	tbodger@mgssurveys.com
Project Manager:	John Currie		1-905-830-6880	jcurrie@mgssurveys.com
Systems Engineer	Keith W. Hall		1-905-954-5212	khall@mgssurveys.com
HSE Manager:	Victor Oetke		1-905-830-6880	vhoe@mgssurveys.com

McPhar Geosurveys Ltd.
1256B Kerrisdale Boulevard, Newmarket, Ontario, Canada L3Y 7V1
Tel: (905) 830-6880, Fax: (905) 898-0336, E-mail: info@mgssurveys.com

*Please note that kilometres flown are estimates.

*Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries

Project #:	0607	Daily Field Report - Wawa Block					
Report Date:	04-Apr-06	Aircraft:	C-GLMD	SURVEY PERSONNEL			
Report Number:	7	Ops Base:	Wawa	Pilot	Alain Tremblay		
Client:	Dianor Resources Inc	Country:	CANADA	Operator	Alain Tremblay		
Survey Type:	Helimag survey			Field Data QC:	John Currie		
Survey Area:	Wawa Block			Helicopter Engineer	Alain Tremblay		
Project Km:	1,750.4	Total Flown	Total Accepted				
Km flown today:		55.50	55.50				
Accumulated km:		1,705.40	1,705.40				
Percent Completed:		97.4%	97.4%				
Lines flown:							

Flight #	Comments	Take off (GPS time)	Land (GPS time)	Hours Flown
10	Production in original block	11:10	12:41	1:31

Weather:	Overcast and snow. 3C. NE wind @5-10 knots.	Hours Flown Today.		1:31
Accum. Standby:	1	Accumulated Survey Days:	7	Accumulated Project Hours:		22.49
---	---	---	---	---	---	---

COMMENTS
1 Production flight flown.
2 tie lines remain.
Unable to fly another flight due to poor visibility in snow.

CONTROL	Flight # :		Flight date:	
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection	

REFLIGHTS		OBSERVATIONS.	LINES REFLOWN
Rejected km			
Kms today			
Accumulated km			
Percent Completed			

Operations Base: Wawa, Ontario

Geophy Co-ordinator:	Dr. Tomas Grand		1-905-830-6880	tgrand@mgssurveys.com
General Manager	Tim Bodger		1-905-830-6880	tbodger@mgssurveys.com
Project Manager:	John Currie		1-905-830-6880	jcurrie@mgssurveys.com
Systems Engineer	Keith W. Hall		1-905-954-5212	khall@mgssurveys.com
HSE Manager:	Victor Oetke		1-905-830-6880	vho@mgssurveys.com

McPhar Geosurveys Ltd.
1256B Kerrisdale Boulevard, Newmarket, Ontario, Canada L3Y 7V1
Tel: (905) 830-6880, Fax: (905) 898-0336, E-mail: info@mgssurveys.com

*Please note that kilometres flown are estimates.
*Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 1 of 1

FLT #: 1 Date(dd/mm/yr): 29/03/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 10 A/C REG: C-GLMD

DEPART TIME: 17:10 RETURN TIME: 18:00 TOTAL FLIGHT TIME: 0:50

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
10160	556	618	flt1.txt	
10150	106	531		
10140	706	1265		
10130	62	685		Line aborted. Getting dark. Return to base.

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 1 of 1

FLT #: 2 Date(dd/mm/yr): 30/03/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 10 A/C REG: C-GLMD

DEPART TIME: 15:00 RETURN TIME: 17:58 TOTAL FLIGHT TIME: 2:58

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
LAG01			lag_calibration.txt	Lag Test
LAG02				Lag Test
RADAR01			radar_calibration.txt	Radar Test @100'
RADAR02				Radar Test @150'
RADAR03				Radar Test @200'
RADAR04				Radar Test @250'
RADAR05				Radar Test @300'
RADAR06				Radar Test @350'
RADAR07				Radar Test @400'
10130	61	685	flt2.txt	
10120	699	1225		
10110	1243	1829		
10100	1853	2383		
10090	2402	2979		Helicopter alternator needs to be changed.
10020	235	434		
10010	458	681		

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

McPHAR AIRBORNE GEOPHYSICAL FLIGHT LOG McPHAR

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 1 of 1

FLT #: 3 Date (dd/mm/yr): 31/03/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 4 A/C REG: C-GLMD

DEPART TIME: 17:35 RETURN TIME: 18:05 TOTAL FLIGHT TIME: 0:30

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
				Flight aborted due to poor visibility in fog.
				Weather standby day.

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 1 of 2

FLT #: 4 Date(dd/mm/yr): 1/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 2 A/C REG: C-GLMD

DEPART TIME: 7:45 RETURN TIME: 10:28 TOTAL FLIGHT TIME: 2:43

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
20	81	176	Flt4.txt	
30	189	296		
40	307	447		
50	454	570		
60	583	721		
70	798	909		
80	920	1067		
90	1076	1192		
100	1211	1348		
110	1357	1464		
120	1482	1627		
130	1638	1748		
140	1768	1917		
150	1933	2049		
160	2077	2227		
170	2238	2362		
180	2373	2526		
190	2536	2652		
200	2672	2870		
210	2942	3092		
220	3500	3700		
230	3709	3870		
240	3881	4098		
250	4106	4270		

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 2 of 2

FLT #: 4 Date (dd/mm/yr): 1/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 2 A/C REG: C-GLMD

DEPART TIME: 7:45 RETURN TIME: 10:28 TOTAL FLIGHT TIME: 2:43

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
260	4289	4489		
270	4496	4656		
280	4666	4886		
290	4895	5052		
300	5067	5276		
310	5280	5445		
320	5455	5671		
330	5677	5843		
340	5855	6076		
350	6082	6250		
360	6259	6540		
370	6551	6760		
380	6770	7033		
390	7105	7302		
400	7362	7627		
410	7640	7840		

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 1 of 3

FLT #: 5 Date(dd/mm/yr): 1/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 2 A/C REG: C-GLMD

DEPART TIME: 11:05 RETURN TIME: 13:48 TOTAL FLIGHT TIME: 2:43

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
420	231	439	Flt5.txt	
430	462	635		
440	652	884		
450	900	1103		
460	1117	1348		
470	1361	1561		
480	1573	1806		
490	1815	2011		
500	2020	2250		
510	2257	2451		
520	2467	2697		
530	2708	2914		
540	2931	3177		
550	3184	3385		
560	3402	3632		
570	3643	3841		
580	3852	4105		
590	4112	4330		
600	4336	4580		
610	4592	4801		
620	4809	5057		
630	5066	5270		
640	5287	5515		
650	5521	5728		

McPHAR AIRBORNE GEOPHYSICAL FLIGHT LOG McPHAR

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 2 of 3

FLT #: 5 Date (dd/mm/yr): 1/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 2 A/C REG: C-GLMD

DEPART TIME: 11:05 RETURN TIME: 13:48 TOTAL FLIGHT TIME: 2:43

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
660	5742	5986		
670	5995	6206		
680	6217	6458		
690	6463	6675		
700	6689	6919		
710	6926	7136		
720	7147	7381		
730	7392	7604		
740	7612	7841		
750	7853	8070		
760	8078	8301		
770	8355	8556		
780	8563	8791		
790	8799	9001		
800	9013	9236		
810	9246	9454		
820	9460	9697		
830	9708	9924		
840	9939	10158		
850	10169	10375		
860	10383	10617		
870	10624	10828		
880	10840	11062		
890	11071	11268		

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 3 of 3

FLT #: 5 Date (dd/mm/yr): 1/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 2 A/C REG: C-GLMD

DEPART TIME: 11:05 RETURN TIME: 13:48 TOTAL FLIGHT TIME: 2:43

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
900	11277	11503		
910	11513	11702		

McPHAR AIRBORNE GEOPHYSICAL FLIGHT LOG McPHAR

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 1 of 2

FLT #: 6 Date (dd/mm/yr): 1/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 2 A/C REG: C-GLMD

DEPART TIME: 15:25 RETURN TIME: 17:59 TOTAL FLIGHT TIME: 2:34

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
920	59	258	Flt6.txt	
930	273	455		
940	473	684		
950	702	890		
960	906	1118		
970	1127	1320		
980	1338	1549		
990	1563	1743		
1000	1764	1976		
1010	1994	2173		
1020	2186	2402		
1030	2408	2600		
1040	2612	2830		
1050	2838	3032		
1060	3039	3257		
1070	3265	3461		
1080	3474	3686		
1090	3709	3902		
1100	3912	4132		
1110	4139	4330		
1120	4342	4558		
1130	4577	4765		
1140	4779	4943		
1150	4955	5105		

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 2 of 2

FLT #: 4 Date (dd/mm/yr): 1/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 2 A/C REG: C-GLMD

DEPART TIME: 15:25 RETURN TIME: 17:59 TOTAL FLIGHT TIME: 2:34

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
1160	5121	5290		
1170	5301	5455		
1180	5468	5639		
1190	5650	5801		
1200	5816	5980		
1210	5993	6151		
1220	6163	6331		
1230	6342	6496		
1240	6511	6678		
1250	6687	6855		
1260	6866	7034		
1270	7091	7252		
1280	7260	7422		
1290	7434	7575		
HEAD01	0	691	Heading.txt	Magnetometer Heading Test

McPHAR AIRBORNE GEOPHYSICAL FLIGHT LOG McPHAR

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 1 of 3

FLT #: 7 Date(dd/mm/yr): 2/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 5 A/C REG: C-GLMD

DEPART TIME: 10:01 RETURN TIME: 13:00 TOTAL FLIGHT TIME: 2:59

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
1300	33	162	Flt7.txt	
1310	182	330		
1320	343	477		
1330	493	647		
1340	662	804		
1350	990	1124		
1360	1135	1289		
1370	1297	1439		
1380	1450	1601		
1390	1613	1751		
1400	1758	1917		
1410	1926	1062		
1420	2074	2233		
1430	2242	2379		
1440	2391	2546		
1450	2560	2701		
1460	2709	2867		
1470	2876	3019		
1480	3048	3192		
1490	3201	3342		
1500	3351	3508		
1510	3516	3660		
1520	3676	3837		
1530	3849	3984		

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 2 of 3

FLT #: 7 Date(dd/mm/yr): 2/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 5 A/C REG: C-GLMD

DEPART TIME: 10:01 RETURN TIME: 13:00 TOTAL FLIGHT TIME: 2:59

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
1540	4049	4204		
1550	4212	4354		
1560	4362	4521		
1570	4533	4673		
1580	4686	4847		
1590	4857	4999		
1600	5010	5178		
1610	5194	5334		
1620	5346	5508		
1630	5516	5661		
1640	5671	5832		
1650	5842	5984		
1660	5995	6160		
1670	6179	6327		
1680	6335	6500		
1690	6507	6652		
1700	6662	6830		
1710	6840	6982		
1720	6988	7158		
1730	7166	7311		
1740	7321	7485		
1750	7493	7634		
1760	7652	7817		
1770	7824	7973		

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 3 of 3

FLT #: 7 Date(dd/mm/yr): 2/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 5 A/C REG: C-GLMD

DEPART TIME: 10:01 RETURN TIME: 13:00 TOTAL FLIGHT TIME: 2:59

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
1780	7984	8144		
1790	8152	8252		
1800	8268	8381		
1810	8396	8494		
1820	8506	8620		
1830	8630	8736		
1840	8745	8855		

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 1 of 2

FLT #: 8 Date(dd/mm/yr): 2/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 5 A/C REG: C-GLMD

DEPART TIME: 16:15 RETURN TIME: 18:55 TOTAL FLIGHT TIME: 2:40

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
1850	201	294	Flt8.txt	
1860	307	407		
1870	427	524		
1880	538	647		
1890	655	760		
1900	771	881		
1910	889	1002		
1920	1009	1117		
1930	1124	1235		
1940	1241	1351		
1950	1364	1468		
1960	1475	1592		
1970	1603	1711		
1980	1723	1836		
1990	1852	1956		
2000	1971	2087		
2010	2098	2209		
2020	2220	2337		
2030	2349	2466		
2040	2483	2601		
2050	2614	2731		
2060	2739	2853		
2070	2861	2977		
2080	2982	3096		

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 2 of 2

FLT #: 8 Date(dd/mm/yr): 2/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 5 A/C REG: C-GLMD

DEPART TIME: 16:15 RETURN TIME: 18:55 TOTAL FLIGHT TIME: 2:40

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
2090	3104	3215		
2100	3226	3333		
2110	3339	3449		
2120	3455	3564		
2130	3576	3690		
2140	3696	3806		
2150	3818	3929		
2160	4065	4174		
2170	4181	4291		
2180	4299	4410		
2190	4416	4528		
2200	4536	4650		
2210	4659	4777		
2220	4784	4896		
2230	4908	5025		
2240	5032	5147		
2250	5153	5272		
2260	5282	5392		
2270	5402	5518		

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : LECLAIR	JOB: 0607	PAGE 1 of 3

FLT #: 9 Date(dd/mm/yr): 3/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 0 A/C REG: C-GLMD

DEPART TIME: 13:54 RETURN TIME: 16:55 TOTAL FLIGHT TIME: 3:01

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
20	77	180	Flt9.txt	
10	190	224		
30	319	394		
40	416	527		
50	655	730		
60	749	863		
70	867	948		
80	970	1082		
90	1104	1180		
100	1200	1305		
110	1323	1406		
120	1422	1530		
130	1542	1626		
140	1642	1754		
150	1771	1841		
160	1861	1955		
170	1971	2039		
180	2064	2150		
190	2167	2229		
200	2251	2332		
210	2348	2408		
220	2418	2502		
230	2514	2580		
240	2593	2681		

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : LECLAIR	JOB: 0607	PAGE 2 of 3

FLT #: 9 Date(dd/mm/yr): 3/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 0 A/C REG: C-GLMD

DEPART TIME: 13:54 RETURN TIME: 16:55 TOTAL FLIGHT TIME: 3:01

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
250	2693	2757		
260	2772	2862		
270	2866	2931		
280	2947	3025		
290	3039	3097		
300	3113	3189		
310	3196	3252		
320	3276	3353		
330	3362	3422		
340	3430	3502		
350	3510	3568		
360	3580	3659		
370	3666	3726		
380	3738	3800		
390	3882	3922		
400	3941	3969		
410	3983	4025		
420	4029	4060		
430	4075	4119		
440	4127	4158		
450	4181	4224		
460	4235	4265		
470	4285	4323		
480	4341	4370		

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : LECLAIR	JOB: 0607	PAGE 3 of 3

FLT #: 9 Date(dd/mm/yr): 3/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 0 A/C REG: C-GLMD

DEPART TIME: 13:54 RETURN TIME: 16:55 TOTAL FLIGHT TIME: 3:01

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
490	4390	4432		
10030	4473	4590		
10020	4612	4664		
10010	4691	4740		
10040	4786	4912		
10050	4962	5123		
10060	5140	5298		
10070	5387	5461		

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 1 of 1

FLT #: 10 Date(dd/mm/yr): 04/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: 3 A/C REG: C-GLMD

DEPART TIME: 11:10 RETURN TIME: 12:41 TOTAL FLIGHT TIME: 1:31

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
10060	139	482	Flt10.txt	
10050	498	890		
10040	911	1229		
10030	1394	1588		

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: DIANOR	BLOCK # : WAWA	JOB: 0607	PAGE 1 of 1

FLT #: 11 Date(dd/mm/yr): 05/04/06 OPERATOR: ALAIN TREMBLAY

PILOT: ALAIN TREMBLAY O.A.T.: -3 A/C REG: C-GLMD

DEPART TIME: 7:20 RETURN TIME: 8:43 TOTAL FLIGHT TIME: 1:23

SURVEY HEIGHT: 50m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
10070	107	605	Flt11.txt	
10080	626	1144		

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

APPENDIX 3

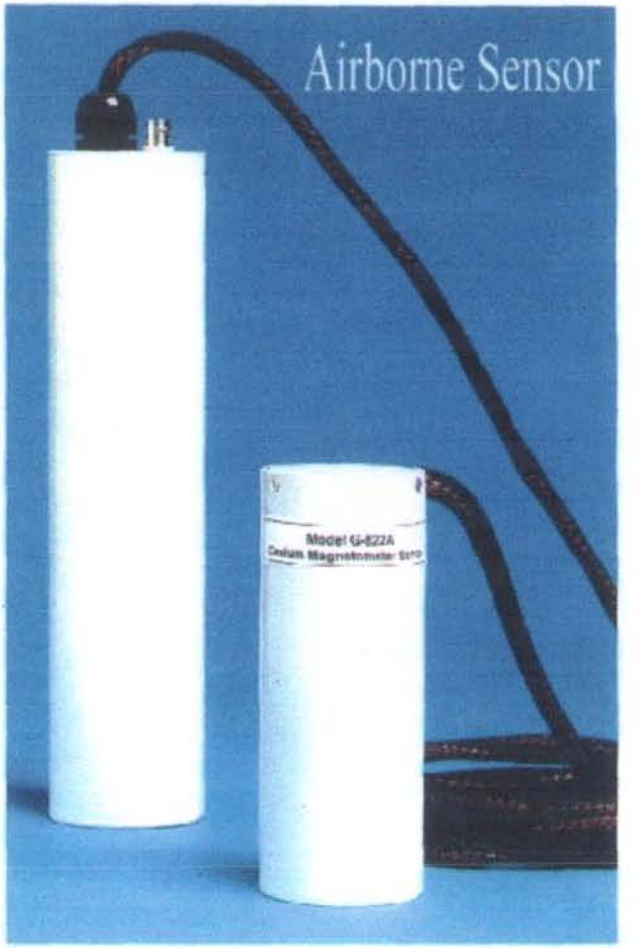
Equipment Documentation

- Geometrics G-822A Cesium Magnetometer
- Gem GSM-19 Overhauser Magnetometer
- Fugro 3000L GPS/OmniStar Receiver
- Free Flight 3000 Radar Altimeter
- Geosoft Montaj Processing Software
- Field Data Processing Workstations

GEOMETRICS

G-822A CESIUM MAGNETOMETER

- ***Airborne and Vehicle Applications with Multi-Sensor Array Capability***
- ***Automatic Hemisphere Switching***
- ***Highest Sensitivity ___ 0.0005 nT/√Hz RMS with the G-822A Super-Counter***
- ***Highest Versatility ___ Full Aircraft Compensation with RMS AADCII or Button-on Towed Bird system with CM-201 Internal Mini-Counter, with 6 Channel 12 bit A to D converters***
- ***Superior resolution of the Cesium Larmor signal, tracking earth's field variation rates exceeding thousands of nT (γ) over 0.01second periods when using the G-822A Super-Counter***
- ***Gradiometer arrays offering simultaneous operation of up to four separate sensors with the RMS Instruments AADCII , Geometrics' G-822A Super-Counter or CM-201 Internal Mini-counter (See 823A Data Sheet)***
- ***Geometrics offers complete turnkey systems including Birds, Stingers, Wingtip installation accessories as well as Digital Data Acquisition Systems, Flight Path Recovery, GPS Navigation, Gamma Ray Spectrometers, VLF EM , Post Acquisition Data Processing Software and Training***



The G-822A is designed for all airborne or mobile applications where the unique combination of high sensitivity and very rapid sampling of the earth's magnetic field are required. Applications include mapping geologic structure for mining, oil and gas exploration, and the detection and delineation of target bodies in environmental or military type surveys. The unit consists of a high performance low heading error cesium vapor sensor with its associated cables and driver electronics package.

The G-822A sensor uses a precise well-proven design, carefully selected and tested components to insure the very best specifications in sensitivity, noise, heading error and absolute accuracy. A proven record of stable and reliable operation over long periods is the hallmark of the industry standard G-822A. A single coaxial cable of up to 50 meters length supplies both 28 VDC power and Larmor signal transmission from the sensor driver electronics to the 822A Super-Counter or the RMS Instruments' AADCII Automatic Aeromagnetic Digital Compensator. Internal or external signal/power filter-decoupler assemblies are available to provide extremely low noise operation.

The interconnect cable from the driver/electronics to the sensor may be supplied in lengths of 82 and 136 inches. Tuning throughout the earth's field range is fully automatic, and includes automatic hemisphere switching for equatorial surveys.

The sensor/electronics package is watertight, temperature controlled, and delivers full performance under extreme operating conditions. Accessories include special mounting clamps and orientation platforms for installation into a variety of vehicle or aircraft mounting configurations, as well as Birds, Stingers and Wing Tip fairings.

MODEL G-822A AIRBORNE CESIUM MAGNETOMETER SENSOR SPECIFICATIONS

OPERATING PRINCIPLE:	Self-oscillating split-beam Cesium Vapor (non-radioactive)
OPERATING RANGE:	20,000 to 100,000 nT
OPERATING ZONES:	The earth's field vector should be at an angle greater than 6 from the sensor's equator and greater than 6° away from the sensor's long axis. Automatic hemisphere switching.
SENSITIVITY:	<0.0005 nT/√Hz rms. Typically 0.003 nT P-P at a 0.1 second sample rate (90% of all readings falling within the P-P envelope) using 822A Supercounter, 0.02nT P-P for CM-201
HEADING ERROR:	±0.25 nT (over entire 360° spin and tumble)
ABSOLUTE ACCURACY:	<3 nT throughout range
OUTPUT:	Cycle of Larmor frequency = 3.498572 Hz/nT. 2V P-P coupled through the sensor power input
MECHANICAL:	
Sensor:	2.375" (60.32 mm) dia., 6.25" (158.75 mm) long, 12 oz (339 g) - any orientation in 7" dia. stinger
Sensor Electronics:	2.5" (63.5 mm) dia., 11" (279.4 mm) long, 22 oz (623 g)
Cables:	
Sensor to electronics:	70" (1.78 m) or additional 40" (1.1 m) increments with quick disconnect on electronic end. Longer lengths available - Up to 19.5 ft (6.1m)
Sensor Electronics to Counter:	Up to 220 ft (70 m)
OPERATING TEMPERATURE:	-30°F to +122°F (-35°C to +50°C)
STORAGE TEMPERATURE:	-48°F to +158°F (-45°C to +70°C)
ALTITUDE:	Up to 30,000 ft (9,000 m)
WATER TIGHT:	Sealed for up to 2 ft (0.9 m) depth
POWER:	24 to 32 VDC, 0.75 amp at turn-on and 0.5 amp thereafter
ACCESSORIES:	
Standard:	Power/Larmor coaxial cable (electronics to counter), lengths to be specified, spare O rings, operation manual and carrying case
Optional:	
Signal/Power Decoupler:	Separates the Larmor signal from the power (28 V) to enable connection to RMS Instruments' AADCII Automatic Aeromagnetic Compensator or Customer supplied counter
Internal Decoupler:	P/N 27504 - up to two sensor installation
External Decoupler:	P/N 27560 - three and four sensor installation
Internal CM-201 Counter	See G-823 A Data Sheet
Stinger, Wingtip, Bird	Contact Factory for complete system integration information
Base Station Accessories	Non-magnetic Tripod, clamps cables

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE **1/98**

GEOMETRICS, INC. 2190 Fortune Drive, San Jose, California 95131
408-954-0522 • Fax 408-954-0902 • Internet sales@mail.geomtrics.com

GEOMETRICS Europe Manor Farm Cottage Galley Lane, Great Brickhill, Bucks, England MK179AB • 44-1525-261874 • Fax 44-1525-261867

GEOMETRICS China Laurel Industrial Co. Inc. - Beijing Office, Room 2509-2511, Full Link Plaza #18 Chaoyangmenwai Dajie, Chaoyang District, Beijing, China 100020
10-6588-1126 (1127 .1130), 10-6588-1132 • Fax 010-6588-1162

GEOMETRICS

GSM-19 Overhauser Magnetometer

Features of the magnetometer

- **Sensitivity = 0.02 nT**
- **Absolute Accuracy = 0.2 nT**
- **Sample Rates up to 5 Hz**
- **Low Power Consumption**

General

"Overhauser" Once you experience it, you'll never go back to proton. Overhauser technology brings you sensitivities one to two orders of magnitude better than proton, yet in a light weight package. This is because the overhauser magnetometer consumes an order of magnitude less power than proton magnetometer, allowing a lighter weight for batteries.

What is the Overhauser technique? The Overhauser sensor contains the electrons' fluid that has been added to a hydrogen rich in the form of "free radial". The resulting mixture yields a sensor with 5000 times gain in proton polarization. Since the Overhauser polarization effect does not require static magnetic fields, but uses radio frequency fields transparent to protons, measurement can be done concurrently with polarization. The result is a sensor with much greater sensitivity, that can be sampled much more rapidly than the standard proton sensor.

Overhauser magnetometer systems therefore maximize resolution while minimizing power consumption. Even with Walking Gradiometer systems, sampling at rates of once per second or betterare posible; Even in cold temperatures of minus 40 zero degrees Celsius and greater, the internal rechargeable battery can still be relied on for a 10 hour day, or longer.

The GSM-19 Overhauser magnetometer is thus truly a State-of-the-Art Magnetometer / VLF system. The GSM-19 offers the data quality, reliability, and extensive list of capabilities, and options, that allow it to meet a very wide spectrum of applications.

Standard Features of the magnetometer

The GSM-19 magnetometer console features a real time graphic display of the current profile. In addition digital display of the current reading, current position, and warning messages are provided. The console design, with internal rechargeable battery pack, allows the unit to be completely sealed against the elements. With the built in heater for the display the GSM-19 magnetometer is ready to go wherever your surveys may take you.

Tuning is automatic worldwide, with provision for manual override. In high gradient conditions the GSM-19 magnetometer monitors the signal decay rate and displays a warning message when the gradient becomes too great. Filters for rejection of 50 or 60 Hz noise are provided.

Diurnal corrections may be done in traditional fashion with one magnetometer unit as a base station and a second unit used as the mobile field unit. At the end of the survey the two units are connected and the field unit creates a corrected data file (which still includes the raw data file) based on the temporal drift recorded by the base station.

As a standard feature GSM-19 magnetometer also offer the capability of making tie point measurements for automatic diurnal corrections. To use this feature the operator records a base value and then loops back to this point periodically during the survey to record another measurement, and thus build a file of the drift. In this way a single instrument may be used to make diurnal corrections.

The RS-232 port on the GSM-19 magnetometer will output data as it is collected. This allows interface to GPS loggers that will accept RS232 data. The standard GSM-19 magnetometer may be operated in a remote mode via computer. Memory storage is 512 K in the standard unit, and may be upgraded to 2 MB.

Grid coordinates are stored with either numeric or compass designations. A seven digit number may be used to designate lines and positions. Line and position spacing is entered so that with every reading the position may be automatically updated. An End of Line feature allows the next line to be quickly selected, plus changes the sign on the position spacing. If the previous line had been adding positions as the operator moved, then on the next line, positions will be subtracted as the operator moves. The operator may also easily manually enter his grid position for cases where gaps in the line are necessary.

SPECIFICATIONS

Performance

	Overhauser	Proton
Resolution:	0.01 nT	0.01 nT
Relative Sensitivity:	0.02 nT	0.2 nT
Absolute Accuracy:	0.2 nT	1 nT
Range:	20,000 to 120,000 nT	20,000 to 120,000 nT
Gradient Tolerance:	Over 10,000 nT/m	Over 7,000 nT/m

Storage Capacity (readings)

	Overhauser	Proton
Std. Magnetometer:	32,000 to 131,000	16,000 to 32,000
With 3 VLF stations:	12,000 to 58,000	6,000 to 12,000
Base Station:	170,000 to 700,000	84,000 to 170,000
Gradiometer:	25,000 to 110,000	12,000 to 25,000
With 3 VLF stations:	12,000 to 46,000	6,000 to 12,000

Operating Modes

Manual: Coordinates, time, date and reading stored automatically at a minimum 3 second interval.

Base Station: Time, date and reading stored at 3 to 60 second interval (higher speeds available).

Walking: Time, date and reading stored at coordinates of fiducial with 0.5, 1 or 2 second cycle time.

Hip Chain: Equidistant coordinates, time, date and reading stored automatically. Distance interval of readings is programmable.

Remote Control: Optional remote control using RS-232 interface.

Input/Output: RS-232 or analog (optional) output using 6 pin weatherproof connector.

Operating Parameters

Power Consumption: Only 2 Ws per reading for Overhauser, and 12 Ws per reading for Proton magnetometer. Will operate continuously for 45 hours on standby.

Power Source: 12V 2.6 Ah sealed lead acid battery standard, other batteries available.

Operating Temperature: Overhauser: -50°C to +60°C. Proton: -40°C to +60°C.

Dimensions and Weight

Dimensions:
- Console 223 x 69 x 240 mm.
- Sensor 170 x 71 mm diameter cylinder. Omnidirectional sensor 180 x 80mm.

Weight:
- Console 2.1 kg.
- Sensor and staff assembly 2.0 kg.

A Standard package includes a console with batteries, harness, battery charger, case, sensor with 2m cable, and staff.

OmniSTAR 3000LS SERIES DGPS RECEIVER PRODUCT FAMILY

Technical Data

3000 LRS Receiver Products

The 3000L Series DGPS receivers are the product of years of research and development and represent the latest technology and one of the highest levels of integration yet be seen in Satellite DGPS receivers.

Fugro transmits differential GPS correction data to user mobile receiver units via L-band satellites worldwide. The correction data is generated by a network of ground (reference) stations located worldwide and monitored around the clock by three regional control centres. The normal operating environments for the receivers is vessel mounting for precise navigation.

The 3000L series incorporates high quality RF components and circuitry which ensures the best possible performance in fringe area reception and/or noisy reception areas where good signal to noise performance means the difference between the receiver "locking on" to the signal or failing to receive.

The 3000L series also incorporates a powerful DSP (digital signal processing computer), and one of the latest technology RISC (Reduced Instruction Set Computing) embedded processors for receiver control and general purpose processing. The embedded processor operates in real time continuously checking the data integrity, the receiver system health and the computed solution integrity and immediately notifies any out of limits or other alarm condition to the operator. A CAN bus interface is available for access to the processor for machine control and data transfer functions under special software controls. The 3000L Series uses Forward Error Correction Techniques and Fugro proprietary data compression and encryption algorithms to ensure data integrity security and efficiency. These systems are software implemented so that the receiver remains a flexible tool for a wide variety of applications which may require specialised software implementations to suit different users needs.

3000LRS A full function receiver system inside a field case with a display and push button operator interface, Antenna input, Power & Data inputs & outputs.

3000LR8S A full function receiver system inside a field case with a display and push button operator interface, Antenna input, Power and Data inputs and outputs. This unit is equipped with special enhanced differential solution software and also incorporates an internal 8 channel GPS engine.

3000LR12S A full function receiver system inside a field case with a display and push button operator interface, Antenna input, Power and Data inputs and outputs. This unit is equipped with special enhanced differential solution software and also incorporates an internal 12 channel GPS engine.

3000LMS A modular OEM Unit with Antenna, Power and Data inputs and outputs and LED alarm and status indicators.

3000LC A minimum configuration OEM eurocard size receiver board with minimum configuration RF and Power Supply assemblies where integration into other equipment is the responsibility of the original manufacturer (release mid 1997).

Subscription Service Options

VRC This is the Virtual Reference Cell Service where the user selects a "virtual reference cell" which provides an optimised set of RTCM corrections.

VBS This is the Virtual Base Station Service where the user is provided with optimised RTCM corrections for the user current position.

DGPS This is to the Satellite DGPS Service providing DGPS Corrections.

OmniSTAR 3000LS SERIES DGPS RECEIVER PRODUCT FAMILY

Technical Data

Receive Frequency

Automatic scanning:	1525 MHz to 1559 MHz

Environment

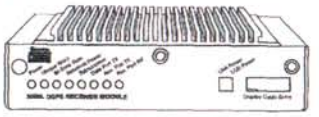
Operating Temperature:	- 20° to 80°C
Non-Operating:	- 40° to 85°C
Humidity:	95% non-condensing
Vibration:	3G/30 Hz/ x, y & z axes
Shock:	Max 7G, 5-20 msec zero rebound
Acceleration:	4G (with optional software)

Data inputs and outputs

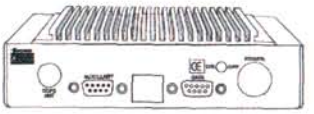
Three Serial Ports:	Command, Data & Auxiliary
Electrical Interface:	RS-232-C
Data Rates:	300, 600, 1200, 2400, 4800, 9600, 19200
Message Rate:	Typically 1-2 seconds output
Plug Types:	DB-9 and RJ 45 connectors

Active Filtered Splitter

RF Input :	1525MHz - 1559MHz and 1575MHz
GPS RF Output :	1575MHz
RF Connector	TNC
Power Connector:	KYCON



3000LM Receiver Module Front View



3000LM Receiver Module Rear View

The system is available world-wide from :

Australia: OmniSTAR Pty Ltd.
Norway: Fugro Starfix Europe AS.
Netherlands: OmniSTAR BV.
Singapore: Fugro OmniSTAR Pte Ltd.
United Kingdom: Fugro Starfix UK .
USA: OmniSTAR Inc.

Power

Power Supply:	10 Vdc to 32 Vdc
Power Consumption:	250-500 mA at 12 Vdc

Antennas

Satellite Signal:	Plate and Helix antennas
Frequency Range:	1525 MHz to 1559 MHz
Gain:	2dBi to 8 dBi
Polarisation:	RHC
Elevation Angles:	5°-20° or 20°-45° or 45°-90°

Memory

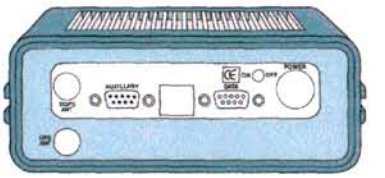
Program Memory:	640kB
Expansion Memory:	512kB to 2 MB

Physical Characteristics

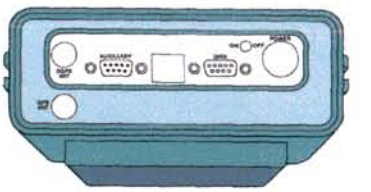
Dimensions (approx):	200mm D x 150mm W x 50mm H
Weight (approx.):	1.5 kg
Display:	Two lines by 20 characters LCD display with yellow backlight
Control:	Five button control

Approvals

Complies with European and USA EMI/EMC Directives



3000LR Rear Panel



3000LR12/LRFM Extended Case

Tel: 61-8-93225295	Fax: 61-8-93224164
Tel: 47-22-134700	Fax: 47-22-134646
Tel: 31 71 5814710	Fax: 31 71 5814710
Tel: 65-5430200	Fax: 65-5430500
Tel: 44-1224-257500	Fax: 44-1224-257501
Tel: 1-713-785-5850	Fax: 1-713-785-5164

FreeFlight Radar Altimeter
TRA3000

Key Features and Benefits

- Increased pilot safety
- Lightweight
- Easy installation
- Highly visible panel display
- 2-year warranty
- NVG (optional)

For critical flying operations, the FreeFlight TRA3000™ Radar Altimeter, combined with the TRI20 or TRI40 Radar Indicators, provides the pilot with highly accurate altitude-above-ground-level (AGL) information. This real-time system offers an extra measure of operational safety during landing, navigation, or hovering. It is especially useful in flying search and rescue missions, forestry operations, pipeline maintenance, offshore helicopter operations, aeromedical emergency medical services, border patrol, and electronic news gathering operations.

Sending a continuous signal from a single antenna, the TRA3000 radar altimeter provides precise AGL information from 2,500 feet down to 40 feet. The transmitter/receiver and antenna fit in a single, lightweight, aerodynamic unit that can be easily installed on the fuselage or under the wing. Innovative design reduces the size and weight of the system and significantly increases transmitter efficiency. The TRA3000 radar altimeter is used with the TRI20 indicator on 14V aircraft and the TRI40 indicator on 28V aircraft.

The Complete TRA3000 Radar Altimeter System

TRI20 and TRI40 Radar Indicators

The panel-mounted TRI20 and TRI40 indicators provide important information when there are no visual clues to the landscape surrounding the airport or your flight path. Both indicators display the AGL and your preselected decision height (DH) in a bright, LED readout and provide an audible warning when you descend below the DH. A test button sends a 40-foot altitude code to the indicator to test the display and warning alerts at any time.

The TRI40 also includes a visual and audible gear-up warning when the aircraft is below 100 feet. A trip-point output allows you to activate additional pilot alerts every 100 feet up to 800 feet.

Whether you are a private or professional pilot, the cost-effective FreeFlight TRA3000 Radar Altimeter System is the ideal choice where precise, near-ground navigation and safety are key. The system is covered by a two-year warranty.

FreeFlight SYSTEMS

FreeFlight Radar Altimeter

TRA3000

TECHNICAL SPECIFICATIONS

TRA3000/TRI20

Altitude range:	40 to 2500 ft. (12 to 762 m)
Power requirements:	13.75 VDC; 700 mA
Environmental:	TRI: -4°F to +131°F (-20°C to +55°C) TRA: -40°F to +158°F (-40°C to +70°C) Alt: -45,000 ft. (13,716 m)
Size (HxWxL):	TRI: 1.375 x 3.5 x 7.5 in (3.5 x 9.9 x 19 cm) TRA: 1 x 5 x 7.625 in. (2.5 x 12.7 x 19.4 cm)
Weight:	TRI: 0.6 lb. (0.27 kg) TRA: 1.5 lbs. (0.68 kg)
Antenna(s) response angle when mounted ±6° from horizontal:	Single; ±20° pitch, ±30° roll
Display type:	LED, yellow seven segment, auto dim
Transmitter power:	20 mW typical; 10 mW minimum
Frequency:	100 MHz sweep, within 4.2 to 4.4 GHz
Display update rate:	2 times/sec. minimum.
Altitude accuracy:	40 to 100 ft ±5 ft (12 to 30.5 m: ±1.5 m) 100 to 500 ft ±5% (30.5 to 152.4 m: ±5%) 500 to 2500 ft ±7% (152.4 to 762 m: ±7%)
Decision height selection:	100-ft. increments from 0 to 900 ft. (30.5-m increments from 0 to 274 m)
Flag(s):	Display blanks in unlock
Self-test:	Indicates 40 ft (12 m), DH operates normally
Visual DH alert:	Internal DH light; External output
Aural DH alert:	1-kHz tone output
Gear warning:	None
ARINC analog outputs:	None
Trip point outputs:	None
Display disable:	None
Anti-hover circuit:	None

TRA3000/TRI40

Altitude range:	40 to 2500 ft. (12 to 762 m)
Power requirements:	27.5 VDC; ±20%, 600 mA
Environmental:	TRI: -4°F to +131°F (-20°C to +55°C) TRA: -40°F to +158°F (-40°C to +70°C) Alt: -45,000 ft. (13,716 m)
Size (HxWxL):	TRI: 1.375 x 3.5 x 7.5 in. (3.5 x 9.9 x 19 cm) TRA: 1 x 5 x 7.625 in. (2.5 x 12.7 x 19.4 cm)
Weight:	TRI: 0.75 lb. (0.34 kg) TRA: 1.5 lbs. (0.68 kg)
Antenna(s) response angle when mounted ±6° from horizontal:	Dual; ±20° pitch, ±30° roll
Display type:	LED, yellow seven segment, auto dim
Transmitter power:	20 mW typical, 10 mW minimum
Frequency:	100 MHz sweep, within 4.2 to 4.4 GHz
Display update rate:	2 times/sec. min.
Altitude accuracy:	40 to 100 ft ±5 ft (12 to 30.5 m: ±1.5m) 100 to 500 ft ±5% (30.5 to 152.4 m: ±5%) 500 to 2500 ft ±7% (152.4 to 762 m: ±7%)
Decision height selection:	50-ft. increments from 0 to 600 ft. plus 700, 800, 900 ft. (15.2-m increments from 0 to 183 m, plus 213, 244, 274 m)
Flag(s):	Displays "U" when unlocked
Self-test:	Indicates "8's," then DH & gear lights, then 40 ft. (12 m) altitude
Visual DH alert:	Internal DH light; External output
Aural DH alert:	1-kHz tone output
Gear warning:	Internal gear light aural and visual out
ARINC analog outputs:	A: 2.5 mV/ft., 0 V=0 ft. B: 20 mV/ft., 400 mV=0 ft.
Trip point outputs:	Eight fixed trip points; 100 to 800 ft. (30 to 244 m)
Display disable:	Two strut switch inputs—ground or line
Anti-hover circuit:	None

SPECIFICATIONS

PMA Elegible, Cessna 182Q, Mooney M20J, M20M, M20R

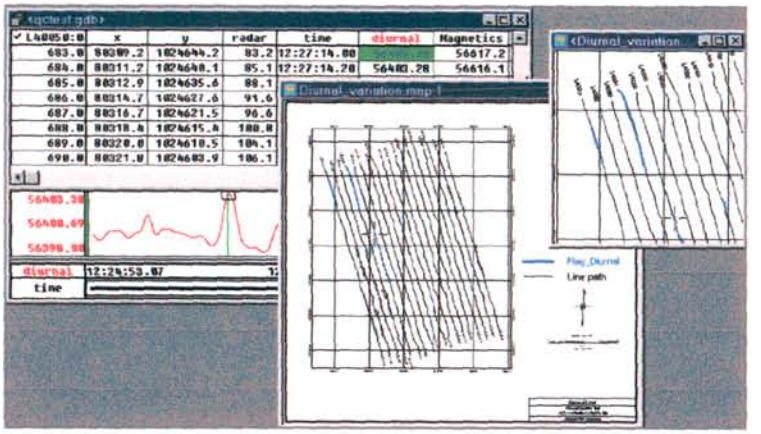
Note: Specifications subject to change without notice. Made in the U.S.A.

FreeFlight SYSTEMS

For Sales Information:
FreeFlight Systems
3700 Interstate 35
Waco, TX 76706
(254) 662-0000
www.freeflightsystems.com

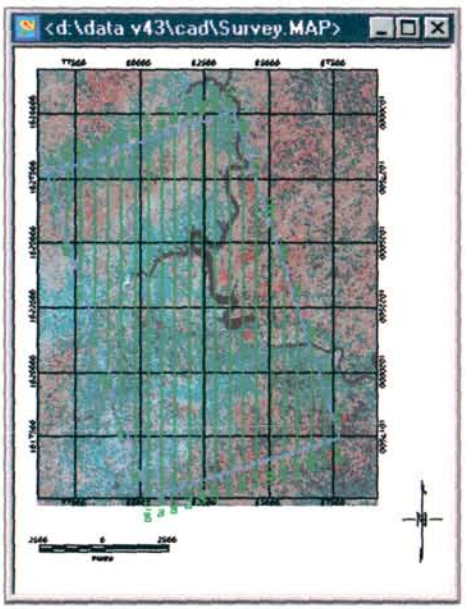
Airborne Geophysics

product description



Geosoft's **Airborne Geophysics** application for the **Oasis montaj**™ software platform provides field geophysicists with the ability to process, filter, grid, and map data from airborne geophysical surveys.

This application includes **Oasis montaj** the core software platform for working with large volume spatial data. The core software platform consists of an Interface and a Processing engine. For detailed information on the system and its capabilities, see the **Oasis montaj** Core software platform information page.



In addition to the features provided in the core platform, the **Airborne Geophysics** application provides a variety of gridding methods and 1-D filters for processing your data. Perform quality control tasks on airborne data including levelling survey lines and correcting IGRF, lag, heading, and base station errors. Several map-creation capabilities are also provided to present your processed data for interpretation.

product capabilities

The **Airborne Geophysics** application includes the following capabilities:

- Basic grid utilities
- Advanced grid utilities
- Basic 1-D Filters
- 1D Non-linear Filters
- Line levelling
- Line intersections
- Lag, heading, and base station corrections
- IGRF
- Picodas (PDAS) import
- C3NAV support
- Profile Plotting
- Symbol plotting
- Posting (label) plotting
- Contouring
- Line gridding (Bigrid)
- Minimum curvature gridding
- Tinning
- Target Picking
- Survey line plotting
- Quality Control
- Trend gridding (**GeoStrike**™ Tool)

GEOSOFT

Geosoft Inc.
Phone: 1 (416) 369-0111
Fax: 1 (416) 369-9599
Email: info@geosoft.com

www.geosoft.com

Airborne Geophysics capabilities

Basic Grid Utilities

The following functions can be performed with the basic grid utilities:

- Display grid as a terenary image
- Display grids as two, three or four grid composites
- Grid windowing (create a grid from a window of a larger grid)
- Colour shaded grid (apply shading to create a quick shaded relief grid)
- Display statistics (display header and grid details on screen)
- Import ASCII grid
- Point grid value (the grid value at a selected location from up to four grid files)
- Grid outline (find edge points in a grid image and either save the edges in a polygon file or draw the edges on the current map)
- Sample a grid (sample a grid at specified X,Y locations and create a new channel that contains the sampled grid data)
- Grid profile (extract a data profile from a grid and place it in a new line of the current database)
- Transpose a grid by swapping the grid rows with the grid columns
- Save grid to database (import grid data into new or existing databases)
- Shaded relief grid (create a shaded relief image from a grid)

Advanced Grid Utilities

The following functions can be performed with advanced grid utilities:

- Trend enforcement (**GeoStrike**)
- Remove regional trends and gradients (remove a regional trend or gradient from a grid)
- Locate grid peaks
- Grid masking (insert placeholder values based on a polygonal area you specify in a file)
- Grid expansion and filling
- Grid volume (calculate the volume of space defined by a grid surface, above and below a base of reference)
- Grid peak (find peaks in a grid file)
- Apply a 3 X 3 convolution filter such as hanning, laplace, horizontal derivative (X direction), horizontal derivative (Y direction), horizontal derivative (45 degree direction)
- Apply a 5x5 symmetric convolution filter
- Apply a vertical derivative convolution filter
- Create and apply user defined filters
- Horizontal gradient (calculate the grid gradient amplitude in a specified direction)
- AGC (apply automatic gain compensation to a grid)
- Use Boolean operators to merge overlapping grids or display the parts of grids which overlap
- Expressions: mathematical operations such as remove base, multiply by factor, add grids, subtract grids, multiply grids, ratio grids and general expressions

Basic 1D Filters

Basic one dimensional filters are commonly used to smooth data, with or without non-linear filtering. The following are descriptions of the different 1D filters:

- High-pass filter applies a high-pass (sharpening) filter to a channel.
- Low-pass filter applies a low-pass (smoothing) filter to a channel.
- Bandpass filter applies a filter that removes features longer than the long wavelength cutoff and shorter than the short wavelength cutoff.
- Convolution filter applies space-domain averaging filter to a channel. The filter can be defined in a filter file or in a comma delimited string.
- Difference filter calculates differences between values in a channel. The common fourth difference can be calculated by specifying four differences, which is useful for identifying noise.
- Polynomial filter calculates n'th (maximum nine) order trend of a data channel by (least square) best-fit polynomial. The trend is then evaluated and placed in a new channel. An optional residual channel (input trend) may also be created.
- B-Spline filter calculates a B-spline interpolation of data in a channel. A B-spline allows you to control the smoothness of the spline and the tension applied to the ends of the spline.
- Linear Regression filter fits a least-square linear regression to a set of marked data in a channel and reports the slope and intercept.

1D Non-Linear Filters

The 1D Non-Linear Filter is ideal for removing very short wavelength, but high amplitude features from data. It is often thought of as a noise spike-rejection filter, but it can also be effective for removing short wavelength geological features, such as signal from surficial features.

The 1D Non-Linear Filter is used to locate and remove data that is recognized as noise. The algorithm is 'non- linear' because it looks at each data point and decides if that data is noise or a valid signal. If the

— continued on next page

GEOSOFT

Geosoft Inc.
Phone: 1 (416) 369-0111
Fax: 1 (416) 369-9599
Email: info@geosoft.com

www.geosoft.com

Airborne Geophysics capabilities

point is noise, it is simply removed and replaced by an estimate based on surrounding data points. Parts of the data that are not considered noise are not modified at all.

Line Levelling

Statistical levelling corrects for intersection errors (miss ties) that follow a specific pattern or trend. The algorithm calculates a least-squares trend line through an error channel to derive a trend error curve, which is then added to the channel to be levelled.

The objective of full line levelling is to adjust the survey lines so that all lines match the trended tie lines exactly at each intersection that has been included in the process.

The line levelling system:

- Identifies potential errors in data sets
- Applies systematic corrections including magnetic base station, lag and heading corrections and select line direction
- Performs conventional levelling using simple (tie line and full levelling) and careful levelling methods

Line Intersections

The output intersection table file tabulates every intersection between tie lines and regular survey lines. It includes the exact ground location of the intersection point, the tie line and survey line numbers, the recorded value on each line, and the horizontal gradient of the data at that location. The line intersection system can find and edit intersection between any lines in a data set (lines can either be regular survey lines or tie lines).

Lag, Heading and Base Station Corrections

Correction routines include applying a:

- Lag correction to a channel of data by shifting the start fiducial by a specified lag amount
- Heading correction to data for a systematic shift (in the data) that is a function of the direction of travel for a survey line
- Magnetic base station correction to a magnetic channel

IGRF

The International Geomagnetic Reference Field **IGRF** or the Definitive International Geomagnetic Reference Field **DGRF** correction (field strength, inclination and declination) can be calculated from a geographic coordinate channel or a single geographic point.

Picodas import

Picodas is an airborne instrument data acquisition system that records multi-parameter airborne survey data. The system produces a set of files for each survey flight. The files include an ASCII header file and a number of binary data files that contain the data for each survey flight. The ASCII header file fully documents the contents of the binary data files and includes a list of the binary files for that flight.

C3NAV

C3Nav software corrects errors caused by the difference between recorded GPS location and the true ground loaction.

C3Nav matches the ground GPS and moving GPS readings at the same time, and uses the data only from the common set of satellites that both are observing at that time. C3Nav produces a listing file that contains the GPS time (seconds from the start of the week), and the differentially corrected location of the moving GPS receiver.

Profile Plots

The profile plotting capability features the ability to draw profiles of channel values for all selected lines in a database.

Posting Plots

Posting plots means the user can post the data values for a channel on a map.

Symbol Plots

The symbol plotting function can draw symbols on a map at all data points along all selected lines in a database. Symbol plotting methods include adding:

- Symbols
- Proportionally scaled symbols
- Zoned colored symbols (symbols can be a fixed size, or sized in proportion to data values)
- Range classified symbols

Contouring

Contouring is the capability to draw contours on a map using a specified grid.

— continued on next page

GEOSOFT

Geosoft Inc.
Phone: 1 (416) 369-0111
Fax: 1 (416) 369-9599
Email: info@geosoft.com

www.geosoft.com

Airborne Geophysics capabilities

Line Gridding

Line gridding is the capability to create a new grid file (.GRD) using the bi-directional gridding method (BIGRID).

The BIGRID method uses a two step process:

1. Each line is interpolated along the original survey line to yield data values at the intersection of each required grid line with the observed value.
2. The intersected points from each line are then interpolated in the across-line direction to produce a value at each required grid node.

The BIGRID GX has the following capabilities:

- Unlimited line based data
- LP, HP filters
- Data presort options
- Enhanced trended gridding
- Output any grid size

Minimum Curvature Gridding

Minimum curvature gridding uses a minimum curvature gridding algorithm (RANGRID) to create a new grid file (.GRD).

The RANGRID method fits a minimum curvature surface to the data points. A minimum curvature surface is the smoothest possible surface that will fit the given data values and settings.

The RANGRID GX also has the capability to:

- Access unlimited number of input observation points
- Adjust internal tension
- Apply de-aliasing filter
- Apply linear and logarithmic gridding
- Blank un-sampled areas
- Output grids up to any size

Tinning

The Triangular Irregular Network (TIN) method, utilizes the Sweepline algorithm implemented by Steven Fortune of Bell Laboratories. The Sweepline algorithm calculates the X,Y (Z-optional) values to create a binary (*.TIN) file.

When Z values are included in the (*.TIN) file, a TIN grid can be created using the TINGRID GX. The TINGRID GX applies the Natural Neighbour algorithm (Sambridge, Brown & McQueen 1995) to the Z values in the (*.TIN) file to create a grid.

Survey Line Plots

The survey line path plots and labels survey line locations.

Quality Control (Airborne)

Airborne Quality Control includes three main functions:

1 **The Flight Path Planning** which creates a flight line plan tailored to the shape and size of the survey area. Boundary maps of the survey area can be imported from an AutoCAD DXF file or digitized as polygon files.
   - Planning controls specify the direction, starting reference point, and distance between flight lines for the airborne survey area.
   - The software plots both regular flight lines and tie lines. The flight planning utility produces a database and a map of the flight lines that can be viewed, printed or exported.

2 **Database Statistics** extends the statistical reporting tools included in the basic **OASIS montaj**™ system.
   - The QC statistical tool generates and prints a statistical report for specific channels or an entire database. The statistical report provides the number of dummies, minimum, maximum, mean and total distance flown for each channel and for the whole database.
   - The survey line distance tool displays the total distance flown for a specific flight line.

3 **Airborne Quality Control Tool** identifies line sections that do not meet survey specifications. Examples include evaluating the diurnal variation, altitude deviation, flight path deviation, flight line separation of each point along the flight lines to ensure they are within specification. Points that do not meet specifications are identified by a coloured symbol using a colour that corresponds to the type of error. These results are plotted to a map so that the user can visualize the sections of the survey that must be re-flown.

Trend Gridding (GeoStrike™)

Trend Gridding (GeoStrike™) alleviates the aliasing problem that results when there are more samples "along the lines" than across lines — a traditional problem in gridding geophysical data. This problem leads to undesirable effects including ellipsoids or ellipsoidal "beads" between lines in gridded data. The Trend Gridding (GeoStrike™) algorithm is designed to provide a solution that preserves the character of local trends while eliminating aliasing effects.

— continued on next page

GEOSOFT

Geosoft Inc.
Phone: 1 (416) 369-0111
Fax: 1 (416) 369-9599
Email: info@geosoft.com

www.geosoft.com

Airborne Geophysics capabilities

Target Picking

Two new target-picking capabilities have been added to the Geophysics application:

- The new Pick anomalies option, located on the X-Utility menu, enables the users to pick anomalies from one or multiple channels based on the channel(s) values and the amplitude of the troughs on either side of the anomaly in the channel(s) profile. The target results will be stored in a new "targets" line using the actual values of the input channel or with alphabetical or numerical numbering.
- The Select target option, located on the profile window popup menu, enables individual targets to be picked directly from the profile window. The selected targets are appended to the "targets" line and, optionally, can be plotted simultaneously to the current map using user-defined symbols.

GEOSOFT

Geosoft Inc.
Phone: 1 (416) 369-0111
Fax: 1 (416) 369-9599
Email: info@geosoft.com

Advanced Gridding Toolkit

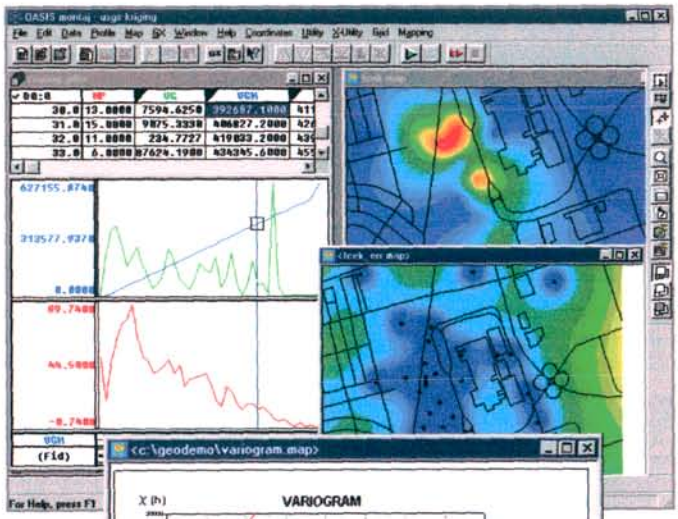
product description

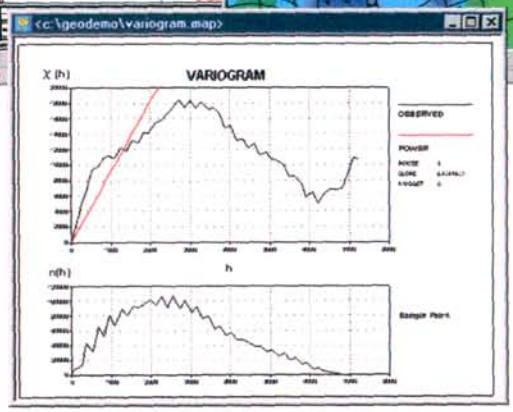
Geosoft's **Advanced Gridding Toolkit** expands your **Oasis montaj**™ core system to enable advanced gridding capabilities, including four proven gridding routines and basic grid analysis methods.

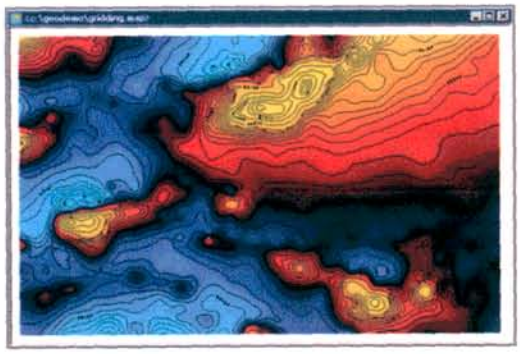
The **Advanced Gridding Toolkit** enables you to interpolate data and produce a grid using any of Geosoft's four gridding routines; Minimum Curvature (Random) Gridding, Line (Bi-Directional) Gridding, TIN Gridding using the Natural Neigbours method, and Kriging. Basic grid utilities provide processing and grid enhancement tools, including:

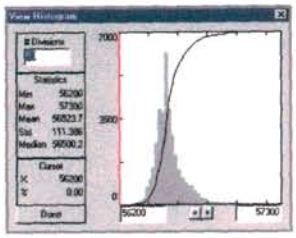
- Grid outline
- Grid windowing
- Point grid value
- Apply shading to create a shaded relief grid
- Display and update standard grid statistics

This tool can be added to any Geosoft application to meet your specific data processing and analysis needs. For more information about specialized data processing and analysis tools, please contact your local Geosoft representative.









product capabilities

This tool includes the following capabilities:

- Basic Grid Utilities
- Line gridding
- Minimum curvature gridding
- Tinning
- Kriging

GEOSOFT

Geosoft Inc.
Phone: 1 (416) 369-0111
Fax: 1 (416) 369-9599
Email: info@geosoft.com

www.geosoft.com

Advanced Gridding Toolkit capabilities

Basic Grid Utilities

The following functions can be performed with the basic grid utilities:

- Display grid as a terenary image
- Display grids as two, three or four grid composites
- Grid windowing (create a grid from a window of a larger grid)
- Colour shaded grid (apply shading to create a quick shaded relief grid)
- Display statistics (display header and grid details on screen)
- Import ASCII grid
- Point grid value (the grid value at a selected location from up to four grid files)
- Grid outline (find edge points in a grid image and either save the edges in a polygon file or draw the edges on the current map)
- Sample a grid (sample a grid at specified X,Y locations and create a new channel that contains the sampled grid data)
- Grid profile (extract a data profile from a grid and place it in a new line of the current database)
- Transpose a grid by swapping the grid rows with the grid columns
- Save grid to database (import grid data into new or existing databases)
- Shaded relief grid (create a shaded relief image from a grid)

Line Gridding

Line gridding is the capability to create a new grid file (.GRD) using the bi-directional gridding method (BIGRID). The BIGRID method uses a two step process:

1. Each line is interpolated along the original survey line to yield data values at the intersection of each required grid line with the observed value.
2. The intersected points from each line are then interpolated in the across-line direction to produce a value at each required grid node.

The BIGRID GX has the following capabilities:

- Unlimited line based data
- LP, HP filters
- Data presort options
- Enhanced trended gridding
- Output any grid size

Minimum Curvature Gridding

Minimum curvature gridding uses a minimum curvature gridding algorithm (RANGRID) to create a new grid file (.GRD). The RANGRID method fits a minimum curvature surface to the data points. A minimum curvature surface is the smoothest possible surface that will fit the given data values and settings. The RANGRID GX also has the capability to:

- Access unlimited number of input observation points
- Adjust internal tension
- Apply de-aliasing filter
- Apply linear and logarithmic gridding
- Blank un-sampled areas
- Output grids up to any size

Tinning

The Triangular Irregular Network (TIN) method, utilizes the Sweepline algorithm implemented by Steven Fortune of Bell Laboratories. The Sweepline algorithm calculates the X,Y (Z-optional) values to create a binary (*.TIN) file.

When Z values are included in the (*.TIN) file, a TIN grid can be created using the TINGRID GX. The TINGRID GX applies the Natural Neighbour algorithm (Sambridge, Brown & McQueen 1995) to the Z values in the (*.TIN) file to create a grid.

Kriging

The Kriging Tool provides you with the capability to:

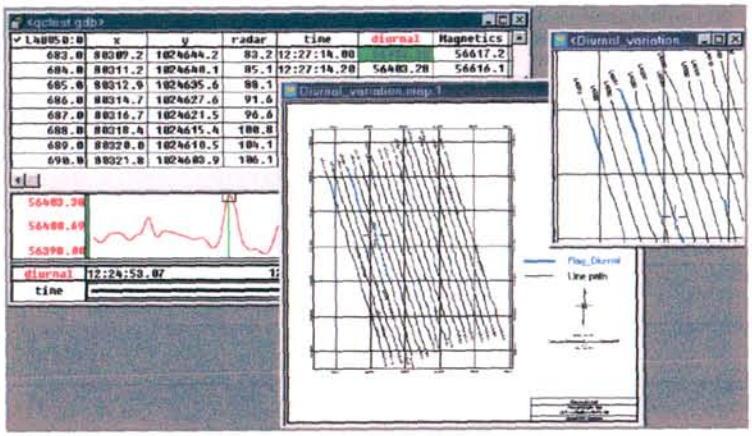
- Apply de-aliasing filter
- Apply linear and logarithmic gridding options
- Blank un-sampled areas
- Calculate a variogram from the input data channel
- Output grids up to any size
- Process unlimited number of input observation points
- Support linear, power, spherical, Gaussian, exponential and user defined models

GEOSOFT

Geosoft Inc.
Phone: 1 (416) 369-0111
Fax: 1 (416) 369-9599
Email: info@geosoft.com

Airborne Quality Control Toolkit

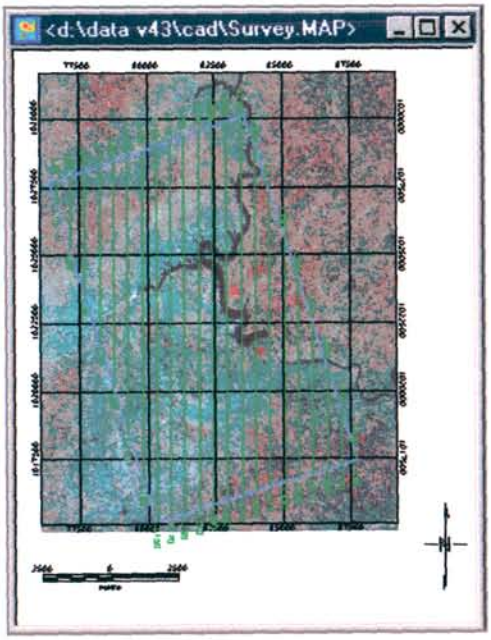
product description



The Airborne Quality Control toolkit offers the productivity tools to plan an airborne survey, and meet basic tender specifications. This provides flight path planning tools, the ability to monitor the survey progress, and streamlined quality control (QC) tools. A built-in mapping wizard automatically displays QC results.

The Airborne Quality Control toolkit provides the tools to accomplish the tasks below:

- Generate flight path map of planned survey
- Display survey statistics
- Display survey line distance
- Perform altitude deviation QC test
- Perform flight path deviation QC test
- Perform flight line separation QC test
- Perform sample spacing QC test
- Perform diurnal drift QC test
- Perform magnetic noise QC test
- Map and print QC results



This tool can be added to any Geosoft application to offer you a more complete data processing and analysis solution. For more information about specialized data processing and analysis tools, please contact your local Geosoft representative.

product capabilities

This tool includes the following capabilities:

- Map Creation
- Importing
- Symbol plots
- Survey line plots
- Quality Control
- Grid Compression
- Database compression
- Coordinate Utilities and Warping

GEOSOFT

Geosoft Inc.
Phone: 1 (416) 369-0111
Fax: 1 (416) 369-9599
Email: info@geosoft.com

www.geosoft.com

Aiborne Quality Control Toolkit capabilities

Map Creation

Map creation capabilities consist of the "Mapping Wizard" which simplifies the mapmaking process. The wizard uses a series of dialog boxes in which the user can define each specification for the map. The Mapping Wizard uses an existing grid or database to define the extent (area) and scale of the map. The first step in mapping data is to create a new map, which is a blank map with the size, scale and name defined. Once a blank map has been created, plot data, grids or other information can then be added. Map surrounds, north arrows, coordinates and titles can also be add to a map.

Importing

Oasis montaj provides seamless access to both original spatial data and processed information (grids, images and plots).

Spatial data import formats include:

- ASCII data files
- Database table files (single or all tables)
- Geosoft XYZ data files
- Geosoft binary data files
- Flat archive data files
- Blocked binary data files
- ODBC data files
- RMS data files
- Picodas PDAS data files
- USGS data files

Processed data import formats include:

- Geosoft plot (PLT)
- AutoCAD DXF (DXF)
- MapInfo TAB files
- ArcView shape files

Database Compression

Oasis montaj (v4.3 or later) features a database compression option that can reduce file size and improve the performance of Geosoft database files (*.gdb). Processing speed is improved by compressing files because the computer takes less time to read and write to disk. Power users will especially benefit from using compressed databases.

Grid Compression

Oasis montaj (v4.3 or later) features a grid compression option that can reduce the file size and improve the performance of Geosoft grids files (*.grd). Processing speed is improved by compressing files because the computer takes less time to read and write to disk. Power users will especially benefit from using compressed grids.

Symbol Plots

The symbol plotting function can draw symbols on a map at all data points along all selected lines in a database. Symbol plotting methods include adding:

- Symbols
- Proportionally scaled symbols
- Zoned colored symbols (symbols can be a fixed size, or sized in proportion to data values)
- Range classified symbols

Survey Line Plots

The survey line path plots and labels survey line locations.

Quality Control (Airborne)

Airborne Quality Control includes three main functions:

- The Flight Path Planning creates a flight line plan tailored to the shape and size of the survey area. Boundary maps of the survey area can be imported from an AutoCAD DXF file or digitized as polygon files. Planning controls specify the direction, starting reference point, and distance between flight lines for the airborne survey area. The software plots both regular flight lines and tie lines. The flight planning utility produces a database and a map of the flight lines that can be viewed, printed or exported.
- Database Statistics extends the statistical reporting tools included in the basic **Oasis montaj** system. The QC statistical tool generates and prints a statistical report for specific channels or an entire database. The statistical report provides the number of dummies, minimum, maximum, mean and total distance flown for each channel and for the whole database. The survey line distance tool displays the total distance flown for a specific flight line.
- Airborne Quality Control Tool identifies line sections that do not meet survey specifications. Examples include evaluating the diurnal variation, altitude deviation, flight path deviation, and flight line separation of each point along the flight lines to ensure they are within specification. Points that do not meet specifications are identified by a coloured symbol using a colour that corresponds to the type of error. These results are plotted to a map so that the user can visualize the sections of the survey that must be re-flown.

Warping & Coordinate Utilities

Warping is the process of re-projecting or moving data coordinates numerically, instead of using standard analytical methods for projecting to UTM, longitude/latitude and other coordinate systems. **Oasis montaj** warping defines a polygonal outline (either in a file or interactively) by defining a maximum of four control points. Then data can be warped (creating new X and Y channels) or an entire grid can be warped based on this polygonal outline.

Warping and coordinate utilities include capabilities to do the following:

- Change coordinates
- Backup current X, Y channels
- Restore backup X, Y channels
- Translate coordinates
- Rotate coordinates
- Interpolate X, Y channels
- Convert longitude, latitude to local X, Y
- Convert local X, Y to longitude, latitude
- Define a warp
- Apply a warp

GEOSOFT
Geosoft Inc.
Phone: 1 (416) 369-0111
Fax: 1 (416) 369-9599
Email: info@geosoft.com
www.geosoft.com

McPhar Geosurveys Ltd.
1256B Kerrisdale Blvd.. Newmarket
Ontario, Canada L3Y 8Z9
Tel: (905) 830-6880, Fax: (905) 898-0336
E-Mail: info@mgssurveys.com
WebSite: www.mgssurveys.com

FIELD DATA PROCESSING WORKSTATIONS

Our Field Data Processing Workstations (FWS) are dedicated PC-based microcomputer systems for use at the technical base in the field. The workstations are designed for use with Geosoft OASIS, MPS and MONTAJ, ENCOM, and other data processing software, as well as in-house developed software and utilities.

The FWS has a data replot capability, and may be used to produce pseudo analog charts from the recorded digital data within less than 12 hours after the completion of a survey flight, if this is necessary. It is also capable of processing and imaging all the geophysical and navigation data acquired during the survey, producing semi-final, preliminary-levelled maps in either black-line contours on Mylar or full colour contours on paper.

FWS FEATURES

- **Portability** - the workstations can be packaged and transported to the field with a minimum of effort
- **Digital Data Verification** - flight data quality and completeness can be assured by both statistical and graphical means
- **Flight Path Plots** - flight path plots can be quickly generated from the GPS satellite data to verify the completeness and accuracy of a day's flying
- **Versatility** - the FWS can be used in both the field and the office. Data pre-processed in the field can be up-loaded to the computers at the Data Processing Centre to speed data turnaround.
- **QC and Preliminary Maps** - the software will permit preliminary maps of the magnetic and gamma-ray spectrometer data to be quickly and efficiently created in the field, providing a quick and efficient method to undertake QC Verification of newly acquired data.

THE HARDWARE

The workstations are PC-compatible PENTIUM microcomputers with a 2GHz or faster processor, 512 MB of memory, a large capacity hard disk drive, an extended VGA graphics card with VGA monitor and a colour inkjet plotter for generating maps and/or profiles, and ZIP, JAZZ and writeable CD-ROM drives to backup data.

THE SOFTWARE

The FWS software enables the user to read the FLASH cards, ZIP cartridges or PCMCIA removable hard disks from the airborne system, check the data for gaps, spikes or other defects and permits editing where necessary.

The base station GPS/magnetometer data is checked and edited, and where necessary merged with the airborne data. Post-survey differential GPS corrections are made using either C³NAV and/or WAYPOINT software. GPS flight path plots may be created and plotted. Multi-channel stacked profiles of the recorded and edited data may be produced on the dot-matrix printer.

The Software includes:

- Geosoft OASIS/Montaj Airborne Processing Software
- PC-based airborne data compilation and binary database system for in-field processing and compilation of large volumes of time or fiducial based airborne data
- Proprietary data for processing HEM data
- GrafNAV GPS processing/differential GPS correction software
- McPhar's proprietary software and utilities
- General Utility software (WINDOWS 200 PRO, Norton Utilities, Norton Anti-virus, Xtree Gold, LapLink, etc.)

APPENDIX 4

McPhar Personnel Resumes

- Robert Hearst
- John Currie
- Tonia Bojkova

McPhar Geosurveys Ltd.
1256B Kerrisdale Blvd., Newmarket
Ontario, Canada L3Y 8Z9
Tel: (905) 830-6880, Fax: (905) 898-0336
E-Mail: info@mgssurveys.com
WebSite: www.mgssurveys.com

RÉSUMÉ

NAME: **Robert Hearst**

PROFESSION: Geophysicist

EDUCATION:

1996 M.Sc., Geophysics and Geology, McMaster University
1983 B.Sc. (Honours), Geophysics and Geology, University of Western Ontario

WORK EXPERIENCE:

2004 - **McPhar Geosurveys Ltd., Senior Geophysicist/Data Processing Manager** – Responsible for supervising McPhar's Data Processing Dept., responsible for processing data acquired by ground and airborne (installed in either rotary- or fixed-wing aircraft) electromagnetic, magnetic, radiometric, or other geophysical survey systems at the company's Data Processing Centre in Newmarket, using OASIS, MONTAJ, INTREPID and other software; quality control (QC) of acquired geophysical data; geophysical interpretations; operational logistics

2002 – 2004 **Consulting Geophysicist, Toronto** - servicing various international and local clients. Quality Control / Quality Assurance for Saudi Aramco on the World's largest multiple gradient airborne magnetic survey (approx. 1.7 million line-kms of data acquisition). Supervision and field quality control of data acquired by multiple aircraft on a daily basis including the acceptability and necessary re-flights / modifications required to meet contract specifications. Evaluation and specification of all final deliverable products including acceptability of final products and processing steps. Design, Quality Control / Quality Assurance and Interpretation of several smaller airborne and ground geophysical surveys completed in Canada and Venezuela for several Junior Mining Companies.

1997 - 2002 **Stratagex Ltd., Geophysical Consulting, Toronto, Senior Geophysicist** - Survey design, management, interpretation and client liaison for numerous mining companies involved in geophysical exploration for diamonds, gold and base metals in Canada, Central America, South America and Africa. Including the selection of contractor(s), writing of survey specifications, review of contracts, quality control (QC)/quality assurance (QA) activities for ground and airborne data sets and interaction with project geologists.

1995 - 1997 **Guaniamo Mining Company Limited, C/O Toco Mining Company Limited, Fort Lauderdale, Florida, USA, Chief Geophysicist and Project Manager** - Design and management of an integrated geological and geophysical grassroots exploration program for hard rock and alluvial gold and diamonds in the Guyana Shield of Venezuela. Responsibilities included the assembly of a balanced geological and geophysical exploration team; selection of contractors and consultants (international and local); planning and execution of ground follow-up areas for geological,

geochemical and geophysical surveying; analysis of results; selection of drill sites, selection of bulk sampling sites; selection of possible alluvial plant sites; preparation of exploration budgets. Selection of appropriate geological and geophysical methodologies for the follow-up of high resolution aeromagnetic and radiometric surveys on the concessions. Analysis of country-wide and concession-scale aeromagnetic, radiometric, and satellite databases with selection of prospective areas for gold and diamond potential.

1983 – 1995 **Paterson, Grant & Watson Limited, Consulting Geophysicists, Toronto - Senior Staff Geophysicist (1987-1995) Staff Geophysicist (1983-1987)** - Development of new client base; responsible for the design, implementation, acquisition, compilation, processing, interpretation and presentation of geophysical and geological exploration and development surveys for precious metals, diamonds, base metals and petroleum. Management of government contracts. Assembly and coordination of field work crews (worldwide) and data processing teams. Geophysical data processing and interpretation; organization, supervision, coordination and participation in geophysical data processing projects conducted by teams of three to four individuals. Responsible for scheduling assigned projects, team selection, quality control of the product and presentation and delivery of final products to the clients.

ACADEMIC AWARDS:

- McMaster University Department of Geology Graduate Scholarship 1991 - 1992, 1992 - 1993.
- Canadian Society of Exploration Geophysicists Trust Fund Scholarship, donated by Chevron Standard Limited, 1982.

PROFESSIONAL AFFILIATIONS:

- Society of Exploration Geophysicists (SEG).
- Past President, Canadian Exploration Geophysicists Society (KEGS).
- Environmental and Engineering Geophysicists Society (EEGS)
- Canadian Institute of Mining and Metallurgy (CIM) (National and Toronto Branch).
- Prospectors and Developers Association of Canada (PDAC).
- Registered Professional Geophysicist, NAPEGG.

PROFESSIONAL EXPERIENCE:

- 22 years of continuous experience in the geophysical survey industry
- Good management skills
- Extensive international experience
- Extensive experience processing and interpreting airborne magnetic and/or magnetics/ radiometric data
- Excellent computer skills, experienced programmer

TECHNICAL PUBLICATIONS:

More than 15 technical publications between 1983 and 2003, list available on request.

LANGUAGES: English, working knowledge of French and Spanish

McPhar Geosurveys Ltd.
1256B Kennisdale Blvd., Newmarket
Ontario, Canada L3Y 8Z9
Tel: (905) 830-6880, Fax: (905) 898-0336
E-Mail: info@mgssurveys.com
WebSite: www.mgssurveys.com

RÉSUMÉ

NAME: **John R. Currie**

PROFESSION: Geophysicist

EDUCATION:

1990 Bachelor of Science (Honours), Geology - Physics
University of New Brunswick

WORK EXPERIENCE:

2002 - **McPhar Geosurveys Ltd., Contract Geophysicist/Project Manager,** responsible for processing of airborne geophysical data in the field; on-site quality control (QC) of acquired geophysical data; installation of ground base station geophysical instruments; operational logistics and client liaison report writing.

2001 – 2002 **AERO SURVEYS INC., Contract Geophysicist/Project Manager,** responsible for processing of airborne geophysical data in the field; on-site quality control (QC) of acquired geophysical data; installation of ground base station geophysical instruments; operational logistics and client liaison report writing.

1994 – 2000 **Scintrex Limited, Concord, Ontario, Geophysicist.** Responsible for acquiring and processing high resolution airborne electromagnetic, magnetic, radiometric, and VLF-EM data. Experienced with the Global Positional System (GPS) and differential GPS correction. Data processing was done on Pentium PC's in DOS and Windows environments using GEOSOFT and in-house software.

Responsible for field crew management, data quality control, and field data interpretation on helicopter and fixed wing geophysical airborne surveys internationally.

Provided training worldwide to clients on data processing and field operation procedures.

Responsible for managing the Data Processing department to ensure that all projects were completed on time and to contract specifications.

1992 - 1994 **Sander Geophysics Limited, Kanata, Ontario, Geophysicist.** Responsible for processing high resolution magnetic, radiometric, and VLF-EM data from airborne surveys flown for oil and mining

companies. Was responsible for field data quality control and processing on airborne surveys in Canada and South America.

1990 – 1992 **Schlumberger of Canada, Estevan, Saskatchewan. Senior Field Engineer.** Responsible for managing and training a crew that consisted of two Field Engineers, three Senior Field Technicians, and an Electronics Technician.

Operated and maintained a complete suite of geophysical borehole survey equipment. Typical surveys measured resistivity, sonic transit time, neutron and gamma ray density and porosity. Other surveys included measuring stratigraphic dips, subsurface fluid pressures, electromagnetic wave propagation, and natural gamma ray spectrometry.

Carried out field interpretation of data to determine physical properties of underground rock formations such as subsurface permeability, porosity, salinity, pressure, and oil and gas content.

Extensively used PC's and became familiar with DOS, UNIX, WORD, WORDPERFECT, EXCEL, and Schlumberger software.

Summer 1989 University of New Brunswick, Fredericton, N.B., Research Geophysicist. Performed magnetic, electrical, and seismic geophysical surveys as part of a Geological Survey of Canada research project. Designed and wrote software to process the data, and then interpreted the data using software such as MAGIX, MAGPAC, and MAGRAV.

AWARDS

1989 Canadian Society of Exploration Geophysicists Scholarship, T.B. Fraser Memorial Scholarship, Sharon Bachinski Memorial Scholarship, Canadian Society of Petroleum Geologists Award, Amoco Scholarship, Natural Sciences & Engineering Research Council of Canada, Student Research Award, UNB Undergraduate Scholarship.

1988 Canadian Society of Petroleum Geologists Award, UNB Undergraduate Scholarship.

1987 Sophia Wood Scholarship, UNB Undergraduate Scholarship.

1986 N.B. Society of Retired Teachers Scholarship, Nina Fairchild Simon Memorial, Scholarship, UNB Undergraduate Scholarship.

PROFESSIONAL EXPERIENCE:

- 13 years of continuous experience in the geophysical survey industry
- Management of all phases of numerous airborne magnetic and/or magnetics/radiometric programs in numerous countries in North and South America
- Extensive participation as an expert in various in-house geophysical training programs and provision of instructional seminars for government / private industry delegations

LANGUAGES: English, Spanish

McPhar Geosurveys Ltd.
1256B Kennisdale Blvd., Newmarket
Ontario, Canada L3Y8Z9
Tel: (905) 830-6880, Fax: (905) 898-0336
E-Mail: info@mgssurveys.com
WebSite: www.mgssurveys.com

RÉSUMÉ

NAME: **Tonia Bojkova**

PROFESSION: Geophysicist

EDUCATION:

2001	Geosoft Data Processing and Analysis Software, Guildford, United Kingdom
1998	GeoPak Data Processing Software, HSG Ltd., Toronto, Canada
1978 – 1980	M.Sc., Applied Mathematics, Technical University, Sofia, Bulgaria
1973 – 1978	M.Sc., Geophysics, University of Mining and Geology, Sofia, Bulgaria

WORK EXPERIENCE:

2004 - **McPhar Geosurveys Ltd., Geophysicist/Data Processor** - responsible for processing of airborne geophysical data; quality control (QC) of acquired geophysical data; geophysical interpretations; operational logistics

2000 – 2002 **Fugro Airborne Survey (FAS), United Kingdom – Office in Sofia, Bulgaria, Geophysicist** - Processed and analyzed radiometric and magnetic data, and produced corresponding maps in Bulgaria and in the UK (Guildford). Prepared final reports.

1992 - 2000 **Airborne Geophysical Survey (AGS) Ltd., Bulgaria** (a Joint Venture between the Government of Bulgaria and High-Sense Geophysics Ltd., Toronto, Canada), **Geophysicist** - Planned and managed airborne surveys; collected, processed, and analyzed airborne radiometric and magnetic data, produced the corresponding maps and prepared final reports; reprocessed archive data from Namibia, performed environment projects - gamma-ray monitoring of the Bulgarian NPP, Kozloduy using 2048-channel gamma-ray spectrum analyzer

1980 – 1992 **Airborne Geophysical Department of the Enterprise for Geophysical Explorations and Geological Mapping, Sofia, Bulgaria, Geophysicist** - collected, processed, and analyzed airborne radiometric and magnetic data; produced the corresponding maps and prepared final reports; performed gamma-ray monitoring of Bulgaria after Chernobyl NPP fallout

INTERNATIONAL EXPERIENCE:

Canada, Bulgaria, Macedonia, Congo, Zimbabwe, Zambia, Botswana

PROFESSIONAL EXPERIENCE:

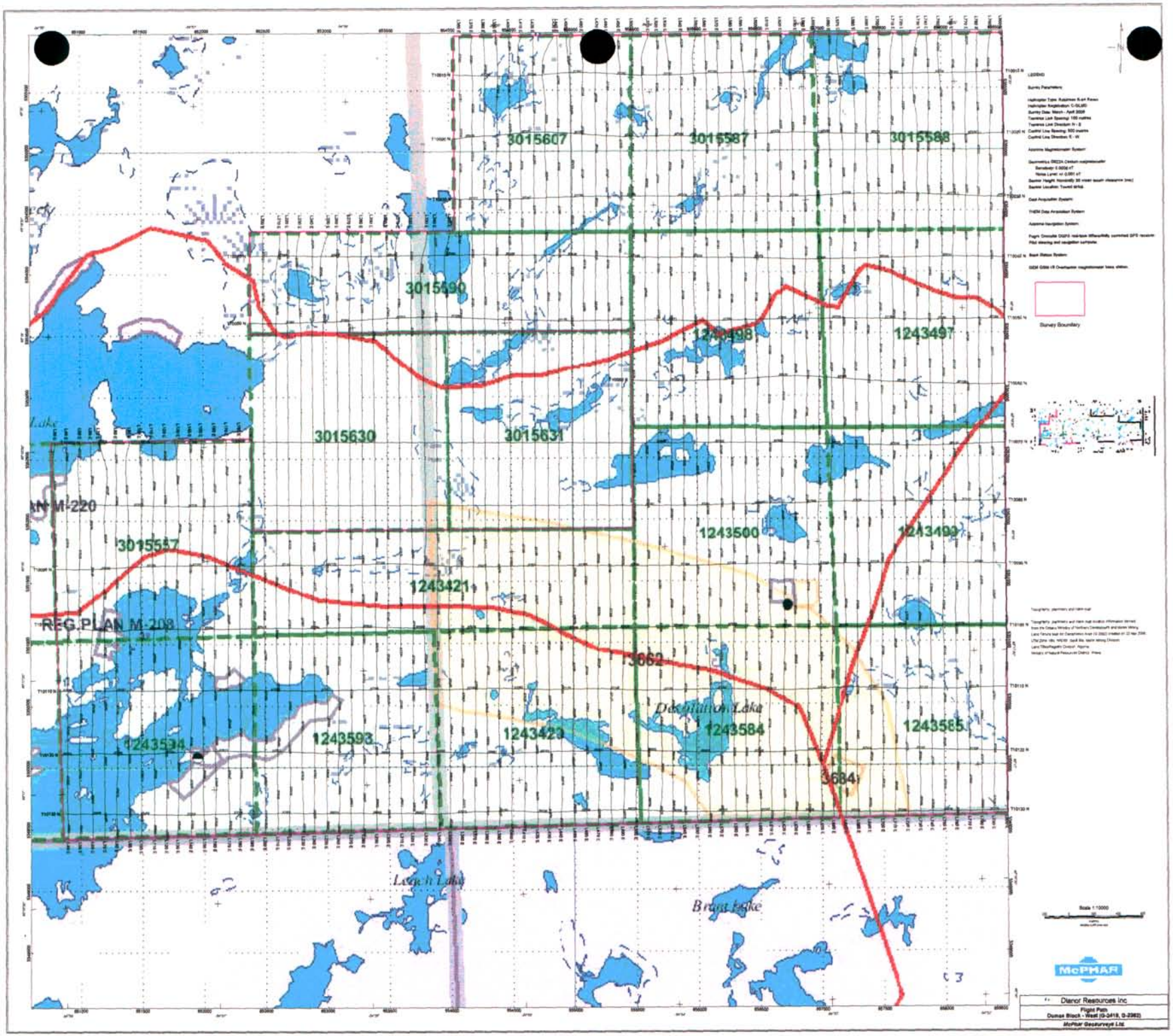
- 24 years of continuous experience in the geophysical survey industry
- Extensive international experience
- Extensive experience processing and interpreting airborne magnetic and/or magnetics/ radiometric data
- Excellent computer skills, experienced programmer

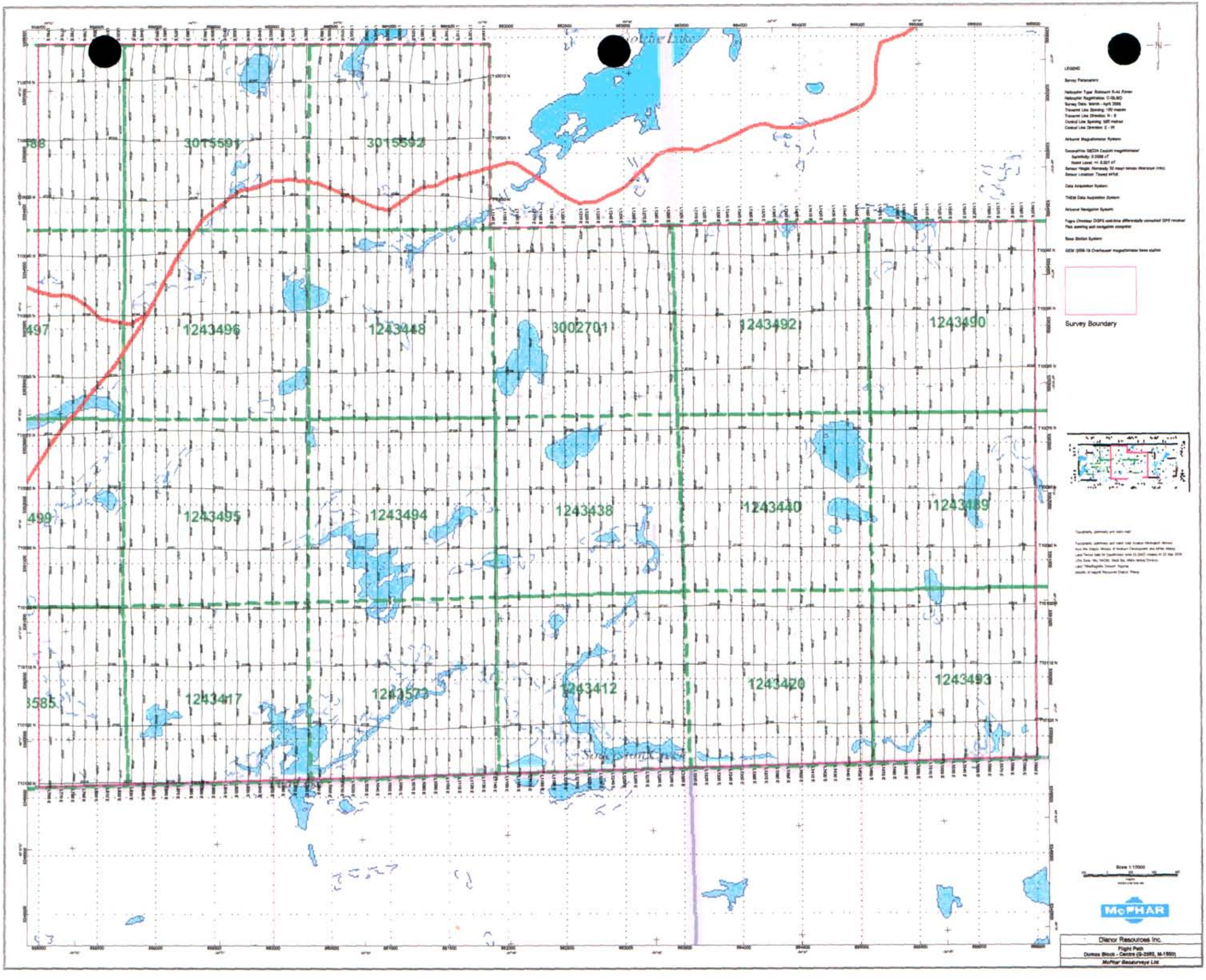
LANGUAGES: Bulgarian, English

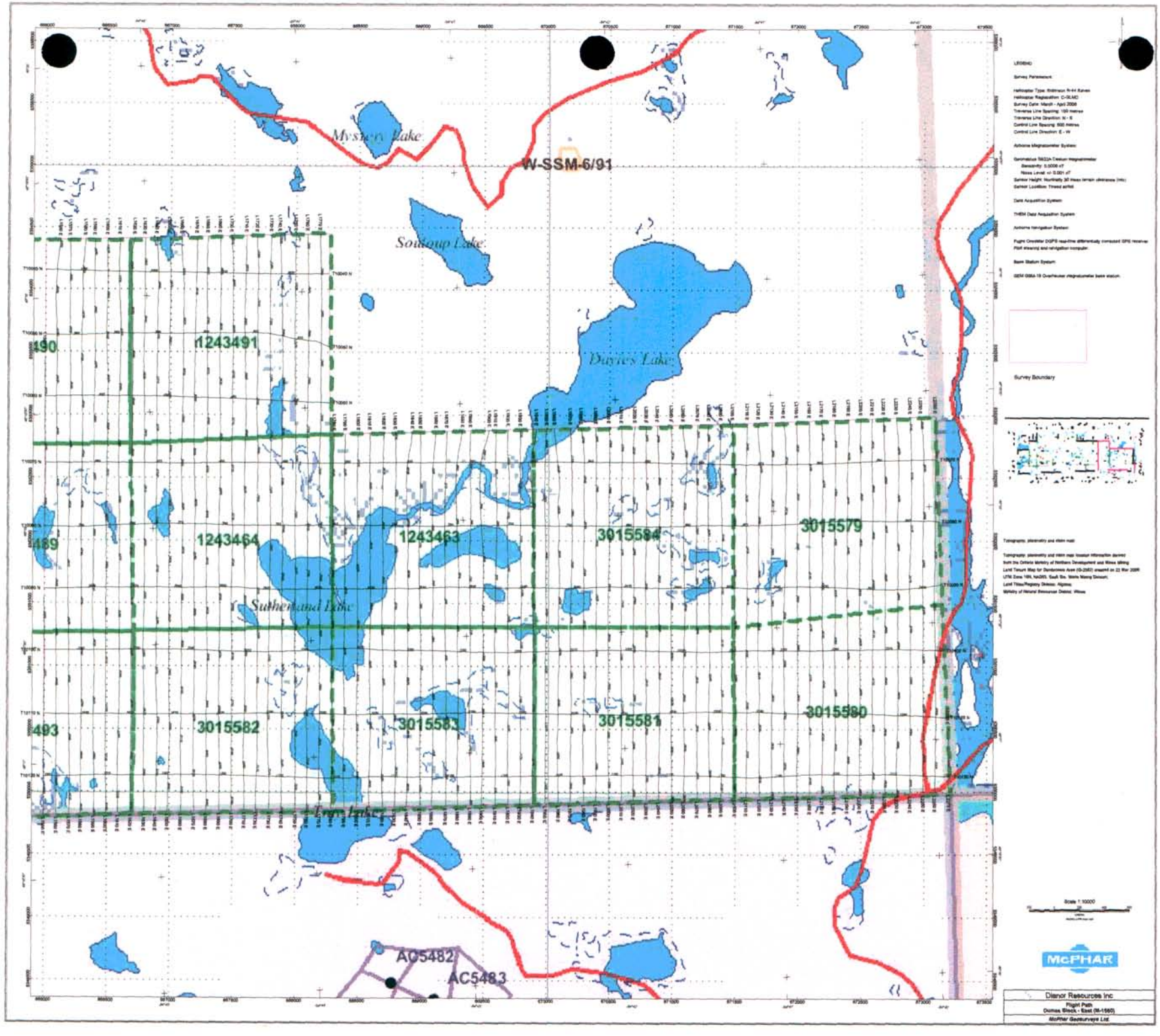
APPENDIX 5

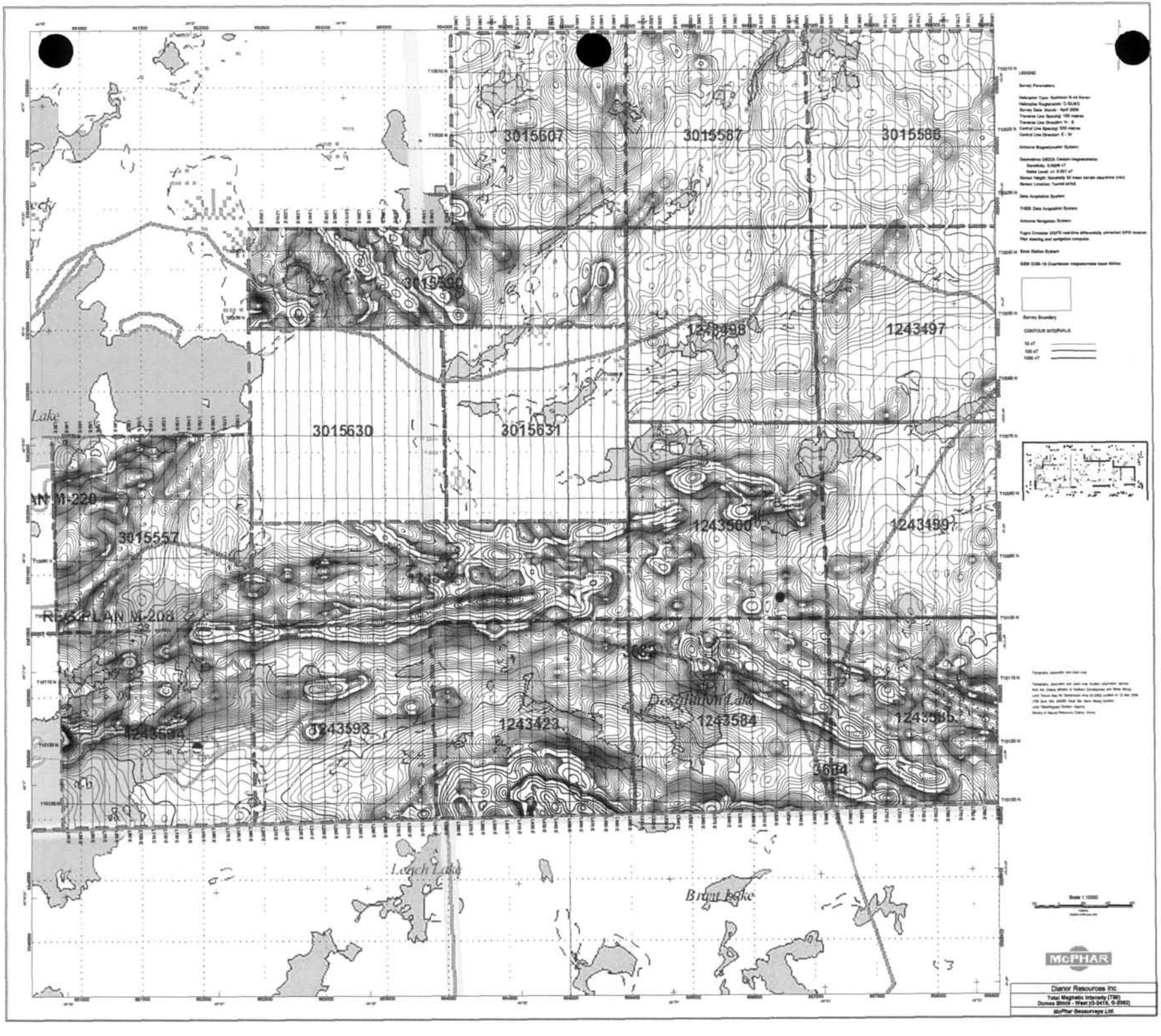
Page Size Maps

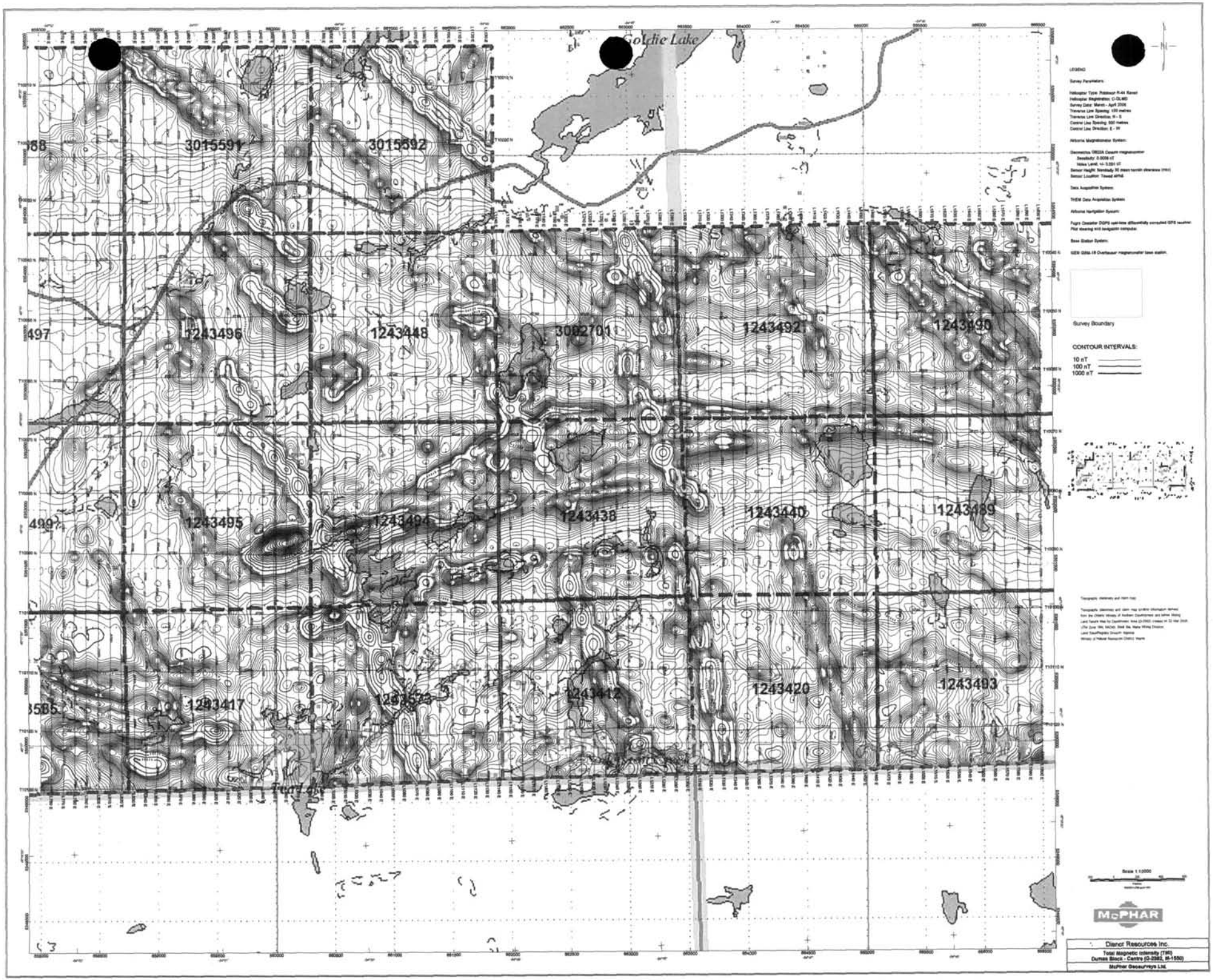
- Flight Path with Planimetry
- Total Magnetic Intensity
- Geophysical Interpretation

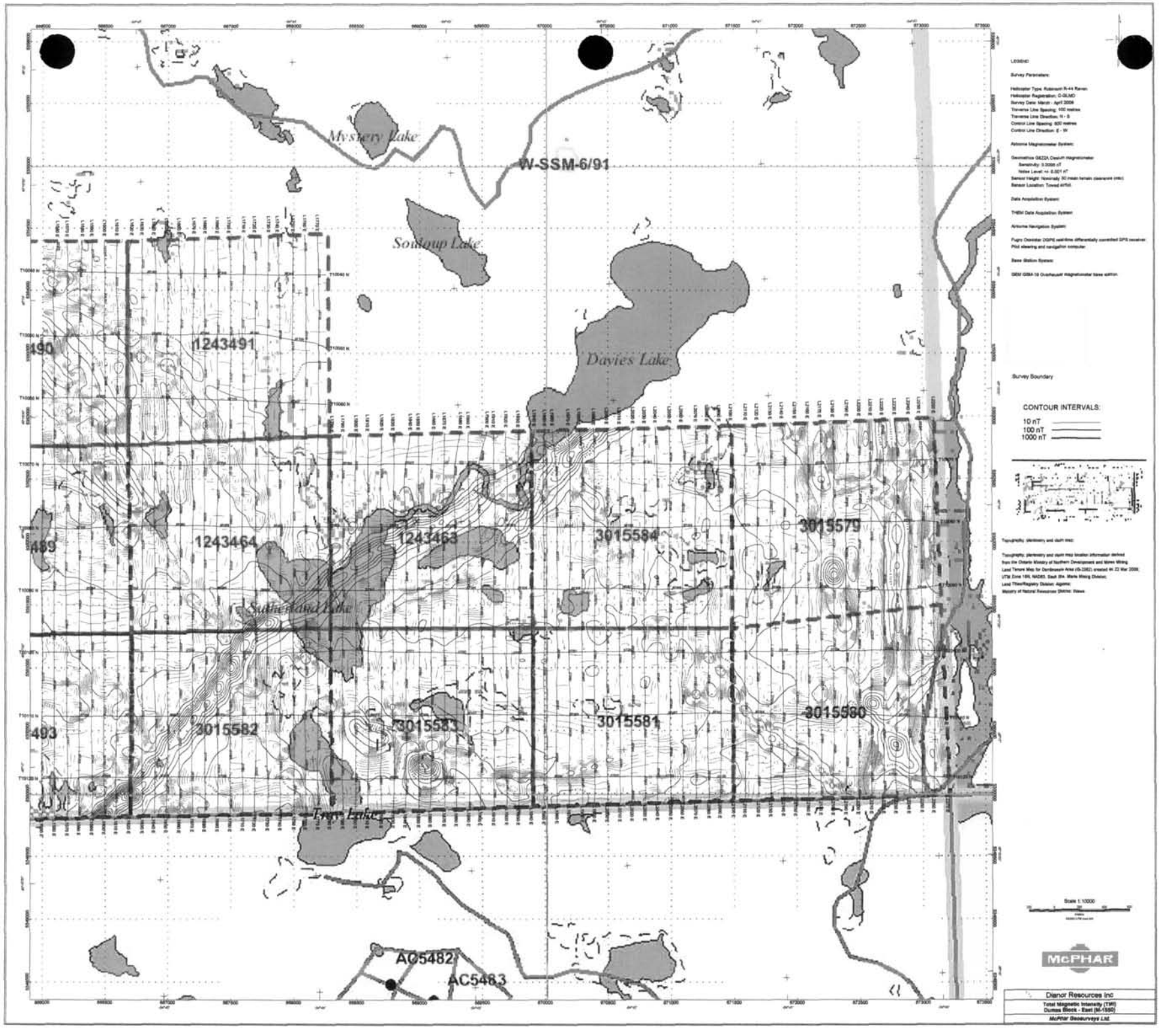

3015607
3015587
3015588
3015590
1243498
1243497
3015630
3015631
1243500
1243499
3015557
1243421
REG PLAN M-208
3062
Desjardins Lake
1243584
1243585
1243593
1243423
1243594
3684
Lough Lake
Bryant Lake
Survey Boundary
McPHAR
Dianor Resources Inc.
Flight Path
Dumas Block - West (G-2415, G-2362)
McPhar Geosurveys Ltd.

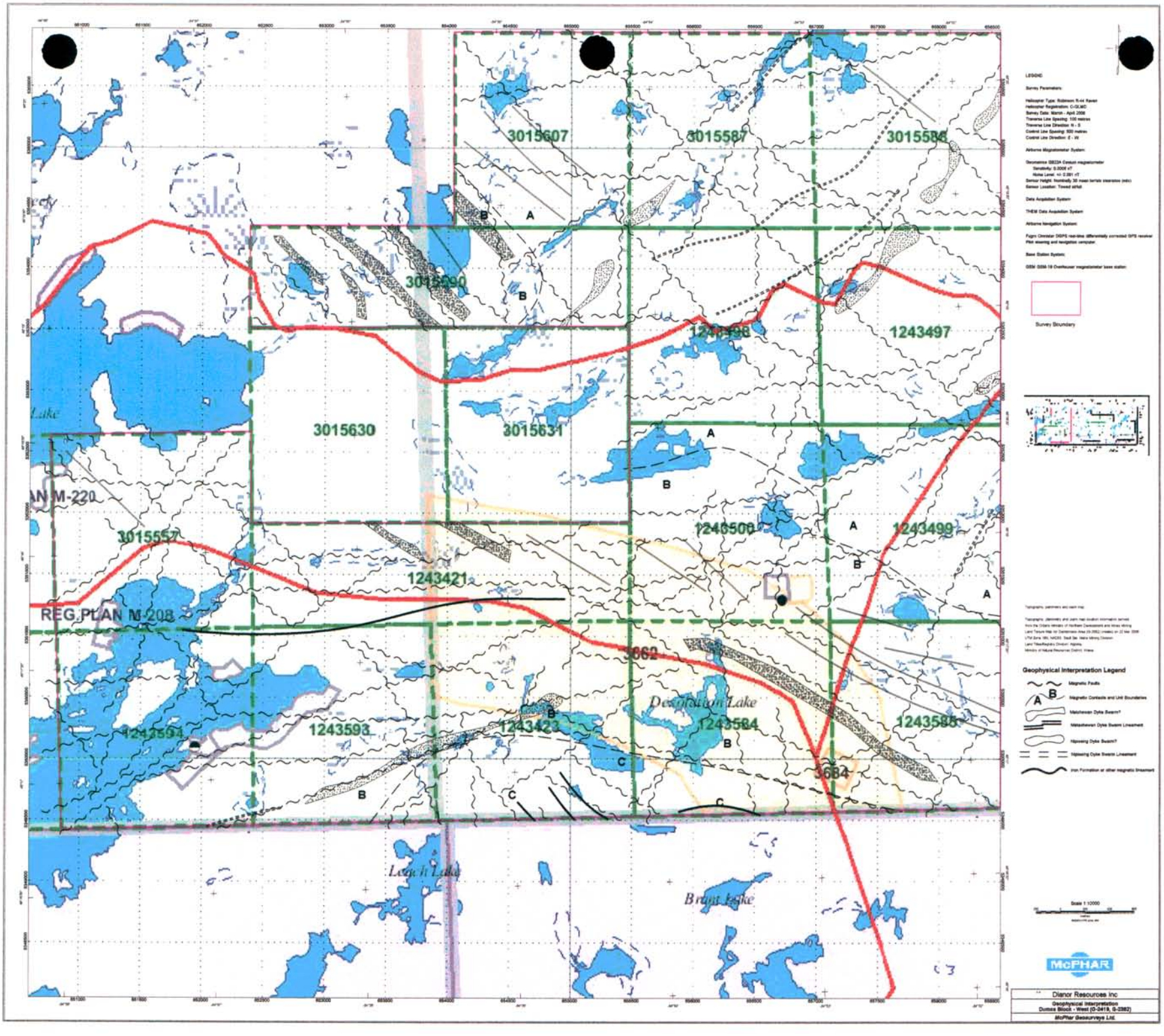

3015591
3015592
1243496
1243448
3002701
1243492
1243490
1243495
1243494
1243438
1243440
1243489
1243417
1243573
1243412
1243420
1243493
Survey Boundary
Scale 1:10000
McPHAR
Dianor Resources Inc.
Flight Path
Dumas Block - Centre (G-2585, M-1550)
McPhar Geosurveys Ltd.

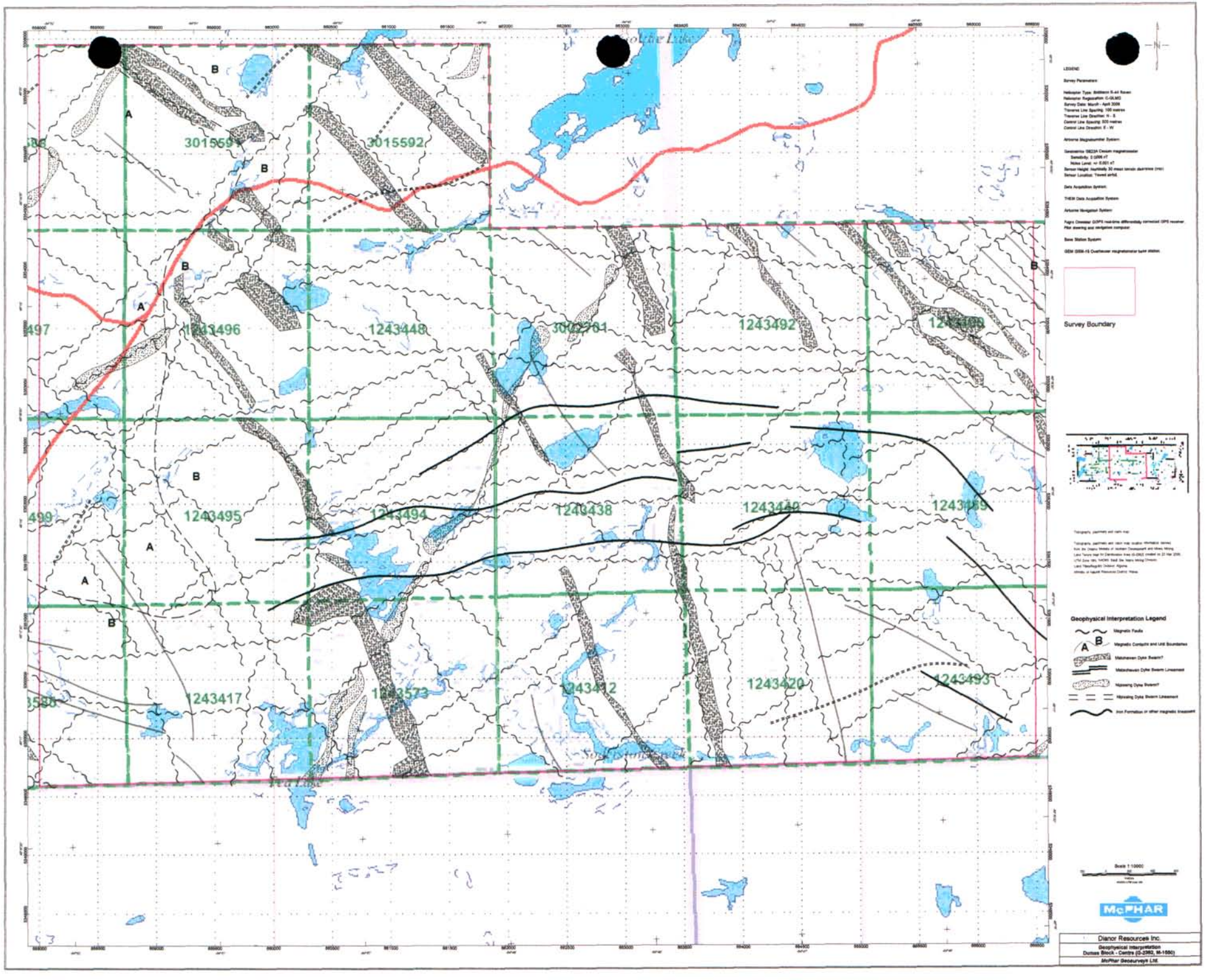

W-SSM-6/91
Mystery Lake
Solitaire Lake
Davies Lake
Sutherland Lake
Twin Lake
490
1243491
489
1243464
1243463
3015584
3015579
493
3015582
3015583
3015581
3015580
AC5482
AC5483
Survey Boundary
Scale 1:10000
McPHAR
Diamor Resources Inc
Flight Path
Dumas Block - East (96-1560)
McPhar Geosurveys Ltd.

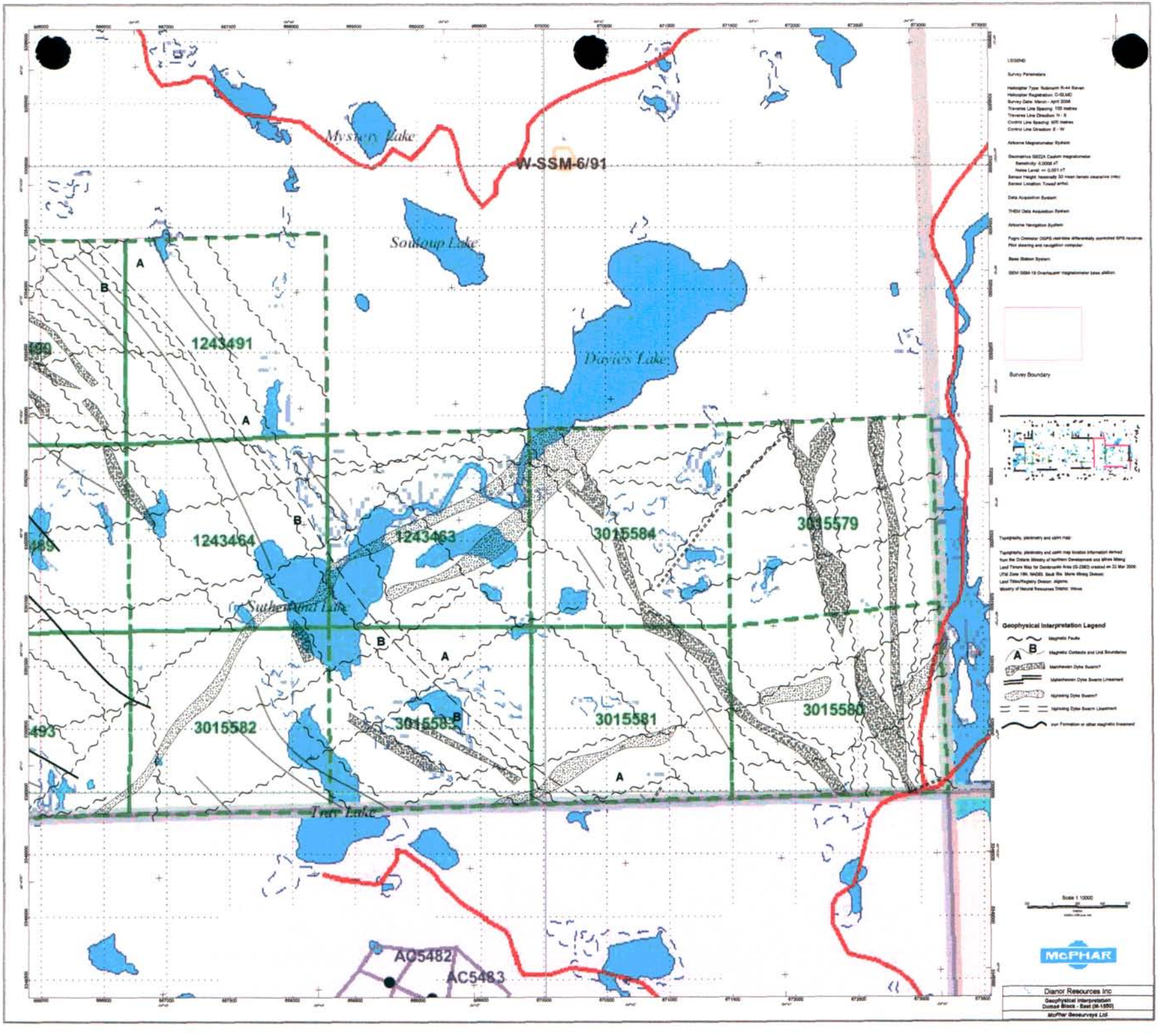

3015607
3015587
3015586
3015630
3015631
3015557
1243498
1243497
1243500
1243499
1243593
1243423
1243584
1243585
Lake
Leech Lake
Brunt Lake
Survey Boundary
CONTOUR INTERVALS
10 nT
100 nT
1000 nT
McPHAR
Dianor Resources Inc
Total Magnetic Intensity (TMI)
Dumas Block - West (O-3419, O-2382)
McPhar Geosurveys Ltd.


Goldie Lake
3015591
3015592
1243496
1243448
3002701
1243492
1243490
1243495
1243494
1243438
1243440
1243489
1243417
1243412
1243420
1243493
Survey Boundary
CONTOUR INTERVALS:
10 nT
100 nT
1000 nT
McPHAR
Dianor Resources Inc.
Total Magnetic Intensity (TMI)
Dumas Block - Centre (G-2982, M-1550)
McPhar Geosurveys Ltd.


Mystery Lake
W-SSM-6/91
Soldoup Lake
Davies Lake
Sutherland Lake
Twp. Line
490
1243491
489
1243464
1243463
3015584
3015579
493
3015582
3015583
3015581
3015580
AC5482
AC5483
LEGEND
Survey Parameters:
Helicopter Type: Aerospatiale AS 350 B2 Ecureuil
Helicopter Registration: C-GLMD
Survey Date: March - April 2006
Traverse Line Spacing: 100 metres
Traverse Line Direction: N - S
Control Line Spacing: 500 metres
Control Line Direction: E - W
Airborne Magnetometer System:
Geometrics G822A Cesium magnetometer
Sensitivity: 0.0006 nT
Noise Level: +/- 0.001 nT
Sensor Height: Nominally 30 meter terrain clearance (min)
Sensor Location: Towed stinger
Data Acquisition System:
THEM Data Acquisition System
Airborne Navigation System:
Fugro Starfix DGPS real-time differentially corrected GPS receiver
Pilot steering and navigation computer
Base Station System:
GEM GSM-19 Overhauser magnetometer base station
Survey Boundary
CONTOUR INTERVALS:
10 nT
100 nT
1000 nT
Topography, planimetry and claim map:
Topography, planimetry and claim map location information derived from the Ontario Ministry of Northern Development and Mines Mining Land Tenure Map for Dondenaute Area (G-2382) created on 22 Mar 2006, UTM Zone 16N, NAD83, Sault Ste. Marie Mining Division, Land Titles/Registry Division: Algoma
Ministry of Natural Resources (MNR): Wawa
Scale 1:10000
McPHAR
Dianor Resources Inc.
Total Magnetic Intensity (TMI)
Dumas Block - East (M-1560)
McPhar Geosurveys Ltd.


3015607
3015587
3015586
3015590
1243498
1243497
3015630
3015631
Lake
REG.PLAN M-220
3015557
1243500
1243499
1243421
REG.PLAN M-208
3662
Desjardins Lake
1243594
1243593
1243423
1243584
1243585
3684
Leach Lake
Bright Lake
LEGEND
Survey Parameters:
Survey Boundary
Geophysical Interpretation Legend
Magnetic Faults
Magnetic Contacts and Unit Boundaries
Matchewan Dyke Swarm?
Matachewan Dyke Swarm Lineament
Nipissing Dyke Swarm?
Nipissing Dyke Swarm Lineament
Iron Formation or other magnetic lineament
Scale 1:10000
McPHAR
Diamor Resources Inc
Geophysical Interpretation
Dumas Block - West (O-2419, O-2382)
McPhar Geosurveys Ltd.


3015591
3015592
1243496
1243448
1243492
1243495
1243494
1243438
1243417
1243573
1243412
1243420
1243493
Survey Boundary
Geophysical Interpretation Legend
Magnetic Faults
Magnetic Contacts and Unit Boundaries
Matchewan Dyke Swarm?
Matchewan Dyke Swarm Lineament
Nipissing Dyke Swarm?
Nipissing Dyke Swarm Lineament
Iron Formation or other magnetic lineament
McPHAR
Dianor Resources Inc.
Geophysical Interpretation
Dumas Block - Centre (G-2982, M-1550)
McPhar Geosurveys Ltd.


Mystery Lake
W-SSM-6/91
Soltoup Lake
Davies Lake
Survey Boundary
1243491
1243464
1243463
3015584
3015579
3015582
3015581
3015580
AC5482
AC5483
Two Lake
Geophysical Interpretation Legend
Scale 1:10000
McPHAR
Dianor Resources Inc
Geophysical Interpretation
Dumas Block - East (M-1850)
McPhar Geosurveys Ltd.