MPX GEOPHYSICS LTD.

BC Geological Survey
Assessment Report
31648b

FINAL

April 2010

Coast Mountain Geological Ltd.

620-650 West Georgia Street
Vancouver, British Columbia, Canada

Helicopter-borne Magnetic Survey

Kechika Project
(Kwad South, New & West Quad and
Akie-Sika North Areas)
Northwest British Columbia,
Canada

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1.0 Summary

A helicopter-borne high resolution magnetic survey project was completed over one (1) project area identified by the client as the Kechika Project with two survey blocks (Kwad South, New & West Quad and Akie-Sika North). This area is approximately 420 km northeast of Prince George, BC. This report summarizes the results of the above survey. This work was completed under contract to Coast Mountain Geological Ltd. ("the client") signed on 7 March 2010.

Figure 1: Survey Area.

2.0 Introduction

The MPX equipment was shipped to Prince George on 15 March 2010. The MPX crew was mobilized to Prince George on 20 March 2010. The equipment was installed and tested on 23 March 2010. Data acquisition was initiated on 23 March 2010. The final survey flight was completed on 1 April 2010. A total of 1,199 line-kilometres of data were acquired over the two blocks which covers a total area of 99 km^2. The survey blocks were flown at a nominal mean terrain clearance of 70 metres (40 metres for the magnetic sensor). The survey blocks were flown along NE-SW (045°) flight lines separated by 100 metres, and NW-SE (135°) tie lines at a line separation of 1000 metres

2.1 Geophysical Survey

Geophysical data acquisition involved the use of precision differential GPS positioning, and a high sensitivity magnetometer installed in the towed-bird airfoil suspended on a long-line 23 m below the helicopter. The helicopter used was a Bell Jet Ranger helicopter with Canadian registration C-GPWY.

This report describes the data acquisition and processing procedures, parameters and delivery products for this survey.

3.0 Survey Area

The high-resolution magnetic survey was completed over two (2) blocks identified by the client as the Kechika Project (Kwad South, New & West Quad Block and Akie-Sika North Block) which is located approximately 420 km northeast from Prince George BC, and shown in Figure 2. A total of 1,199 line-kilometres of data were acquired in the project area which covers a total area of 99 km^2.

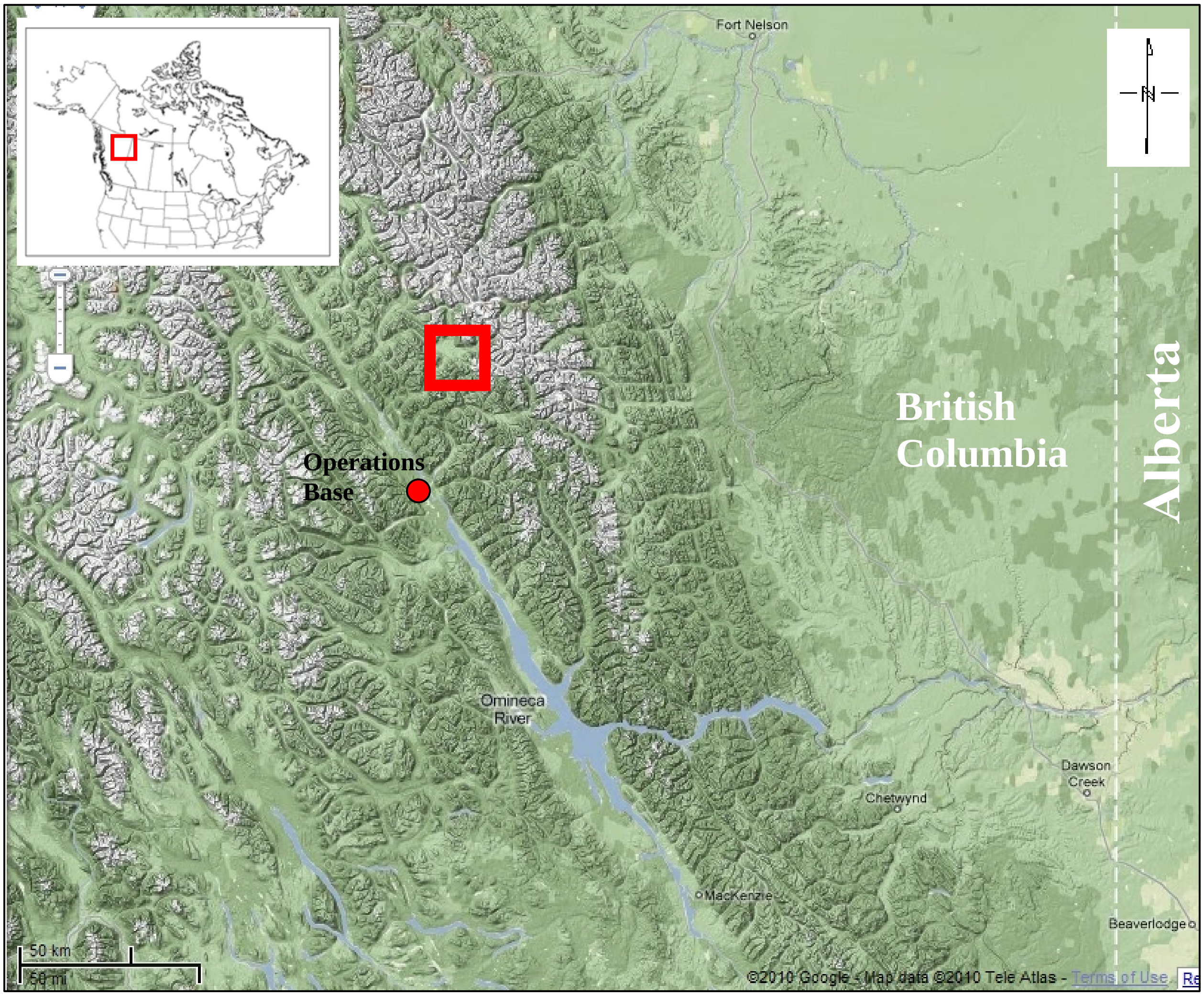

Figure 2: Survey area location map. The survey area is indicated by the red polygon with an operations base in Tsay Keh Dene, B.C.

The topography in the survey area consisted of steep mountainous terrain as part of the Canadian Rocky mountain range in British Columbia, with a steep river valley at the northwest end of the survey area (see Figure 3). The elevation ranged from approximately 800 metres to 2000 metres above sea level. During production the weather conditions were cool (-3^{o}C to +3 ^{o}C) with moderate to strong winds.

Figure 3: General topography in the survey area.

3.1 Geophysical Survey

The Kechika Project was flown along flight lines separated by 100 metres and tie lines at a line separation of 1000 metres. All survey areas were flown at a nominal mean terrain clearance of 70 metres (40 metres for the magnetic sensor).

The flight lines were oriented predominantly NE-SW (045° or 225°), with tie lines oriented NW-SE (135° or 315°). The details of the flown survey are summarized in Table 1.

Table 1: Description of Survey Blocks

Survey Blocks	Flight Lines			Tie Lines			Total line-km	Area (km^2)
	Direction	Spacing	Line-km	Direction	Spacing	Line-km		
Kwad South, New&West Quad	NE-SW (045^o)	100 m	329.0	NW-SE (135^o)	1000 m	35.0	364.0	29
Akie-Sika North	NE-SW (045^o)	100 m	757.0	NW-SE (135^o)	1000 m	78.0	835.0	70
TOTAL			1,086.0			113.0	1,199.0	99

The survey blocks corner coordinates were provided in NAD83, Zone 10N UTM easting and northing. Final grids were required in NAD83, Zone 10N UTM easting and northing. The survey blocks corner coordinates are provided below in Table2.

Table 2: Boundary Coordinates of Survey Blocks (Datum and Projections are noted).

Kwad South, New&West Quad			Akie-Sika North		
NAD83 / UTM zone 10N			NAD83 / UTM zone 10N		
Corner	Easting	Northing	Corner	Easting	Northing
1	385111	6378439	1	393398	6371958
2	383252	6379840	2	393098	6372129
3	380156	6379911	3	393098	6372579
4	380168	6380429	4	392348	6372622
5	379850	6380440	5	392369	6373072
6	379862	6381052	6	390505	6373093
7	379567	6381347	7	390548	6374507
8	379120	6381335	8	389048	6374507
9	379108	6381770	9	389091	6376457
10	378378	6381817	10	387934	6376436
11	378390	6382512	11	387934	6376886
12	377566	6383218	12	387548	6376907
13	376542	6383242	13	387527	6377421
14	376566	6384348	14	386884	6377421
15	376142	6384819	15	86884	6378835
16	377060	6385631	16	387677	6379649
17	378025	6384654	17	387655	6380699
18	378473	6384642	17	389584	6382649
19	378484	6384136	19	387056	6385134
20	379897	6382712	20	388662	6386741
21	382251	6384960	21	389584	6385670
22	384076	6384937	22	390012	6385220
23	383993	6381453	23	391234	6385177
24	386124	6379593	24	391276	6383956
25	385100	6378439	25	392348	6383742
			26	392262	6381921
			27	391426	6381064
			28	392605	6380035

	29 393869 6378621 30 394447 6378642 31 394447 6377678 32 393248 6376478 33 394426 6375364 34 395819 6375364 35 395819 6374914 36 396161 6374893 37 396826 6372750 38 395926 6371936 39 395133 6372579 40 394019 6372600 41 393376 6371958

The final flight path for the survey area is illustrated by Figure 4.

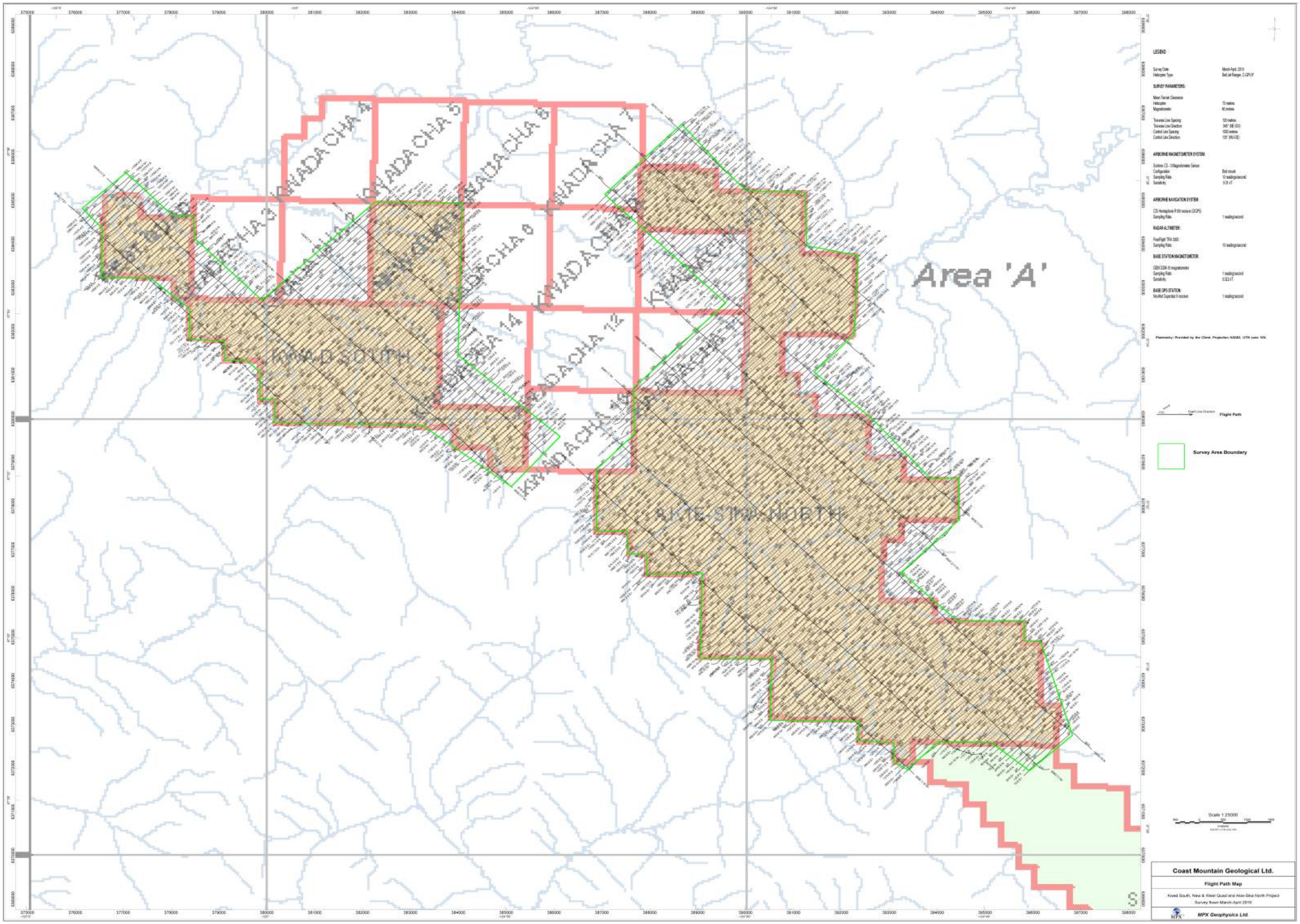

Figure 4: The final flight path for the Kechika Project survey area.

4.0 Survey Operations

4.1 Operations Base

Survey operations were based in Tsay Keh Dene, B.C. One magnetic base station was utilized during the project and was set up next to the base of operations at the Pacific Western Helicopters fuel cache approximately 25 kilometers south of the survey area.

The station was positioned to minimize the distance to the survey block, and/or to provide a backup data set. The base station location is summarized in Table 3.

Table 3: Magnetic Base Station details.

Station Name	Lat&Long (Degrees)	Datum / Projection	Location (Easting / Northing)	Datum / Projection
Base Mag	57º 17' 35.57" N 124 º 56' 56.2" W	WGS 84 Geographic	6351795.7 N 379537.3 E	NAD83 UTM 10N

Quality Control and preliminary data processing was undertaken by the crew in the field as the survey progressed.

4.1.1 Magnetic Base Station

To monitor and record diurnal variations of the Earth's magnetic field of a GEM Systems GSM-19TW Overhauser magnetometer with onboard GPS for post processing of airborne data was utilized. The magnetic sensor was set-up utilizing a staff mount at a height of 1.7 m above ground. Every effort was made to ensure that the magnetometer sensor was placed in a location with a low magnetic gradient and sited away from electric transmission lines and moving ferrous objects, such as motor vehicles and aircraft, without compromising safety and local activity.

The base-station magnetometer was operated continuously throughout the airborne data acquisition work with a sensitivity of 0.022 nT. The ground and airborne system clocks were synchronized using GPS time. The sample rate of the base magnetometer was once per second (1 Hz). A continuously updated profile plot of the base station values was presented on the base station screen. The magnetometer base station data were recorded in the solid-state memory of the base station and downloaded to the field laptop at the end of each day's survey operations.

4.2 Survey Conditions

Weather conditions during the survey were variable. The temperature ranged from -3°C to +3°C during the survey. During the period of 15 March to 1 April 2010 a total of three (3) days were installation days; six (6) days were production days; zero (0) days were lost due to equipment troubleshooting; [*nine (9) days were mobilization/standby due to non availability of accommodations at Tsay Key Dene*]; zero (0) days were lost due to weather and zero (0) days were required for the pilot's roster day off. Table 4 provides a summary of the days spent on each type of activity.

Table 4: The number of days spent on each survey activity.

	Days
Mobilization	*[9]*
Installation	3
Equipment troubleshoot	0
Production	6
Weather	0
Pilot day off	0
Total	**18**

Sunspot activity, and hence diurnal geomagnetic activity, was minimally active during the entire data acquisition period. No data were lost due to the geomagnetic activity being out of contract specification.

4.3 Navigation

The nominal data acquisition speed of the helicopter was approximately 90 kilometres per hour (25 metres per second), but this varied in areas of rugged terrain. Magnetic and altimeter data values were sampled 10 times per second (10 Hz). The GPS position was sampled at a rate of 1 time per second (1 Hz). A position fix was recorded approximately every 25 metres along the flight track. With a sampling rate of 0.1 seconds, magnetometer and altimeter measurements were acquired approximately every 2.5 metres along the survey line.

Navigation was assisted by a Hemisphere R100 receiver DGPS system that reported real-time differentially corrected GPS co-ordinates as WGS-84 latitude and longitude and guided the pilot over a pre-programmed two-dimensional (2-D) survey grid. The R100 has an LCD, Keypad and associated user interface that allows field configuration and observation without an external controller. The x-y position of the helicopter reported by the GPS system was recorded with the terrain clearance as reported by the radar altimeter.

Vertical navigation along flight lines was established using the radar altimeter. The nominal terrain clearance during normal survey flying was 70 metres for the helicopter and 40 metres for the magnetometer sensor. However, due to the terrain in some areas and/or the pilot's judgment of safe flying conditions, the prescribed terrain clearances were not possible 100% of the time.

4.4 Field Processing & Quality Control

The survey data were transferred to portable recording media on a flight-by-flight basis, and subsequently copied to the field data processing workstation. In-field data processing included reduction of the data to GEOSOFT GDB database format and inspection of the data for adherence to contract specifications listed below in Table 5. Survey lines that exhibited excessive deviation, or that were considered to be of inferior quality, were reflown. None of the flight lines required partial or complete reflying due to equipment malfunction or for diurnal.

Table 5: Contract re-flight specifications. Re-flights occurred under any of the conditions listed below.

Specification	Details
POSITION	
Position	Digital positioning data not available.
Line Spacing	Flight lines deviate from the intended flight path by more than 50% of the nominal line spacing over a distance of more than 1 km - 100 m flight line spacing: ± 50 m over 1000 m
MAGNETICS	
Diurnal	Diurnal Total Magnetic Intensity non-linear variations exceed 12 nT in a straight-line chord over 5 minutes. Survey data acquisition will be stopped altogether in the case of severe magnetic diurnal activity.

4.5 Project Status Report

The project status report provides a brief summary of all information relevant to the project for each day of the survey. Details include the type of activity carried out on each day (mobilization, installation, equipment troubleshooting, production, weather down-day, or pilot day off); the flight numbers; total line-km flown; total flight hours; personnel working; and any additional details for each day. The report also provides a summary of the survey block names and the line-km flown in each. The project status reports are included in Appendix 2.

5.0 Aircraft and Equipment

The installation of the geophysical and ancillary equipment was carried out by MPX personnel at the Pacific Western Helicopters (PWH) helicopter base in Prince George B.C., Canada with final adjustments, calibration and testing completed prior to commencement of production survey flights. The MPX operator was responsible for ensuring that the equipment functioned properly and within specifications; operating the survey equipment during data acquisition; and carrying-out preliminary quality control of the acquired data.

5.1 Aircraft

The survey was flown using a Bell Jet Ranger helicopter, with a crew of two people on board (pilot plus operator).

Figure 5: Bell Jet Ranger helicopter with registration C-GPWY flown during the survey.

Aircraft Registration:	-	Canada, C-GPWY
Empty weight:	-	718 kg (1583 lbs)
Maximum takeoff weight	-	1360kg (2,998 lbs)
Service ceiling:	-	18,999 ft/ 5,791 m (with oxygen)
Survey duration:	-	3.0 hours (with reserves)

5.2 *Survey Equipment*

5.2.1 Survey System Overview

The system consisted of DGPS navigation (Hemisphere R100 receiver DGPS), FreeFlight TRA 3000 Radar Altimeter, and a Scintrex CS-3 high-sensitivity Cesium magnetometer in a bird. The sampling rates for each component of the system are presented in Table 6.

Table 6: System component sampling rates

SYSTEM / No. of CHANNELS	SAMPLING RATES
Total Field Magnetometer (1 channel)	10.0 / sec
Radar Altimeter (1 channel)	10.0 / sec
Barometric Altimeter (1 channel)	10.0 / sec
DGPS Navigation (1 channel)	1.0 / sec

5.2.2 Airborne Magnetometer

The magnetic sensor utilized for the survey was a Scintrex CS-3 high resolution cesium split-beam total-field magnetometer, which was installed in a towed array. The sampling rate was ten (10) times per second with an in-flight sensitivity of 0.002 nanoTesla (nT). Aerodynamic magnetometer noise was +/- 0.01 nT. The sensitivity of the magnetometer was recorded at 0.002 nT when operated at a sampling rate of 0.1 seconds.

Figure 6: Scintrex CS-3 Cesium Magnetometer.

A Cesium vapour magnetic sensor is a miniature atomic absorption unit, producing a signal whose frequency (Larmor frequency) is proportional to the intensity of the ambient magnetic field. The unit consists of three main elements; a Cesium vapour lamp, an absorption cell, and a photosensitive diode.

These components are mounted along a common optical axis within the sensor housing. The electronic support system is mounted at the rear end of the towed bird, transmitting the Larmor signal to a counter in the data acquisition system then converted the signal to magnetic field strength in nanoTeslas.

5.2.3 Radar Altimeter

A FreeFlight TRA 3000 radar altimeter system recorded the ground clearance to an accuracy of ± 1.5 m from 12 m – 30.5 m; ± 5% over a range of 30.5 m – 152.4 m; and 7% over a range of 152.4 m – 762 m. The altimeter antenna and receiver were mounted on the base of the forward bubble in the helicopter.

The altimeter was interfaced to the data acquisition system with the output sampled at 10 times per second (10 Hz), and digitally recorded.

5.2.4 Barometric Altimeter

A Setra Model 276 Pressure Transducer recorded the barometric pressure to an accuracy of about 1 ft (30 cm). The barometric altimeter was mounted on the AGIS frame inside the fuselage of the helicopter.

The altimeter was interfaced to the data acquisition system with a sample rate of 0.1 seconds, and was digitally recorded.

5.2.5 GPS Navigation System

A Hemisphere R100 receiver DGPS navigation system input to a navigation computer and pilot steering indicator (PSI) provided navigation control. The pilot guidance unit (PGU) provided steering and cross-track guidance to the pilot. The pilot was provided with GPS and altimeter data to aid in the flying of the aircraft.

Survey co-ordinates were set-up prior to commencement of the survey and the information was loaded into the airborne navigation system. The GPS positional data was recorded at one-second intervals and used to calculate real-time differentially corrected locations.

5.2.6 Base Station Magnetometer

To monitor and record diurnal variations of the Earth's magnetic field, a GEM Systems GSM-19TW Overhauser magnetometer with onboard GPS for post processing of airborne data was utilized. The base station magnetometer was set up in the field next to the PWH fuel cache. The magnetic sensor was set-up utilizing a staff mount at a height of 1.7 m above ground. Every effort was made to ensure that the magnetometer sensor was placed in a location with a low magnetic gradient and sited away from electric transmission lines and moving ferrous objects, such as motor vehicles and aircraft, without compromising safety and local activity.

The base-station magnetometer was operated continuously throughout the airborne data acquisition work with a sensitivity of 0.022 nT. The ground and airborne system clocks were synchronized using GPS time. The sample rate of the base magnetometer was one time per second (1 Hz). A continuously updated profile plot of the base station values was presented on the base station screen. The magnetometer base station data were recorded in the solid-state memory of the base station and downloaded to the field laptop at the end of each day's survey operations.

5.2.7 PC-based Data Acquisition System

A Pico-Envirotec Airborne Geophysical Information System (AGIS) PC Based Data Acquisition System (DAS) was used to record the geophysical and navigation survey data on a portable media flashcard. The data were recorded at various rates ranging from 10 Hz to 1 Hz (ten times per second to once per second) that are summarized in Table 6 (page 12). 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.

5.2.8 Spares

A complement of spare parts and test equipment were maintained at the survey site. In addition, MPX maintained an equipment log noting all equipment serial numbers, date and time of equipment repair and replacement throughout the survey

6.0 Instrument Checks and Calibrations

The following airborne magnetometer system tests and calibration checks were completed at appropriate times during the survey.

6.1 Magnetometer Checks

6.1.1 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. At least one pass in each direction was flown over a recognizable magnetically "flat" feature on the ground in order to obtain sufficient statistical information to estimate the heading error.

A heading test was performed for this project during Flight #09 on 31 March 2010.

Heading Effect Test Data				
Line	**Fiducial**	**Direction**	**Mag (nT)**	**Height (m)**
L5002:9	9785.2	WE - 045°	57355.679	1721.0
L5006:9	10593.6	NS - 135°	57355.228	1834.0
L5003:9	9953.1	EW - 225°	57355.594	1770.0
L5005:9	10416.2	SN - 315°	57356.230	1756.0
			57355.68	

/Geosoft Heading Correction Table

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Direction	Correction
045°	**-0.004**
135°	**+0.455**
225°	**+0.089**
315°	**-0.547**

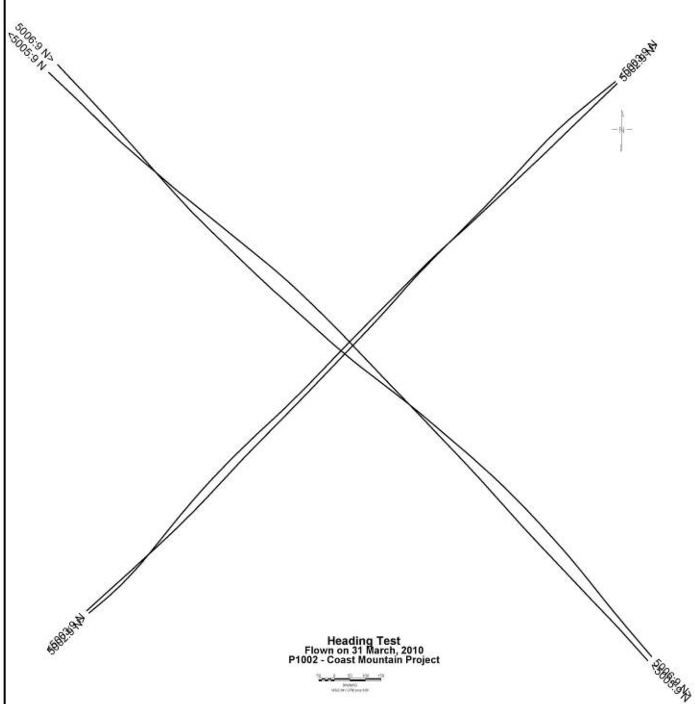


Figure 6: Results of the heading test.

6.1.2 Lag Test

A Lag Test was performed during Flight 07 on 29 March 2010 to determine 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 sharp anomaly on reciprocal headings at survey altitude. A lag of 25 fiducials (2.5 seconds) was determined from the lag test (Figure 7).

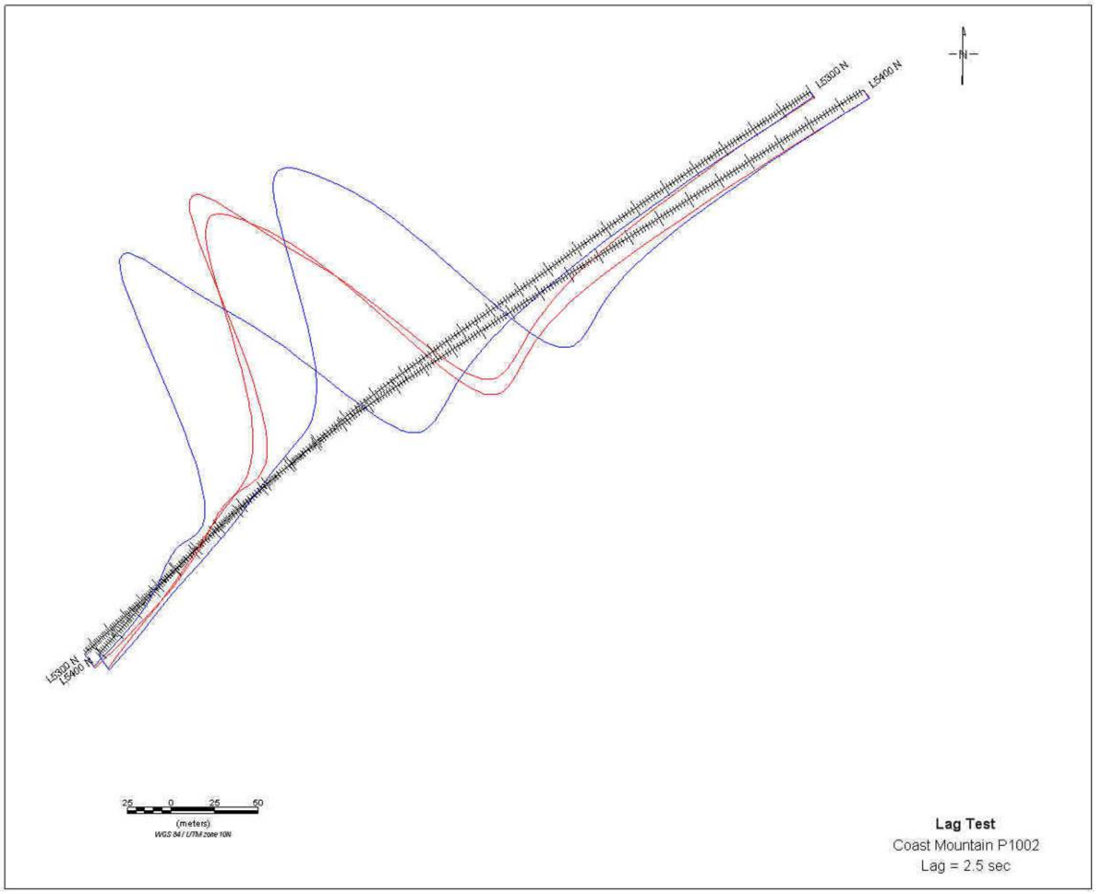


Figure 7: The results of the lag test indicating a lag of 25 fiducials (2.5 seconds).

6.2 Altimeter Calibration Checks

Checks of the radar altimeter calibration were undertaken on 26 March 2010 over an area of flat topography. The calibration was determined by comparing the radar altitude with a suitable reading from the GPS system during a radar "stack" over the land-based test line where the height above sea-level (ASL) is accurately known. A correction factor of 0.8815 was determined from the stack test. The results of the test are presented in Figure 8.

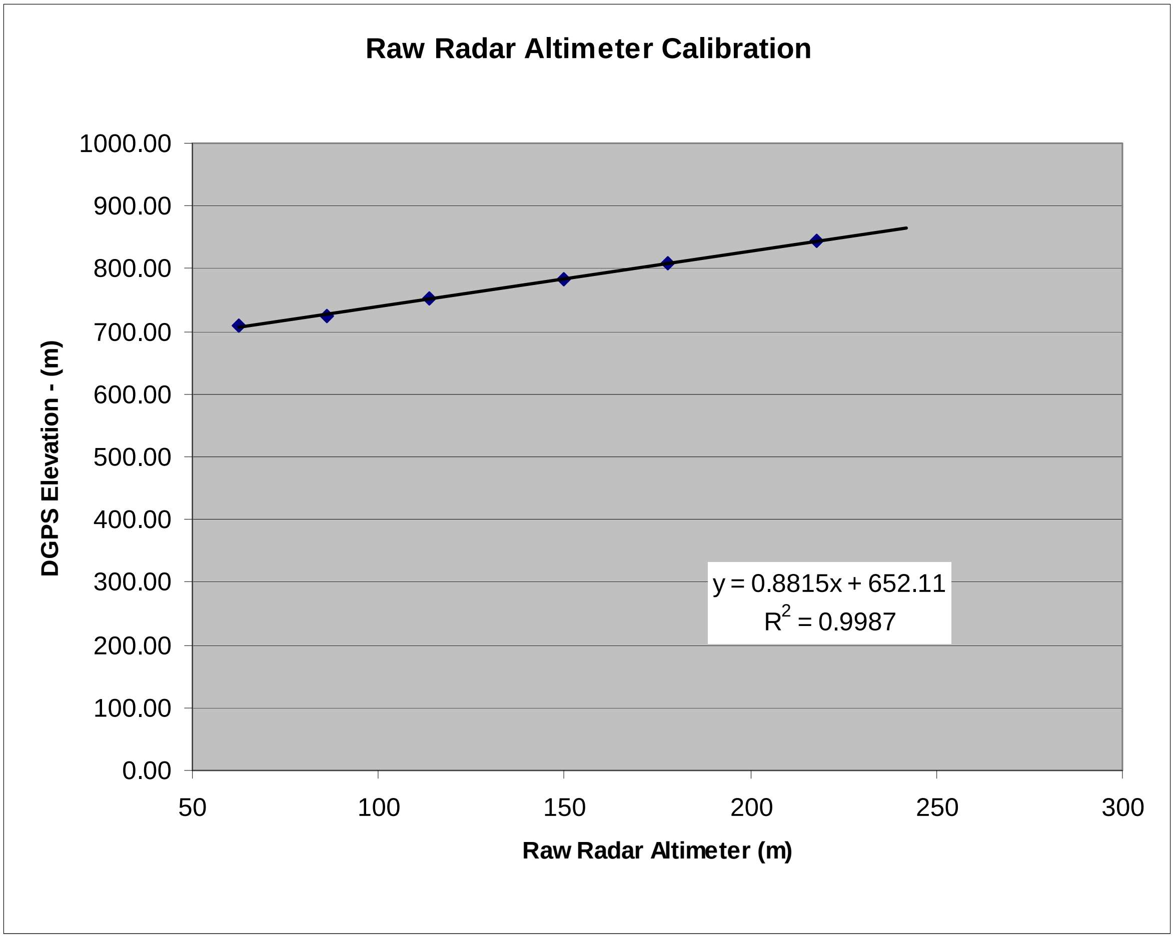


Figure 8: GPS Elevation vs. radar altimeter, showing the line of best fit with trend line equation.

6.3 Barometer Calibration Checks

Checks of the barometer calibration were undertaken on 26 March 2010 over an area of flat topography. The calibration was determined by comparing the barometric altitude with a suitable reading from the GPS system during a barometric "stack" over the land-based test line where the height above sea-level (ASL) is accurately known. The results of the test are presented in Figure 9.

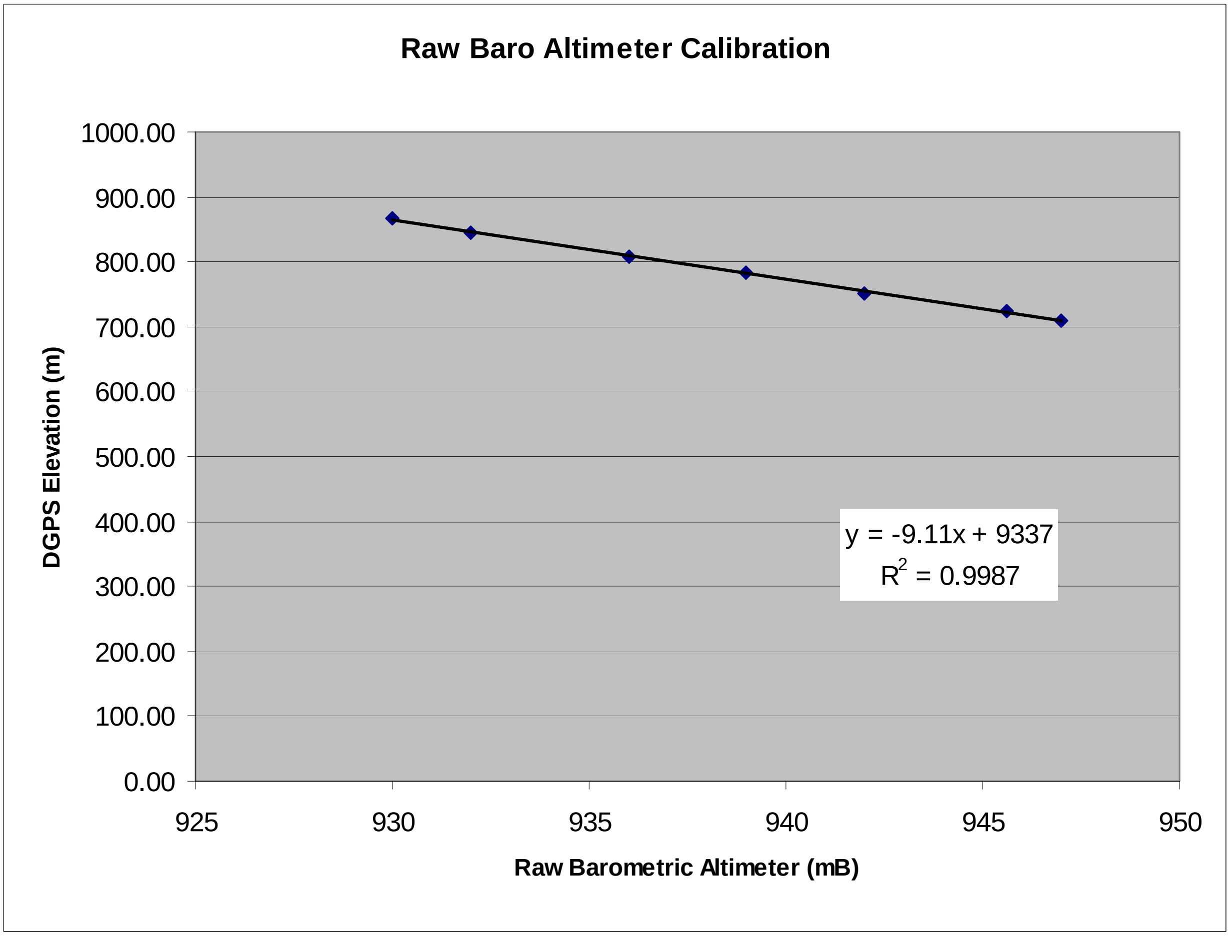


Figure 9: GPS Elevation vs. barometric altimeter, showing the line of best fit with trend line equation.

7.0 Quality Control and Data Processing

Daily quality control, post-processing of GPS positions and archiving of the data were completed by MPX at the Markham, Ontario office using Geosoft's OASIS montaj software and a notebook PC computer.

All data were verified upon receipt, and checked against the flight logs. The final data processing, map and report preparation was completed by MPX at the Markham, Ontario office.

7.1 In-Field Processing and Deliverables

The following items were verified once the data arrived in the Markham office for final processing and grid preparation.

7.1.1 Flight Path Compilation

The flight path was derived from differentially corrected GPS positions from the airborne data. A position was calculated each second (approximately every 25 metres along the flight path) to an accuracy of better than ±0.5 metres. The position data was then merged into the magnetic data in each of the respective Geosoft GDB databases.

If the contract specifications noted in Table 5 were not met, a re-flight was deemed necessary. All positional data was projected in WGS84, UTM Zone 10N coordinates.

7.1.2 Digital Terrain Model

A digital terrain model (DTM) channel was calculated by subtracting the filtered radar altimeter data from the GPS elevation defined by the WGS84 ellipsoidal height.

The DTM channel was gridded using a minimum curvature algorithm with a grid cell size of 30 m and inspected for continuity. Micro-levelling of the DTM was then completed prior to DTM grid production.

7.1.3 Base Station Magnetic Data

The base station magnetometer data was edited, plotted and merged into the database on a daily basis. The following constraints were used during the quality control procedure:

- Removal of spikes in the data set resulting from cultural activities not associated with the survey (ex. a truck driving by the base station);
- Diurnal Total Magnetic Intensity linear gradient could not exceed 12 nT in a straight-line chord over 5 minutes.
- Calculation of the 4^{th} difference noise of the signal to identify potential erroneous data

7.2 Airborne Magnetic Data

Field processed magnetic data were made available on a daily basis and at the completion of the survey prior to demobilization of the survey aircraft and crew. A description of all processing methods applied to the magnetic data is included below.

7.2.1 Corrections

The processing of the data involved editing raw magnetic data to remove any noise spikes; correcting for diurnal variations by using the digitally recorded ground base station magnetic values; network adjustment using the flight-line and tie-line information to level the survey data set. The corrected data set was used to generate the initial Total Magnetic Intensity (TMI) grid upon which all further processing and analysis has been made.

7.2.2 Levelling

Conventional levelling methods that utilize the data from the ties lines was performed. Levelling of the magnetic data included the following steps:

- Statistically levelling the tie lines to a common regional base using the mean of the cross-level errors;
- Levelling the traverse lines using the statistically levelled ties. Note: this procedure involves editing individual corrections at selected intersections as required in order to obtain the best possible levelled data before microlevelling.

7.2.2.1 Micro-levelling

After applying the above corrections to the magnetic 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 noise and signal, the grid is extracted to the profile database, and an amplitude limit and a filter length are determined such that the final error channel reflects only noise present in the grid without removing or changing the geologic signal. This error channel is then subtracted from the initial data channel in order to obtain the final microlevelled channel. The microlevelled channel is then gridded using a minimum curvature algorithm. The resulting grid is therefore free of line direction noise.

7.2.3 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 $1/3^{rd}$ of the line spacing (30 m).

7.2.4 Filter Derivatives

The Total Magnetic Intensity (TMI) data were subjected to:

- Subtraction of International Geomagnetic Reference Field (IGRF)

Colour grids were produced for all the above listed magnetic products.

All of these spatial filtering techniques were completed using the Oasis/Montaj MAGMAP and IGRF modules for filtering in the 2D FFT domain.

7.2.4.1 IGRF Removal

The International Geomagnetic Reference Field (IGRF) is a long-wavelength regional magnetic field calculated from permanent magnetic observatory data collected around the world. The IGRF is updated and determined by an international committee of geophysicists every 5 years. Secular variations in the Earth's magnetic field are incorporated into the determination of the IGRF. The IGRF values were calculated for model year 2005 and the following dates were used for the survey:

29 March 2010

Through the removal of the IGRF from the observed Total Magnetic Intensity (TMI), the resulting residual magnetic intensity allows for more valid modeling of individual near surface anomalies. Additionally, the data can be more easily incorporated into databases of magnetic data acquired in the past or to be acquired in the future.

7.2.4.2 Calculation of the First Vertical Derivative (1VD)

To "sharpen" magnetic anomalies and to provide better spatial location of source axes and boundaries, a first vertical derivative map was computed from the TMI. Vertical derivatives compute the rate of change of the TMI as it drops off when measured vertically over the same point (upward continuation). Potential field data obeys Laplace's equation, which allows for the computation to take advantage of this symmetry and solve for the vertical or "z" component of the field.

8.0 Deliverable Products

The survey data are presented as digital databases and geosoft grid files. All digital data are also presented on CD-ROM in ASCII format. The deliverable items of this survey are described below.

8.1 Maps

The following map products were prepared and delivered in three (3) copies at scale of 1:25,000 for the Kechika Project.

Magnetic Maps (colour image with contour lines):

- Flight path map
- Digital elevation model (DEM) calculated from the GPS and radar altimeter data
- Levelled total magnetic intensity (TMI)
- IGRF removed TMI (TMI-IGRF)
- Calculated first vertical derivative of TMI (1VD)

All products were prepared in NAD83, UTM Zone 10N with Latitude and Longitude edge ticks.

8.2 Digital Data

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.

The following grid products were prepared in NAD83, UTM Zone 10N.

Geosoft Grids:

- Digital elevation model (DEM) calculated from the GPS and radar altimeter data
- Levelled total magnetic intensity (TMI)
- Levelled total magnetic intensity with IGRF removed
- Calculated first vertical derivative of TMI (1VD)

Full descriptions of the digital data formats and contents are included in this final report (Appendix 3) and as text files on each CD-ROM.

8.2.1 Metadata Files

Text files with information about the digital data provided for each survey block (metadata) are made available for each survey block. All files and/or database channels are described in the metadata file. See Appendix 3 for the contents of the metadata file.

8.3 Report

Three (3) copies of a survey report with data projected in NAD83 UTM Zone 10N were delivered. This report provides information about the acquisition, processing and presentation of the survey data. A full digital copy of this report is included in Acrobat PDF format with the digital data that is provided on CD-ROM.

8.3.1 Statement of Qualifications

The collection of data, and preparation of map and report products for this project were completed by the following staff of MPX; Daniel McKinnon, Pat Healy, Tonia Bojkova and Christina Clark. A summary of their qualifications appear in Appendix 1.

Respectfully submitted,

MPX Geophysics Ltd.

Appendices

Appendix 1. Statement of Qualifications

Daniel J. McKinnon, President

Daniel holds electrical and electronics diplomas from the New Brunswick Community College. Daniel started working in the mining industry in 1993 as an underground miner in the famous massive base metal sulphide mines of Brunswick and Heath Steele of New Brunswick, Canada. With the downturn on the mining industry in the late 1990's, Daniel moved to Ontario and was employed by Compressario of Newmarket as Production Manager and Field Customer Services Manager. In 2001, Daniel became involved in geophysical survey operations first with Geotech of Aurora, Canada, a provider of time-domain electromagnetic helicopter surveys and more recently as a Senior Project Manager and Geophysical Technician for the various electromagnetic, radiometric and magnetic systems employed. In February 2006 Daniel co-founded MPX Geophysics Inc. in order to provide efficiently managed projects and high-quality products to the airborne geophysical industry. In 2007 he acquired the company in order to form MPX Geophysics Ltd. as an employee-owned and directed company that specializes in magnetic and radiometric airborne surveys. Daniel is a member of the Prospectors & Developers Association of Canada. He has worked in Canada, the U.S., Mexico, South America, and Europe.

Patrick Healy, Project Manager

Pat has an Electronics Technician Certificate from the Royal Australian Army Trades School. He served in the Royal Australian Army as an Electronics Technician from 1980 to 1988, responsible for the installation and maintenance of HF, VHF and UHF radio systems. After leaving the army Pat worked for a few years as a radio technician in Australia for several companies and joined Kevron Geophysics Pty Ltd., Perth, Western Australia in 1993 as an Operator / Party Leader, where he worked until 1999. His responsibilities included operation and maintenance of airborne geophysical acquisition equipment in both fixed-wing aircraft and helicopters, monitoring quality of data and production of QC reports/products for presentation to clients, supervision of field crews and liaison with Client representatives. From 1999 to 2003 Pat worked for GeoInstruments Pty Ltd. of Sydney, Australia an airborne geophysical survey contractor, performing duties very similar to those described above at Kevron. Pat joined another airborne geophysics company in early 2004 as a Senior Technician/Operator, responsible for the installation and operation of airborne geophysical systems in fixed-wing aircraft and helicopters. He is a skilled technician, has many years supervisory experience on geophysical survey crews, and has excellent computer skills. He has worked extensively in Australia, Canada, South-east Asia, Romania and Greenland.

Tonia Bojkova, M. Sc., Senior Geophysicist

Tonia received her first Master of Science degree in Engineering Geophysics at the University of Mining and Geology in Sofia, Bulgaria, where her thesis research was focused on the integration and interpretation of high resolution magnetic and radiometric data collected over southeastern Bulgaria. The best method to determine regional magnetic models without the influence from local anomalies was investigated during her second Master of Science degree that was obtained in Applied Mathematics at the Technical University in Sofia, Bulgaria. Tonia entered the industry in 1980 as a geophysicist for the Bulgarian government collecting, processing, and analyzing airborne radiometric and magnetic data while also performing gamma-ray monitoring of Bulgaria after the Chernobyl NPP fallout. While working for the Airborne Geophysical Survey (AGS) Ltd. - High-Sense joint venture from 1992 to 2000, Tonia added survey planning, quality control (QC), and supervision to her geophysical skill set, while continuing to develop her geophysical processing experience. During the last decade Tonia has held senior roles working for Fugro (U.K.), McPhar and now MPX Geophysics. Tonia has 26 years of continuous experience in the geophysical survey industry with extensive experience processing and interpreting airborne magnetic, radiometric, and electromagnetic (EM) data. This includes working both in and out of the field with a variety of QA/QC protocols, processing geophysical data and preparation of final map products, geophysical interpretations and/or reports for clients.

Christina Clark, M. Sc., P.Geo. Geophysicist

Christina attended McMaster University, Hamilton, Ontario and obtained her M.Sc. in Geology in 2004 and a B.Sc. in Environmental Sciences in 2002. In 2000 she was a Co-op Student at the environmental engineering firm SENES Consultants Limited, Richmond Hill, Ontario where she was involved in researching and evaluating information on project specific environmental and mining issues for Environmental Assessment preparation, as well as the design and compilation of project specific user-friendly databases. Her Masters thesis research involved integrating sedimentological, geophysical and geochemical techniques to identify proxy indicators to further understand environmental change, which has provided a strong foundation in environmental geophysics. Christina began her career as an Applied Geophysics Research Assistant to Dr. William Morris at McMaster University in 2004 to aid innovative potential-field based research through theoretical, field-based and experimental approaches. In December 2004 she visited an international group conducting petrophysical analyses of core from Lake Bosumtwi impact crater (Ghana) at the International Contental Drilling Program (ICDP) facility, GFZ Institute, Potsdam, Germany. Christina joined the geophysics industry in 2005 as a Geophysicist responsible for undertaking QC and processing of airborne and ground geophysical data in the field and in the office. She has worked in Canada, the United States, Colombia, Ecuador and Germany.

Appendix 2.

- **Project Status Report**
- **Flight Logs**

Appendix 3. Digital File Metadata

A text file with information about the digital data provided for the Kechika Project survey block (metadata) is made available. All files and/or database channels included on the DVD-ROM are described below.

Table 7: File names and descriptions for all digital data prepared.

Kechika Project , BC, Canada

Metadata Updated April, 2010
MPX Geophysics Ltd.
25 Valleywood Drive, Unit # 14
Markham, ON, L3R 5L9
T: (905) 947-1782

Project #: P1002
Client Name: Coast Mountain Geological Ltd.
Survey Name: Kwad South, New&West Quad Area
Akie-Sika North Area
Survey Area: Kwad South, New&West Quad Area – 29 km²
Akie-Sika North Area – 70 km²
Kwad South, New&West Quad Area Total line kilometres = 364.0 line km
Flight Lines: 329.0 line km Tie Lines: 35.0 line km

Akie-Sika North Area Survey Area: Total line kilometres = 825.0 line km
Flight Lines: 757.0 line km Tie Lines: 78.0 line km

Total Line kilometres for survey: 1,199.0 line km

Survey Areas:
Flight lines (NE/SW – 450°) 100 m spacing
Tie lines (SE/NW – 135°) 1000 m spacing

Aircraft: Bell Jet Ranger Helicopter
Aircraft Registration: C-GPWY
Radar Altimeter: FreeFlight TRA 3000 @ 10 Hz
Helicopter DGPS: Hemisphere R100 receiver @ 1Hz
Magnetometer: Scintrex CS-3
Magnetometer sample rate: 10Hz
Magnetometer sensitivity: 0.01nT

Aircraft altitude: 70 m
Magnetometer altitude: 40 m

Base mag: GEM Systems GSM-19TW magnetometer @ 1Hz
Base GPS: NovAtel Superstar II @ 1Hz

IGRF date: 29 March 2010
IGRF: 57591.74 nT
Incl: 76.1°
Decl: 20.9°

Planimetry: Provided by the Client

Polygons: Kwad South, New&West Area: Kwad South&NewQuad-MPX.ply
Akie-Sika North Area: Akie-Sika North-MPX.ply

Grids:

Kwad South & New Quad Area:

DTM_kwad.grd	Calculated Digital Terrain Model from the GPS and radar altimeter(DTM)
TMI_kwad.grd	Levelled Total Magnetic Intensity (TMI)
TMI_IGRF_kwad.grd	IGRF Removed of TMI (TMI_IGRF)
1VD_kwad.grd	Calculated first vertical derivative of TMI_IGRF

Akie South New&West Area:

DTM_akie.grd	Calculated Digital Terrain Model from the GPS and radar altimeter(DTM)
TMI_akie.grd	Levelled Total Magnetic Intensity (TMI)
TMI_IGRF_akie.grd	IGRF Removed of TMI (TMI_IGRF)
1VD_akie.grd	Calculated first vertical derivative of TMI_IGRF

Maps:

Survey Area:	Scale 1:25000, NAD83 UTM 10N
FlightPath_CoastMountain.map	Flight Path Map
DTM_CoastMountain.map	Digital Terrain Model Map
TMI_CoastMountain.map	Total Magnetic Intensity Map (TMI)
TMI_IGRF_CoastMountain.map	Total Magnetic Intensity IGRF Removed Map (TMI IGRF)
1VD_CoastMountain.map	First vertical derivative of TMI

Magnetic Database:	Mag_AKIE_FINAL.GDB	Mag_AKIE_FINAL.XYZ
	Mag_KWAD_FINAL.GDB	Mag_KWAD_FINAL. XYZ

Channel Name and description:

GX_NAD83	Easting – NAD83, UTM zone 10N (metres)
GY_NAD83	Northing – NAD83, UTM zone 10N (metres)

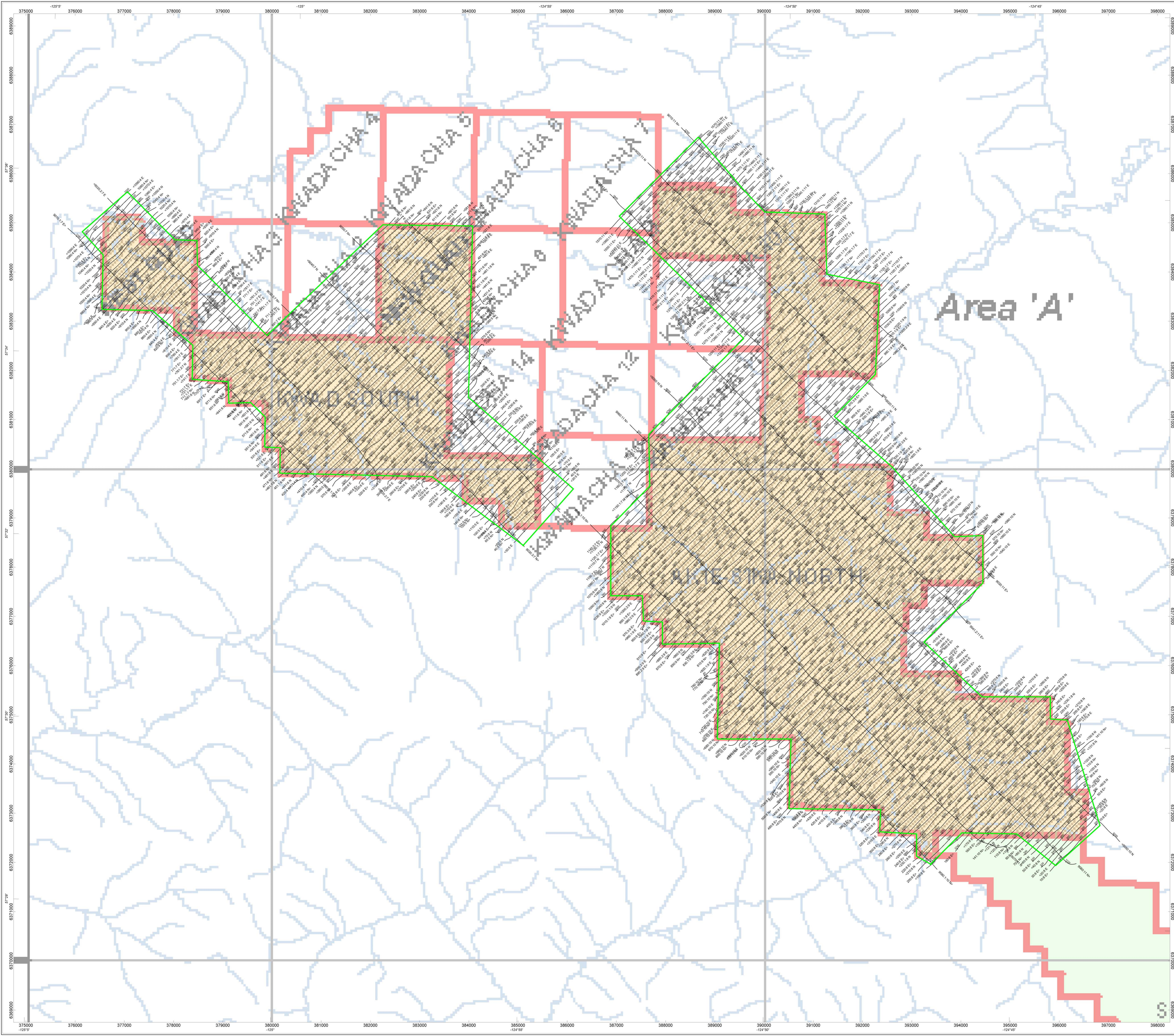
Longitude	Longitude (WGS84)
Latitude	Latitude (WGS84)
H_ELL	GPS height (meters)
Date	Flight date (DDMMYY)
Flight	Flight number
UTCtm_sec	UTC time (start of day) (seconds)
Baro_mb	Baro altimeter (mb)
RadAlt_m	Radar altimeter height (meters)
DTM	Calculated Digital Terrain Model (Terrain Height) (meters)
Fid	Fiducial
MagRaw	Raw Total Magnetic Intensity (nT)
BaseMag	Magnetic Base Station (Diurnal) (nT)
Mag_D	Diurnal corrected MagRaw (nT)
Mag_DL	Lag corrected Mag_D (nT)
Mag_lev	Levelled Total Magnetic Intensity (nT)
TMI	Final levelled and micro levelled Total Magnetic Intensity (nT)
IGRF	IGRF correction applied (nT)
Incl	IGRF Inclination (degrees)
Dec	IGRF Declination (degrees)
TMI_IGRF	Final levelled, IGRF corrected Total Magnetic Intensity (nT)

Report: P1002_Report.pdf

Appendix 4. Page Size Maps

Magnetic Maps (colour image with contour lines):

- Flight path map
- Digital elevation model (DEM) calculated from the GPS and radar altimeter data
- Levelled total magnetic intensity (TMI)
- IGRF removed TMI (TMI-IGRF)
- Calculated first vertical derivative of TMI (1VD)



LEGEND

Survey Date:	March-April, 2010
Helicopter Type:	Bell Jet Ranger, C-GPWY

SURVEY PARAMETERS:

Mean Terrain Clearance:	
Helicopter:	70 metres
Magnetometer:	40 metres
Traverse Line Spacing:	100 metres
Traverse Line Direction:	045° (NE-SW)
Control Line Spacing:	1000 metres
Control Line Direction:	135° (NW-SE)

AIRBORNE MAGNETOMETER SYSTEM:

Scintrex CS - 3 Magnetometer Sensor	
Configuration:	Bird mount
Sampling Rate:	10 readings/second
Sensitivity:	0.01 nT

AIRBORNE NAVIGATION SYSTEM:

CSI Hemisphere R100 receiver (DGPS)	
Sampling Rate:	1 reading/second

RADAR ALTIMETER:

FreeFlight TRA 3000	
Sampling Rate:	10 readings/second

BASE STATION MAGNETOMETER:

GEM GSM-19 magnetometer	
Sampling Rate:	1 reading/second
Sensitivity:	0.022 nT

BASE GPS STATION:

NovAtel Superstar II receiver	1 reading/second

Planimetry: Provided by the Client. Projection NAD83, UTM zone 10N

Flight Line Direction — **Flight Path**

Survey Area Boundary

Coast Mountain Geological Ltd.

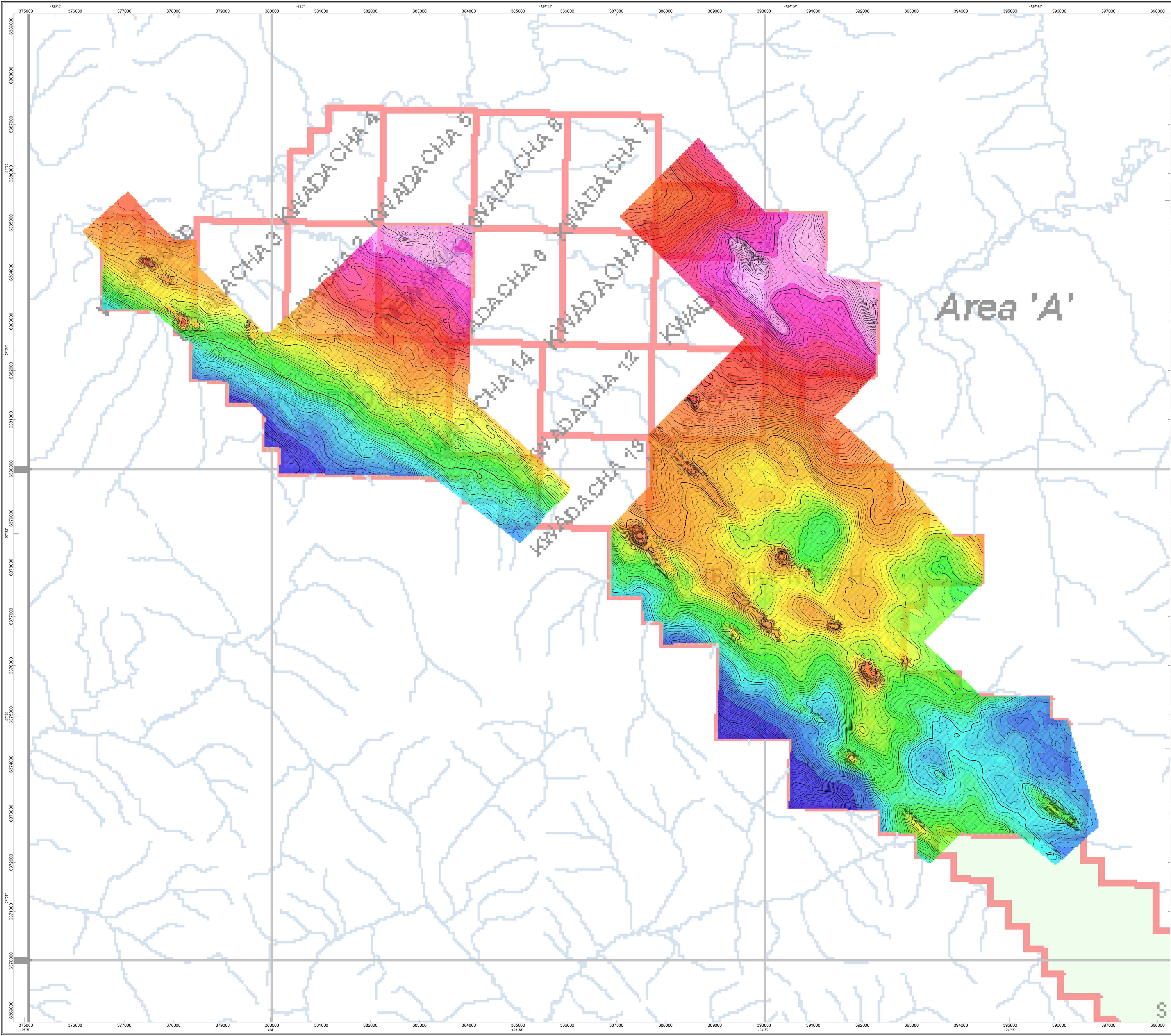
Flight Path Map

Kwad South, New & West Quad and Akie-Sika North Project

Survey flown March-April 2010

MPX Geophysics Ltd.


Area 'A'
LEGEND
Survey Date: March-April, 2010
Helicopter Type: Bell Jet Ranger, C-GPWY
SURVEY PARAMETERS:
Mean Terrain Clearance:
Helicopter: 70 metres
Magnetometer: 40 metres
Traverse Line Spacing: 100 metres
Traverse Line Direction: 045° (NE-SW)
Control Line Spacing: 1000 metres
Control Line Direction: 135° (NW-SE)
AIRBORNE MAGNETOMETER SYSTEM:
Scintrex CS - 3 Magnetometer Sensor
Configuration: Bird mount
Sampling Rate: 10 readings/second
Sensitivity: 0.01 nT
AIRBORNE NAVIGATION SYSTEM:
CSI Hemisphere R100 receiver (DGPS)
Sampling Rate: 1 reading/second
RADAR ALTIMETER:
FreeFlight TRA 3000
Sampling Rate: 10 readings/second
BASE STATION MAGNETOMETER:
GEM GSM-19 magnetometer
Sampling Rate: 1 reading/second
Sensitivity: 0.022 nT
BASE GPS STATION:
NovAtel Superstar II receiver 1 reading/second
Planimetry: Provided by the Client. Projection NAD83, UTM zone 10N
2186
2014
1916
1854
1812
1785
1759
1738
1716
1696
1676
1655
1636
1616
1598
1580
1562
1544
1527
1510
1493
1477
1462
1445
1429
1413
1396
1377
1353
1330
1304
1278
1249
1225
1198
1165
1123
1086
1045
985
DTM
metre (m)
Contours:
10 m
50 m
250 m
Scale 1:25000
500 0 500 1000 1500
(meters)
NAD83 / UTM zone 10N
Coast Mountain Geological Ltd.
Calculated Digital Terrain Model (DTM)
Kwad South, New & West Quad and Akie-Sika North Project
Survey flown March-April 2010
MPX Geophysics Ltd.



LEGEND

Survey Date: March-April, 2010
Helicopter Type: Bell Jet Ranger, C-GPWY

SURVEY PARAMETERS:

Mean Terrain Clearance:
Helicopter: 70 metres
Magnetometer: 40 metres

Traverse Line Spacing: 100 metres
Traverse Line Direction: 045° (NE-SW)
Control Line Spacing: 1000 metres
Control Line Direction: 135° (NW-SE)

AIRBORNE MAGNETOMETER SYSTEM:

Scintrex CS - 3 Magnetometer Sensor
Configuration: Bird mount
Sampling Rate: 10 readings/second
Sensitivity: 0.01 nT

AIRBORNE NAVIGATION SYSTEM:

CSI Hemisphere R100 receiver (DGPS)
Sampling Rate: 1 reading/second

RADAR ALTIMETER:

FreeFlight TRA 3000
Sampling Rate: 10 readings/second

BASE STATION MAGNETOMETER:

GEM GSM-19 magnetometer
Sampling Rate: 1 reading/second
Sensitivity: 0.022 nT

BASE GPS STATION:
NovAtel Superstar II receiver 1 reading/second

Planimetry: Provided by the Client. Projection NAD83, UTM zone 10N

Scale 1:25000
500 0 500 1000 1500
(meters)
NAD83 / UTM zone 10N

Coast Mountain Geological Ltd.

Total Magnetic Intensity (TMI)

Kwad South, New & West Quad and Akie-Sika North Project
Survey flown March-April 2010

MPX Geophysics Ltd.

Area 'A'
KWADACHA 4
KWADACHA 5
KWADACHA 6
KWADACHA 7
KWADACHA 12
KWADACHA 15
LEGEND
Survey Date: March-April, 2010
Helicopter Type: Bell Jet Ranger, C-GPWY
SURVEY PARAMETERS:
Mean Terrain Clearance:
Helicopter: 70 metres
Magnetometer: 40 metres
Traverse Line Spacing: 100 metres
Traverse Line Direction: 045° (NE-SW)
Control Line Spacing: 1000 metres
Control Line Direction: 135° (NW-SE)
AIRBORNE MAGNETOMETER SYSTEM:
Scintrex CS - 3 Magnetometer Sensor
Configuration: Bird mount
Sampling Rate: 10 readings/second
Sensitivity: 0.01 nT
AIRBORNE NAVIGATION SYSTEM:
CSI Hemisphere R100 receiver (DGPS)
Sampling Rate: 1 reading/second
RADAR ALTIMETER:
FreeFlight TRA 3000
Sampling Rate: 10 readings/second
BASE STATION MAGNETOMETER:
GEM GSM-19 magnetometer
Sampling Rate: 1 reading/second
Sensitivity: 0.022 nT
BASE GPS STATION:
NovAtel Superstar II receiver 1 reading/second
Planimetry: Provided by the Client. Projection NAD83, UTM zone 10N
TMI IGRF
nanoTesla (nT)
IGRF - coefficients 2010 year
Inclination = 76.1°
Declination = 20.9°
Contours:
0.5 nT
2.5 nT
12.5 nT
Scale 1:25000
(meters)
NAD83 / UTM zone 10N
Coast Mountain Geological Ltd.
Total Magnetic Intensity IGRF Removed (TMI IGRF)
Kwad South, New & West Quad and Akie-Sika North Project
Survey flown March-April 2010
MPX Geophysics Ltd.