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BATTERY MINERAL RESOURCES LIMITED

Q2293 – Elk Lake Project Magnetometer Survey

C Jason Ploeger, P.Geo. – February 2, 2017

Abstract

CXS was contracted by Battery Mineral Resources Limited to perform approximately twelve kilometres of magnetometer survey over a portion of the Elk Lake Project. Between January 30th and February 1st, 12.7625 line kilometers of magnetic traverse were performed.

Three magnetic units were identified with the survey and strong magnetic fluctuations were noted in the region of some of the historic work.

BATTERY MINERAL RESOURCES LIMITED.

Q2293– Elk Lake Project
Magnetometer Survey

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1. SURVEY DETAILS

1.1 PROJECT NAME

This project is known as the **Elk Lake Property**.

1.2 CLIENT

Battery Mineral Resources Limited
Level 36
Governor Phillip Tower
1 Farer Place
Sydney
Australia

1.3 LOCATION

The Elk Lake Property is, located in Mickle, Farr, James and Barber Townships. The area targeted for this survey is located in James Township approximately 2 km northeast of Elk Lake, Ontario. The survey area covers parts of claims numbered 4269818, 4269816, 4269823, 4240785 and 4273173 located in James Township, within the Larder Lake Mining Division.

Figure 1: Location of the Elk Lake Property

1.4 Access

Access to the property was attained with a 4x4 truck along highway 65. From Elk Lake highway 65 was travelled west for 1.7km where the truck was parked at a location 400m from the traverse area.

1.5 Survey Grid

The traversed lines were established using a GPS in conjunction with the execution of the survey. The GPS operator would establish sample locations while remaining approximately 12.5m in front of the magnetometer operator. GPS waypoints, magnetic samples were taken every 12.5m along these controlled traverses. The GPS used was a Garmin GPSMAP 62s with an external antenna for added accuracy.

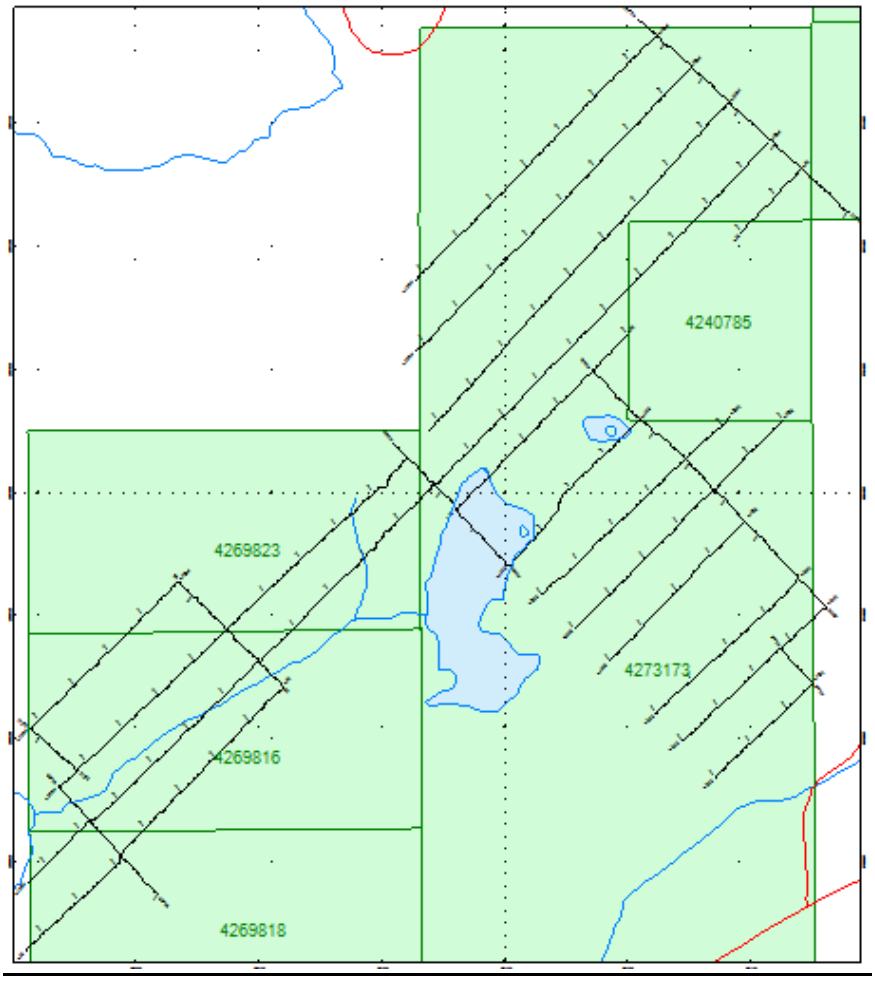

Figure 2: Claim Map with Elk Lake Traverses

2. SURVEY WORK UNDERTAKEN

2.1 SURVEY LOG

Date	Description	Line	Min Extent	Max Extent	Total Survey (m)
January 30, 2017	Locate survey area and begin magnetometer survey.	300W	425S	0	425
		200W	475S	500N	975
		100W	650S	500N	1150
		0W	750S	0	750
		500N	237.5W	100E	337.5
		0N	300W	0	300
		425S	325W	200W	125
		575S	200W	100E	300
January 31, 2017	Continue magnetometer survey.	0E	500N	1000N	500
		100E	500N	900N	400
		200E	500N	1025N	525
		300E	500N	1100N	600
		400E	500N	900N	400
		500E	500N	900N	400
		600E	500N	900N	400
		700E	500N	775N	275
		900N	75W	600E	675
		775N	600E	700E	100
February 1, 2017	Complete Magnetometer	400W	775N	1475N	700
		300W	675N	1475N	800
		200W	575N	1475N	900
		100W	500N	1475N	975
		0W	1300N	1475N	175
		1475N	475W	100E	575

Table 1: Survey Log

2.2 PERSONNEL

Bruce Lavalley of Britt, Ontario conducted all the magnetic data collection while Claudia Moraga also of Britt, Ontario was responsible for the GPS control and GPS waypoint collection.

2.3 Survey Specifications

The survey was conducted with a GSM-19 v7 Overhauser magnetometer with a second GSM-19 magnetometer for a base station mode for diurnal correction.

A total of 12.7625 line kilometers of magnetometer was read over the Elk Lake Property between January 30th and February 1st, 2017. This consisted of 1021 magnetometer samples taken at a 12.5 metre sample interval.

3. OVERVIEW OF SURVEY RESULTS

3.1 SUMMARY

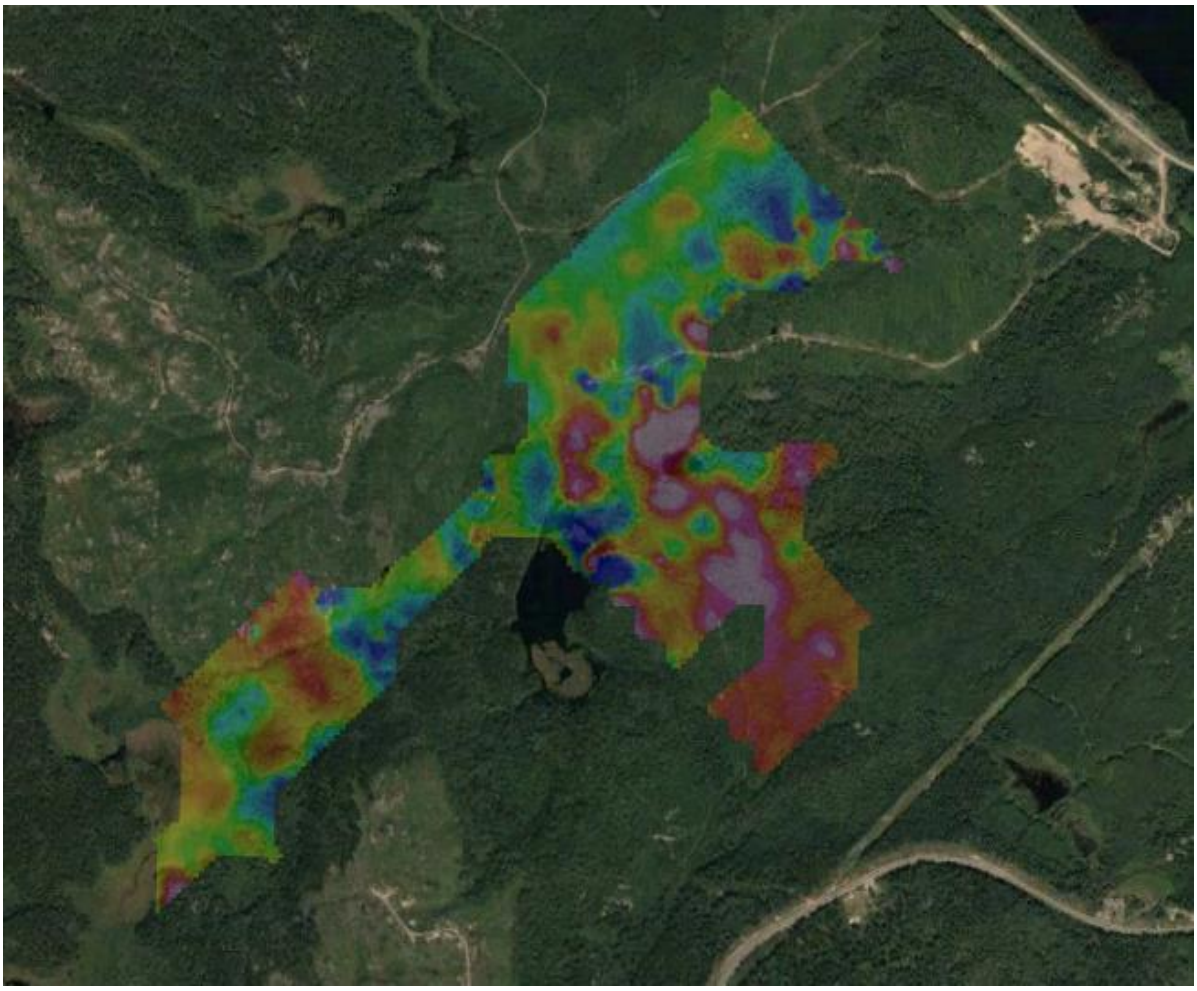

Figure 3: Magnetometer Plan on Google Earth

The survey covered a large portion of the James Township claims. The magnetometer crew identified rugged terrain and numerous pits and trenches crossed during their traverses. The only culture noted during the survey that may affect data quality falls at 547788E 5287590N and 547286E 5286879N. These are both noted as shafts, however due to the snow cover the extent of culture noise could not be identified.

The survey indicates the presence of three magnetic units. The south unit, located south of baseline 0, appears to exhibit a moderate increase in the magnetic signature with minor variations. This increase may represent an granitic unit.

The second magnetic unit appears to be constrained by the baseline 0 and 600N and west of 200W. This appears to be a magnetically depressed region with weak-

ening magnetic signatures extending inward from the east. This indicates an overprint of this unit, which may indicate the existence of a layer of Huronian Sediments.

West of line 200W exists a magnetic unit with strong fluctuations in the magnetic strength. This most likely indicates the presence of the Nipissing Diabase sill. Near some of the pits, shafts and trenches noted during the survey strong magnetic relief exists. I would recommend a tight 50 meter postage stamp grid be cut over the areas of strong magnetic relief and a walkmag survey be conducted to determine if there is a correlation between these strong magnetic fluctuations and the historically known vein systems.

I would also recommend prospecting be carried out in the summer months over some of the historic work identified in the field notes.

APPENDIX A

STATEMENT OF QUALIFICATIONS

I, C. Jason Ploeger, hereby declare that:

1. I am a professional geophysicist with residence in Larder Lake, Ontario and am presently employed as a Geophysicist and Geophysical Manager of Canadian Exploration Services Inc. of Larder Lake, Ontario.

2. I am a Practicing Member of the Association of Professional Geoscientists, with membership number 2172.

3. I graduated with a Bachelor of Science degree in geophysics from the University of Western Ontario, in London Ontario, in 1999.

4. I have practiced my profession continuously since graduation in Africa, Bulgaria, Canada, Mexico and Mongolia.

5. I am a member of the Ontario Prospectors Association, a Director of the Northern Prospectors Association and a member of the Society of Exploration Geophysicists.

6. I do not have nor expect an interest in the properties and securities of **Battery Mineral Resources Limited.**

7. I am responsible for the final processing and validation of the survey results and the compilation of the presentation of this report. The statements made in this report represent my professional opinion based on my consideration of the information available to me at the time of writing this report.

C. Jason Ploeger, P.Geo., B.Sc.
Geophysical Manager
Canadian Exploration Services Inc.

Larder Lake, ON
February 2, 2017

APPENDIX B

THEORETICAL BASIS AND SURVEY PROCEDURES

TOTAL FIELD MAGNETIC SURVEY

Base station corrected Total Field Magnetic surveying is conducted using at least two synchronized magnetometers of identical type. One magnetometer unit is set in a fixed position in a region of stable geomagnetic gradient, and away from possible cultural effects (i.e. moving vehicles) to monitor and correct for daily diurnal drift. This magnetometer, given the term 'base station', stores the time, date and total field measurement at fixed time intervals over the survey day. The second, remote mobile unit stores the coordinates, time, date, and the total field measurements simultaneously. The procedure consists of taking total magnetic measurements of the Earth's field at stations, along individual profiles, including Tie and Base lines. A 2 meter staff is used to mount the sensor, in order to optimally minimize localized near-surface geologic noise. At the end of a survey day, the mobile and base-station units are linked, via RS-232 ports, for diurnal drift and other magnetic activity (ionospheric and sferic) corrections using internal software.

For the gradiometer application, two identical sensors are mounted vertically at the ends of a rigid fiberglass tube. The centers of the coils are spaced a fixed distance apart (0.5 to 1.0m). The two coils are then read simultaneously, which alleviates the need to correct the gradient readings for diurnal variations, to measure the gradient of the total magnetic field.

APPENDIX C

GSM 19

Specifications

Overhauser Performance

Resolution: 0.01 nT
Relative Sensitivity: 0.02 nT
Absolute Accuracy: 0.2nT
Range: 20,000 to 120,000 nT
Gradient Tolerance: Over 10,000nT/m
Operating Temperature: -40°C to +60°C

Operation Modes

Manual: Coordinates, time, date and reading stored automatically at min. 3 second interval.
Base Station: Time, date and reading stored at 3 to 60 second intervals.
Walking Mag: Time, date and reading stored at coordinates of fiducial.
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 2Ws per reading. Operates continuously for 45 hours on standby.
Power Source: 12V 2.6Ah sealed lead acid battery standard, other batteries available
Operating Temperature: -50°C to +60°C

Storage Capacity

Manual Operation: 29,000 readings standard, with up to 116,000 optional. With 3 VLF stations: 12,000 standard and up to 48,000 optional.

Base Station: 105,000 readings standard, with up to 419,000 optional (88 hours or 14 days uninterrupted operation with 3 sec. intervals)

Gradiometer: 25,000 readings standard, with up to 100,000 optional. With 3 VLF stations: 12,000, with up to 45,000 optional.

Omnidirectional VLF

Performance Parameters: Resolution 0.5% and range to ±200% of total field. Frequency 15 to 30 kHz.

Measured Parameters: Vertical in-phase & out-of-phase, 2 horizontal components, total field coordinates, date, and time.

Features: Up to 3 stations measured automatically, in-field data review, displays station field strength continuously, and tilt correction for up to ±10° tilts.

Dimensions and Weights: 93 x 143 x 150mm and weighs only 1.0kg.

Dimensions and Weights

Dimensions:
Console: 223 x 69 x 240mm
Sensor: 170 x 71mm diameter cylinder
Weight:
Console: 2.1kg
Sensor and Staff Assembly: 2.0kg

Standard Components

GSM-19 magnetometer console, harness, battery charger, shipping case, sensor with cable, staff, instruction manual, data transfer cable and software.

Taking Advantage of a "Quirk" of Physics

Overhauser effect magnetometers are essentially proton precession devices except that they produce an order-of magnitude greater sensitivity. These "supercharged" quantum magnetometers also deliver high absolute accuracy, rapid cycling (up to 5 readings / second), and exceptionally low power consumption.

The Overhauser effect occurs when a special liquid (with unpaired electrons) is combined with hydrogen atoms and then exposed to secondary polarization from a radio frequency (RF) magnetic field. The unpaired electrons transfer their stronger polarization to hydrogen atoms, thereby generating a strong precession signal-- that is ideal for very high-sensitivity total field measurement. In comparison with proton precession methods, RF signal generation also keeps power consumption to an absolute minimum and reduces noise (i.e. generating RF frequencies are well out of the bandwidth of the precession signal).

In addition, polarization and signal measurement can occur simultaneously - which enables faster, sequential measurements. This, in turn, facilitates advanced statistical averaging over the sampling period and/or increased cycling rates (i.e. sampling speeds).

- The unique Overhauser unit blends physics, data quality, operational efficiency, system design and options into an instrumentation package that ... exceeds proton precession and matches costlier optically pumped cesium capabilities

APPENDIX C

GARMIN GPS MAP 62S

Physical & Performance:	
Unit dimensions, WxHxD:	2.4" x 6.3" x 1.4" (6.1 x 16.0 x 3.6 cm)
Display size, WxH:	1.43" x 2.15" (3.6 x 5.5 cm); 2.6" diag (6.6 cm)
Display resolution, WxH:	160 x 240 pixels
Display type:	transflective, 65-K color TFT
Weight:	9.2 oz (260.1 g) with batteries
Battery:	2 AA batteries (not included); NiMH or Lithium recommended
Battery life:	20 hours
Waterproof:	yes (IPX7)
Floats:	no
High-sensitivity receiver:	yes

Interface:	high-speed USB and NMEA 0183 compatible
Maps & Memory:	
Basemap:	yes
Preloaded maps:	no
Ability to add maps:	yes
Built-in memory:	1.7 GB
Accepts data cards:	microSD™ card (not included)
Waypoints/favorites/locations:	2000
Routes:	200
Track log:	10,000 points, 200 saved tracks
Features & Benefits:	
Automatic routing (turn by turn routing on roads):	yes (with optional mapping for detailed roads)
Electronic compass:	yes (tilt-compensated, 3-axis)
Touchscreen:	no
Barometric altimeter:	yes
Camera:	no
Geocaching-friendly:	yes (paperless)
Custom maps compatible:	yes
Photo navigation (navigate to geotagged photos):	yes
Outdoor GPS games:	no
Hunt/fish calendar:	yes
Sun and moon information:	yes

Tide tables:	yes
Area calculation:	yes
Custom POIs (ability to add additional points of interest):	yes
Unit-to-unit transfer (shares data wirelessly with similar units):	yes
Picture viewer:	yes
Garmin Connect™ compatible (online community where you analyze, categorize and share data):	yes

- *Specifications obtained from www.garmin.com*

APPENDIX D

LIST OF MAPS (IN MAP POCKET)

Magnetometer Plan Map (1:2500)

1) Q2293-Battery-Elk Lake-Mag-Cont

TOTAL MAPS = 1

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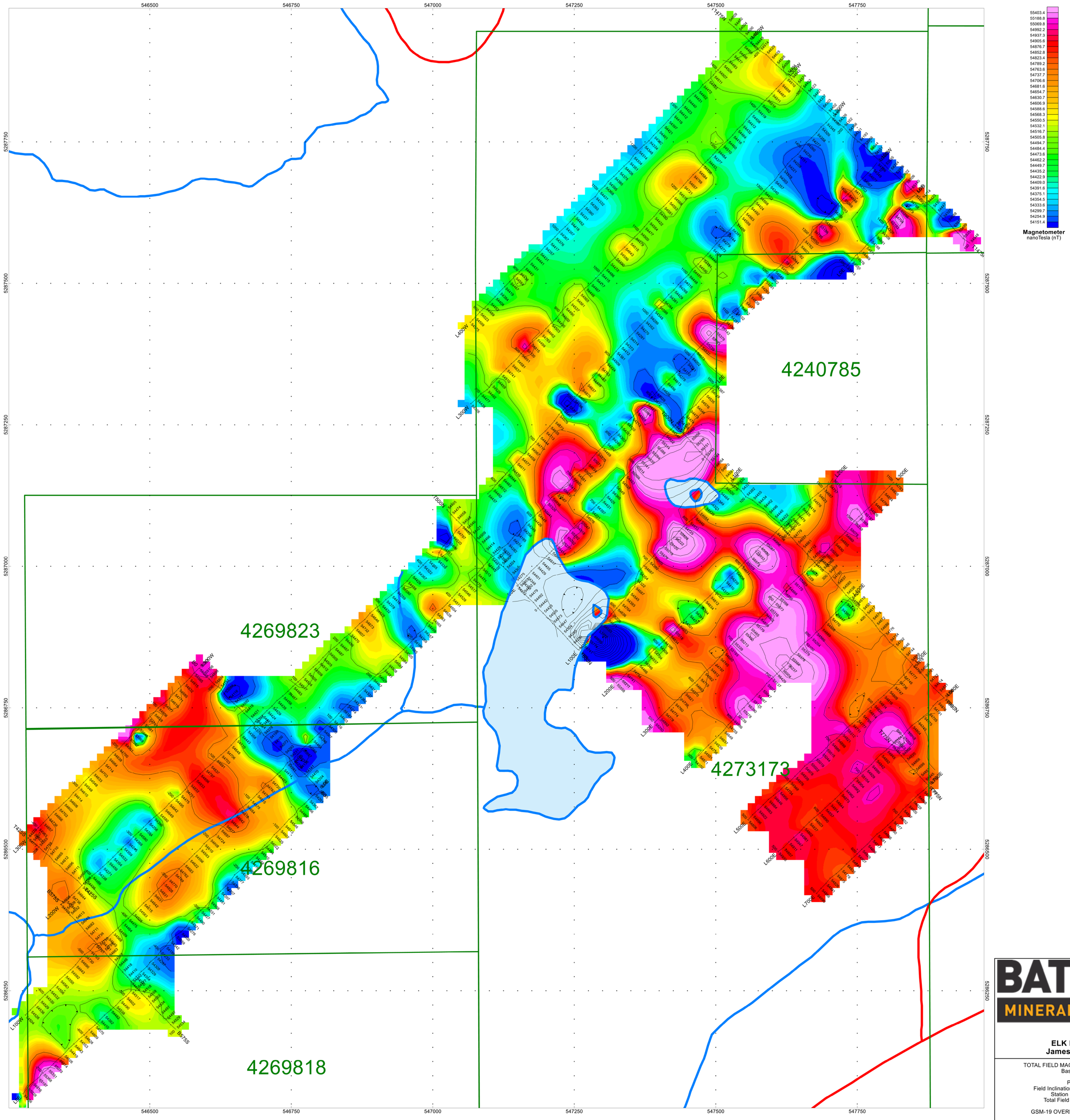

ELK LAKE PROPERTY
James Township, Ontario

TOTAL FIELD MAGNETIC CONTOURED PLAN MAP
Base Station Corrected

Posting Level: 0nT
Field Inclination/Declination: 74degN/12degW
Station Seperation: 12.5 meters
Total Field Magnetic Contours: 250nT

GSM-19 OVERHAUSER MAGNETOMETER v7

Receiver Operated By: Bruce Lavalley
GPS Operated By: Claudia Moraga
Processed by: C Jason Ploeger
Map Drawn By: C Jason Ploeger, P.Geo
February 2017

CXS CANADIAN EXPLORATION SERVICES LTD

Drawing : Q2293-BATTERY-ELK LAKE-MAG-CONT