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## CANADIAN EXPLORATION SERVICES LTD

## KNIGHTSBRIDGE EXPLORATION LTD

**Q2338 – North Wind Property Magnetometer Survey** 

C Jason Ploeger, P.Geo. – March 23, 2017

# KNIGHTSBRIDGE EXPLORATION LTD.

#### **Abstract**

CXS was contracted by Knightsbridge to expand and better define a magnetic target generated from some reconnaissance traverses in 2016 over the North Wind Property.

A total of 20.3 kilometers of magnetometer survey was performed in early March. The magnetic target has not been fully constrained and more work is need.

KNIGHTSBRIDGE EXPLORATION LTD.

**Q2338 – North Wind Property Magnetometer Survey** 

C Jason Ploeger, P.Geo. - February 23, 2017



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#### 1. SURVEY DETAILS

#### 1.1 PROJECT NAME

This project is known as the **North Wind Property**.

#### 1.1 CLIENT

Knightsbridge Exploration Ltd

P.O. Box 219 Larder Lake, Ontario P0K 1L0

#### 1.2 LOCATION

The North Wind Property is located approximately 10 km northwest of Shining Tree, Ontario. The survey area covers mining claims numbered 4270316, 4270317 and 4270318, located in Connaught Township, within the Larder Lake Mining Division.

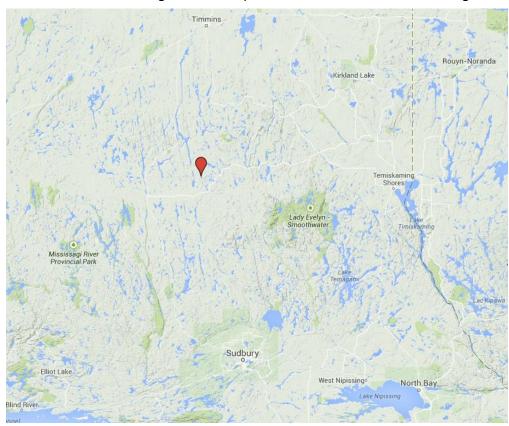


Figure 1: Location of the North Wind Property



#### 1.3 Access

Access to the property was attained with a 4x4 truck via highway 560. Approximately 16km west of the town of Shining Tree, Ontario, a forestry access road was travelled north for an additional 19 kilometers to a point where the survey area crossed the road.

#### 1.4 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 and magnetic samples were taken every 12.5m along these controlled traverses. The GPS used was a Garmin GPSMAP 62s.

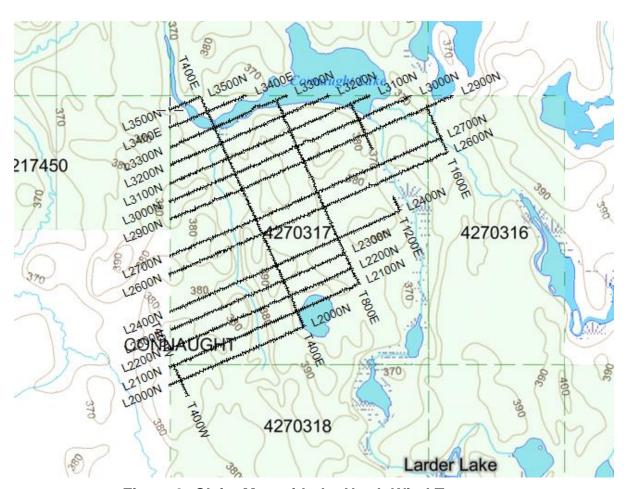


Figure 2: Claim Map with the North Wind Traverses



## 2. SURVEY WORK UNDRTAKEN

#### 2.1 SURVEY LOG

| Date           | Description                 | Line   | Min<br>Extent | Max<br>Extent | Total<br>Survey<br>(m) |
|----------------|-----------------------------|--------|---------------|---------------|------------------------|
| March 14, 2017 | Establish access and locate |        |               |               |                        |
|                | survey area. Extreme cold.  | 2400N  | 287.5W        | 1200E         | 1487.5                 |
|                |                             | 3100N  | 25E           | 1325E         | 1300                   |
|                |                             | 3200N  | 87.5E         | 800E          | 712.5                  |
|                |                             | 1200E  | 2400N         | 2500N         | 100                    |
|                |                             | 1200E  | 2800N         | 3100N         | 300                    |
|                |                             |        |               |               |                        |
| March 15, 2017 | Continue survey.            | 2200N  | 425W          | 400E          | 825                    |
|                |                             | 2300N  | 325W          | 800E          | 1125                   |
|                |                             | 2900N  | 62.5W         | 400E          | 462.5                  |
|                |                             | 3000N  | 25W           | 400E          | 425                    |
|                |                             | 3200N  | 800E          | 1112.5E       | 312.5                  |
|                |                             | 3300N  | 112.5E        | 887.5E        | 775                    |
|                |                             | 3400N  | 150E          | 650E          | 500                    |
|                |                             | 3500N  | 200E          | 400E          | 200                    |
|                |                             | 400E   | 2200N         | 3500N         | 1300                   |
|                |                             | 800E   | 2300N         | 3300N         | 1000                   |
| Manah 40 0047  | 04:                         | 000001 | 000)4/        | 40005         | 4000                   |
| March 16, 2017 | Continue survey.            | 2600N  |               | 1600E         | 1800                   |
|                |                             | 2700N  | 150W          | 1600E         | 1750                   |
|                |                             | 2900N  | 400E          | 1775E         | 1375                   |
|                |                             | 3000N  | 400E          | 1550E         | 1150                   |
|                |                             | 1600E  | 2600N         | 2900N         | 300                    |
| March 17, 2017 | Complete magnetic.          | 2000N  | 475W          | 400E          | 875                    |
|                |                             | 2100N  | 425W          | 800E          | 1225                   |
|                |                             | 2200N  | 400E          | 800E          | 400                    |
|                |                             | 400W   | 1900N         | 2100N         | 200                    |
|                |                             | 400E   | 2000N         | 2200N         | 200                    |
|                |                             | 800E   | 2100N         | 2300N         | 200                    |

Table 1: Survey Log

#### 2.2 PERSONNEL

Bill Bonney of Kirkland Lake, Ontario conducted all the magnetic data collection while Claudia Moraga 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 in base station mode for diurnal correction.

A total of 20.3 line kilometers of Magnetometer was read over the North Wind Property between March 14<sup>th</sup> to March 17<sup>th</sup>, 2017. This consisted of 1624 magnetometer samples taken at a 12.5m sample interval.



#### 3. OVERVIEW OF SURVEY RESULTS

#### 3.1 SUMMARY

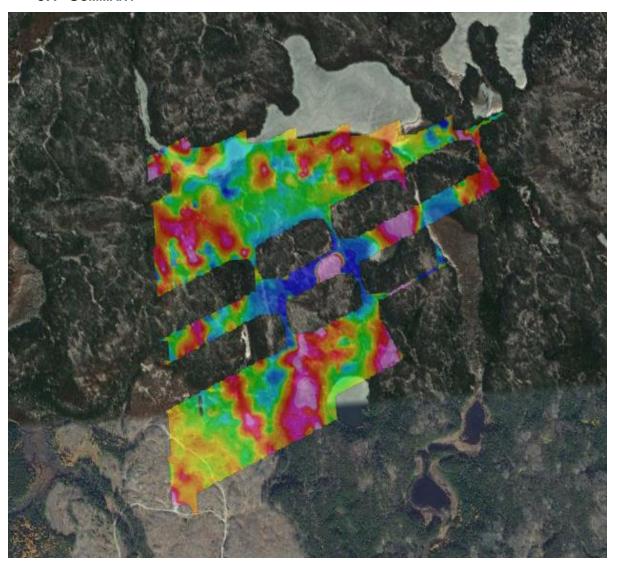


Figure 3: Magnetometer Plan on Google Earth

Little culture was noted over the survey area that may influence the survey results. The only note was of a partial airplane fuselage located at the east end of the survey area between lines 3000N and 3100N, which was noticed during a crossover. There appeared to be no influence from this or any other of the snow covered wreckage.

Some linear magnetic features striking at 335 degrees are noted within the survey area. They appear to cut other magnetic regions and most likely represent Matachewan Diabase Dykes .

The west side of the survey area appears to exhibit a slight increase in magnetic signature. This most likely represents the edge of an intrusive.



Striking at 15 degrees in the central region of the survey area appears a broad region of elevated magnetic. Paralleling this to the east by about 400 meters appears a second feature. These strike into the target being investigated, which is highlighted by a large magnetic low/high region. This magnetic target exhibits a strong magnetic variation. This may represent the nose of a fold or an ultramafic intrusive.

I would recommend prospecting this region to help determine the source of the anomaly. I would also recommend a grid be cut with an IP survey performed over this magnetic anomaly. A soil survey should also be performed over this target to help determine the source of the anomaly.



#### **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.
- 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 **Knightsbridge.**
- 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 March 23<sup>rd</sup>, 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 & Performanc       | e:  |  |  |
|-----------------------------|---|--|--|
| Unit dimensions,<br>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,<br>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 recom-<br>mended |  |  |
| 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/loc           | ations:         | 2000                                    |  |  |
| Routes:                           |                 | 200                                     |  |  |
| Track log:                        |                 | 10,000 points, 200 saved tracks         |  |  |
| Features & Benefits:              |                 |   |  |  |
| Automatic routing (turn           | by turn routing | yes (with optional mapping for detailed |  |  |
| on roads):                        |                 | 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 ge- |                 | yes                                     |  |  |
| otagged photos):                  |                 | 7-2                                     |  |  |
| Outdoor GPS games:                |                 | no                                      |  |  |
| Hunt/fish calendar:               |                 | yes                                     |  |  |
| Sun and moon informa              | tion:           | yes                                     |  |  |



| Tide tables:  | yes |
|---|-----|
| Area calculation:   | yes |
| Custom POIs (ability to add additional points of interest):                                 | yes |
| Unit-to-unit transfer (shares data wire-lessly 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)

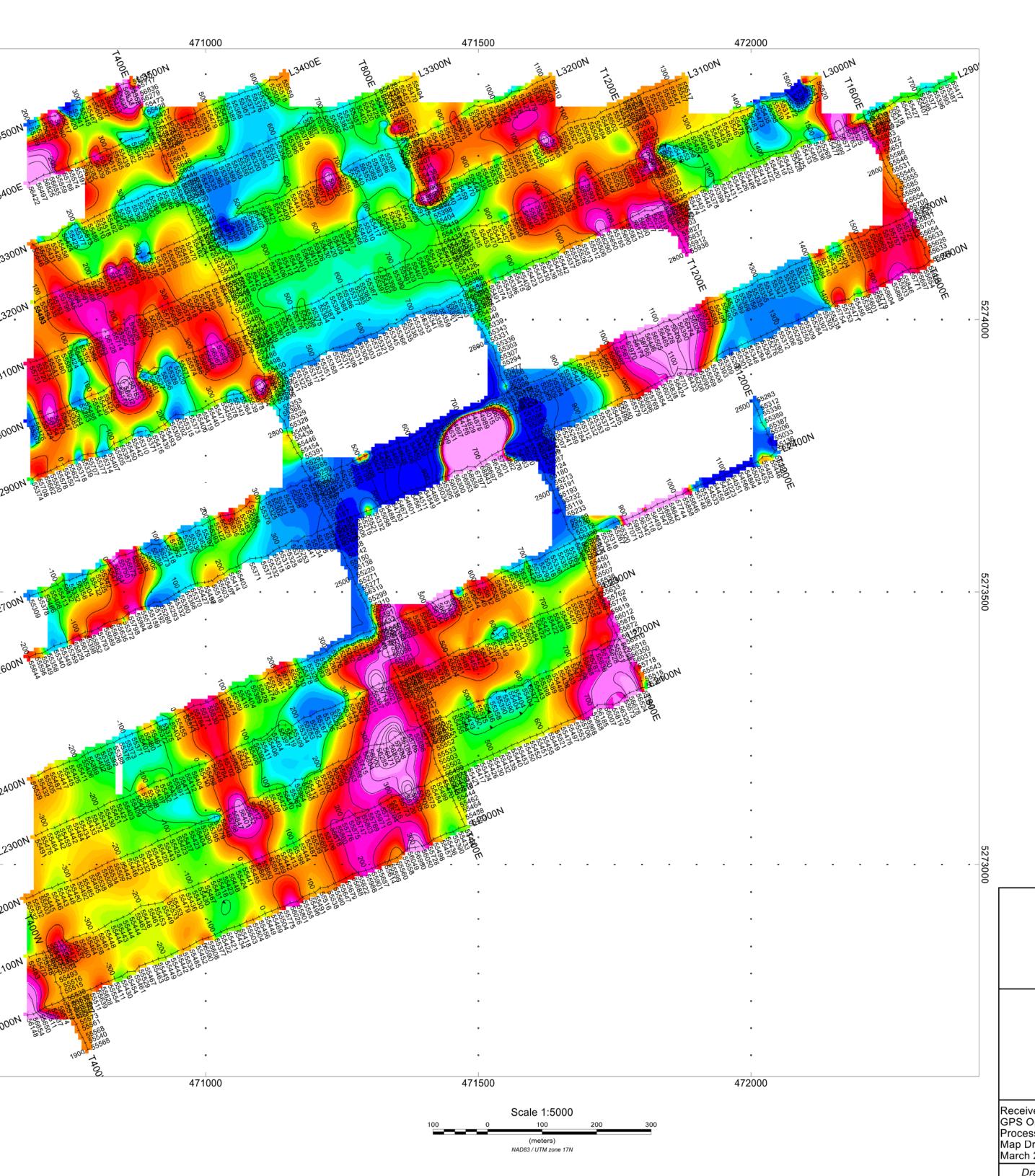
Magnetometer Plan Map (1:5000)

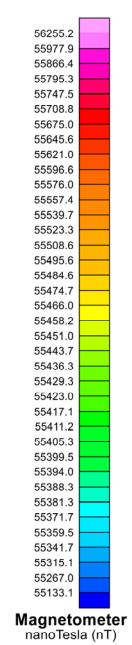
1) Q2338-Knightsbridge-North Wind-Mag-Cont

Claim Map with Magnetic Traverses (1:20000)

2) Q2338-Knightsbridge-North Wind-Traverses

**TOTAL MAPS = 2** 





## KNIGHTSBRIDGE EXPLORATION LTD.

## NORTH WIND PROPERTY Connaught 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: 200nT

GSM-19 OVERHAUSER MAGNETOMETER v7

Receiver Operated By: Claudia Moraga GPS Operated By: Bill Bonney Processed by: Jason Ploeger Map Drawn By: C Jason Ploeger, P.Geo March 2017



Drawing: Q2338-KNIGHTSBRIDGE-NORTH WIND-MAG-CONT

