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# **SKEAD HOLDINGS LTD.**

**Magnetometer and VLF  
EM Surveys  
Over the  
Cunningham B Property**

**Cunningham Property  
Cunningham Township, Ontario**

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## 1. SURVEY DETAILS

### 1.1 PROJECT NAME

This project is known as the **Cunningham- B Property**.

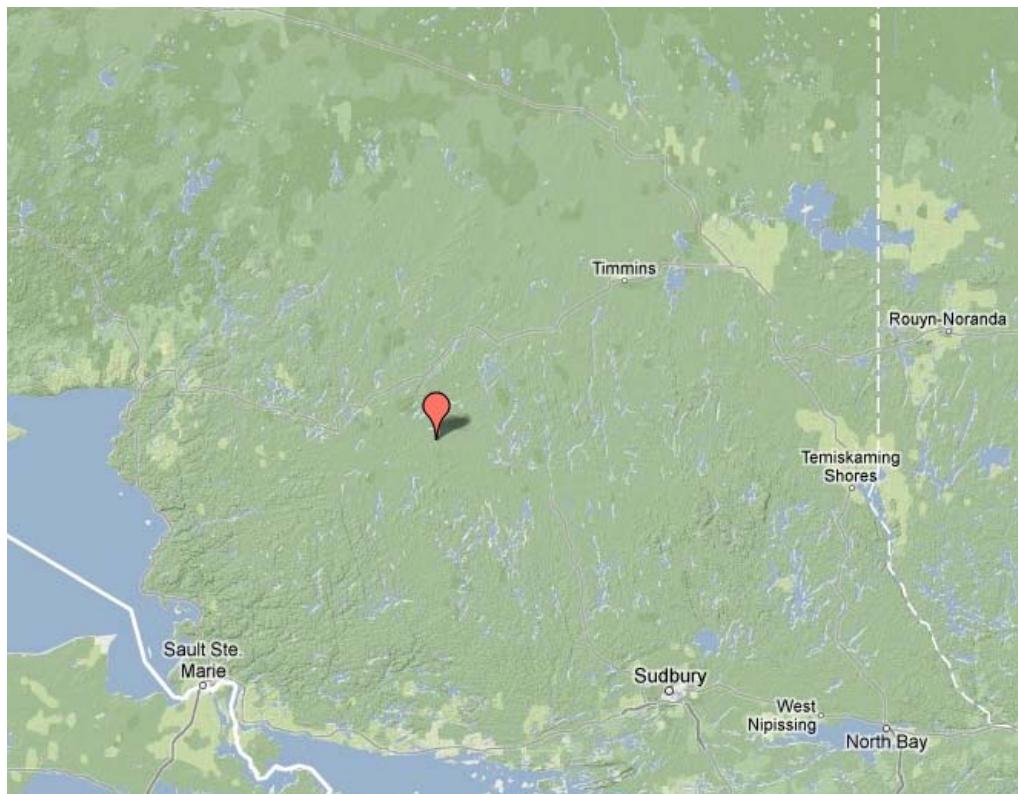
### 1.2 CLIENT

SKEAD HOLDINGS LTD.

28 Ford St.  
Sault Ste. Marie, Ontario  
P6A 4N4

### 1.3 LOCATION

The Cunningham-B Property is located in Cunningham Township approximately 10km northeast of Sultan, Ontario. The survey area covers claims numbered 4259263 to 4259267, located in Cunningham Township, within the Porcupine Mining Division.



**Figure 1: Location of the Cunningham Property**

## 1.4 ACCESS

Access to the property was attained with a 4x4 truck on Highway 129 for approximately 28 km southeast from the Town of Chapleau to Regional Rd 667 for approximately 47km east. From that point, ATVs were used to travel for an additional 10km north on an old logging road to the beginning of the property. The rest of the property was then accessed by ATVs trails and on foot.

## 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 and magnetic samples were taken every 25m along these controlled traverses. The GPS used was a Garmin GPSMAP 62s with an external antenna for added accuracy.

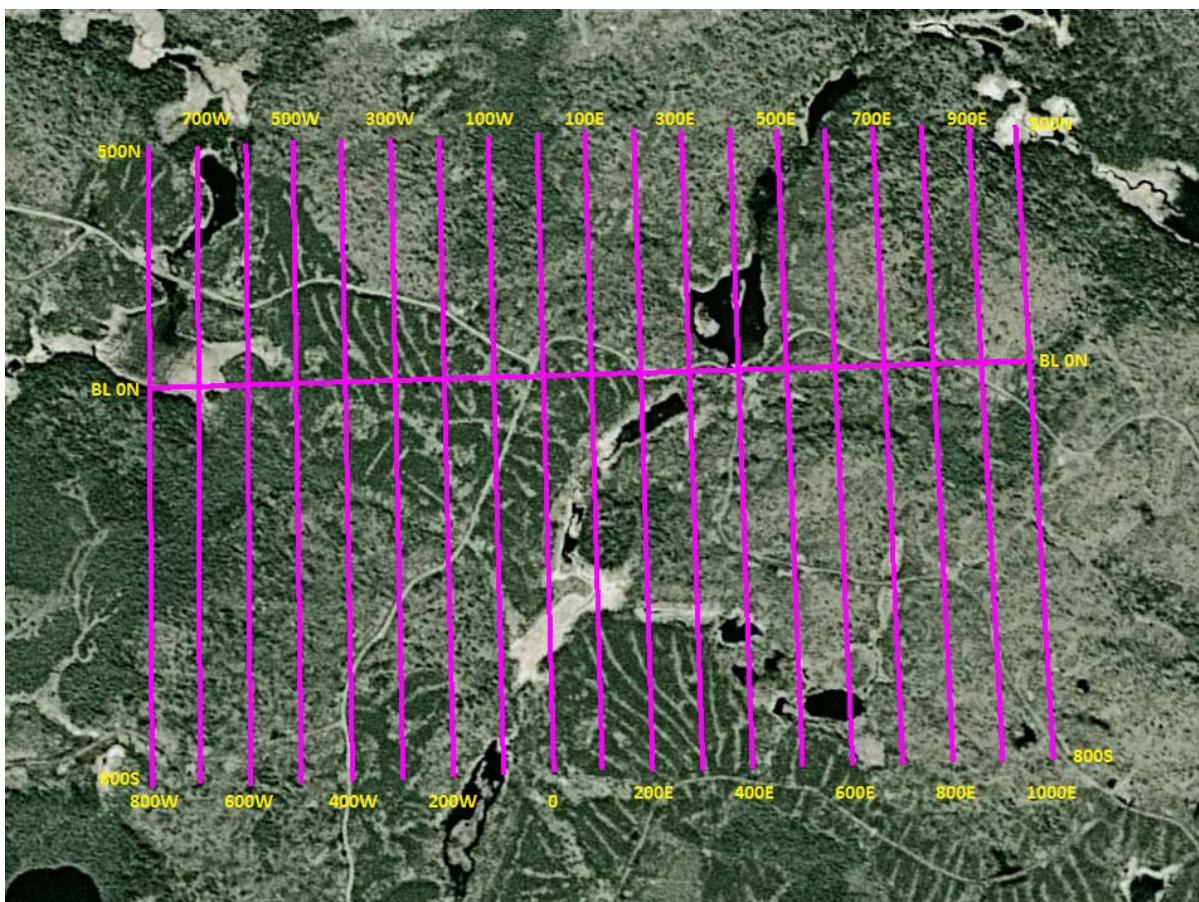
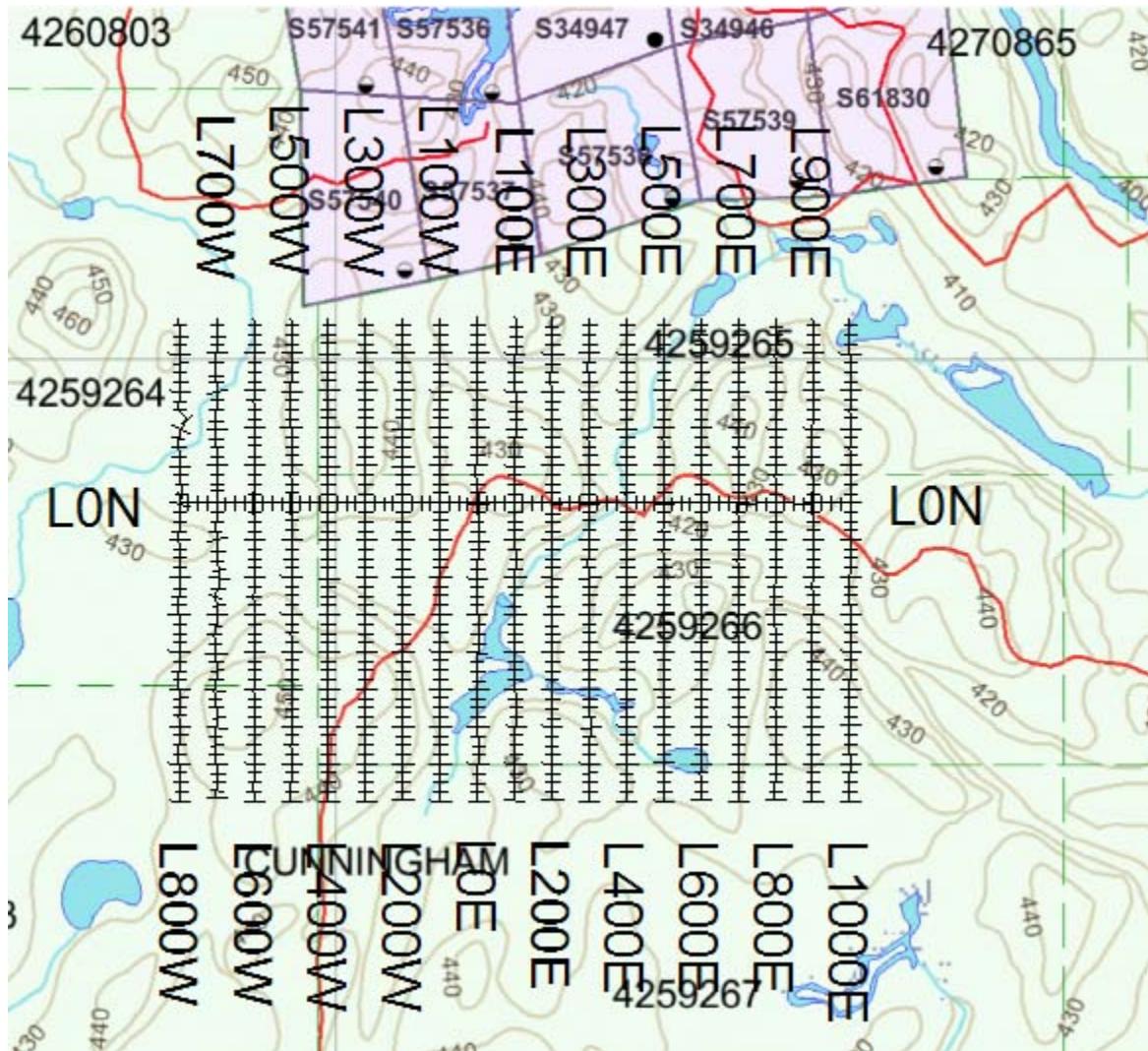


Figure 2: Google Image with Grid



**Figure 3: Claim Map with Cunningham Property Traverses**

## 2. SURVEY WORK UNDERTAKEN

### 2.1 SURVEY LOG

Date	Description	Line	Min Extent	Max Extent	Total Survey (m)
April 09, 2013	Begin magnetometer and VLF EM surveys	800W	800S	500N	1300
		700W	800S	500N	1300
		400W	800S	500N	1300
		300W	800S	500N	1300
		200W	800S	500N	1300
		100W	800S	500N	1300
		0N	500W	0E	500
April 10, 2013	Continue magnetometer and VLF EM surveys	600W	800S	500N	1300
		500W	800S	500N	1300
		0E	25N	500N	475
		100E	0N	500N	500
		0N	800W	500W	300
		0N	0E	1000E	1000
April 11, 2013	Continue magnetometer and VLF EM surveys	0E	800S	0N	800
		100E	800S	0N	800
		200E	800S	500N	1300
		300E	800S	500N	1300
		700E	800S	500N	1300
		800E	800S	500N	1300
		900E	800S	500N	1300
		1000E	800S	500N	1300
April 12, 2013	Complete magnetometer and VLF EM surveys	400E	800S	500E	1300
		500E	800S	500E	1300
		600E	800S	500E	1300

**Table 1: Survey Log**

### 2.2 PERSONNEL

Kyle Amos of Kirkland Lake, Ontario and Claudia Moraga of Britt, Ontario conducted all the magnetic and VLF EM data collection with Maxime Jacques of Sudbury, Ontario and Bruce Lavallee of Britt, Ontario responsible for GPS control and waypoint collection.

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### **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 26.475 line kilometers of magnetometer and VLF EM was read over the Cunningham Property between April 9<sup>th</sup> and 12<sup>th</sup>, 2013. This consisted of 1059 magnetometer samples taken at a 25m sample interval.

### 3. OVERVIEW OF SURVEY RESULTS

#### 3.1 SUMMARY INTERPRETATION

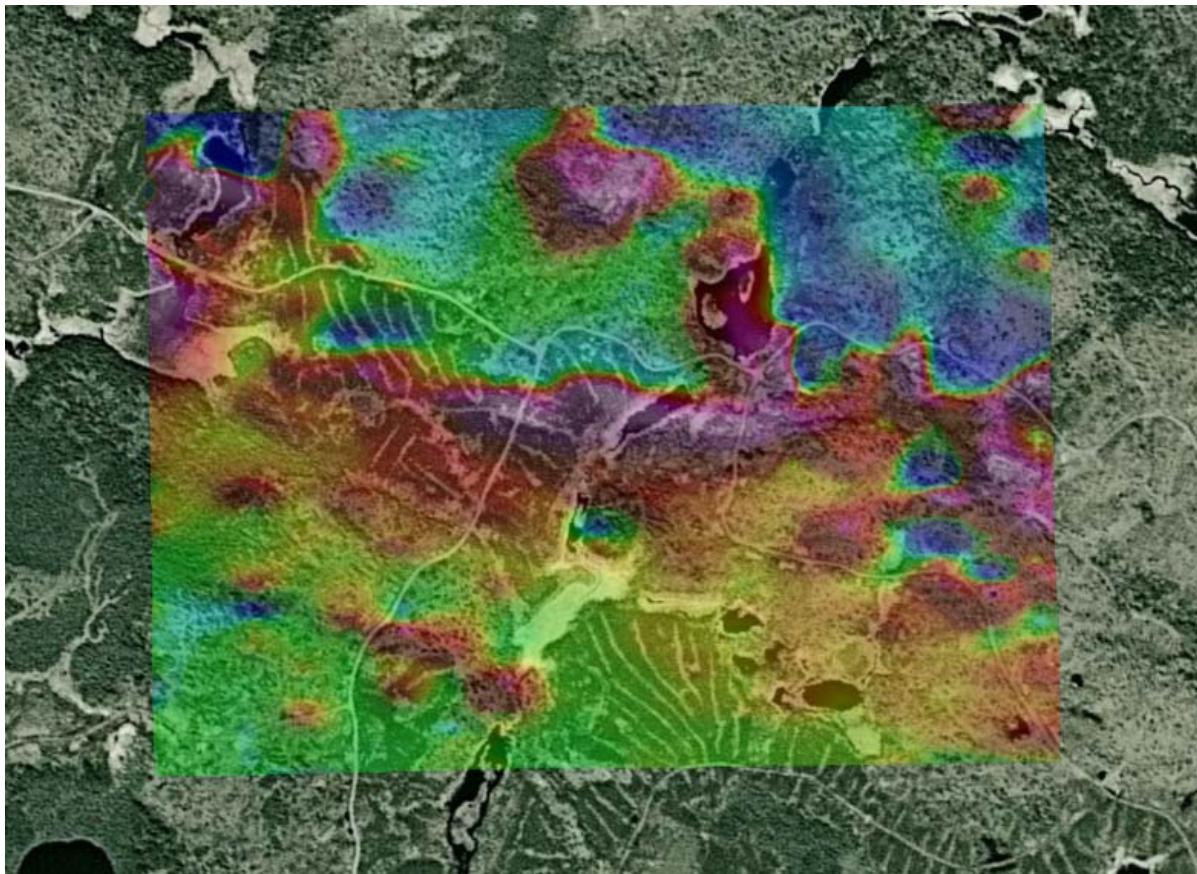


Figure 4: Google Image with Magnetic Overlay

The magnetic signature indicates three probable magnetic domains. The northern-most of these domains appears generally as a depressed magnetic region. The central domain indicates an intensely elevated magnetic region. The southern domain appears to have an average magnetic signature. These most likely represent different volcanic units crossing the property.

On the west part of the survey area, there appears to be a magnetic offset within these magnetic domains. Corresponding to this offset appears a VLF EM axis. This most likely indicates a structural feature crossing this area.

The intensity of the central magnetic high unit appears to be that of an ultramafic unit or an iron formation. This also appears to be offset by the VLF EM axis. This offset area may indicate a horizon of potentially favorable alteration.

All of the anomalies outlined are strong and should be investigated further. This should include compiling this data with additional information on the area.

**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 Ltd. 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 **Skead Holdings Ltd.**
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 Ltd.

Larder Lake, ON  
July 16, 2013

**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.

**VLF Electromagnetic**

The frequency domain VLF electromagnetic survey is designed to measure both the vertical and horizontal in-phase (IP) and Quadrature (OP) components of the anomalous field from electrically conductive zones. The sources for VLF EM surveys are several powerful radio transmitters located around the world which generate EM radiation in the low frequency band of 15-25kHz. The signals created by these long-range communications and navigational systems may be used for surveying up to several thousand kilometers away from the transmitter. The quality of the incoming VLF signal can be monitored using the field strength. A field strength above 5pT will produce excellent quality results. Anything lower indicates a weak signal strength, and possibly lower data quality. A very low signal strength (<1pT) may indicate the radio station is down.

The EM field is planar and horizontal at large distances from the EM source. The two components, electric (E) and magnetic (H), created by the source field are orthogonal to each other. E lies in a vertical plane while H lies at right angles to the direction of propagation in a horizontal plane. In order to ensure good coupling, the strike of possible conductors should lie in the direction of the transmitter to allow the H vector to pass through the anomaly, in turn, creating a secondary EM field.

The VLF EM receiver has two orthogonal aerials which are tuned to the frequency

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of the transmitting station. The direction of the source station is located by rotating the sensor around a vertical axis until a null position is found. The VLF EM survey procedure consists of taking measurements at stations along each line on the grid. The receiver is rotated about a horizontal axis, right angles to the traverse and the tilt recorded at the null position.

**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  $\pm 200\%$  of total field.  
Frequency 15 to 30 kHz.

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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  $\pm 10^\circ$  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

**APPENDIX D****LIST OF MAPS (IN MAP POCKET)**

Posted contoured TFM plan map (1:2500)

- 1) SKEAD-CUNNINGHAM B-MAG-CONT

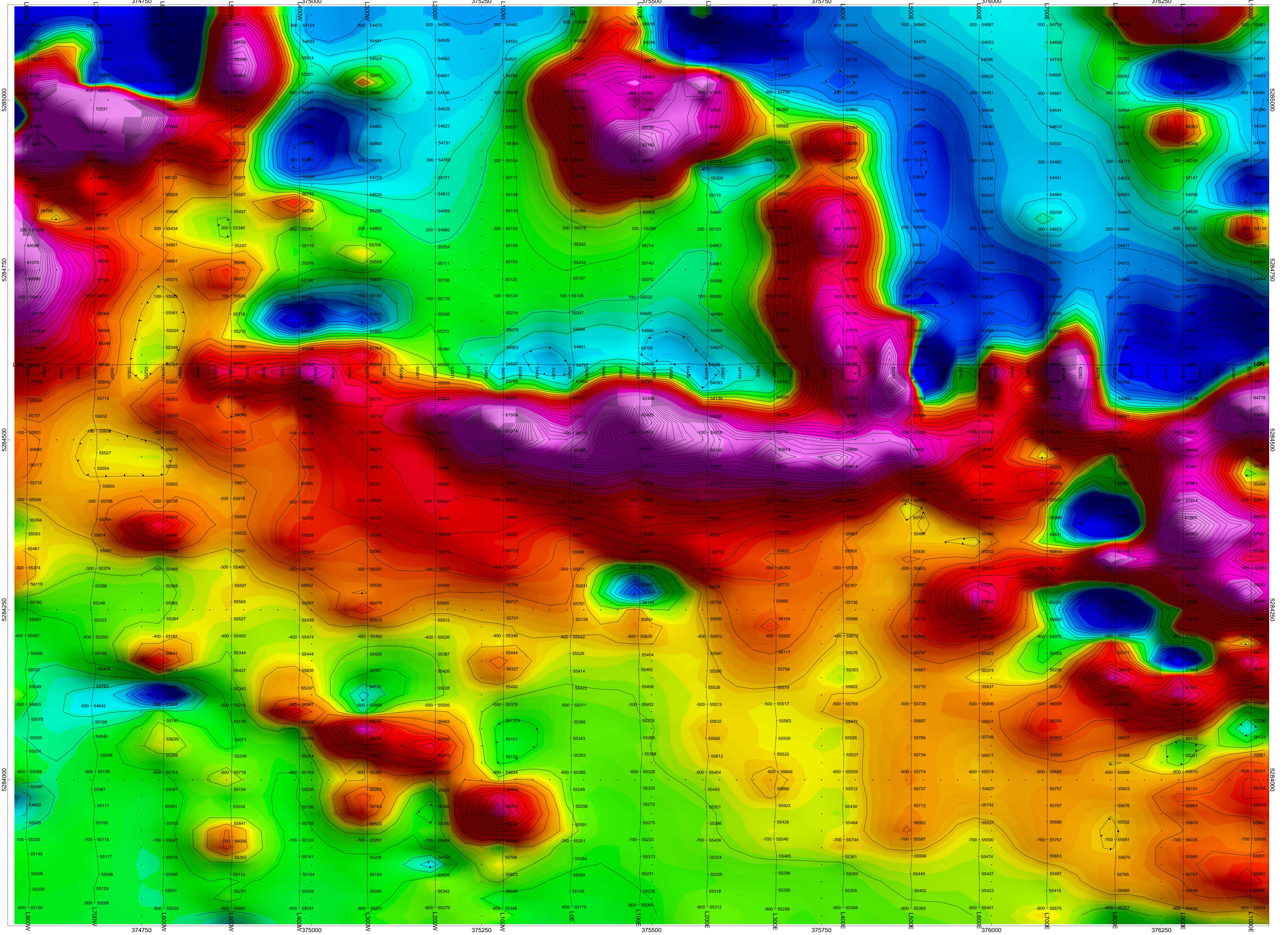
Posted VLF EM Profiles with Contoured Fraser Filter Plan Map (1:2500)

- 2) SKEAD-CUNNINGHAM B-VLF-NAA

Claim Map with Magnetic Traverses (1:20000)

- 3) SKEAD-CUNNINGHAM B-GRID

**TOTAL MAPS=3**



**SKEAD HOLDINGS LTD.**  
**CUNNINGHAM-B PROPERTY**  
Cunningham Township, Ontario

TOTAL FIELD MAGNETIC CONTOURED PLAN MAP  
Base Station Corrected

Posting Level: OnT  
Field Inclination/Declination: 74degN/12degW  
Station Separation: 25 meters  
Total Field Magnetic Contours: 200nT

GSM-19 OVERHAUSER MAGNETOMETER/VLF v7

Receiver Operated By: Max Jacques  
GPS Operated By: Bill Bonney  
Processed By: Claudia Moraga  
Map Drawn By: C Jason Ploeger  
July 2013



Drawing: SKEAD-CUNNINGHAM-CUNNINGHAM B-MAG-CONT

Date / Time of Issue: Thu May 23 11:36:36 EDT 2013

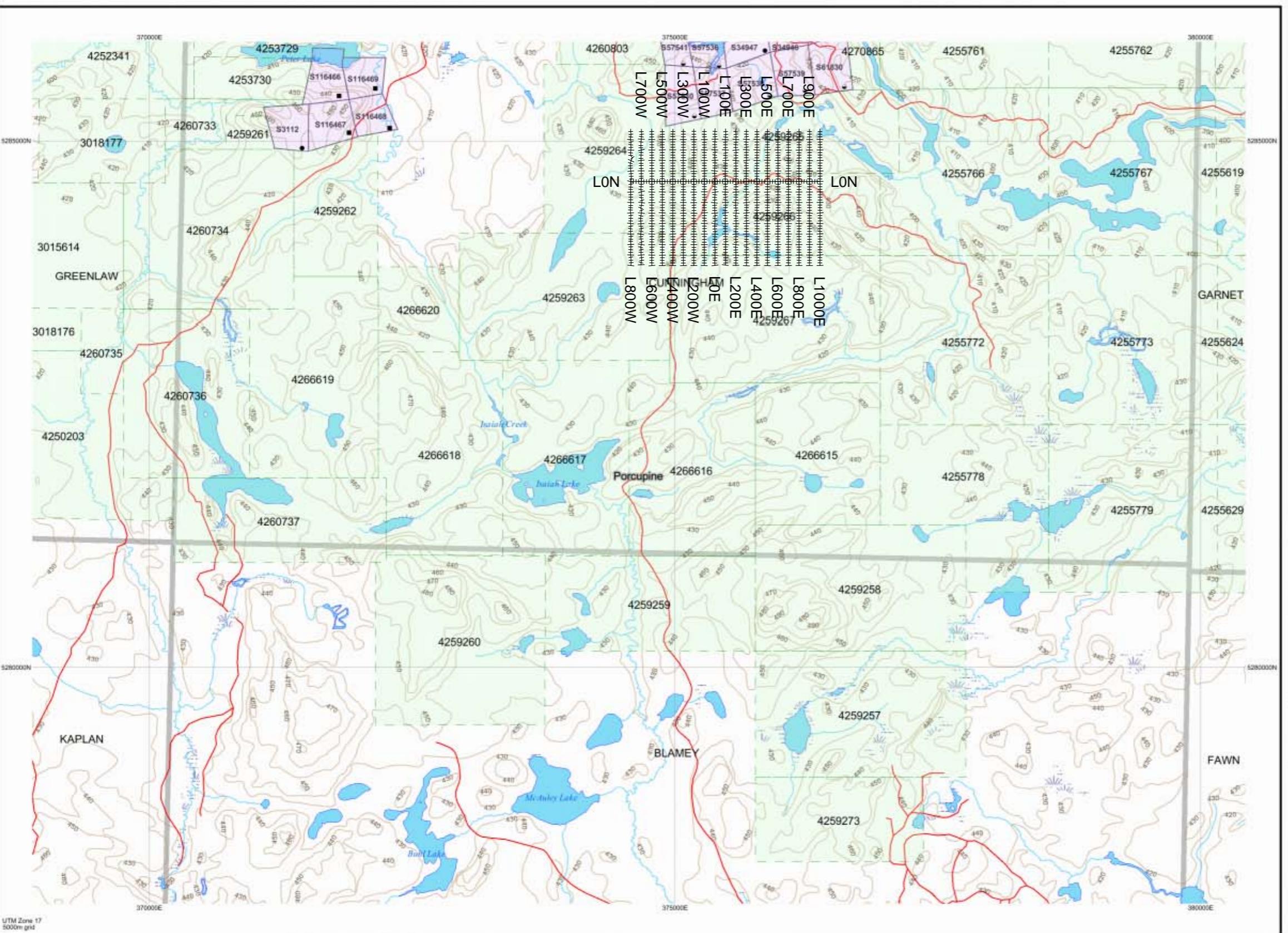
**TOWNSHIP / AREA**  
**CUNNINGHAM**

**PLAN**  
**G-1095**

**ADMINISTRATIVE DISTRICTS / DIVISIONS**

Mining Division  
Land Titles/Registry Division  
Ministry of Natural Resources District

Porcupine  
SUDBURY  
CHAPLEAU



Those wishing to stake mining claims should consult with the Provincial Mining Recorders' Office of the Ministry of Northern Development and Mines for additional information on the status of the lands shown herein. This map is not intended for navigational, survey, or land title determination purposes as the information shown on this map is compiled from various sources. Completeness and accuracy are not guaranteed. Additional information may also be obtained through the local Land Titles or Registry Office, or the Ministry of Natural Resources.

The information shown is derived from digital data available in the Provincial Mining Recorders' Office at the time of downloading from the Ministry of Northern Development and Mines web site.

General Information and Limitations

Contact Information:  
Provincial Mining Recorders' Office  
Willet Green Miller Centre 803 Ramsey Lake Road  
Sudbury ON P3E 8B5  
Home Page: [www.mndm.gov.on.ca/MNDM/MINES/LANDS/mismpge.htm](http://www.mndm.gov.on.ca/MNDM/MINES/LANDS/mismpge.htm)

Toll Free: Tel: 1 (888) 415-9845 ext 5742  
Fax: 1 (877) 670-1444  
Map Datum: NAD 83  
Projection: UTM (6 degrees)

Topographic Data Source: Land Information Ontario  
Mining Land Tenure Source: Provincial Mining Recorders' Office

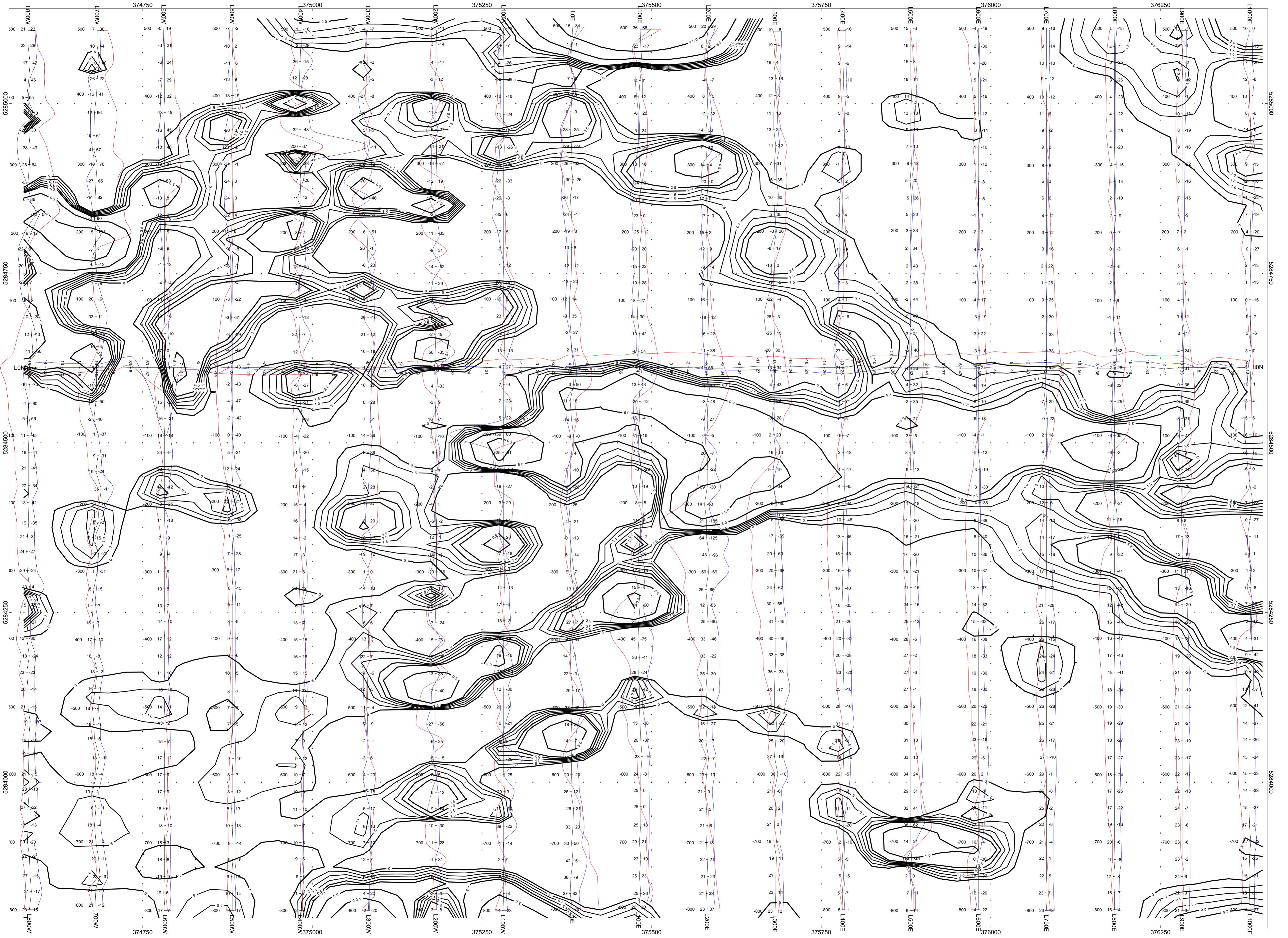
This map may not show unregistered land tenure and interests in land including certain patents, leases, easements, right of ways, flooding rights, licences, or other forms of disposition of rights and interest from the Crown. Also certain land tenure and land uses that restrict or prohibit free entry to stake mining claims may not be illustrated.

**LAND TENURE WITHDRAWAL DESCRIPTIONS (list may not be complete)**

Identifier	Type	Date	Description
4350	Wsm	Jan 1, 2001	CROWN RESERVE
4434	Wsm	Jan 1, 2001	400 FEET SURFACE RIGHTS RESERVATION AROUND ALL LAKES & RIVERS



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**SKEAD HOLDINGS LTD.**  
**CUNNINGHAM-B PROPERTY**  
Cunningham Township, Ontario

VLF IN PHASE/OUT PHASE PROFILE  
VLF FRASER FILTERED CONTOURED PLAN MAP  
24.0kHz NAA - CUTLER USA

In Phase: Posted Right/Bottom (Red)  
Out Phase: Posted Left/Top (Blue)

Vertical Profile Scales: 2 %/mm  
Contour Interval: 0, 5, 10, 15, 20, 25, 50, 100

Station Separation: 25 meters  
Posting Level: 0

GSM-19 OVERHAUSER MAGNETOMETER/VLF v7  
Receiver Operated By: Max Jacques  
GPS Operated By: Bill Bonard  
Processed by: Claudia Moraga  
Map Drawn By: C Jason Ploeger  
July 2013



Drawing: SKEAD-CUNNINGHAM-CUNNINGHAM B-VLF-NAA

Scale 1:2500  
(meters)  
NAD83/UTM zone 17N