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CANADIAN EXPLORATION SERVICES LTD

COBALTECH MINING INC.

**Q2346 – Mining Claim 4217615
VLF EM Survey**

C Jason Ploeger, P.Geo. – April 6, 2017



Abstract

CXS was contracted to perform survey over mining claim 4217615, located in Coleman Township.

COBALTECH MINING INC.

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1. SURVEY DETAILS

1.1 PROJECT NAME

This project is known as the **Claim 4217615**.

1.2 CLIENT

CobalTech Mining Inc.

77 King St. West
Unit 400
Toronto, Ontario
M5K 0A1

1.3 LOCATION

Claim 4217615 is located approximately 2.5km southeast of Cobalt, Ontario. The VLF EM traverse area is located in Coleman Township and covers part of mining claim 4217615, within the Larder Lake Mining Division.

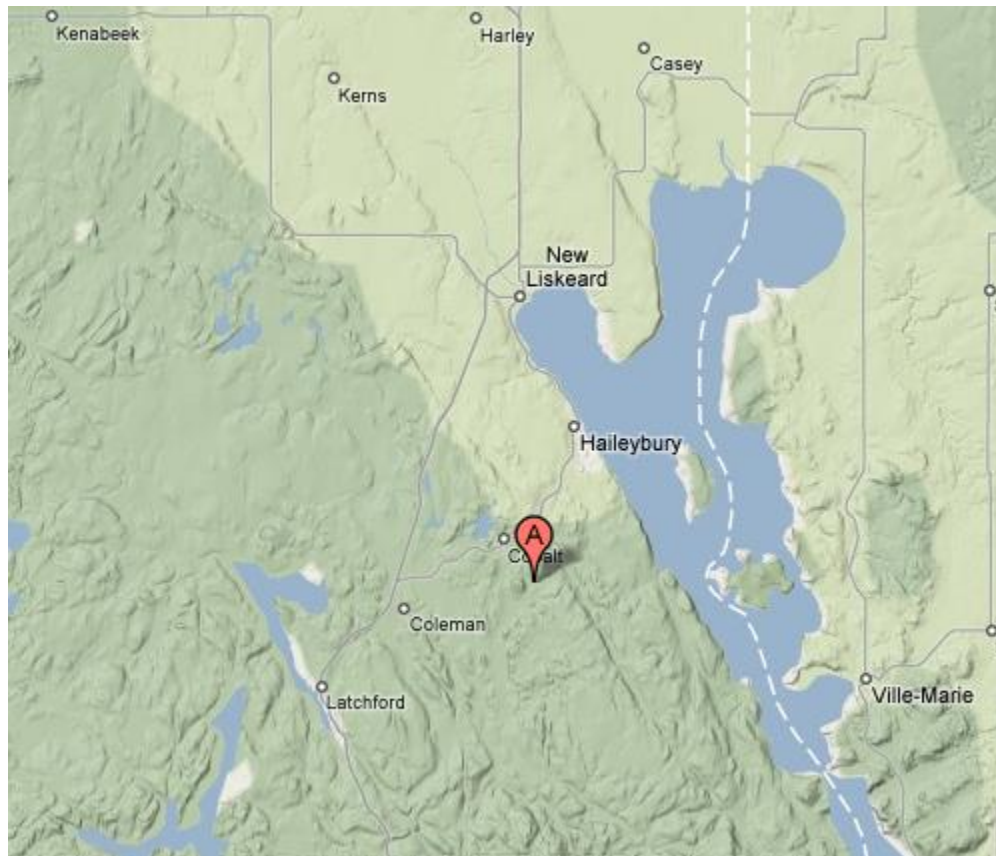


Figure 1: Location of the Claim 4217615

1.4 ACCESS

Access to the property was via Nipissing Road east from the town of Cobalt. The Kerr Lake road was then travelled north for 700m until the property was reached.

1.5 SURVEY AREA

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 VLF EM operator. GPS waypoints, VLF EM 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.

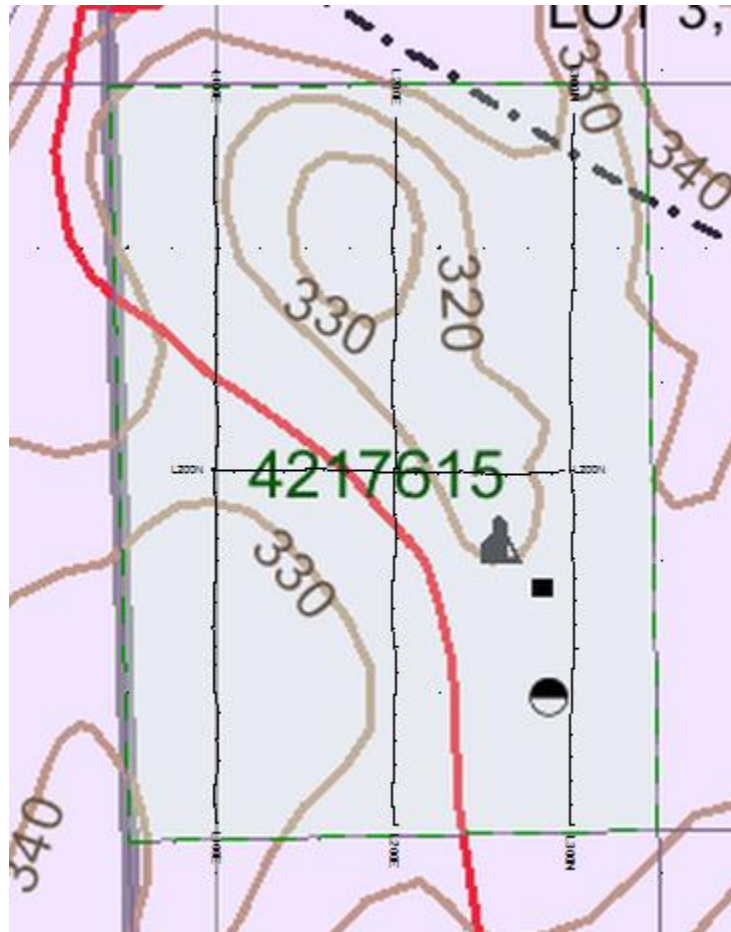


Figure 2: Claim 4217615 Traverses

2. SURVEY WORK UNDERTAKEN

2.1 SURVEY LOG

Date	Description	Line	Min Ex- tent	Max Ex- tent	Total Survey
April 2, 2017	Locate survey area and read VLF EM survey.	100E	0	400N	400
		200E	0	400N	400
		300E	0	400N	400
		200N	100E	300E	200

Table 1: Survey Log

2.2 PERSONNEL

Claudia Moraga of Britt, Ontario, operated the VLF EM with Ryan Lavalley of Sudbury, Ontario, navigating and collecting the GPS waypoints.

2.3 SURVEY SPECIFICATIONS

The survey was conducted with a GSM-19 v7 VLF.

A total of 1.4 line kilometers of VLF EM was read over Mining Claim 4217615 on April 2nd, 2017. This consisted of 112 VLF EM samples taken at an approximate 12.5 metre sample interval.

3. OVERVIEW OF SURVEY RESULTS

3.1 SUMMARY

Some culture was noted on the property during the course of the survey. This culture fell on the north-east corner and near tieline 200N.

Crossing the northeast corner was a powerline corridor. This powerline is reflected in the data with a strong VLF EM crossover being noted near 375N on line 300E. The second piece of culture of note was a historic mine located between lines 200E and 300E just south of tieline 200N. A small crossover occurs on line 200N at 275E which may be related to this culture or additional culture that was buried under the snow. The Kerr Road passes through the property, however no effect from this was noted in the data.

Outside of the culture, the only response within the VLF EM survey can be seen near line 100E and tieline 200N. This is represented by a weak crossover at 12.5E on tieline 200N and a weak response on line 100E at 187.5N. This may be part of a weak linear trend that appears to be extending at extending 60 degrees from this point. This may be related to a structural feature which may be associated to some alteration.

I would recommend compiling the historic information on the property and comparing it to the results of this survey. From these areas, a correlation of trends may become evident. The area around 100E and 200N should be prospected to determine the source of the weak crossover.

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 Practising 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 have interest in the properties and securities of **CobalTech Mining**.
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
April 6, 2017

APPENDIX B

THEORETICAL BASIS AND SURVEY PROCEDURES

VLF EM SURVEY

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 aeriels which are tuned to the frequency 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.

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

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
<u>Geocaching-friendly:</u>	yes (paperless)
<u>Custom maps compatible:</u>	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*

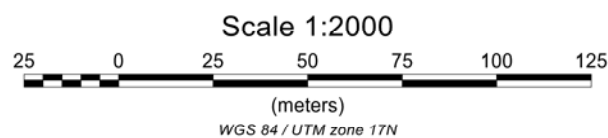
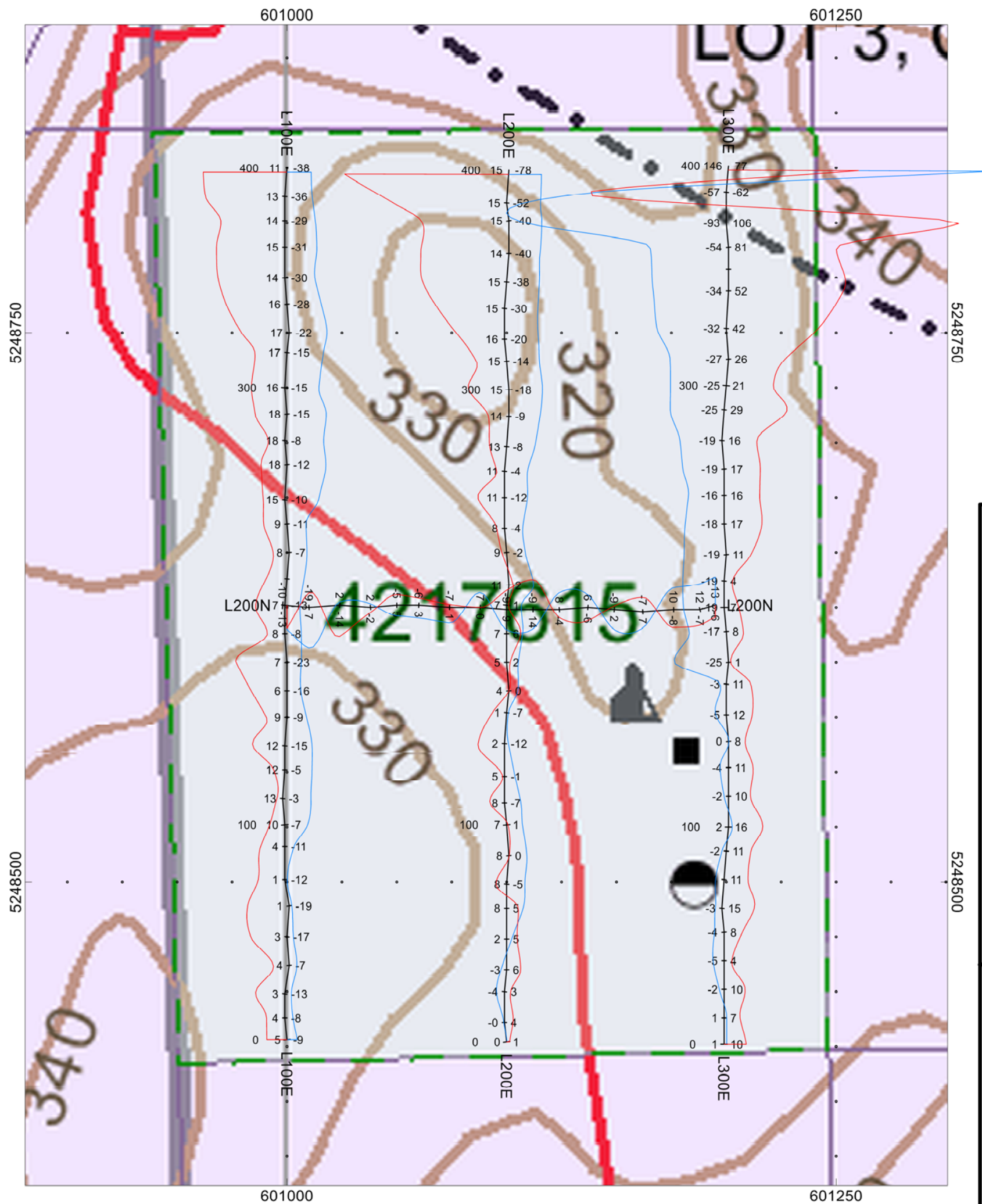
APPENDIX D

LIST OF MAPS (IN MAP POCKET)

Posted VLF EM plan maps (1:2000)

1) Q2346-CobalTech-4217615-VLF-NAA

TOTAL MAPS = 1



Claim 4217615
Coleman Township, Ontario

VLF IN PHASE/OUT PHASE PROFILE
24.0kHz NAA - CUTLER USA

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

Vertical Profile Scales: 2.5 %/mm

Station Separation: 12.5 meters
Posting Level: 0

GSM-19 VLF v7

Receiver Operated By: Claudia Moraga
GPS Operated By: Ryan Lavalley
Processed by: C Jason Ploeger, B.Sc.
Map Drawn By: C Jason Ploeger, B.Sc.
April 2017



Drawing: Q2346-COBALTECH-4217615-VLF-NAA