

PO Box 219 14579 Government Road Larder Lake, Ontario POK 1L0, Canada Phone (705) 643-1122 Fax (705) 643-2191

## CANADIAN PROSPECTING VENTURES

# Magnetometer and VLF EM Surveys Over the

TRITON PROPERTY

MacMurchy Township,
Ontario

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#### 1. SURVEY DETAILS

#### 1.1 PROJECT NAME

This project is known as the **Triton Property**.

#### 1.2 CLIENT

CANADIAN PROSPECTING VENTURES

14579 Government Rd. Larder Lake, Ontario P0K1L0

#### 1.3 LOCATION

The Triton Property is located approximately 100km south of Timmins, Ontario. The magnetic traverse area is located in MacMurchy Township and covers a portion of mining claims 4247576 and 4247576, within the Larder Lake Mining Division.

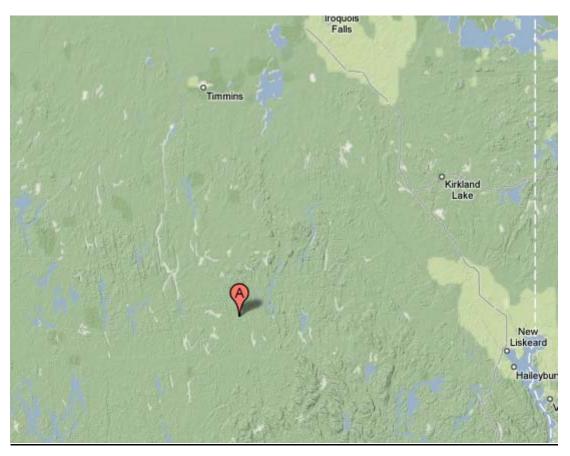


Figure 1: Location of Triton Property



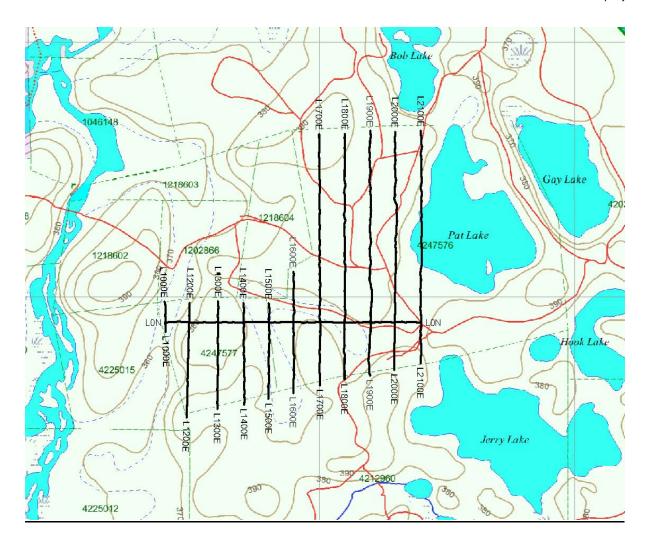


Figure 2: Claim Map with Triton Property Traverses

#### 1.4 Access

Access to the property was attained with a 4x4 truck via highway 560, 34km west of Gowganda, Ontario. From here the Bay Lumber Road was followed southward by snowmachine, for 5km to Jerry Lake, where the survey area is located.

#### 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 25m 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 76 with an external antenna for added accuracy.



#### 2. SURVEY WORK UNDERTAKEN

#### 2.1 SURVEY LOG

Date	Description	Line	Min Extent	Max	Total
				Extent	Survey
March 23 2009	Locate survey area and begin survey.	1100E	37.5S	75N	112.5
Waren 20, 2000	Essate survey area and segin survey.	1200E	375S	75N	450
		1300E	337.5S	75N	412.5
		1400E	325S	75N	400
		1500E	300S	75N	375
		1600E	275S	200N	475
		1700E	250S	737.5N	987.5
		1800E	225S	737.5N	962.5
March 24, 2009	Complete survey.	1900E	200S	750N	950
		2000E	187.5S	750N	937.5
		2100E	162.5S	750N	912.5
		0	1100E	2100E	1000

Table 1: Survey log

#### 2.2 Personnel

Barry Allen of Kirkland Lake conducted all the magnetic data collection and Shane Buckland of Haileybury 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/VLF with a second GSM-19 magnetometer for a base station mode for diurnal correction.

A total of 7.975 line kilometers of no grid magnetometer/VLF EM survey was read over the Triton Property between March 23<sup>rd</sup> and March 24<sup>th</sup>, 2009. This consisted of 638 magnetometer samples taken.



#### 3. OVERVIEW OF SURVEY RESULTS

#### 3.1 SUMMARY INTERPRETATION

The magnetic survey indicates the presence of two possible magnetic regimes. Through both of these regimes a linear magnetically high crosses the property in a north-south direction. This linear feature most likely represents a regional dike.

The northern region has a slightly weaker magnetic signature than the southern region. This may indicate a change in geology from a magnetic to non-magnetic volcanic unit.

The southern unit appears to indicate the presence of a strong magnetic relief within this geologic unit. Bisecting this in a north-south direction and crossing the baseline near 1550E is a magnetic low signature. This may be the result of a structural zone such as a fault, which may be a structural source for the mineralization.

Through the survey area there are three VLF EM axis of note. The northern axis strikes in a south-east direction from line 1900E and 600N. This corresponds to a weak magnetic high that truncates at the linear magnetic feature.

The other two axis appear to form a Y shape with the intersection being near a magnetic low area on line 1800E at 100S. This area should be further investigated for the source of the anomaly.



#### **APPENDIX A**

#### STATEMENT OF QUALIFICATIONS

- I, C. Jason Ploeger, hereby declare that:
- 1. I am a geophysicist (non-professional) with residence in Larder Lake, Ontario and am presently employed as president of Larder Geophysics Ltd. of Larder Lake, Ontario.
- 2. I graduated with a Bachelor of Science degree in geophysics from the University of Western Ontario, in London Ontario, in 1999.
- 3. I have practiced my profession continuously since graduation in Africa, Bulgaria, Canada, Mexico and Mongolia.
- 4. I am a member of the Ontario Prospectors Association, a director of the Northern Prospectors Association and a member of the Association of Exploration Geophysicists.
- 5. I am a director of Canadian Prospecting Ventures.
- 6. 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.

Larder Lake, ON March 2009

C. Jason Ploeger, B.Sc. (geophysics)
President of Larder Geophysics Ltd.



#### **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 inphase (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 kilometres 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 of the transmitting station. The direction of the source station is locate 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 ±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 orderof 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 76**





#### **GPS Performance**

Receiver: WAAS-enabled, 12 parallel channel GPS receiver continuously tracks and uses up to 12 satellites to compute and update your position

**Navigation Features** 

Waypoints/icons: 500 with name and graphic symbol, 10 nearest (automatic), 10 proximity 50 reversible routes with up to 50 points each, plus MOB and TracBack® modes Routes: Tracks: Automatic track log; 10 saved tracks let you retrace your path in both directions Trip computer: Current speed, average speed, resettable max. speed, trip timer and trip distance

Anchor drag, approach and arrival, off-course, proximity waypoint, shallow water and deep water

Tables: Built-in celestial tables for best times to fish and hunt, sun and moon rise, set and

location

Map datums: More than 100 plus user datum

Position format: Lat/Lon, UTM/UPS, Maidenhead, MGRS, Loran TDs and other grids, including

user

**Acquisition times** 

Alarms:

Warm: Approximately 15 seconds Cold: Approximately 45 seconds AutoLocate®: Approximately 2 minutes Update rate: 1/second, continuous

**GPS** accuracy

Position: < 15 meters, 95% typical\* Velocity: 0.05 meter/sec steady state

WAAS accuracy

Position: < 3 meters, 95% typical\* Velocity: 0.05 meter/sec steady state

**Power** 

Two "AA" batteries (not included) Source:

Up to 16 hours Battery Life:

**Physical** 

2.7"W x 6.2"H x 1.2"D (6.9 x 15.7 x 3.0 cm) Size:

Weight: 7.7 ounces

**Display** 

1.6"W x 2.2"H (4.1 x 5.6 cm) 180 x 240 pixels, high-contrast



#### FSTN with bright backlighting

Case: Fully gasketed, high-impact plastic alloy, waterproof to IEC 529 IPX7 standards Interfaces: RS232 with NMEA 0183, RTCM 104 DGPS data format and proprietary Garmin®

**Antenna:** Built-in quadrifilar, with external antenna connection (MCX)

**Differential:** DGPS (USCG and WAAS capable) **Temperature range:** 5°F to 158°F (-15°C to 70°C)

**Dynamics**: 6 g's

User data storage: Indefinite, no memory battery required

Specifications obtained from www.garmin.com



#### **APPENDIX D**

#### LIST OF MAPS (IN MAP POCKET)

Posted contoured TFM plan map (1:2500)

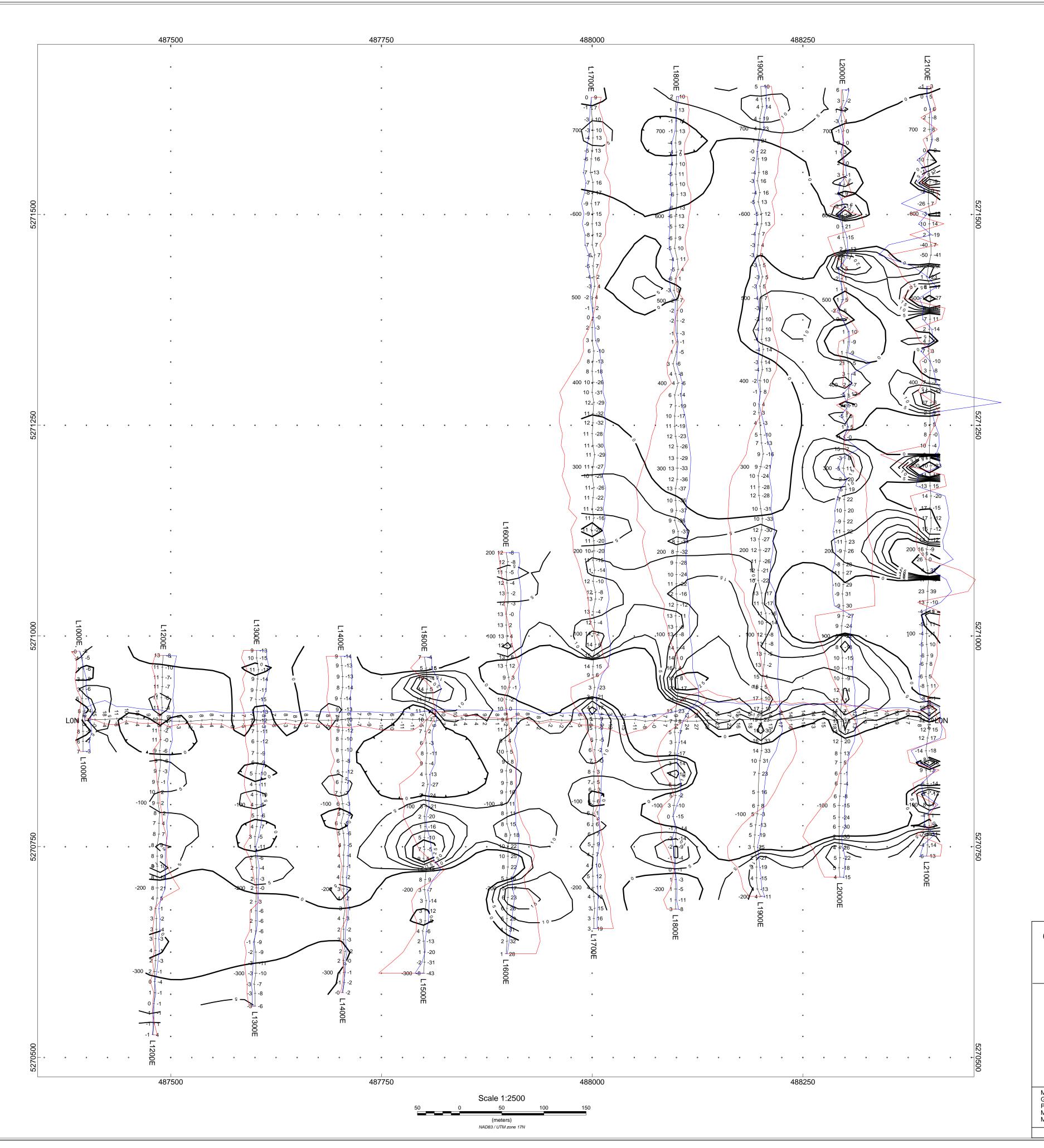
1) CPV-TRITON -MAG-CONT

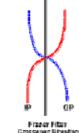
Posted contoured fraser filtered profiled VLF EM plan map (1:2500)

2) CPV -TRITON-VLF-NAA

TOTAL MAPS=2







### **CANADIAN PROSPECTING VENTURES**

TRITON PROPERTY MacMurchy Township, Ontario

VLF IN PHASE/OUT PHASE PROFILE
VLF FRASER FILTERED CONTOURED PLAN MAP
24.0kHz NAA-CUTLER USA Projection: NAD 83, Zone 17

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

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

Station Seperation: 12.5 meters Posting Level: 0

GSM-19 OVERHAUSER MAGNETOMETER/VLF v7 Magnotometer Operated by: Barry Allen GPS Operated by: Shane Buckland Processed by: C Jason Ploeger, B.Sc. Map Drawn By: Belinda Bailey March 23 to 24, 2009

LARDER GEOPHYSICS LTD.

Drawing: CPV-TRITON-VLF-NAA

