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**CANADIAN EXPLORATION SERVICES LTD**

**PALISADES RESOURCES CORP.**

**Q2289 – Lucky Strike Property – Lemieux  
Group  
VLF EM Survey**

**C Jason Ploeger, P.Geo. – May 15, 2017**

# PALISADES RESOURCES CORP.

## **Abstract**

CXS was contracted by Palisades Resources Corp. to perform a VLF EM survey over part the Lucky Strike Property, in particular the Lemieux Group. The area over part of Crosby Lake was surveyed as ice conditions permitted.

**PALISADES RESOURCES CORP.**

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## TABLE OF CONTENTS

<b>1.</b>	<b>SURVEY DETAILS</b> .....	<b>3</b>
1.1	PROJECT NAME .....	3
1.2	CLIENT.....	3
1.3	LOCATION .....	3
1.1	ACCESS .....	4
1.2	SURVEY GRID.....	4
<b>2.</b>	<b>SURVEY WORK UNDERTAKEN</b> .....	<b>5</b>
2.1	SURVEY LOG .....	5
2.2	PERSONNEL .....	5
2.3	SURVEY SPECIFICATIONS .....	5
<b>3.</b>	<b>OVERVIEW OF SURVEY RESULTS</b> .....	<b>6</b>
3.1	SUMMARY .....	6

## LIST OF APPENDICES

<b>APPENDIX A: STATEMENT OF QUALIFICATIONS</b>
<b>APPENDIX B: THEORETICAL BASIS AND SURVEY PROCEDURES</b>
<b>APPENDIX C: INSTRUMENT SPECIFICATIONS</b>
<b>APPENDIX D: LIST OF MAPS (IN MAP POCKET)</b>

## LIST OF TABLES AND FIGURES

Figure 1: Location of the Lucky Strike Property – Lemieux Group .....	3
Figure 2: Claim Map with Lucky Strike – Lemieux Group Traverses.....	4
Table 1: Survey Log.....	5

## 1. SURVEY DETAILS

### 1.1 PROJECT NAME

This project is known as the **Lucky Strike Property – Lemieux Group**.

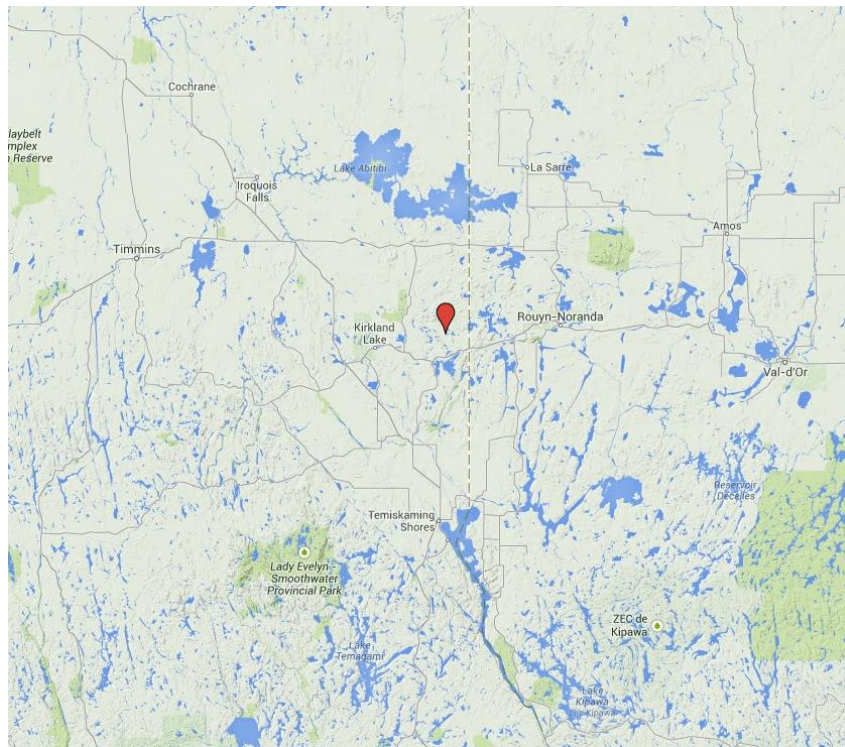
### 1.2 CLIENT

Palisades Resources Corp.

69 Young St.  
Suite 1010  
Toronto, Ontario  
M5E 1K3

### 1.3 LOCATION

The Lucky Strike Property is located approximately 9km north-east of Larder Lake, Ontario. The survey area is located on a portion of mining claim 4225515, located in McVittie Township, within the Larder Lake Mining Division.



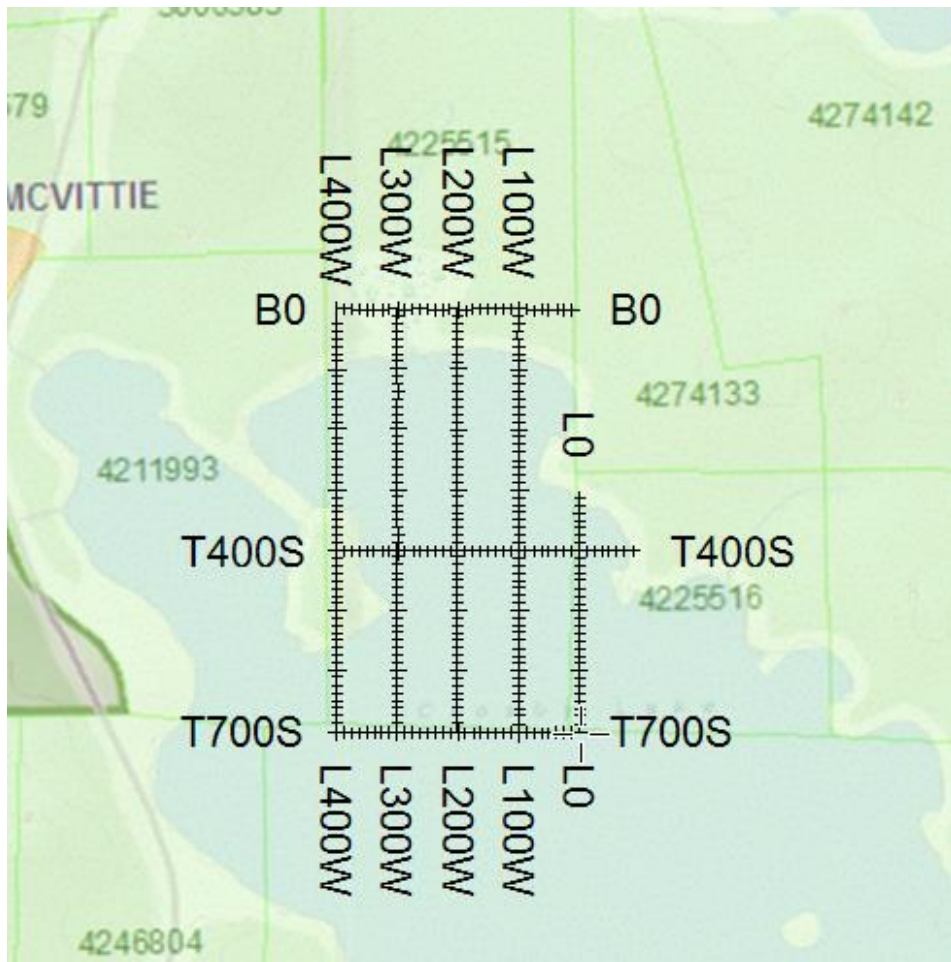
**Figure 1: Location of the Lucky Strike Property – Lemieux Group**

## 1.1 ACCESS

Access to the property was attained with a 4x4 truck via the Larder Station Road which is located just east of Larder Lake off provincial highway 66. The Larder Station Road was followed north for approximately 10km to a point at which a trail extends eastward to Lemieux Lake.

## 1.2 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 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 Map with Lucky Strike – Lemieux Group Traverses**

## 2. SURVEY WORK UNDERTAKEN

### 2.1 SURVEY LOG

Date	Description	Line	Min Extent	Max Extent	Total Survey (m)
December 19, 2016	Locate survey area and conduct survey.	0W	700S	300S	400
		100W	700S	0	700
		200W	700S	0	700
		300W	700S	0	700
		400W	700S	0	700
		0S	400W	0	400
		400S	400W	100E	500
		700S	400W	0	400

***Table 1: Survey Log***

### 2.2 PERSONNEL

Bruce Lavalley operated the VLF EM and Claudia Moraga navigated and collecting the GPS waypoints. Both are from Britt, Ontario.

### 2.3 SURVEY SPECIFICATIONS

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

A total of 4.5 line kilometers of VLF EM was read over the Lucky Strike Property – Lemieux Block on December 19, 2016. This consisted of 360 VLF EM samples taken at a 12.5m sample interval.



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### **3. OVERVIEW OF SURVEY RESULTS**

#### **3.1 SUMMARY**

No cultural features were noted within the survey area.

The VLF survey indicated numerous responses within the survey area. The majority of these responses occur at the shorelines. These include 400W at 600S, 450S and 300S, 300W at 525S along with 200W and 100W at the north end of the lines.

A response occurs near 400S and 0E. This response appears as a strong in-phase crossover. This area appears to fall within the lake making it difficult to prospect. I would recommend extending the survey to the east to determine if the signature extends onto the shoreline, where it can be better identified. A lake bed soil survey is also recommended to better understand this anomaly.



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## 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 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 not have nor expect an interest in the properties and securities of **Palisades Resources Corp.**
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  
May 15, 2017

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## 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.

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## 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.

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## 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
<b>Maps &amp; Memory:</b>	
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
<b>Features &amp; Benefits:</b>	
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](http://www.garmin.com)*

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**APPENDIX D**

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

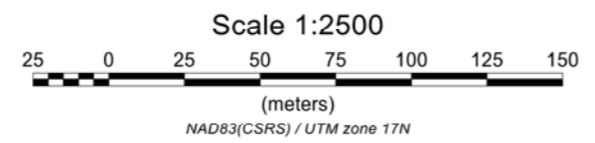
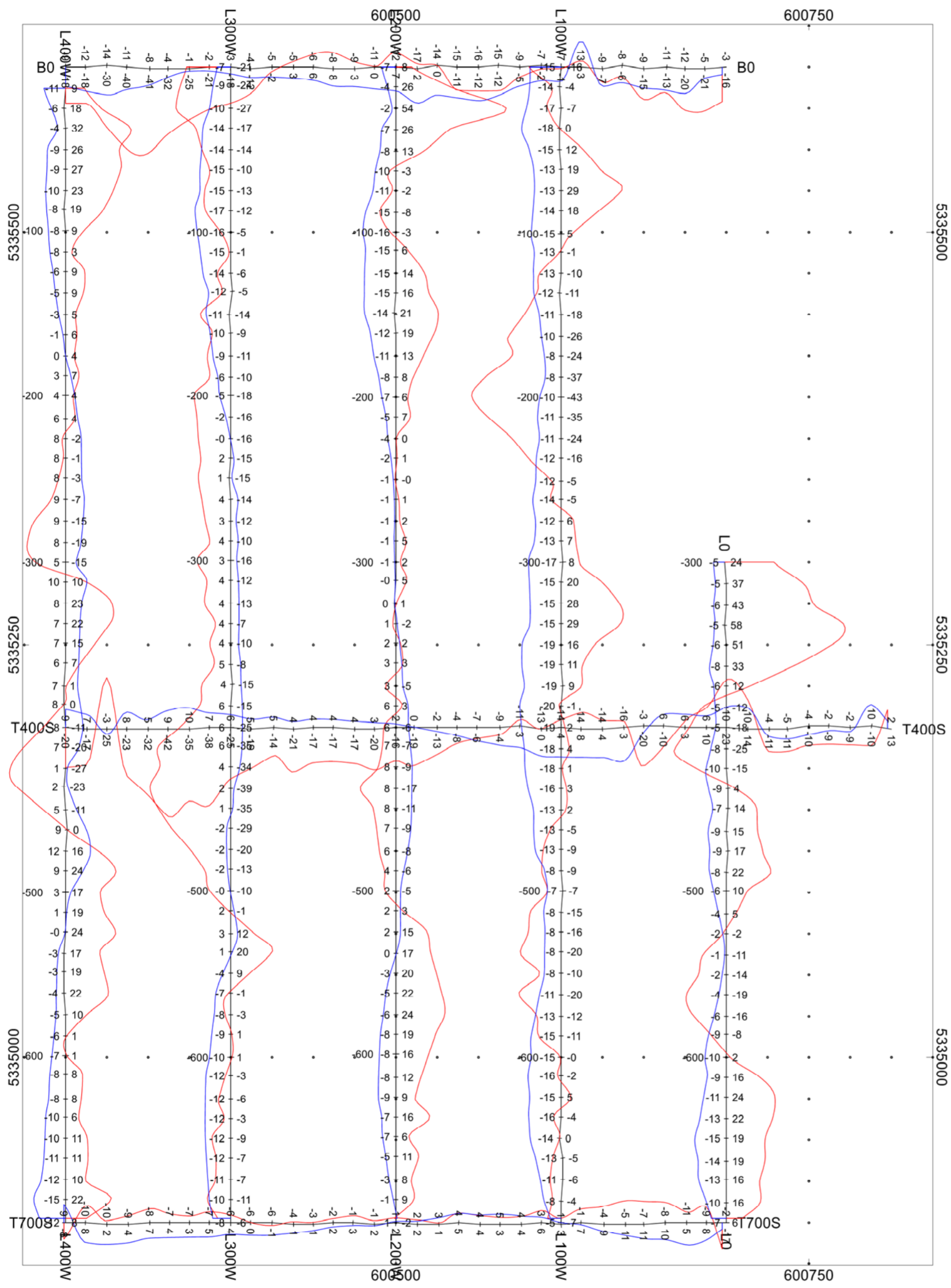
VLF EM Plan Map (1:2500)

1) Q2289-PALISADES-LUCKY STRIKE-LEMIEUX-VLF-NAA

Grid Sketch on Claim Map (1:20000)

2) Q2289-PALISADES-LUCKY STRIKE-LEMIEUX-TRAVERSE

**TOTAL MAPS=2**



**PALISADES RESOURCES CORP.**

**LUCKY STRIKE PROPERTY  
LEMIEUX GROUP  
McVittie 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 %/mm

Station Separation: 12.5 meters  
Posting Level: 0

GSM-19 VLF v7

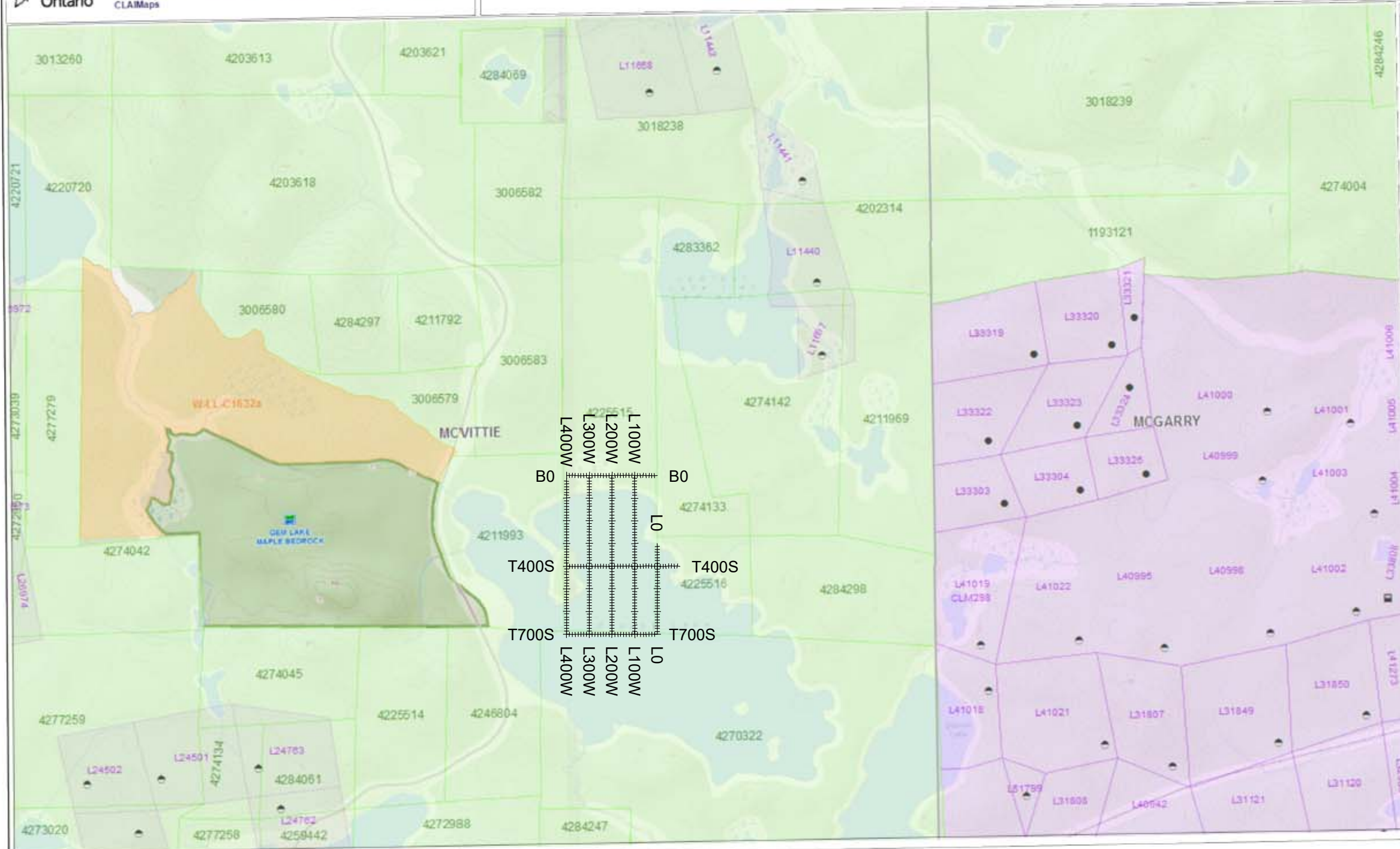
Receiver Operated By: Bruce Lavalley  
GPS Operated By: Claudia Moraga  
Processed by: Jason Ploeger  
Map Drawn By: C Jason Ploeger, B.Sc.  
May 2017





Enter map title

Notes: Enter map notes



### Legend

**Administration Boundaries**

- Mining Divisions
- Equivalent Geological District
- Townships and Areas

**Mineral Tenure Grid**

- OMIO Tenure Grid

**Alienations**

- Withdrawal
- Notice

**Unpatented Claim**

- Active
- Pending

**Disposition**

- Disposition

**Disposition Symbols**

- Camp
- Disposition Unknown/Pending
- Freehold Patent Mining Rights Only
- Freehold Patent Surface Rights Only
- Freehold Patent Surface and Mining Rights
- Land Use Permit
- Leasehold Patent Mining Rights Only
- Leasehold Patent Surface Rights Only
- Leasehold Patent Surface and Mining Rights
- License of Occupation Mining Use Only
- License of Occupation Surface Use Only
- License of Occupation Surface and Mining Rights
- License of Occupation Uses Not Specified
- Order in Council
- Tower
- WPLA

**Geology Layers**

- AMIS Sites
- AMIS Features
- D&B Holes
- Mineral Occurrences



Projection: Web Mercator



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