PO Box 219, 14579 Government Road, Larder Lake, Ontario, P0K 1L0, Canada

## (w) <br> WALLBRIDGE MINING COMPANY LIMITED

## MAX-MIN HLEM

## Survey

Over the
MINISTIC PROPERTY

## Ermatinger Township, Ontario

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## 1. SURVEY DETAILS

### 1.1 Project Name

This project is known as the Ministic Property.

### 1.2 Client

Wallbridge Mining Company Limited
129 Fielding Road
Lively, Ontario
P3Y 1L7

### 1.3 Location

The Ministic Property is located approximately 30 km west of Chelmsford, Ontario. The grid area is located in Ermatinger Township and covers a portion of mining claims 1244387, 1244719, 4207192 and 4207193, within the Sudbury Mining Division.


Figure 1: Location of Ministic Property

MINING COMPANY LIMITED

### 1.4 Access

Access to the property was via a $4 \times 4$ pickup truck along with a snowmachine. The Windy Lake Road is travelled west from highway 144 at Windy Lake. Near kilometer 8, the Chicago Mine Road extends southward and is travelled 2.5 km to the Ministic Lake boat launch. At this point, a snowmachine is used to access the final 5 km across the ice to the survey area.

### 1.5 SURVEY GRID

The grid was established prior to survey execution and consisted of 11.75 kilometers of grid lines. The survey lines were spaced at 150-250 meters and stations were picketed at 25 m intervals with the baseline running at $140^{\circ} \mathrm{N}$ for a total of $1650 \mathrm{me}-$ ters.


Figure 2: Claim Map with Ministic Property Grid

## 2. SURVEY WORK UNDERTAKEN

### 2.1 Survey Log

| Date | Description | Line | Min <br> Extent | Max <br> Extent | Total <br> Survey <br> $(\mathbf{m})$ |
| :---: | :--- | :---: | :---: | :---: | :---: |
| February 11, 2014 | Locate survey area and per- <br> form survey. Difficult terrain. | 750 N | 50 E | 1200 E | 1250 |
|  |  | 900 N | 50 E | 1200 E | 1250 |
|  |  |  |  |  |  |

## Table 1: Survey Log

### 2.2 Personnel

Jason Ploeger of Larder Lake, Ontario, operated the MaxMin receiver and Bruce Lavalley of Britt, Ontario, operated the MaxMin transmitter.

### 2.3 Survey Specifications

The survey was conducted with an APEX PARAMETRICS MAXMIN II. Frequencies $222 \mathrm{~Hz}, 444 \mathrm{~Hz}, 888 \mathrm{~Hz}, 1777 \mathrm{~Hz}$ and 3555 Hz were used with a 200 m coil separation. A Suunto PM-5 clinometer was used to measure slopes between picketed stations. These slopes were averaged over 50m to determine the correct tilt readings.
A total of 2.5 line kilometers of MaxMin was read on February $11^{\text {th }}, 2014$. This consisted of 168 samples taken in $222 \mathrm{~Hz}, 444 \mathrm{~Hz}, 888 \mathrm{~Hz}, 1777 \mathrm{~Hz}$ and 3555 Hz at a 12.5 m sample interval.

## 3. OVERVIEW OF SURVEY RESULTS

### 3.1 Summary Interpretation

Within the area, it was noted that there was a low frequency noise. This was more apparent in frequency 222 Hz and occasionally crept into frequency 444 Hz . When this noise was noted, many repeats were taken until two back to back readings repeated themselves. Generally, the higher frequencies were stable once the initial reading was taken.

The topography was difficult over the grid. This includes steep inclines and sidehills throughout the grid. Care was taken to keep the coil and receiver coaxial at a properly corrected distance between transmitter and receiver. This being said there may be some minor topographical variances within the dataset. One variance will most likely occur when the cable was straddling 900W due to a cliff. The cable length corrections required was slightly longer than the extra cable incorporated into the cable. This meant that for the 200 meters the Rx Tx separation was approximately 195m.

No strong obvious responses or trends were noted in the data. Two in phase and one out phase responses may occur.

The first in phase response is noted as an unconstrained shoulder response located at 950 W on line 900 N . This response correlates with the location of the cliff and may be a result of this.

The second response appears as a stronger negative in phase measurement centered near 600W on line 900N. This may indicate a deeper conductive zone; however, no shoulders are apparent to enable characterization.

The out phase response occurs on line 750 N centered at 350 W . This response also exhibits some in phase movement in the high frequencies. This anomaly should be treated with caution because of its location in the water. This may be a result of a shoal. This anomaly being stronger in the out phase response trends it more into the realm of being overburden in nature.

## 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 have Special Authorization number 270 by l'Ordre des Geologues du Quebec to practice geoscience in Quebec.
4. I graduated with a Bachelor of Science degree in geophysics from the University of Western Ontario, in London Ontario, in 1999.
5. I have practiced my profession continuously since graduation in Africa, Bulgaria, Canada, Mexico and Mongolia.
6. 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.
7. I do not have nor expect an interest in the properties and securities of WALLBRIDGE MINING COMPANY LIMITED
8. 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 Limited.

Larder Lake, ON
February 27, 2014

## APPENDIX B

## Theoretical Basis and Survey Procedures

## HLEM Electromagnetic

The HLEM method involves the use of a pair of separated horizontal coils (Figure MMI). Most commonly, the surveys are conducted in the frequency domain. In this method, a sine wave of variable frequency is sent through one of the coils to create a time-varying vertical magnetic dipole source. The second coil is a receiver which detects both the primary signal from the transmitting coil and a secondary signal created by magnetic induction in a conductive target in the earth.

The HLEM method requires that a sample of the transmitted signal be sent along a wire to the receiver where it is used to synchronize the phase of the receiver with the transmitter. This permits the receiver to remove the effect of the transmitter signal (primary field) and to split the remaining secondary field into two components. One phase with the primary field (in-phase component). The second component is the portion of the secondary field which lags the primary field by one quarter cycle ( $90^{\prime}$ quadrature component). The ratio of the in-phase to quadrature components is used to determine the electrical conductance of a target.


MMI: HLEM source field

MAX-MIN HLEM SURVEY
Ministic Property Ermatinger Township, Ontario

HLEM instruments remove the primary filed from the signal to leave only the secondary field. By convention, a secondary field in the same direction as the primary field is recorded as positive while a secondary field in the opposite direction to the primary field is recorded as negative. HLEM data is commonly plotted as profiles with the reading plotted at the midpoint between the transmitter and receiver. The reason for this is that the response from a steeply dipping conductor, the most common target of this method, is strongest when the two coils straddle the conductor.

## APPENDIX C

## APEX PARAMETRICS MAXMIN II



## Specifications

Advanced spheric and powerline interference rejection results in faster and more accurate surveys, particularly at the larger coil separations.

The Maxmin Computer or MMC is offered for digital data processing, display, storage and transfer. The MMC displays and stores the inphase and quadrature readings, their standard deviations, and the corresponding apparent ground conductivity values. Rough terrain surveys are also simplified with the MMC.

Data interpretation and presentation programs are available for layered earth parametric soundings and discrete conductor surveys.

## Frequencies

$222,444,886,1777,3555 \mathrm{~Hz}$

Coil Separations
50, 100, 200 meters (selected with grid switch in receiver)
Modes of Operation
MAX 1: Horizontal loop or slingram— Transmitter and receiver coil planes horizontal and coplanar.

MAX 2: Vertical coplanar loop mode- Transmitter and receiver coil planes vertical and coplanar.

MIN 1: Perpendicular mode 1—Transmitter coil plane horizontal and receiver coil
plane vertical.
MIN 2: Perpendicular mode 2—Transmitter coil plane vertical and receiver coil plane horizontal.

## Parameters Measured

In-phase and quadrature components of the secondary magnetic field. Measures percent of primary field.

Readouts
Analog direct edgewise meter readouts for in-phase, quadrature and tilt. Additional digital LCD readouts provided in the optional MMC computer. Interfacing and controls are provided for ready plug-in of the MMC.

Ranges of Readouts
Switch activated analog in-phase and quadrature scales: $0 \pm 4 \%, 0 \pm 20 \%$ and $0 \pm 100 \%$, and digital $0 \pm 199.9 \%$ autorange with optional MMC Analog tilt $0 \pm 75 \%$ and $0 \pm 99 \%$ grade with MMC.

## Resolution

Analog in-phase and quadrature 0.1 to $1 \%$ of primary field, depending on scale used, digital 0.01\% with autoranging MMC; tilt 1\% grade.

Repeatability
0.01 to $1 \%$ of primary field typical, depending on frequency, coil separation and conditions.

## Signal Filtering

Powerline comb filter, continuous spheric noise clipping, auto adjusting time constant, and more.

## Warning Lights

Receiver signal and reference warning lights to indicate potential error conditions.

## Survey Depth Penetration

From surface down to 1.5 times coil separations for large horizontal targets, and 0.75 times coil separation for large vertical targets are typical values.

## Reference Cable:

Lightweight unshielded $4 / 2$ conductor teflon cables for maximum operating temperature range and for minimum pulling friction.

## Intercom

Voice communication link provided for operators via the reference cable.

Temperature Range:
-30 to +60 degrees Celsius, operating range.

## Receiver Batteries

Four standard 9V - 0.6 Ah alkaline batteries. Life: 25 hours continuous duty, less in cold weather. Optional 1.2 Ah extended life lithium batteries available (recommended for very cold weather).

## Transmitter Batteries

Standard rechargeable gel-type lead-acid 6V-26 Ah batteries (4 x 6V - 6.5 Ah) in nylon belt pack. Optional rechargeable long life 6V-28 Ah Nicd batteries ( $20 \times 1.2 \mathrm{~V}$ 7 Ah) with Nicd chargers (best choice for cold climates).

Transmitter BatteryChargers
Lead acid battery charger: 7.3V @ 2.8A Nicd battery charger with 2.8 A @ 8V nominal output. Operation from $110-120$ and $220-240 \mathrm{VAC}, 50-60 \mathrm{~Hz}$, and $12-15 \mathrm{VDC}$ supply

## Receiver Weight

8 Kg carrying weight (including the two ferrite cored antenna coils), 9 Kg with MMC computer.

Transmitter Weight
16 Kg carrying weight
Shipping Weight
60 Kg plus weight of reference cables at 2.8 Kg per 100 meters, plus optional items if any Shipped in two aluminum-lined field I shipping cases

## APPENDIX D

## List of Maps (in Map Pocket)

Posted Profiled Plan Map (1:2500)

1) WALLBRIDGE-MINISTIC-MAXMIN-222
2) WALLBRIDGE-MINISTIC-MAXMIN-444
3) WALLBRIDGE-MINISTIC-MAXMIN-888
4) WALLBRIDGE-MINISTIC-MAXMIN-1777
5) WALLBRIDGE-MINISTIC-MAXMIN-3555

Grid Sketch on Claim Map (1:20000)
6) WALLBRIDGE-MINISTIC-GRID

TOTAL MAPS=6

(X) WALLBRIDGE


(W) WALLBRIDGE

Ex= CxS

(W) WALLBRIDGE

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From: A.King
To: Dist'n
Date: Mar 2014
Subject: Review of Ministic Geophysics with particular emphasis on recent EM surveys

The Wallbridge Ministic property has been covered with multiple generations of geophysical surveys with particular emphasis on EM surveys to assist in the location of conductive $\mathrm{Ni}-\mathrm{Cu}-\mathrm{PGE}$ sulphide mineralization.

EM surveys have included full or partial coverage with:
Inco

- AEM/Mag

Wallbridge

- Regional airborne Geotem/Mag
- airborne VTEM/Mag 2013
- Ground UTEM5 2013
- airborne HeliTEM/Mag 2014
- ground MaxMin 2014

Reviews of these surveys have indicated 2 untested conductivity targets - one fairly well defined and one probable.
The location of these targets are shown in Figure 1


Figure 1 Showing Ministic EM targets and EM survey blocks (AEM and UTEM) and lines (MaxMin)

The EM data over the property is in general of good quality but there is increasing power line noise in the AEM surveys towards the east side of the property and local interference over and around Ministic Lake from cottages and electrical lines (some underwater).
Ground EM surveys were targeted on areas of interest identified from the AEM surveys and other data.

## Targets

EMAK2014-1
This target area was first identified in the later time (LT) 2013 VTEM AEM db/dt and B field data as shown in Figure 2 and was subsequently covered by ground UTEM5, airborne Helitem, and Maxmin surveys. The UTEM5 survey showed small scale anomalies in the same area in most time channels and components in in-loop and out-loop data.



Figure 2 VTEM AEM B Field (top) and and dB/dt (bottom)

The target is also apparent the Helitem LT db/dt data but is not as clear in the Helitem B field data due to high noise levels.
The ground Maxmin data targeted on this anomaly was overwhelmed by topographic noise and natural EM noise in the in-phase component with the noise exceeding the expected response from the target as interpreted from other EM surveys.
The target was modeling in Maxwell for VTEM, UTEM (in and out loop) and Maxmin in an effort to find a source body that fit all the data. Interpretations for the VTEM and UTEM surveys are similar but not identical suggesting an area of small complex veins with various orientations rather than a single discrete conductive body.
The characteristic double peaked VTEM LT B field anomaly suggests a small sub-vertical relatively shallow source but most models (by Dele and myself) also suggested a deeper good quality sub-horizontal or wide source to explain the broad positive AEM late-time plateau typical of a flat or flat topped source. However these models with flat sources were clearly not compatible with the UTEM in-loop data that, with its mainly vertical primary field, should be quite sensitive to any flat source body. After considerable work with the various data sets it appears that the most likely scenario that could explain all the data is as follows:

- a very small relatively shallow sub-vertical plate at the anomaly location above a similar but slightly larger, deeper, and possibly fatter plate as shown in Figure 3.
- the signal from these small very conductive plates decays slowly explaining the discrete LT $\mathrm{db} / \mathrm{dt}$ and B field responses.
- Because the signal is close to noise levels the characteristic null value in the center of the anomaly due to a vertical plate is wiped out by natural noise in the $\mathrm{dB} / \mathrm{dt}$ data and by noise plus filtering applied in processing to get the B field data. Hence the overall LT response is aliased (destructively filtered) into a broad background response.


Figure 3 VTEM Line 2370 - Maxwell Model 3 Two fat Vertical Plates
Due to the variety of responses in the different surveys it appears that this may be an area of small complex veins with various orientations rather than a single discrete conductive body. In previous drilling on small high conductance targets like this on the NW Range we have intersected conductive/magnetic magnetite but in this case there is no local mag high over the EM anomaly.

It is likely that this conductor extends along strike to the conductor interpreted by Dele on VTEM line 2380 as shown in plan view in Figure 4 . It may also extend further SE to the crossover in the UTEM Z component data on Line 500 N although there is no clear evidence of this in the Helitem data.


Figure 4 UTEM and VTEM B field data in plan and VTEM B field data from L2380 shown in profile plus Plates interpreted from VTEM data by AK L2370 (in blue) and Dele L2380 (shown in black)

An Autocad .dxf file of the most likely VTEM L2370 model (2 sub-vertical plates at different depths at the anomaly location) is attached. The modeled plate are small but quite conductive and are of interest as they could represent small conductive veins in a larger less conductive/disseminated mineralized system like the Vale's Capre project.
Due to the uncertainty surrounding the exact nature of the source it is suggested that all possible models be reviewed with the exploration team to design a drill follow up plan that maximizes the probability of success.

## EMAK2014-2

This target (shown in Figure 4) has only been detected in the Helitem data on line L10100 but is similar enough to the EMAK2014-1 signature to warrant further consideration if the results from EMAK2014-1 are positive.


