We are committed to providing <u>accessible customer service</u>. If you need accessible formats or communications supports, please <u>contact us</u>.

Nous tenons à améliorer <u>l'accessibilité des services à la clientèle</u>. Si vous avez besoin de formats accessibles ou d'aide à la communication, veuillez <u>nous contacter</u>.



GEOPHYSICAL REPORT FOR

ST. ANDREWS GOLDFIELDS LTD.

ON THE

GARRISON PROPERTY

GARRISON TOWNSHIP LARDER LAKE MINING DIVISION NORTHEASTERN, ONTARIO



Prepared by: J. C. Grant,

October 2017

TABLE OF CONTENTS

		Page
INTRODUCTION		1
PROPERTY LOCATION AND ACCESS		1
CLAIM BLOCK		1
PERSONNEL		1
GROUND PROGRAM		2
MAGNETIC SURVEY		2
MAGNETIC SURVEY RESULTS		3
CONCLUSIONS AND RECOMMENDATIONS.		3
ADENDUM		3
CERTIFICATE		
LIST OF FIGURES:	FIGURE 1, LOCATION MAP FIGURE 2, PROPERTY LOCATION MAP FIGURE 3, CLAIM MAP	
APPENDICES:	A: SCINTREX ENVI MAG SYSTEM B: GARMIN HAND HELD GPS UNIT	
POCKET MAPS:	COLOR CONTOURED MAGNETIC PLAN MAP SACLE 1:5000, REVISED OCTOBER 2017	

INTRODUCTION:

The services of Exsics Exploration Limited were retained by Mr. J. V. Bonhomme, on behalf of the Company, St Andrews Goldfields Ltd., to complete a Total field magnetic survey across an 8 claim block, called the Garrison Property, located in Garrison Township of the Larder Lake Mining Division.

The purpose of the ground program was to check the claim block for a favorable geological setting that may lend itself to potential gold and or base metal deposition.

PROPERTY LOCATION AND ACCESS:

The Garrison Property is situated approximately 85 kilometers to the east of the City of Timmins and is situated in the southeast section of Garrison Township which is part of the Larder Lake Mining Division in Northeastern, Ontario. Refer to Figures 1 and 2 of this report.

More specifically the property is situated in the southwest section of the township to the immediate south of Halfway Lake and Clermont Lake.

Access to the grid during the survey period was ideal. Highway 101 runs east from the City of Timmins to the Matheson, 65 kilometers to the east of the City. There is a good gravel road that runs south off of Highway 101 east, just to the west of Perry Lake, locally called the Tower road, that allows truck and ATV access to the central west and northeast corner of the grid area. Travelling time from Timmins to the grid is about 2 hours. Figure 2.

CLAIM BLOCK:

The claim numbers that represent the Garrison property of St Andrews Goldfields Ltd. Are listed below:

4286380, 4286381, 4286382, 4286384, 4286385 4286386, 4286387, 4286388

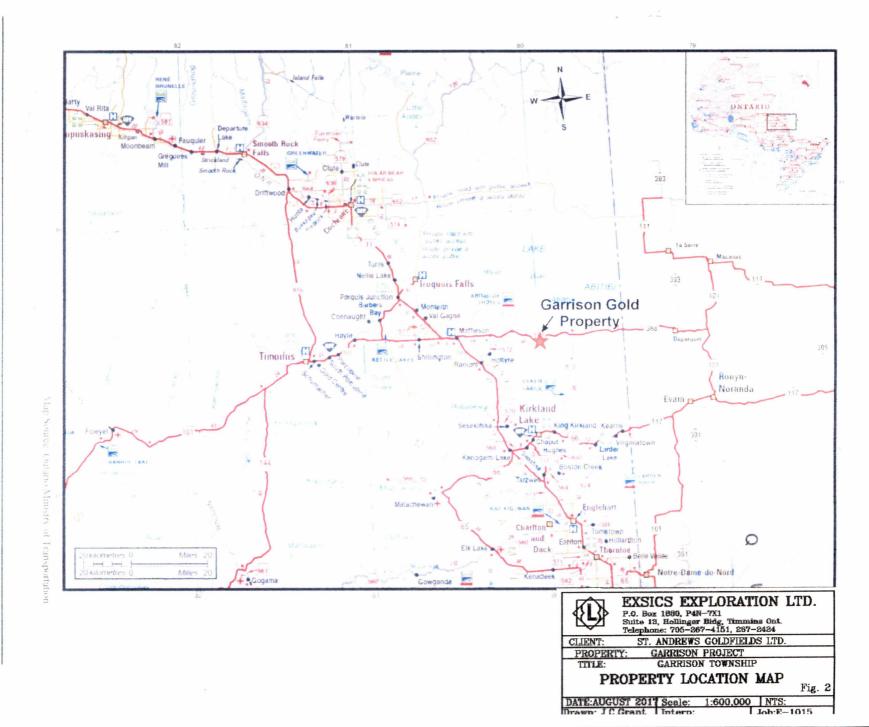
Refer to Figure 3 copied from MNDM Plan Map of Garrison Township for the positioning of the grid and the claim numbers within the Township.

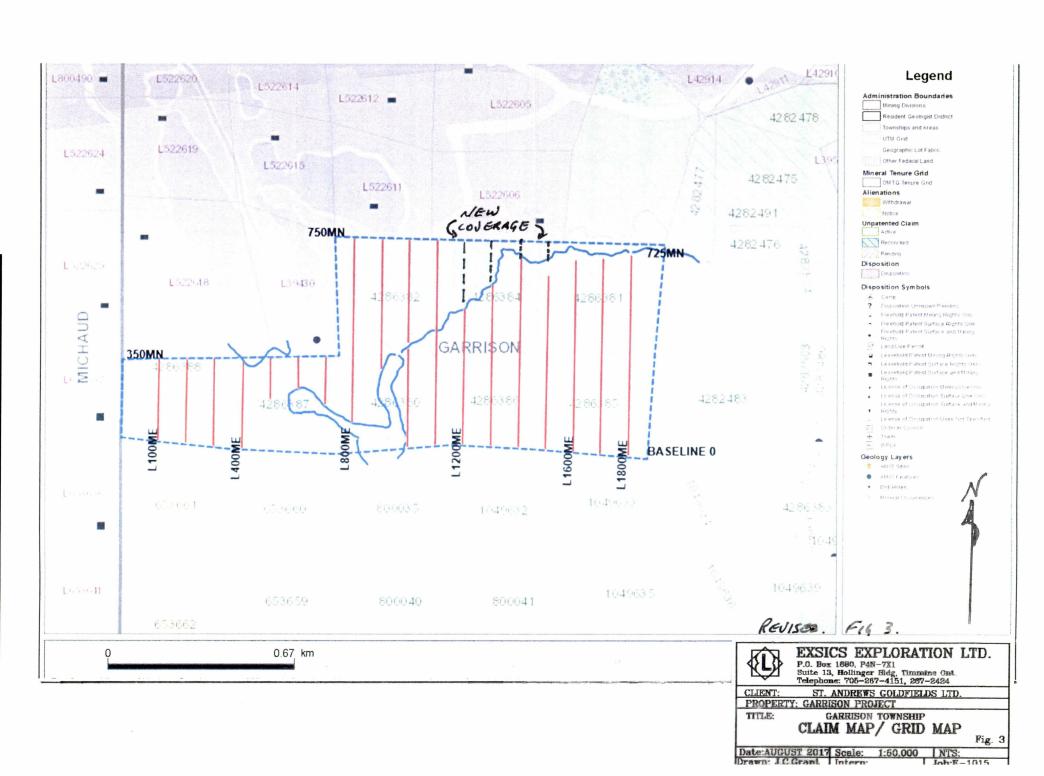
PERSONNEL:

The field crew directly responsible for the collection of all the raw data were as follows:

J. Francoeur Timmins, Ontario R. Bradshaw Timmins, Ontario D. Porier Timmins, Ontario

The program was completed under the direct supervision of J. Grant and the plotting and report was completed by J. C. Grant of Exsics.







GROUND PROGRAM:

The ground program consisted of establishing a detailed compassed paced and GPS controlled grid across the claim group. These grid lines were put in at 100 meter intervals from line 100ME to 1800ME and were chained from the southern boundary of the claim block to the northern boundary. In some cases the northern extent of the grid lines were cut short by a large swollen creek on the northern section of the grid area that runs west to southwest across the claim group to a lake that coves the south central section of the block. All of these lines were then chained with 25 meter stations from the south to the north boundary. In all a total of 8.93 kilometers of grid lines were established across the claim block.

All of the lines were then covered by a total field magnetic survey. The magnetic survey was done using the Scintrex Envi Mag System. Specification for the unit can be found as Appendix A of this report.

In all a total of 8.93 kilometers of grid lines were covered by the magnetic survey between August 18th and 20th 2017.

The following parameters were kept constant throughout the survey period.

Magnetic Surveys:

Line spacing	100 meters
Reading intervals	25 meters

Diurnal monitoring base station recorder

Base record intervals 30 second reading intervals

Reference field 56400 nT Datum subtracted 56000 nT

The collected and corrected data was then plotted onto a base map at a scale of 1:5000 and then the data was contoured at 25 gamma intervals where ever possible. A copy of this color contoured plan map is included in the back pocket of this report.

MAGNETIC SURVEY RESULTS:

The magnetic was successful in outlining a good magnetic high unit that generally covers most of the northern section of the grid lines between 700ME and 1800ME and continues off of the grid in both directions. The high appears to strike northwest from line 1400ME to at least 1200ME and may represent a potential dike like unit striking across the main northern high unit.

A second strong magnetic high also covers the southeast corner of the grid lines between 1600ME and 1800ME and continues off of the grid to the south and east.

There may be a minor fault like structure striking northeast between 1300ME and 1800ME that also continues to the northeast and southwest.

The remainder of the grid is relatively flat magnetically.

CONCLUSIONS AND RECOMMENDATIONS:

The ground program was successful in outlining the suspected geology of the grid area. The most predominant structures are the magnetic highs, one that covers most of the northern section of the grid and the one coming into the southeast corner of the grid. The northern high unit appears to be offset to the south as it approaches the creek suggesting a possible fault striking northeast.

The high outlined in the southeast corner of the grid appears to truncate next to a second possible northeast striking fault that is represented by a narrow magnetic low lying between the south end of line 1300ME and 400Mn on line 1800ME.

A follow up program of detailed mapping and or soil sampling may better define the magnetic highs and potential drill targets.

ADENDUM:

At the request J.V. Bonhomme, Exsics revisited the original survey grid that had been completed in latter part August of 2017. The purpose of this visit was to extend several of the original grid lines to the north on the north side of a river that cut across the central section of claim 4286384. At the time of the original ground program the northern part of claim 4286384 was not fully covered by the ground magnetic survey.

The survey crew completed the north extensions of lines 1200ME. 1300ME, 1400ME and 1500ME from the north side of the river to the northern boundary of the claim unit. This portion of the survey was completed on the 26^{th} of October and consisted of approximately 500 meters of additional coverage over the 4 grid lines.

The survey was completed by James Francoeur and Richard Bradshaw both from Timmins and both operators were part of the same crew that completed the original surveys. The crew used the same magnetic units as the original survey and the specifications can be found as Appendix A of this report.

The results of the line extensions generally correlate to the main conclusions that there is a well-defined magnetic high unit that covers most of the northern extension of the claim block and that the magnetic high continues off of the grid to the north.

It would be recommended that the detailed mapping and or soil sampling program would help in further determining the source of the magnetic high.

Respectfully submitted

J. C. Grant, CET, FGAC Revised October 29th, 2017.

<u>CERTIFICATION</u>

I, John Charles Grant, of 108 Kay Crescent, in the City of Timmins, Province of Ontario, hereby certify that:

- 1). I am a graduate of Cambrian College of Applied Arts and Technology, 1975, Sudbury Ontario Campus, with a 3 year Honors Diploma in Geological and Geophysical Technology.
- I have worked subsequently as an Exploration Geophysicist for Teck Exploration Limited, (5 years, 1975 to 1980), and currently as Exploration Manager and Chief Geophysicist for Exsics Exploration Limited, since May, 1980.
- 3). I am a member in good standing of the Certified Engineering Technologist Association, (CET), since 1984.
- 4). I am in good standing as a Fellow of the Geological Association of Canada, (FGAC), since 1986.
- 5). I have been actively engaged in my profession since the 15th day of May, 1975, in all aspects of ground exploration programs including the planning and execution of field programs, project supervision, data compilation, interpretations and reports.
- 6). I have no specific or special interest nor do I expect to receive any such interest in the herein described property. I have been retained by the property holders and or their Agents as a Geological and Geophysical Consultant and Contract Manager.

JOHN GRANT

John Charles Grant, CET., FGAC.



SCINTEEX

ENVI-MAG Environmental Magnetometer/Gradiometer

Locating Buried Drums and Tanks?

The ENVI-MAG is the solution to this environmental problem. ENVI-MAG is an inexpensive, lightweight, portable "WALKMAG" which enables you to survey large areas quickly and accurately.

ENVI-MAG is a portable, proton precession magnetometer and/or gradiometer, for geotechnical, archaeological and environmental applications where high production, fast count rate and high sensitivity are required. It may also be used for other applications, such as mineral exploration, and may be configured as a total-field magnetometer, a vertical gradiometer or as a base station.

The ENVI-MAG

- easily detects buried drums to depths of 10 feet or more
- more sensitive to the steel of a buried drum than EM or radar
- · much less expensive than EM or radar
- survey productivity much higher than with EM or radar

Main features include:

- select sampling rates as fast as 2 times per second
- "WALKMAG" mode for rapid acquisition of data
- large internal, expandable memory
- easy to read, large LCD screen displays data both numerically and graphically
- ENVIMAP software for processing and mapping data

ENVI-MAG comprises several basic modules; a lightweight console with a large screen alphanumeric display and high capacity memory, a staff mounted sensor and sensor cable, rechargeable battery and battery charger, RS-232 cable and ENVIMAP processing and mapping software.

For gradiometry applications an upgrade kit is available, comprising an additional processor module for installation in the console, and a second sensor with a staff extender.



ENVI-MAG Proton Magnetometer in operation

For base station applications a Base Station Accessory Kit is available so that the sensor and staff may be converted into a base station sensor.

Features and Benefits

"WALKMAG" Magnetometer/Gradiometer

The "WALKMAG" mode of operation (sometimes known as "Walking Mag") is user-selectable from the keyboard. In this mode, data is acquired and recorded at the rate of 2 readings per second as the operator walks at a steady pace along a line. At desired intervals, the operator "triggers" an event marker by a single key stroke, assigning coordinates to the recorded data.

True Simultaneous Gradiometer

An optional upgrade kit is available to configure ENVI-MAG as a gradiometer to make true, simultaneous gradiometer measurements. Gradiometry is useful for geotechnical and archaeological surveys where small near surface magnetic targets are the object of the survey.

Selectable Sampling Rates

0.5 second, 1 second and 2 second reading rates user selectable from the keyboard.

Large-Key Keypad

The large-key keypad allows easy access for gloved-hands in cold-weather operations. Each key has a multi-purpose function.



Front panel of ENVI-MAG showing a graphic profile of data and large-key keypad

Large Capacity Memory

ENVI-MAG with standard memory stores up to 28,000 readings of total field measurements, 21,000 readings of gradiometry data or 151,000 readings as a base station. An expanded memory option is available which increases this standard capacity by a factor of 5.

Easy Review of Data

For quality of data and for a rapid analysis of the magnetic characteristics of the survey line, several modes of review are possible. These include the measurements at the last four stations, the ability to scroll through any or all previous readings in memory, and a graphic display of the previous data as profiles, line by line. This feature is very useful for environmental and archaeological surveys.

Highly Productive

The "WALKMAG" mode of operation acquires data rapidly at close station intervals, ensuring high-definition results. This increases survey productivity by a factor of 5 when compared to a conventional magnetometer survey.

"Datacheck" Quality Control of Data

"Datacheck" provides a feature wherein at the end of each survey line, data may be reviewed as a profile on ENVI-MAG's screen. Datacheck confirms that the instrument is functioning correctly and **Total Field Operating Range**

20,000 to 100,000 nT (gammas)

Total Field Absolute Accuracy:

±1 nT

Sensitivity:

0.1 nT at 2 second sampling rate

Tuning

Fully solid state. Manual or automatic, keyboard selectable

Cycling (Reading) Rates

0.5, 1 or 2 seconds

Gradiometer Option

Includes a second sensor, 1/2m (20 inch) staff extender and processor module.

VLF Option

Includes a VLF sensor and harness assembly

'WALKMAG' Mode

continuous reading, cycling as fast as 0.5 seconds

Digital Display

LCD "Super Twist", 240 x 64 dots graphics, 8 line x 40 characters alphanumerics

Display Heater

Thermostatically controlled, for cold weather operations

Keyboard Input

17 keys, dual function, membrane type

Notebook Function

32 characters, 5 user-defined MACRO's for quick entry

Standard Memory

Total Field Measurements: 28,000 readings Gradiometer Measurements: 21,000 readings Base Station Measurements: 151,000 readings VLF Measurements: 4,500 readings for 3 frequencies

Expanded Memory

Total Field Measurements: 140,000 readings Gradiometer Measurements: 109,000 readings Base Station Measurements: 750,000 readings

VLF Measurements: 24,000 readings for 3 frequencies

Real-Time Clock

Records full date, hours, minutes and seconds with 1 second resolution, ±1 second stability over 24 hours

Digital Data Output

RS-232C interface, 600 to 57,600 Baud, 7 or 8 data bits, 1 start, 1 stop bit, no parity format. Selectable carriage return delay (0-999 ms) to accommodate slow peripherals. Handshaking is done by X-on/X-off. High speed Binary Dump. Selectable formats for easy interfacing to commercial software packages.

Analog Output

0-999 mV full scale output voltage with keyboard selectable range of 1, 10, 100, 1000 or 10,000 full scale

Power Supply

Rechargeable 'Camcorder' type, 2.3 Ah, Lead-acid battery 12 Volts at 0.65 Amp for magnetometer, 1.2 Amp for gradiometer External 12 Volt input for base station operations Optional external battery pouch for cold weather operations

Battery Charger

110 Volt-230 Volt, 50/60 Hz

Operating Temperature Range

Standard: -40° to 60°C

Dimensions & Weight

Console: 250mm x 152mm x 55mm (10" x 6" x 2.25")

2.45 kg (5.4 lbs) with rechargeable battery

Magnetic Sensor: 70mm x 175mm (2.75"d x 7")

1 kg (2.2 lbs)

Gradiometer Sensor: 70mm x 675mm (2.75"d x 26.5")

(with staff extender) 1.15 kg (2.5 lbs)

Sensor Staff: $25mm \times 2m (1"d \times 76")$

.8 kg (1.75 lbs)

VLF Sensor Head: 140mm x 130mm (5.5"d x 5.1")

.9 kg (2 lbs)

VLF Sensor: 280mm x 190mm x 75mm (11" x 7.5" x 3")

1.7 kg (3.7 lbs)

Options

Base Station Accessories Kit

GPS

Software Packages Training Programs

SCINTREX

SCINTREX

HEAD OFFICE

222 Snidercroft Road, Concord, Ontario L4K 1B5 Telephone: (905) 669-2280 Fax: (905) 669-6403

e-mail: <u>scintrex@scintrexltd.com</u> website: <u>www.scintrexltd.com</u>

IN THE U.S.A.

900 Woodrow Lane, Suite 100, Denton, Texas 76205 Telephone: (940) 591-7755 Fax: (940) 591-1968

e-mail: richardj@scintrexusa.com

IN S.E. ASIA

P.O. Box 125 Summer Park, 83 Jijaws Street, Brisbane Telephone: + 61-7-3376-5188 Fax: +61-7-3376-6626

E-mail: auslog@auslog.com.au
Website: www.auslog.com.au



