GEOPHYSICAL REPORT FOR BRIAN COLE ON THE SHAW PROPERTY SHAW TOWNSHIP PORCUPINE MINING DIVISION NORTHEASTERN, ONTARIO

2.24582





42A06NE2028 2.24582 SHAW

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Historically the property, "Bay Lake Occurrence" had been worked in 1925 by the sinking of two 60 foot shafts into a quartz stock work in a felsic to Mafic host rock. In 1940-41 a bulk sample was completed. The stock work is said to have been 340 feet long by 15 feet wide.

The initial geophysical surveys were part of a gold exploration program by Brian Cole on his claim block located in Shaw Township, of the Porcupine mining Division, located 16 kilometers southeast of Timmins, Ontario

**!8.3 kilometers of total field magnetic surveys** done in conjunction with a VLF-EM survey was carried out during the first portion of November,2001 by Exsics Exploration Limited of Timmins.

The surveys were successful in locating and outlining at least 9 conductive trends across the property all of which relate to geological structures situated within a mafic to intermediate volcanic host unit that in turn was cross cut by Diabase dikes and iron rich formations. At least 5 of the zones should be considered for further follow up programs to test their depth extensions.

This second phase of surveys were intended to Follow up the VLF and magnetic survey results. This second phase program consisted of a detailed Line cutting program which was then covered by an Induced polarization, (IP), survey to test the zones at Depth.





### **INTRODUCTION:**

The services of Exsics Exploration Limited were retained by Mr. Brian Cole to complete a detailed induced polarization, (IP), survey across a group of grid lines that were cut across his claim group in Shaw Township.

The purpose of this program was to test the VLF-EM targets at depth with the intent of upgrading the zones for drilling.

This second phase program commenced on the 18th of November and was completed on the <sup>22nd</sup> of November, 2002. In all, a total of 15.0 kilometers of grid lines were cut and chained across the claim block and approximately 7.0 kilometers of IP surveys were done over the grid lines that were cut.

### PROPERTY LOCATION AND ACCESS:

The Cole claim block is situated in the north central section of Shaw Township which is part of the Porcupine Mining Division of Northeastern, Ontario. More specifically it is located to the immediate west of Goose Lake and the northern claim boundary also represents the Township line between Shaw and Whitney. The entire claim block is located approximately 5 kilometers south-southeast of South Porcupine and about 16 kilometers southeast of the City of Timmins. Figures 1 and 2.

Access to the grid during the survey period was ideal. A good gravel road locally called the Carshaw Mine road travels south from the Town of South Porcupine and travels approximately 800 meters west of the Cole claim block. There is a second less traveled gravel road locally called the Goos Lake access road that runs east-northeast off of the Carshaw road and stops at Goose Lake. This secondary road, although over grown in places, generally provided good access to the majority of the grid.. Refer to Figure 3 for the location of this road with respect to the grid lines.

Traveling time from Timmins to the grid area is approximately 25 minutes.

### **PERSONNEL:**

The field crew directly responsible for the collection of the raw IP data were John C. Grant, D. Collin, B. Villneuve, E Jaakkola and J. DerWeduwen.. The plotting, compilation and reports were completed by John C. Grant.

### **CLAIM BLOCK:**

The claim numbers that make up the Cole property are as follows.

P-1227983	5 units
P-1227982	6 units
P-1236904	1 unit
P-1227981	1 unit
P-1236907	2 units
P-1243909	5 units
P-1236903	4 units
P-1236906	1 unit
P-1236905	3 units

Refer to Figure 3 copied from MNDM Plan Map G-3999, Shaw Township for the location of the claims within the block.

### **GROUND PROGRAM**:

The ground program consisted of a detailed metric grid that was established across the property using a base line started at the #4 post of claim P-1236904 and cut at an azimuth of 135 degrees to the eastern boundary of the claim block. A series of cross lines turned off of this base line at right angles were then cut to the north and south limits of the block. All pertinent topographical features, ie, ponds, outcrops, swamps, roads, pits and trenches were tied in as the surveys progressed across the property. In all, a total of 15 kilometers of grid lines were cut across the property.

Once the line cutting was completed, a select group of grid lines were then covered with an IP survey. The lines covered by the IP survey were lines 5600ME to and including line 5000ME. Lines 5600ME to 5400ME were completed using the following survey parameters.

IP method:	Time domain
IP array:	Pole-dipole
Number of electrodes and spacing:	n=4, a=25 meters
Transmitter:	VIP 3000 Kw
Pulse time:	2 second on, 2 seconds off
Parameters measured:	Chargeability,(mV/V) and Resistivity,(ohm/m)



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Lines 5300ME to and including 5000ME were surveyed using the following survey parameters.

IP method:	Time domain
IP array:	Pole-dipole
Number of electrodes and spacing:	n=6, $a=50$ meters
Transmitter:	VIP 3000KW
Receiver:	IRIS, Elrec 6
Pulse time:	2 seconds on, 2 seconds off
Parameters measured:	Chargeability,(mV/V), resistivity, (ohm/m)

Upon the completion of the field program the collected data was then plotted onto individual line pseudo sections showing contoured results for the chargeability and apparent resistivity along with the metal factor for each line.

Copies of these pseudo sections are included in this report.

The collected VLF-EM, in phase and quadrature data was also plotted onto a base map at a scale of 1:2500. The data was then profiled at 1cm to +-20% where possible and then any and all conductor axis where then placed on the lines. A copy of this profiled base map is also included in the back pocket of this report.

In all, a total of 7.0 kilometers of IP surveys were completed across the property.

### **GENERAL PROPERTY GEOLOGY**:

The claim block is generally underlain by mafic ti intermediate volcanics which have been cross cut by a diabase dike striking east-northeast across the central south section of the grid. There is also a suggested iron rich formation striking northwest just to the south of the beaver pond and in the vicinity of tie line 6000MN, lines 4600ME to 5600ME. There is also presence of a second iron rich formation situated in the northeast section of the grid also striking northwest. The gold mineralization noted in previous work appears to be situated along the edge of the iron rich formation and to the northwest of the beaver pond. Past drilling has been concentrated in this immediate area. However, the Author noted a fair number of trenches and pits scattered across the northern section of the grid as well as several pits situated in the south central section of the grid. Old pits and trenches were also observed in the central east section of the grid as well. There may also be evidence of a fault structure striking into the grid from the east which correlates to a topographical low swamp area as well as to the positioning of the beaver pond and its drainage system.

### SURVEY RESULTS:

The IP surveys were successful in locating and outlining one very strong conductor across all of the grid lines. This zone is represented by a good, strong chargeability high ranging from 25 to 10 millivolts as well as a resistivity low. It can be traced from line 5600ME at 5550MN to line 5000ME at 5500MN. This zone represents a good target that is coincidental with several airborne targets as well as a well defined VLF target.

A second IP zone was noted striking across lines 5000ME to 5300ME at about the base line 5000MN. It is represented by a modest chargeability high ranging from 3.5 to 5.5 millivolts as well as a moderate resisitivity high. This zone represents a potentially deep routed target which coincides with a VLF zone.

A third IP zone was noted on lines 5200 and 5300ME at about 4800 to 4900MN. This target is quite deep with modest chargeabilities of 3.3 to 6.0 with a weak resistivity high association. The zone may also correlate to a weak airborne target as well.

The IP survey also shows a moderate to strong resistivity high unit situated between the northern and southern IP zones.

### **CONCLUSIONS AND RECOMMENDATIONS:**

The IP surveys were successful in enhancing several of the VLF-EM zones as well as the airborne targets. The stronger of the three IP zones relate to the suspected iron formation and has shown that the zone extends to depth. The property has been prospected in the past for gold mineralization which seems to be associated with the iron formations. The remaining two IP zones are weaker and deeper but do appear to relate to potential conductive zones at depth as well as correlating to the VLF targets and a weak airborne target.

A follow up drill program should be considered for the strong IP zone as well as the deeper targets. Line 5200ME should be considered as the best line for drilling the deeper zones. Further follow up programs would be based on the results of this drilling.

Respectfully submitted

J. C. Grant, CET, FGAC November, 2001



### **CERTIFICATION**

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 an Honors Diploma in Geological and Geophysical Technology.
- 2). I have worked subsequently as an Exploration Geophysicist for Teck Exploration Limited, (5 years), and currently as Exploration Manager and Geophysicist for Exsics Exploration Limited, since 1980.
- 3). I am a member in good standing of the Certified Engineering Technologist Association, (CET), since 1984
- 4). I am a Fellow of the Geological Association of Canada, (FGAC), since 1986.
- 5). I have been actively engaged in my profession since the 15<sup>th</sup> of May of 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 in the herein described property. I have been retained by the property holders and or their Agent as a Geophysical Consultant and Contract Manager.

John Charles Grant, CET., FGAC.



APPENDIX A

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# ELREC 6

**MULTI CHANNEL IP RECEIVER** FOR MINERAL EXPLORATION

- Six simultaneous dipoles
- **Ten programmable** chargeability windows
- High accuracy and sensitivity





ELREC 6 is a six dipole Time Domain Induced Polarization receiver designed for high productivity surveys in mineral exploration.

ELREC 6 has been designed for being both a user friendly and very sensitive IP receiver.

### **ELREC 6 OUTSTANDING FEATURES**

### Six dipole :

The six channels of the receiver permit to measure six dipoles simultaneously, which provides a high efficiency in the field.

Ten programmable windows :

Beside the classical preset logarithmic and arithmetic modes, ELREC 6 also offers ten fully independant programmable windows which the operator can define by himself according to the way he wants to sample the IP decay curve.

### Automatic measuring process :

A microprocessor fully controls the synchronization, the gain ranging, the stacking, and the display of the results including the apparent resistivity.



Monitoring display :

During the acquisition, the chargeabilities of the six dipoles can be displayed simultaneously on the LCD display for a global visualization of the readings; the standard deviations of these chargeabilities can also be displayed simultaneously for a real time monitoring of the quality of the on going readings.

### Internal memory :

The memory can store up to 2500 readings, each reading including the full set of parameters characterizing the measurements; the date and time of the reading, given by the Real Time Clock of the instrument, are also stored. A serial link permits to transfer the data to a printer or a micro computer.

#### **Remote control** :

ELREC 6 can be fully driven by a micro computer through the serial link for remote operation applications.

Frequency mode : The frequency effect and the phase shift between the fundamental and the third harmonics may be measured for a Frequency Domain waveform (ON+, ON-), or for a Time Domain waveform (ON+, OFF, ON-, OFF).

Time Domain waveform (ON+, OFF, ON-, OFF).

### Field proof instrument :

ELREC 6 operates in a wide temperature range and features a fiber-glass case for resisting to field shocks and vibrations.

### ELREC 6 MEASURING PROCESS

ELREC 6 measuring process has been optimized to provide the best possible accuracy in real field conditions.

### **ELREC 6 features :**

- . A noise monitoring system :
- A monitor function enables the operator the check the level of noise observed on each dipole before the measurement : the digital voltmeter function displays on the LCD the raw instantaneous value of potential. In particular, it is possible to numerically observe the presence of a pulse square waveform corresponding to a primary voltage signal and showing the operation of a transmitter. This function is also available during the acquisition of a reading.
- A line check/ground resistance measurement which permits to check that all seven electrodes are properly connected to the receiver.
- A low-pass analog filter which reduces the effect of higher frequency natural and cultural noises (50-60 Hz).
- Automatic SP compensation, including linear drift correction (up to 1 mV/s) through a digital filter.
- Automatic gain ranging, within a voltage range of  $\pm$  10V.
- Automatic synchronization process : ELREC 6 automatically synchronizes with the signal through a waveform recognition process ; besides it automatically resynchronizes at each new pulse to avoid errors due to a possible shift in the period of the transmitted signal.
- Automatic digital stacking to enhance the signal-to-noise ratio for as long as the operator wants, with a maximum of 250 stacks. During the stacking, the operator can monitor either the instantaneous value (to observe the level of noise), or the cumulative value (to observe the convergence of the average value).
- A continuous quality test procedure, which stops the averaging process when the noise level becomes too high, but keeps the previously stacked data. The averaging procedure starts again when noise decreases. This procedure optimizes the time of data acquisition in very noisy areas.
- A resolution after stacking of 1  $\mu$ V for primary voltage, and of 0.01 mV/V for chargeability, for pointing out low amplitude anomalies. The standard deviations of the chargeability of the six dipoles are displayed during and after the acquisition to give an indication on the noise level.
- A Normalized chargeability option : The Normalized chargeability option refers the chargeability to a standard IP decay curve, and permits to point out any EM coupling effect on the measured signal.



ELREC 6

### Automatic calibration







SP compensation



SIGNAL ~ JN

Digital stacking





---- DIPOLE DIPOLE MEASUREMENTS WITH ELREC & RECEIVER



#### SPECIFICATIONS

- \* Six input channels
- Signal waveform : Time Domain (ON+, OFF, ON-, OFF) with pulse duration of 0.5, 1, 2, 4, 8 seconds;
- \* Up to ten arithmetic, logarithmic, or fully programmable IP chargeability windows.
- \* Computation of apparent resistivity, average chargeability and standard deviation.
- Input impedance 10 Mohm
- Input overvoltage protection up to 1000 volts
- Input voltage range : each dipole : 10V max sum of voltage of dipoles 2 to 6 : 15V max
- \* Automatic SP bucking <u>+</u> 10V with linear drift correction up to 1 mV/s
- \* 50 to 60 Hz power line rejection
- \* Sampling rate : 10 mS
- Common mode rejection : 100 dB (for RS = 0)
- Grounding resistance measurement from 0.1 to 467 Kohm
- Battery test : manual and automatic before each measurement
- Primary voltage : resolution : 1 μV after stacking accuracy : typ. 0.3%
- Chargeability : resolution : 0.01 mV/V accuracy : typ. 0.6%
- Memory capacity : 2500 readings
- RS 232 link for data transfert to micro computers and printers (300 to 19200 bauds rate)
- \* Remote control through the serial link

### FREQUENCY MODE

- Signal waveform : (ON+, ON-) or (ON+, OFF, ON-, OFF)
- \* Pulse duration : 1s or 2s
- Frequency effect and relative phase of fundamental and third harmonics
- \* Resolution : about 0.01 degree after stacking

### **GENERAL FEATURES:**

- \* Dimensions : 31x21x21 cm
- Weight : 6 kg with dry cells 8 kg with internal battery
- Operating temperature : -20°C to +70°C (-40°C to +70°C optional)

# **VIP 3000**

### RESISTIVITY AND IP ADVANCED TRANSMITTER

- 3000V output voltage
- Full microprocessor control
- Ease-of-use
- Standard motor generator

VIP 3000 is a three kilowatt power current regulated Time Domain and Frequency Domain electrical transmitter.

### VIP 3000 MAJOR BENEFITS

• Light in weight and provided with a high voltage (3000V) output, the VIP 3000 is particularly convenient for IP surveys in high resistivity rugged areas and for deep resistivity soundings.

• Microprocessor controlled for ease of operation and protection against misuse. All injection parameters (current, voltages, ...) are controlled. The VIP 3000 can also be operated through its remote control port (RS232).

• The VIP 3000 eight output dipoles provide for higher productivity in the field. Powered from a standard 220V single phase motor generator, the VIP 3000 eliminates the maintenance and supply problems associated with custom power sources.





**VIP 3000 MAIN FEATURES** 

### **HIGH OUTPUTS**

• The VIP 3000 will generate up to 3000 volts for work in high resistivity areas and up to 5 amperes at 600 volts for low resistivity regions.

• With its weight of only 16kg, the VIP 3000 is the lightest 3000W unit on the market.

### HEAVY DUTY CONSTRUCTION

• Very high quality connectors, and heavy duty industrial components are used throughout. The VIP 3000 is shock resistant and weatherproof, for a higher reliability.



### **FULLY AUTOMATED**

• The VIP 3000 is designed for ease of operation. It has a much simplified front panel: current, dipole and frequency (in the frequency domain) settings are the only parameters to be selected by the operator. All the other functions, like voltage range setting, are fully automated.

### PROGRAMMABLE

**Programming functions** are also available, either through the front panel, with a suitable key, or from an external computer terminal. These functions are used to select the parameters and options that are not normally changed during a survey: operating mode, time or frequency domain, cycle time, frequencies, etc.

• This approach reduces front panel cluttering and drastically reduces the possibility of operator mistake. **Instrument reliability** is also increased. For example, it is not possible to switch dipoles when transmitting. This eliminates the possibility of burning out the selector switch or the output circuitry.

## **VIP 3000**

### **COMPLETE DISPLAY**

A backlighted liquid crystal alphanumeric display is provided for the simultaneous indication of **all output parameters**. Ouput current, output voltage, contact resistance and output power are continuously displayed.

### ERROR MESSAGES

Intelligent messages and warnings are displayed in case of problem or malfunction. Besides, the permanent storage of all the parameters relating to the operation of the unit make easier the remote identification of a trouble by the manufacturer for quicker instrument servicing.

### INTELLIGENT REGULATION

The VIP 3000 internal microprocessor is capable of excellent current regulation in almost any load.

Current is operator selectable in preprogrammed steps from 50mA to 5 amperes. Intelligent current adjustment algorithms are always in operation. For example, the contact resistance will occasionally be too high for the VIP 3000 to provide the requested current setting. In such cases, the VIP 3000 will display a warning message and will set the current to the maximum value allowable under that combination of current setting and contact resistance. Some reserve current capacity will always be kept to insure that the current stays constant during the measurements, whatever the contact resistance fluctuations.

### **REMOTE CONTROL**

The VIP 3000 is provided with a remote control port. By using radio modems, it can be operated from a remote location.

The VIP 3000 can also be linked to an intelligent receiver, or to a computer, for the automatic recording of current settings.

Finally, synchronization with a receiver or system is also possible in both directions (i.e. Rx to Tx or Tx to Rx).



### WORKS WITH ALMOST ANY POWER GENERATOR

The VIP 3000 IP transmitter can be powered by almost any motor generator providing a nominal 230V, 45-450 Hz output, single phase, at a suitable KVA rating.

Low cost commercial generator sets, available at local hardware or equipment rental stores are perfectly suitable.





VIP 3000 BLOCK DIAGRAM



### SPECIFICATIONS

• Output Power: 3000 VA maximum

• Output Voltage: 3000 V maximum Automatic voltage range selection

• Output Current: 5 amperes maximum, current regulated

- Current accuracy: better than 1%
- Current stability: 0.1%
- Dipoles: 8, selected by push button

• Output Connectors: Uniclip<sup>TM</sup> connectors accepts bare wire or plug of up to 4 mm. diameter.

### • Time Domain Waveforms:

On +, off, on-, off, (on = off) preprogrammed cycle. Automatic circuit opening in off time. Preprogrammed on times from 0.5 to 8 seconds by factor of two. Other cycles programmable by user.

### • Frequency Domain Waveforms: Square wave,

Preprogrammed frequencies from 0.0625 Hz to 4 Hz by factors of 2. Alternate or simultaneous transmission of any two frequencies. Other frequencies programmable by user.

### • Time and Frequency Stability:

0.01%, 1 PPB optional

### • Display:

Alphanumeric liquid crystal display. Simultaneous display of output current, output voltage, contact resistance, and output horse-power

### • Protection:

Short circuit at 20 ohms, Open loop at 60000 ohms, Thermal Input overvoltage and undervoltage.

### Remote Control:

Full duplex RS-232A, 300-19200 bauds. Direct wire sync for on-time and polarity.

### **GENERAL FEATURES**

Dimensions (h w d): 41 x 32 x 24 cm.
Weight: 16 kg
Power Source:
175 to 270 VAC, 45-450 Hz, single phase.
Operating Temperature: -40 to +50 degree Gabia



### **Work Report Summary**

Transaction No:	W0260.01809	Status:	APPROVED			
Recording Date:	2002-NOV-29	Work Done from:	2002-NOV-18			
Approval Date:	2002-DEC-03	to:	2002-NOV-28			
Client(s): 119582	COLE, BRIAN LESLIE					
Survey Type(s):						

IP

W	Work Report Details:									
Cla	aim#	Perform	Perform Approve	Applied	Applied Approve	Assign	Assign Approve	Reserve	Reserve Approve	Due Date
Ρ	1227981	\$1,119	\$1,119	\$0	\$0	\$1,119	1,119	\$0	\$0	2004-JAN-18
Ρ	1227983	\$0	\$0	\$2,000	\$2,000	\$0	0	\$0	\$0	2004-JAN-26
Р	1236903	\$2,702	\$2,702	\$1,600	\$1,600	\$1,102	1,102	\$0	\$0	2003-NOV-30
Р	1236904	\$901	\$901	\$400	\$400	\$501	501	\$0	\$0	2003-NOV-30
Ρ	1236905	\$0	\$0	\$1,200	\$1,200	\$0	0	\$0	\$0	2003-DEC-20
Р	1236906	\$730	\$730	\$400	\$400	\$330	330	\$0	\$0	2003-DEC-20
Ρ	1236907	\$663	\$663	\$800	\$800	\$0	0	\$0	\$0	2003-DEC-20
Ρ	1243909	\$285	\$285	\$0	\$0	\$285	285	\$0	\$0	2003-JAN-26
		\$6,400	\$6,400	\$6,400	\$6,400	\$3,337	\$3,337	\$0	\$0	-

LC

External Credits:

Reserve:

\$0 Reserve of Work Report#: W0260.01809

\$0

\$0

Total Remaining

Status of claim is based on information currently on record.



42A06NE2028 2.24582 SHAW

Ministry of Northern Development and Mines Ministère du Développement du Nord et des Mines

Date: 2002-DEC-04

**BRIAN LESLIE COLE** 

SPRINGFIELD, ONTARIO

CANADA



GEOSCIENCE ASSESSMENT OFFICE 933 RAMSEY LAKE ROAD, 6th FLOOR SUDBURY, ONTARIO P3E 6B5

Tel: (888) 415-9845 Fax:(877) 670-1555

Submission Number: 2.24582 Transaction Number(s): W0260.01809

Dear Sir or Madam

NOL 2J0

### Subject: Approval of Assessment Work

RR#1, 51275 WILSON LINE, MALAHIDE TWP.

We have approved your Assessment Work Submission with the above noted Transaction Number(s). The attached Work Report Summary indicates the results of the approval.

At the discretion of the Ministry, the assessment work performed on the mining lands noted in this work report may be subject to inspection and/or investigation at any time.

If you have any question regarding this correspondence, please contact STEVEN BENETEAU by email at steve.beneteau@ndm.gov.on.ca or by phone at (705) 670-5855.

Yours Sincerely,

Lacodal.

Ron Gashinski Senior Manager, Mining Lands Section

Cc: Resident Geologist

Brian Leslie Cole (Claim Holder) Assessment File Library

Brian Leslie Cole (Assessment Office)

John Charles Grant (Agent)











DIPOLE LENGTH : a=25 M DIPOLE SPACINGS : n = 4FREQUENCIES :

CHARGEABILITY Interval 1%, 10% RESISTIVITY Logarithmic 1, 1.5, 2, 3, 5, 7.5, 10,... METAL FACTOR Logarithmic 1, 1.5, 2, 3, 5, 7.5, 10,...

INSTRUMENTS RECEIVER : IRIS IP-4 TRANSMITTER : IRIS VIP-3000

2.24582

Scale 1:2500 0 25 50 75 (meters)

SHAW TOWNSHIP PROPERTY INDUCED POLARISATION

LINE 5500

Date : NOV. 2002 Property : SHAW NTS : 42A Survey by : EXSICS EXPLORATION

### BRIAN COLE









