GEOPHYSICAL REPORT For TRI ORIGIN EXPLORATION LIMITED On The SPADE LAKE GOLD PROPERTY HOBLITZELL TOWNSHIP PORCUPINE MINING DIVISION NORTHER STERN ONTARIO

> Prepared by: J.C.Grant, CET, FGAC January, 2007





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## **INTRODUCTION:**

The services of Exsics Exploration Limited were retained by Mr. R. Valliant, on behalf of the Company, Tri Origin Exploration Limited, to complete two lines of Induced Polarization,(IP), surveys along the Tomlinson access road that cuts across a portion of their Spade Lake Gold Property that is located in Hoblitzell Township of the Porcupine Mining Division in Northeastern Ontario.

The purpose of this program was to locate several existing IP zones that had been outlined in past years by the previous holders of the claim block. Tri-Origin is in the process of drilling these targets and this present program was intended to pinpoint these zones for this drilling. The surveys were completed between the 12<sup>th</sup> and 18<sup>th</sup> of January 2007. In all, a total of 2.1 kilometers of lines were covered by the IP program

## PROPERTY LOCATION AND ACCESS:

The Spade Lake Gold Property is located in the central southeast portion of Hoblitzell Township which is situated in the Porcupine Mining Division in Northeastern Ontario.

More specifically it is located approximately 5 kilometers southwest of the Burntbush River and 7 kilometers southeast of East Soucie Lake. The IP lines run along the Tomlinson Road which runs north to northeast across the Township.

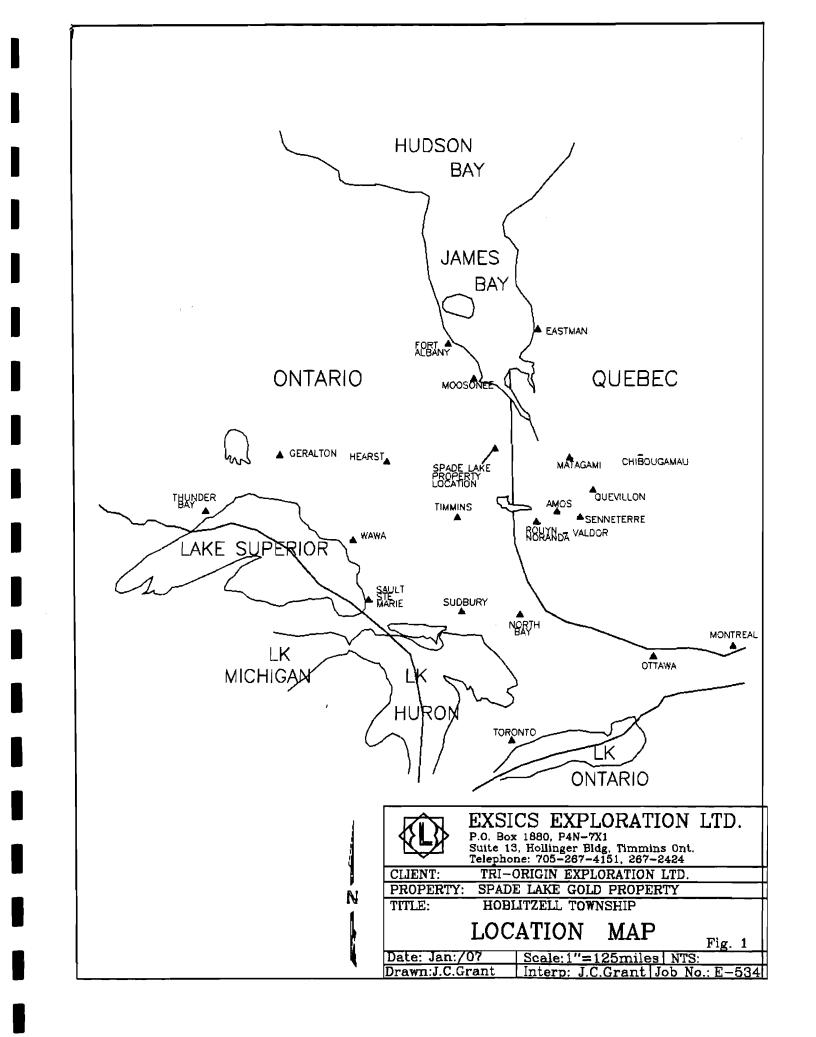
The area lies about 3.5 hours north of the City of Timmins and commences at about the 40 kilometer marker north along the road.

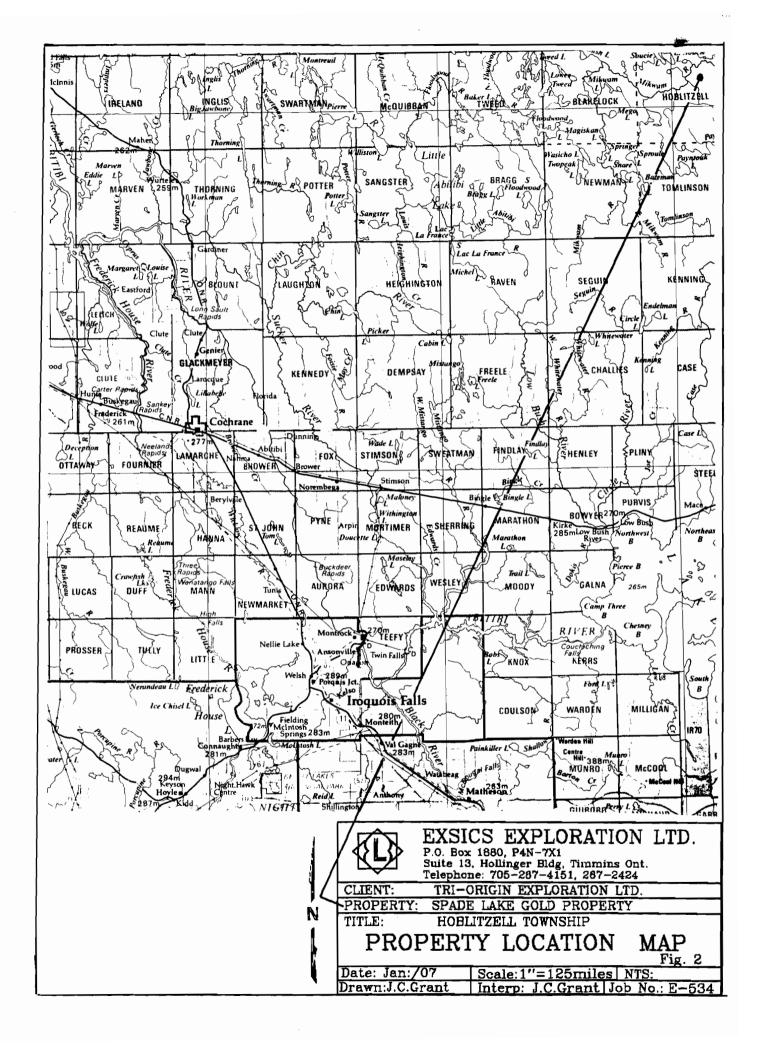
## **CLAIM BLOCK:**

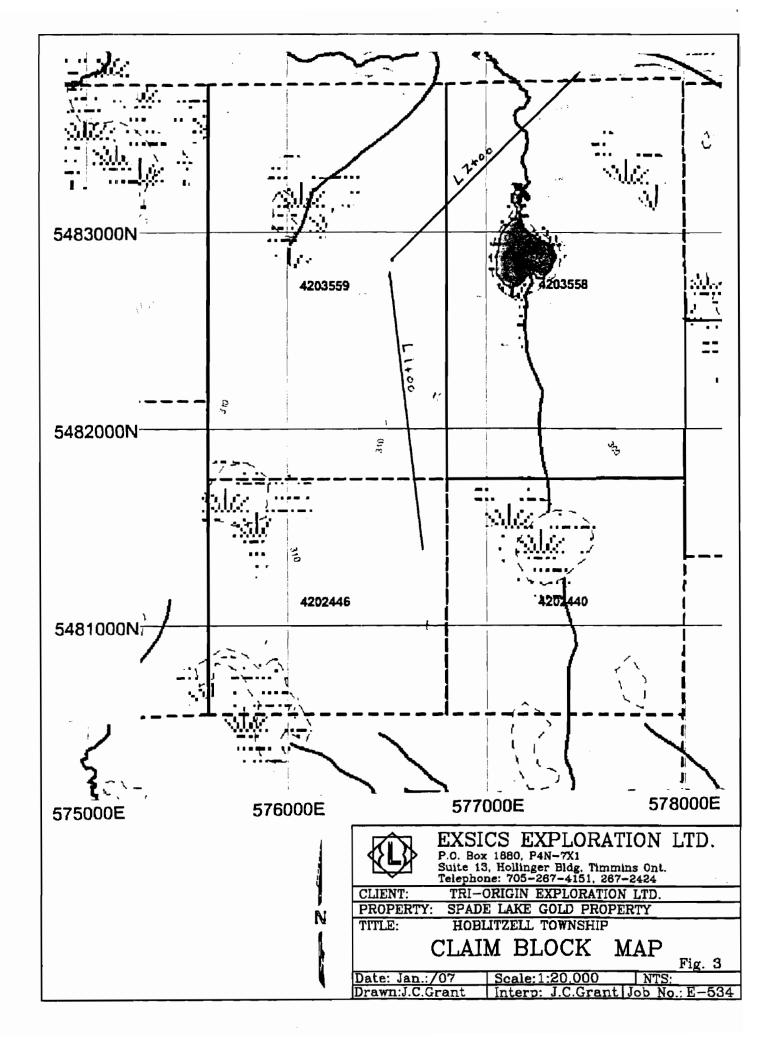
The claim numbers that were covered by this program and that represent a portion of Tri-Origin's Spade Lake Property are as follows.

4203559, 4203558, 4202446 and 4202440

Refer to Figure 3 of this report, which was copied from MNDM Plan Map of Hoblitzell Township for the positioning of the claims within the Township.







## PERSONNEL:

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

E. Jaakkola	Timmins, Ontario
R. Bradshaw	Timmins, Ontario
M. Cayen	Timmins, Ontario
C. Wabi	Timmins, Ontario
D. Collins	Timmins, Ontario

The entire program was completed under the direct supervision of J.C.Grant and all of the plotting, compilation, interpretation and reports were completed by in-house staff. **GROUND PROGRAM:** 

The ground program was completed over a two day period. The first line was completed on the 12<sup>th</sup> of January and the second line was completed on the 18<sup>th</sup> of January. This program consisted of a detailed line of IP being done along the right shoulder of the Tomlinson Road commencing at a designated GPS point established by the project geologist for Tri-Origin. The first line was set up from this point and continued north-northwest to a second GPS completion point also established by the geologist. The northern completion point of the first line stops at a significant bend in the Tomlinson road that goes around a small lake called Spade Lake.

The second IP line commences several meters from the end of the first line again from a designated GPS point and continued northeast for about 1000 meters to a designated completion point. This line also followed the right shoulder of the Tomlinson road.

The first line was 1100 meters in length and the second line was 1000 meters in length for a total of 2.1 kilometers.

## **IP SURVEY:**

The IP survey was completed over both lines using the IRIS, Elrec 10 Receiver and the IRIS VIP 3.0 kilowatt transmitter. Specifications for these units can be found as Appendix A of this report.

The following parameters were kept constant throughout each survey.

Line spacing	random intervals
Station spacing	25 meters
IP array	Pole- Dipole
Electrode number, (n)	6 electrodes
Electrode spacing, (a)	25 meters
Parameters measured	Apparent Resistivity, in Ohms/meter and
	Chargeability in Milivolts/Volt.

Upon the completion of the surveys, the collected data was presented as individual line pseudo-sections showing the color contoured results of the collected Chargeability, Resistively and Metal Factors for each line. Copies of these sections are included in the back pocket of this report.

## **IP SURVEY RESULTS:**

The IP survey was successful in locating the expected conductive zones across each of the survey lines. These results will be discussed separately for each of the lines read.

## **LINE 100:**

This line was completed first and commenced at GPS co-ordinate 576708E/5481606N. The survey was successful in locating at least 4 zones across the line. The first target is a well defined IP anomaly situated between 200MN and 300MN that lies to the immediate south of a narrow resistivity high. The zone appears to be relatively shallow and extending to depth.

A second weaker zone was noted between 550MN and 575MN that is directly associated with a modest resistivity high. This zone may be part of the third zone that lies at 750MN as it appears to be part of the same resistivity high unit. The last zone is a well define IP anomaly situated between 900 and 950MN that correlates to a weak and very deep resistivity high.

## LINE 200:

This line commenced several meters from the end of line 100 which generally related to GPS co-ordinate 576510E/5482772N. This line generally outlined a broad IP anomaly situated between 500ME and 700ME that lies on the northern flank of a modest resistivity high. The zone appears to relate to several lenses of sulphide enrichment within a broader zone. The remainder of the line was relatively quiet.

## **CONCLUSIONS AND RECOMMENDATIONS;**

The IP survey was successful in outlining several targets across the grid line area. The resistivity results suggest that the lines generally show deep overburden coverage on the north and south ends of the lines with a thinning of the overburden coverage over the middle portion of the line. The IP anomalies are well defined on the first line and appear to continue to depth. The IP anomaly on the end of the second line appears to be broader in nature that the other responses which may suggest that the survey line is cutting the zone at an odd angle.

A follow up drill program was in progress at the time of the surveys. Results from this initial drill program will dictate the type of follow up program that should be done to enhance the property.

Respectfully submitted

J. C. Grant, CET, FGAC January, 2007



## **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 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 15<sup>th</sup> 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 Charles Grant, CET., FGAC.

APPENDIX A

# **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.

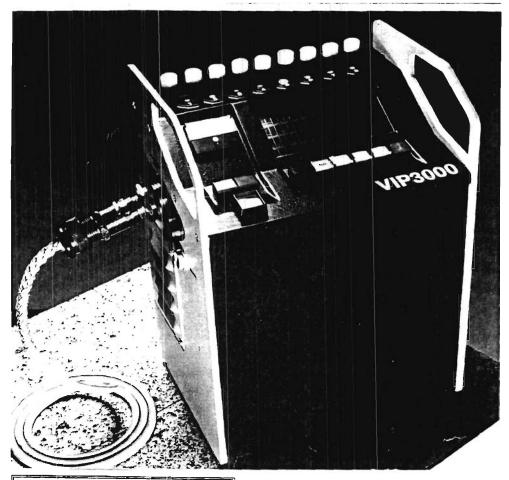
## VIP 3000 MAJOR BENEFITS

• 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.

- HIGH VOLTAGE ON + V= 2900V I= 1.00A R= 2.9KΩ P= 2900W I setpoint = 1.00A



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. 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.

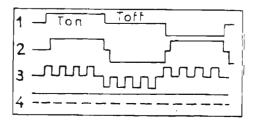
Current is operator selectable in preprogrammed steps from 50mA to 5 amperes. Intelligent current adjustment algorithms are always in operation. For example, the contact resistance will occasionally be too high for the VIP 3000 to provide the requested current setting. In such cases, the VIP 3000 will 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).

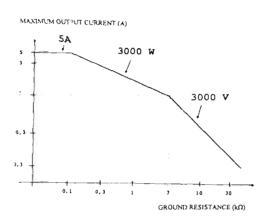


VIP 3000 CURRENT WAVEFORMS

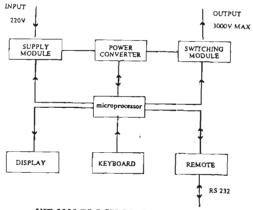
## POWER GENERATOR

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



IRIS INSTRUMENTS 1, ovenue Buffon BP 6007 - 45060 Orléans cedex 2, France Phone : (33) 38.63.81.00 Fox : (33) 38.63.81.82

#### STECH CATIONS

- 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: UniclipTM 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:

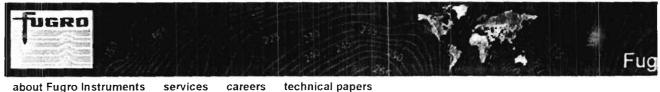
Short circuit at 20 ohms, Open loop at 60000 ohms, Thermal Input overvoltage and undervoltage.

### 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 degrees Celsius.
Supplied Accessories: Programming key Operation manual.



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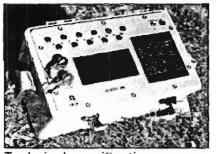
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## Technical specifications

- Signal waveform: Time Domain (ON+ OFF, ON

-, OFF) with pulse duration of 0.5 , 1 , 2 , 4 or 8 seconds

- Up to twenty arithmetic, logarithmic or fully programmable IP chargeability windows

- Computation of apparent resistivity,

average chargeability and standard deviation - Input impedance: >50 Mohms

- Input overvoltage protection up to 1000

Volts

- Automatic SP bucking ±15V with linear drift connection

- Internal calibration generator for a true

calibration on request of the operator

- Automatic synchronization and re-

synchronization process on primary voltage signals whenever needed

- Automatic stacking number in relation with

a given standard deviation value - Proprietary intelligent stacking process

rejecting strong non-linear SP driffs

- Common mode rejection: more than 100 dB (for  $Rs \approx 0$ )

- Ground resistance measurement from 0.1 to 100 kohms

- Battery test: graphic plot of battery status

- Primary voltage: range: 10 µV to 15V,

resolution: 1µV, accuracy: typ. 0.3%

- Chargeability: range: 10µV to 15V.

accuracy: typ. 0.6%

- Self Potential: range: ±15V, resolution: 0.1 m٧

- Time constant (tau) range: Cole-Cole

inversion continuous from 10 millise conds to 100 seconds : Customized range on request

- Dimensions: 31x21x25 cm

Display 16 lines by 40 characters, 128 x

## ELREC 10, Ten dipole IP receiver

The With graphics display for data quality monitoring

TEN SIMULTANEOUS DIPOLES TWENTY PROGRAMMABLE CHARGEABILITY WINDOWS HIGH ACCURACY AND SENSITIVITY

ELREC 10 is a ten dipole Time Domain Induced Polarization receiver designed for high productivity surveys in Mineral Exploration. ELREC 10 is a highly sensitive receiver and features a large graphic display for user friendly operation and a Cole-Cole parameter computation for in-the-field time constant analysis.

#### Ten dipoles:

The ten dipoles of ELREC 10 offer an increased productivity in the field for dipole-dipole, gradient or extended polypole arrays. It is also possible to measure five differential (non adjacent) dipoles. for special electrode configurations.

#### Twenty programmable windows:

arithmetic Beside classical and logarithmic modes, ELREC 10 also offers twenty fully programmable windows for a higher flexibility in the definition of the IP decay curve.

#### **User Friendly Interface:**

user friendly interface has been set up in ELREC 10 with a minimal number of key strokes for each operation.

#### Intelligent Stacking Process:

When the electric noise has strong nonlinear effects, the standard arithmetic stacking process requires a long acquisition time to measure the IP effect ; a proprietary intelligent stacking

<sup>-</sup> Ten input dipoles

 Weight: 8 kg including internal battery
 Operating temperature: -30°C to +70°C
 Power supply: 12V internal rechargeable battery with more than 20 hours service at +20°C ; a 12V external battery can be also used.

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SP bursts and minimize the acquisition time for a given reading accuracy

#### Monitoring Display:

A large graphic LCD (128x240 dots) permits the operator to display simultaneously the IP decay curves of the ten dipoles during the acquisition, for a global visualization of the readings and for better quality control. Before the acquisition, the ELREC 10 can be used as a one channel DC graphic display, for monitoring the noise level and checking the primary voltage waveform, through a continuous display process.

#### Cole-Cole Parameters:

An inversion procedure has been implemented to compute Cole-Cole time constant at the end of the acquisition. This allows a possible grain size discrimination analysis.

#### **Internal Memory:**

The memory can store up to 3200 dipole readings, each reading including the full set of parameters characterizing the measurements. An explicit data storage procedure has been developed including the display of warning messages for data not yet stored. File names are available for a better memory management of sets of readings.

#### Field proof Instrument:

ELREC 10 operates in a wide temperature range and features a fiberglass case for resistance to field shocks and vibrations.

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