



## PDAC 2005 HIGHLIGHTS

The state of the industry is healthier than in the past several years -- reflecting increases in key commodity prices and renewed investor confidence. While this resurgence has brought a new glow to mineral exploration, geologists and geophysicists must continue to ensure that work is performed on time, on budget, and with the proper equipment.

As one of the main instrumentation suppliers to the mineral exploration industry, Terraplus is pleased to note that they have added a range of new equipment that will make a key difference to your exploration program.

This overview highlights developments in many geophysical technologies, including:

- **Magnetometers**
- **Time Domain EM Systems**
- **Gravity Meters**
- **Frequency Domain EM Systems**

### Rentals From Terraplus

As projects demand, Terraplus may recommend a rental as an optimal means of executing a survey or mastering a new and promising technology. This gives you direct access to the largest Mining rental pool in Canada and one of the largest in the world.

The pool is stocked with the latest in geophysical technologies; and we work with you to select the appropriate combination to address your issues exactly. If we know of another solution that is not in our catalogue, we will recommend an alternate solution so that you can still meet your goals.

Terraplus' customers are typically impressed by the ease of renting geophysical equipment – it's an important component of the company's reputation. Terraplus' rentals are fully checked prior to each rental to ensure that all geophysical

instrumentation is functioning to specifications.

## MAGNETOMETERS & GRADIOMETERS

In addition to providing enhanced data quality, the new v7.0 release of the GSM-19 series is designed to provide additional GPS and navigational functionality for survey efficiency. It also provides easier data export to major exploration software packages. Specific v7.0 capabilities include:

- **Quieter Magnetic Field Data**
- **<1.5 m Internal GPS for WAAS**
- **Enhanced GPS Resolution**
- **Improved Lane Guidance**
- **GPS Interface for Picket Annotation**
- **Programmable Export Format**
- **Line Format for Data Import**
- **Standard 16 MB Memory**

The system also acquires GPS elevations – an important parameter for today's 2D and 3D geophysical modeling packages. This capability coupled with other version 7.0 features ensure that the GSM-19 is the most advanced system for explorationists seeking to take advantage of the proven mapping and drill targeting capabilities of magnetics.

GSM-19 and Potassium magnetometers are also of increasing interest for multi-sensor vehicular-borne (ground and airborne) systems. To get your multi-sensor survey going, talk to Terraplus!



**TIME DOMAIN EM (TDEM)**

Base metal prices continue to exhibit strength based on the strong domestic demand from China and the dearth of new project discoveries in the exploration pipeline. Other minerals, such as Uranium, are also seeing record prices and stimulating exploration.

In this environment, it's time once again to look to broadband Time Domain EM methods as a method that not only produces unique and valuable data for interpretation and decision-making, but also has the capability of "targeting" both deep and shallow targets.

Standard components include Receivers, Motor Generator – driven Transmitters, Battery – driven Transmitters, and Accessories, including Controllers and other related items. These items are now available from Terraplus.

### TDEM Receivers

For exploration work, Terraplus' specialists recommend the GDP-32<sup>II</sup> receiver – arguably the most versatile EM receiver available today. These rugged one-man portable, battery-operated receivers are multi-channel instruments that can acquire multi-parameter data with no change in either hardware or software.



Measurements include Time Domain EM (TDEM); Controlled Source Audio Frequency Magnetotellurics (CSAMT); Phase IP and more.

In addition to this multi-function capability, other performance advantages include synchronous timing (via a stabilized precision quartz clock or using GPS for further control) and multi-channel acquisition of up to 16 independent analog channels. The system also features high capacity storage (>1 GB) as an option for waveform recording.

### **Motor Generator – Driven Transmitters**

When considering performing TDEM surveys, it's a great advantage to be able to choose from a variety of transmitters and power options. This ensures that explorationists can reach deeper targets, and ensure that their transmitter delivers the best value possible.



As shown in the figure above, three of the key systems are the GGT - 3, GGT - 10 and GGT - 30 which are rated at 3 kW, 10 kW and 30 kW of power, respectively.

These transmitters also feature a number of capabilities which translate into important benefits for your next TDEM survey. These include broadband frequency range (DC to 8 KHz) for comprehensive measurements; fast shut-off times for versatility in the field; and automatic fault protection and shutdown for operational safety and security.

## Battery – Driven Transmitters

Field conditions or operator preferences may preclude the use of motor generators; in this case, Terraplus customers have the option of using the ZT-30 Battery Powered Transmitter.



As shown above, this unit is compact with output either controlled by the GDP receiver or by a separate XMT-series controller (see Controllers and Accessories).

The ZT-30 is capable of producing time-domain or frequency-domain waveforms into either resistive or inductive loads. For TEM work, the unit can deliver up to 30A into a 100m loop with a turnoff time of less than 200  $\mu$ s. This makes the system ideal for mid-range to shallow surveys that require the information and detail than only TDEM can provide.

## Transmitter Controllers & Accessories

Accessories, such as the XMT-32S Transmitter Controller, or wire reels and ancillary equipment, including switching boxes, are also available from Terraplus. If you require (or are not sure whether you require) a controller for producing timing signals for your transmitter, please contact us.

## **GRAVITY METERS**

While various companies have energized the acquisition of gravity data for mineral exploration through new airborne platforms, exploratists also now have the opportunity to consider a new land gravity alternative from Terraplus – the Burris Gravity Meter.

This system approaches land gravity from a fresh perspective, starting with a new metal, zero-length spring (the main active component), that took six years to develop. In addition, digital technology has been incorporated throughout – providing superior digital performance and ease-of-use.



The control electronics, trademarked as UltraGrav, allow users to select the level of accuracy needed for the particular mineral exploration project at hand. Lower accuracy results in faster reading times, allowing more stations to be recorded in a day. Alternately, higher accuracy delivers data to the most demanding specifications.

UltraGrav also performs additional functions such as automated readings (reads, applies calibration factor, corrects for earth tides and off-level position, stores, and displays results)

or you can proceed manually.

The system also combines a leveling system that is fast and straight-forward to use and a zero-length spring that drifts less than 0.500 mGals per month (when seasoned). We think that you will find the Burris Gravity Meter provides unsurpassed precision and accuracy over large ranges – the ideal system for your next base metal or other mineral exploration project.

## FREQUENCY EM (FEM)

Any explorationist seeking sulphide - hosted mineralization inherently recognizes the value of portable frequency - domain electromagnetic systems. And the good news is that, for the first time in two decades, there is a new system being introduced.

The PROMIS-10 is a multi-frequency EM profiling system bringing improved productivity with its fully incorporated data logger and multi-component receiver sensor. PROMIS-10 features ten frequencies (110 Hz to 56,320 Hz) and is designed for transmitter spacings of up to 400m.

It also features a three-component sensor which enables simultaneous acquisition of EM data in the "MAX" and "MIN" coupling directions. The additional component provides information on the target strike.

Users will also appreciate the lighter yet more powerful design of the transmitter as well as the versatility and easy handling of the receiver unit.

Data is stored to Flash memory so that users can also rest assured that their data is protected during the project. For more information on the new multi-frequency EM system, ask Terraplus. The new PROMIS system is scheduled to be available in the fall of 2005.

## TERRAPLUS RENTALS

Finding the right solution to your earth science application is challenging; but Terraplus offers you the knowledge of one of the most experienced groups in the industry. With more than fifteen years of working with geophysical instrumentation, software, training and support, Terraplus is absolutely the correct choice for your next project.

Perhaps your next project requires a rental rather than a purchase. Terraplus can assist you fully with any technical support questions you may have as well as delivering all system components, as required.



When dealing with Terraplus, rest assured that you have access to the largest Mining rental pool in Canada and one of the largest in the world. Many systems are available, including (but not limited to):

- **Magnetometer / Gradiometer/ VLF**
- **Induced Polarization**
- **TDEM and FEM Electromagnetics**
- **Borehole Logging**
- **Gravity, GPR, Seismics**
- **Magnetic Susceptibility**

# Terraplus

Geophysical Equipment Supplier



- Radiometrics (shown in image above)