

FIRST

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Peri-stem plugs

Stemming plugs for quarries
and mines in Africa

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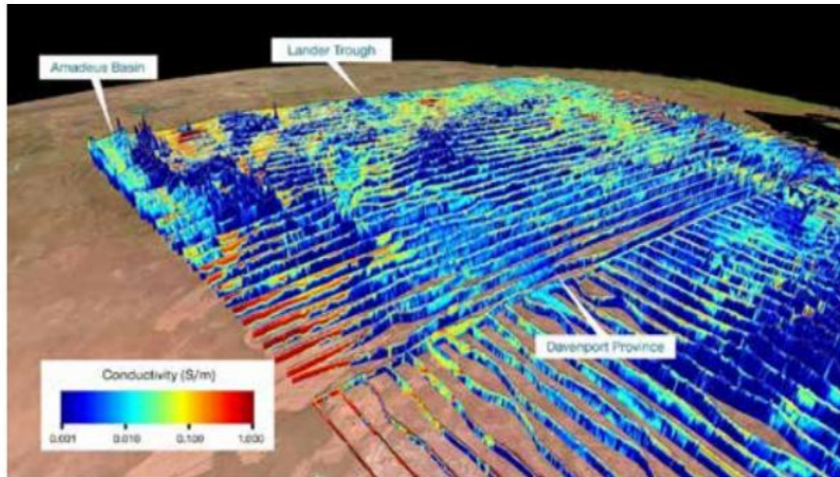
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**Peri Nitrates
(Pvt) Ltd**

Airborne electromagnetic surveying in mining applications



Airborne electromagnetic surveying is a huge growth area as mining companies seek to de-risk prospects before hunting for funding. Airborne electromagnetic (EM) surveying is a method used by mining and exploration companies to determine the geological structure of the earth at potential mining sites, obtaining detailed insight into where and how to drill. And while much cheaper and more efficient than random drilling, it's one that's quickly grown in popularity over recent years as operators seek to de-risk prospects before engaging venture capital firms.

Its popularity can be put down to two important factors, the data provided is extremely high-resolution and resistivity/conductivity. The main parameters of EM methods is highly sensitive to many geological processes and structures including mineralization bearing. Moreover, EM technologies are improving all the time – both in terms of the equipment used to collect the data and the software used to analyze it.

Xcalibur Airborne Geophysics is an airborne geophysical company based in Pretoria, South Africa, that specializes in ultra-high resolution and

standard airborne surveys throughout Africa and the Middle East. They offer several different airborne geophysical services such as, gradient magnetic and radiometric, EM, gravity surveys and value-add data processing and interpretation.

New Resolution Geophysics (NRG™) is an airborne geophysical company specializing in the collection of ultra-high resolution airborne data with offices in Cape Town, Pretoria and Perth. NRG has been in operation since 2005 with specific focus on the African, Middle East and Australasian markets, the company has completed in excess of 4,000,000 line kilometres of survey in over 50 countries

NRG owns its own state of the art Aircraft Maintenance Organisation (AMO), located at Wonderboom Airport in South Africa and is home to NRG's fleet of aircraft which consist of eight new generation turbine powered helicopters, two fixed-wing aircraft and one twin engine aircraft. NRG own all aircraft, geophysical equipment and spares and at all times have a backup of available parts which assists in the turnaround time in the event of unserviceability.

With each technology offered, NRG aim to deliver an industry-leading product. The continual development of new hardware and software ensures that NRG remain at the forefront of geophysical data collection.

The management and staff are committed to the development, implementation and maintenance of a sustainable Health and Safety System in accordance with the requirements of the relevant legislation, applicable standards and codes of practices and participate as an active member of the International Airborne Geophysics Safety Association (IAGSA).

Expert Geophysics Limited (EGL) is a Canadian geophysical company specializing in airborne geophysical surveys worldwide with the advanced electromagnetic system MobileMT. EGL offers the latest innovation in airborne electromagnetic technology:

Mobile MagnetoTellurics (MobileMT), the most advanced generation of airborne electromagnetic technologies based on natural fields. Natural EM fields provide with geoelectrical information from much wider depth range than methods with controlled source.

MobileMT combines the latest advances in electronics, airborne system design, and sophisticated signal processing techniques. The system operates in the frequency range of 30 Hz – 20,000 Hz and providing accurate geoelectrical information from surface up to >1 km depth with high in-depth and in-line resolution.

MobileMT surveys are cost-effective, rapid and resulted in detail 3D full-scale electromagnetic mapping inferring geoelectrical structures in absolute conductivity units. MobileMT is applicable to diverse of exploration models and targets morphologies hosted in any type of geology.

MobileMT mineral exploration applications:

- Delineation shallow and deep fault zones in mineral and geothermal exploration. MobileMT provides data in 3D with high resolution and is able to detect ductile shear zones, brittle faults and subtle lineaments.
- Exploring diamondiferous regions, detection kimberlites fields controlling structures and direct kimberlite pipes detection.
- Highly and super conductive Ni-Cu-Co deposits and discrete targets. MobileMT technology does not have limitations in very conductive range and is evaluated as efficient for detecting mineral targets for mining and bearing Ni-Cu sulphides embayment structures at depths from near surface to not reachable by conventional airborne TEM.
- Alteration and dissemination halos accompanied many mineralized zones (Cu, Au, Ag, Mo, all types of VMS) can be effectively mapped by MobileMT at depth range from few tens of meters to >1 km depending on an environment conductance.
- Cu-bearing igneous intrusions (porphyrys) is an ideal target for MobileMT. Fault contacts and fault associated conductive zones, highly resistive wedges of the intrusives and potassic alteration zones are very well identified and



defined by the MobileMT exploration technique with great spatial, depth and resistivity resolution.

- The MMT technique is applicable for effective mapping deep host/overlying rocks alteration and basement conductors. The combined naturally occurred ELF-VLF bandwidth and increased signal-to-noise ratio of the EM system provide recovering the hydrothermal mineralization system in wide range of resistivity and depth.

Alexander Prikhodko, the Vice President and Chief Geophysicist recommends that before making decision about a technology choice it is best to discuss the exploration tasks and a model. For instance, in such a case EGL would be able to estimate effectiveness and abilities of MobileMT system based on quantitative modelling or your specific conditions.

The main trend of modern mineral exploration, he says, is requirements to explore deeper with high resolution. It thus goes without saying that only MobileMT, the technology based on natural fields with broadband measurements, satisfies these requirements.

EGL services its mining and exploration companies in Canada, USA, Australia, South America, Russia, Central Asia and are also looking to expand into African countries.

EXPERT GEOPHYSICS *from innovations to discoveries*

the most advanced airborne EM technology for your exploration success

MobileMT

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