Gap GeoPhysics
Exploration Services

Groundwater

Near Surface Geophysics

Identify and readily access groundwater resources vital to your operation.

Gap Geophysics can help target large and resilient water sources using Sub-Audio Magnetics (SAM), High Definition Magnetics (HDM), Electrical Resistivity Imaging (ERI) and Time-Domain Electromagnetics (TDEM).

Features & Benefits

- The complementary data sets can be used to define structures and aquifer units.
- Analysis of existing geology and geophysical datasets combined with Gap's geophysical techniques enables prioritization of target locations for water bore development.
- SAM can indicate geology structures favourable as water sources such as fractures sets, shears and faults.
- ERI provides precise images and geometry of likely water bearing units and key structures such as faults or shears.
- ERI allows for models of resistivity to be generated to ~140m depth.
- Gap's techniques minimise surface environmental disturbance.
- Techniques can be used to monitor impacts of dewatering and assess aquifer connectivity.

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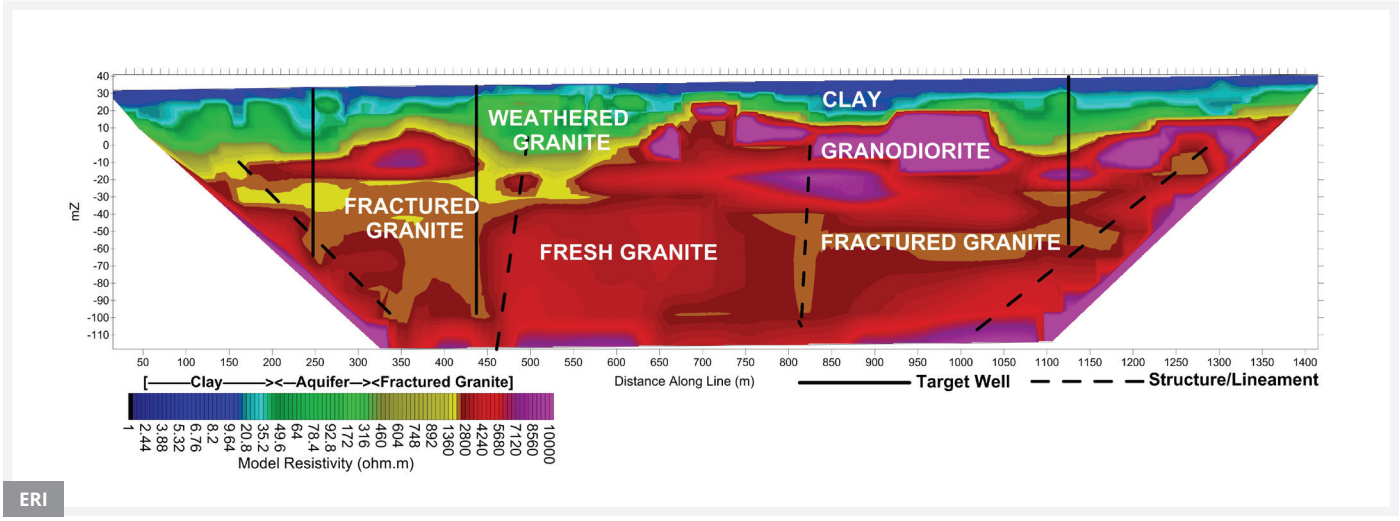
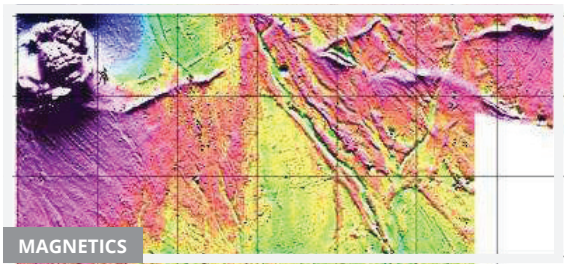


ERI

ERI 2D Depth Section model of Resistivity (above) is an example of deep search capability to identify significant groundwater resources within an existing agricultural production region. Existing primary producers were only using shallow alluvial aquifers. Using deep search ERI techniques in concert with Magnetics and Geology data sets, Gap revealed an extensive and resilient resource of high quality groundwater in a fractured granite aquifer.



MAGNETICS

The high definition Magnetics image (left) reveals shallow palaeochannel features as well as dykes, shears and faults. Knowledge of these features is essential to allow for targeting with ERI or TDEM techniques to identify suitable well locations. ERI also allows for difficult drilling conditions to be assessed to optimize final well placement, saving time and money with drilling and development.

"Gap provided great assistance by identifying targets for significant groundwater resources"

Clem Hill, Principal Hydrogeologist for GeoAxiom Pty Ltd

Gap Geophysics Australia

Gap Geophysics Australia offers a range of proprietary exploration techniques, with advanced instrumentation and high performance transmitters that enable greater depth of exploration and higher resolution surveys.

Gap Geophysics Australia Pty Ltd

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