Australian Groundwater Technologies

AGT

'making water work'

Water Management for Mining and Petroleum

Quarries in the Adelaide Hills.

Australian Groundwater Technologies (AGT) provides strategic water resource management solutions to assist the mining and petroleum sector to incorporate leading practice water management activities within their operations.

Increasingly the mining and petroleum industries are recognising the need to manage water more sustainably to support their operations. Shareholders and the general public are more aware and informed concerning the need to manage water in the environment.

Widespread changes are simultaneously occurring within the regulatory environment and water is no longer being considered as a waste product associated with the primary production of minerals or oil and gas.

In response to these challenges AGT applies its extensive experience in groundwater resources management and policy to deliver sustainable outcomes for our mining and petroleum clients from the pre-feasibility stage through to the operational stage.

Services to the mining and petroleum sector

- Preparation of Mining and Rehabilitation Programs (MARP)
- Project permitting and approvals
- (Bankable) Feasibility studies
- Mine water supply investigations
- Strategic water resources management advice, accounting and auditing
- Mine water management (dewatering and depressurisation)
- Groundwater modelling using industry standard software packages PHREEQC (hydrogeochemical modelling), Modflow or Feflow
- In-situ leach mining studies
- Deep aquifer injection to manage co-produced water from dewatering or coal seam gas (CSG) production
- Independent reviews.

Mine Water Management

AGT provides innovative tools to manage excess or co-produced water from mining or petroleum operations. We work closely with our clients and the regulators to deliver sustainable solutions to water resource management at the mine site or on the petroleum lease. We have the necessary technical expertise to deliver innovative and economic solutions to water supply investigations, site water management, mine dewatering and depressurisation, reinjection of excess or co-produced water and the development of water management plans.

AGT is an industry leader in the sustainable management of water resources for communities, industry and government particularly in the creation of “new” water resources through aquifer storage and recovery (ASR). AGT has more than 20 years of practical experience in the delivery of over 44 operational ASR schemes principally in South Australia but also in WA, Victoria and Queensland.

Modelling

AGT use industry standard modelling packages including Modflow, FeFlow and PHREEQC for hydrogeochemistry modelling. We have carried out numerous flow and transport modelling studies often in relation to the deep aquifer recharge and recovery of stormwater. Key staff are routinely requested to independently peer review numerical groundwater models developed by other consultancies.

In situ leaching

In situ leaching (ISL) entails the pumping of a leachate solution into the ore body via a drillhole that circulates within the porous rock dissolving the ore, which is recovered by means of a second drillhole.

AGTs extensive experience in the recharge and recovery of stormwater, acidisation to improve drillhole yields and extensive mining experience can be readily applied to support ISL mining operations. Characterisation of the target lithology, drillhole construction, modelling (geochemical and numerical) are key strengths of AGT together with our detailed knowledge of the regulatory framework assists in delivering sustainable ISL mining operations for our clients.

Strategic advice and peer review

Water is an integral part of all mining and petroleum operations. Regulatory changes to the way in which water is managed have resulted in a greater awareness of the need to manage the available water across all stages of the life cycle of mining and petroleum operations.

Key staff have considerable experience in mine water supply management and policy, gained from working either for mining companies or the various state regulatory authorities. The extensive experience of our senior staff allows us to provide independent advice on MARPs and EIS studies, numerical modelling and aquifer characterisation.

Successes

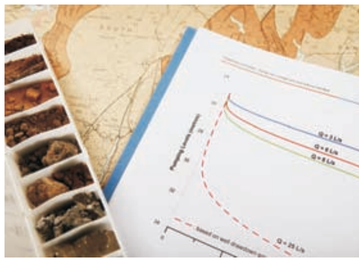
Honeymoon

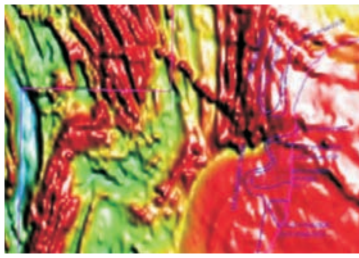
The Honeymoon deposit is recognised as five discrete mineralised sand packages separated by laterally extensive clay seams. Recovery is via in situ leach and an 18 month field trial has recently been completed which proves up the concept. AGT continues to provide on-going technical advice, and training in aquifer hydraulics on an as needs basis to assist in the delivery of this significant project. In addition AGT has setup a detailed sampling and monitoring program to be undertaken by site staff with results regularly reviewed by key AGT personnel.

Angas Zinc Mine

The Angas Mine is centred on a rich zinc ore body on the outskirts of the township of Strathalbyn. AGT was commissioned with the task of assessing the groundwater scenario for their mine operations, with respect to dewatering, waste water injection and water supply. Project scope was to estimate the short and long term impact on the local and regional groundwater levels for both the mining and post-mining phases.

These aspects then determine the water resource availability and environmental impact that is likely with current mine plans. The hydrogeological setting is a sand and limestone sediment overlying fractured rock. The solution has potential for optimal planning of water resources and well use designed to achieve the best results for all stakeholders.





AGT forms the nucleus of the Mecrus Group’s water services business
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