



Groundwater

Geotechnics

Environment

Groundwater

Rock Mechanics

Geophysics

Earthworks

Integrated Practical Solutions



Groundwater Services



“Without exception Douglas Partners has been able to add value to the project work we have been jointly involved in. We have found their staff to be knowledgeable, experienced, flexible, and a pleasure to work with.”

*John Eggleston
Senior Project Manager
Robert Luxmoore Pty Ltd*

Expertise from the Earth's Surface Down

Douglas Partners provides expertise for projects that interface with the Earth's surface. Specialist disciplines include geotechnical engineering, rock mechanics, contaminated land, groundwater, geophysics and earthworks.

We have wide regional coverage, with over 500 staff in 20 branches across Australia including 15 NATA registered laboratories. This allows staff and resources to be available on the ground to service projects quickly and reliably. Our specialist disciplines work closely together to provide integrated and efficient service and solutions.

Quality is a hallmark of our work. Of course we have an ISO9001 accredited QA system, however our dedication to quality runs much deeper than this, it's part of the culture and can be summed up by our mantra: “Keep it Simple, Get it Right, Do it Well”.

With an in-house team of professional consulting staff specialising in the development, control and protection of groundwater resources, Douglas Partners' highly qualified hydrogeological experts provide clients with services and support across a wide range of industries.

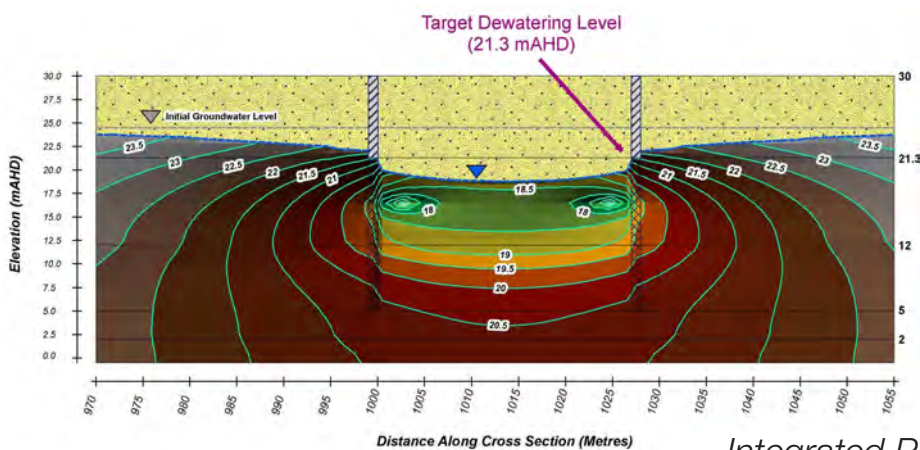




Groundwater Investigations

An understanding of regional or local groundwater systems is required for almost any development. The reasons for groundwater investigations vary widely, as do the methodologies and techniques utilised in such investigations. Douglas Partners has extensive experience in groundwater investigations, which includes:

- Review of relevant information including: geological mapping, hydrogeological data from Government databases and review of previous investigations;
- Geophysical surveying;
- Exploration drilling and borehole logging;
- Construction of monitoring bores and production bores;
- Aquifer and well hydraulic testing (test pumping of water bores), and permeability estimation (slug tests);
- Conceptual, analytical and numerical modelling;
- Groundwater quality assessment; and
- Liaison with Regulatory Authorities.



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Groundwater Monitoring

Information on the quality of groundwater, and the levels and direction of groundwater flow, are essential elements of most groundwater assessments. The construction of monitoring bores or piezometers allows information on groundwater levels and groundwater quality to be obtained. Networks of groundwater monitoring locations are designed to establish baseline (pre-development) conditions, and to record changes (if any occur) over time. Douglas Partners' expertise in groundwater monitoring includes:

- The design and installation of groundwater monitoring networks comprising monitoring bores and / or piezometers;
- The installation of Vibrating Wire Piezometers (WWPs), downloading and processing of WWP data;
- Installation of dataloggers, and the downloading, correction and analysis of pressure transducer data;
- Installation of dataloggers in remote areas and downloading via telemetry (i.e. mobile phone networks);
- Field recording of water quality parameters;
- Sampling of groundwater for detailed analysis of chemical parameters at a NATA accredited laboratory;
- Design and undertaking of groundwater monitoring programs; and
- Analysis and reporting of monitoring data for submission to Regulatory Authorities.

Conceptual, Analytical & Numerical Modelling

Douglas Partners recognises that all models are only as useful as the data on which they are based. Furthermore, our hydrogeologists understand that not all groundwater problems can be solved with the same approach. Our team have the experience to apply a variety of methods to help clients understand the scale of their groundwater issues, and inherent risks associated with uncertainty. Our capabilities include:

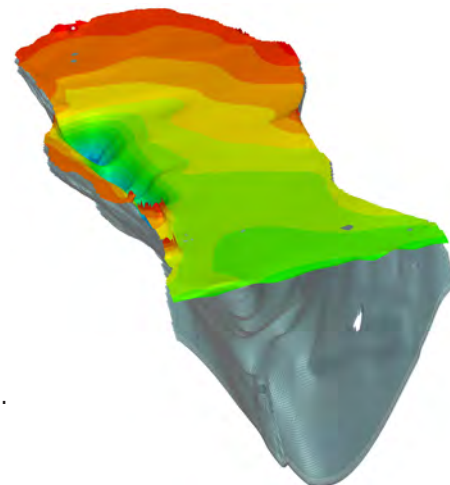
- Development of sound conceptual hydrogeological models;
- Application of proven analytical techniques to estimate specific components of the water budget (e.g. recharge analysis);
- Estimation of aquifer (and well) parameters from the analysis of test pumping data;



“I have always found Douglas Partners to be competitive, honest, approachable, proactive, cooperative, an important member of the consulting team, and who demonstrate a commitment to delivering quality technical advice to clients.”

*Gil Alexander
Managing Director
Serling Consulting (Australia) P/L*

- Construction, calibration, sensitivity testing, verification and uncertainty analysis for either regional or site based numerical models;
- Steady state or transient modelling with all industry standard codes including USGS MODFLOW variants and MODFLOW SURFACT, FEFLOW, and SEEP/W;
- Contaminant transport modelling;
- Water quality and hydrochemical modelling;
- Statistical modelling of hydrological data;
- Design and assessment of dewatering systems;
- Assessment of inflows to mines, tunnels and basement excavations; and
- Groundwater impact assessment of mines and civil infrastructure projects.



Impact Assessment & Approvals

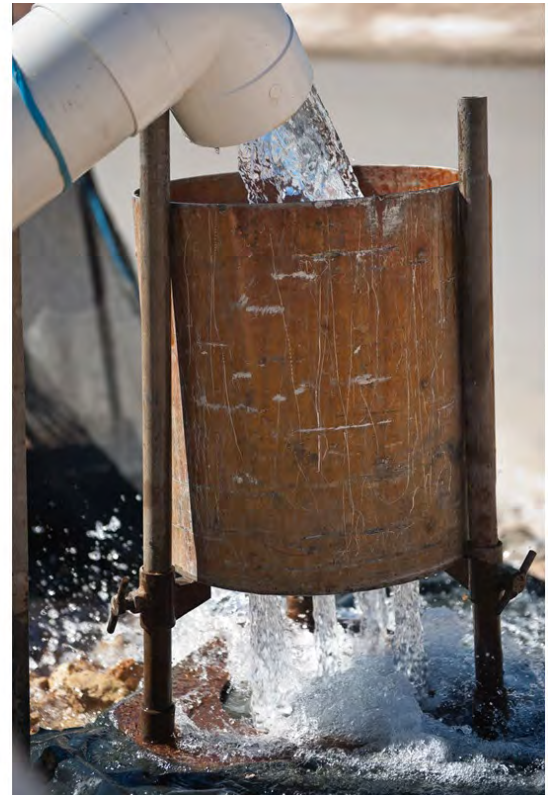
Protection of groundwater resources necessitates an assessment of the likely impact of proposed developments on the groundwater system. In addition, sustainable utilisation of groundwater resources requires careful management to ensure that resources are not degraded. An Assessment of Impact is required to be undertaken for most developments or groundwater utilisation projects in order to obtain approvals from Regulatory Authorities. Our expertise in undertaking Impact Assessments includes:

- Collection of baseline data;
- Development of Conceptual Hydrogeological Models;
- Assessing impact using analytical or numerical modelling;
- Evaluating management strategies;
- Groundwater monitoring programs; and
- Undertaking compliance reporting.

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Groundwater Supply

Groundwater resources are used for potable and other water supply purposes in a wide range of situations including: village water supply, rural and regional town water supply, mine water supply and water for irrigation and stock watering. Groundwater utilisation systems can also vary considerably in nature. Examples include waterbores / tubewells (deep and shallow), infiltration galleries, large diameter wells, spearpoint systems and borefields. Douglas Partners' expertise in developing groundwater resources includes:

- Review of geological mapping and hydrogeological data to focus on likely groundwater sources;
- Geophysical surveying and test drilling to confirm resources;
- Groundwater quality assessment;
- Design of appropriate groundwater utilisation systems;
- Hydraulic testing to confirm yield and sustainability;
- Advice on rehabilitation of groundwater utilisation systems; and
- Obtaining regulatory approvals.

Dewatering & Groundwater Control

DP utilises personal computers and has a large range of "state-of-the-art" software for computer modelling. Our capabilities include:

- Aquifer simulation for steady state or transient problems for water supply and dewatering;
- Contaminant migration modelling;
- Processing of pumping test data from data logger;
- Water quality and hydrochemical modelling;
- Statistical modelling of hydrological data;
- Development of conceptual hydrogeological models;
- Design and assessment of dewatering systems;



“The key to providing practical, cost effective and timely advice and solutions to our clients involves listening to our clients’ ideas and opinions, applying the knowledge and experience gained from our 50 plus years and 100,000 projects completed, and responding quickly with helpful hands-on and cost effective solutions.”

- Assessment of inflows to mines, tunnels and basement excavations; and
- Groundwater impact assessment of mines and civil infrastructure projects.

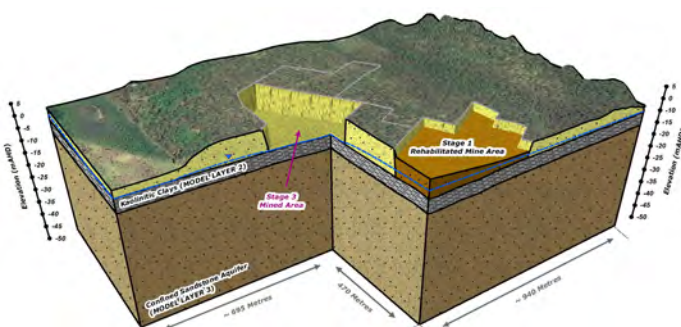
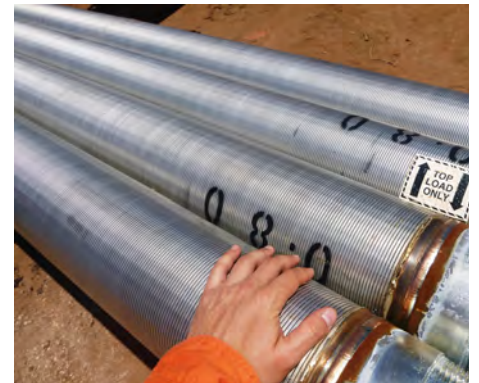
*Will Wright
Managing Director
Douglas Partners Pty Ltd*

Groundwater Contamination

Potential sources of groundwater contamination include landfill sites (sanitary and hazardous wastes), leaks and spills from petroleum, septic and chemical storage tanks, tailings dams, radioactive waste and the use of herbicides, pesticides and fertilisers for agricultural purposes. Prevention detection and control requires effective containment and management techniques.

Douglas Partners provides expertise in:

- Site contamination assessment;
- Underground storage tank evaluation;
- Installation of monitoring wells and groundwater monitoring;
- Assessment of contaminant levels;
- Design of landfills and tailings dams;
- Contaminant transport modelling; and
- Containment and clean-up strategies.



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Groundwater Specialists



Delivering with Integrity

At Douglas Partners, our purpose is to provide our clients with **“Expertise from the Earth’s Surface Down”**.

Our purpose is supported by our objectives to:

- Provide outstanding client service with integrity to achieve practical solutions aligned with client requirements;
- Foster a safe, supportive and cooperative environment with efficient systems and diverse staff who are expected to adapt, learn and grow their technical expertise and character to full potential; and
- Sustainably grow the business to provide opportunities for staff, maintaining control and ownership in the hands of employees, allowing employees the benefits of their efforts.

We value good Character. In fact we recruit, recognise, review and reward our staff based on the character shown in meeting our company objectives. Our Core Character values are:

- Safety – looking out for each other so that everyone goes home safe and sound;
- Honesty and Integrity – being truthful in what we say and do;
- Dependability – fulfilling commitments even in the face of difficulty;
- Cooperation – understanding others so that we can effectively work with them;
- Positivity – maintaining a good attitude even when faced with difficulty;
- Respect – treating others with honour and dignity; and
- Flexibility – adjusting to change with good attitude.

Combining good character with high levels of technical expertise provides a winning combination and is one of the secrets to our consistently high standards.

Douglas Partners’ offices have a number of key personnel with expert groundwater and hydrogeological skills and vast experience enabling projects to be undertaken effectively and at minimal cost to the client whilst at the same time protecting our natural resources.

Principals are directly and actively involved in projects, ensuring client access to the best available expertise and experience in the company.



IAIN HAIR

Principal / Hydrogeologist

Iain started his working career in 1975 and has significant experience in groundwater investigations for the mining, agricultural, and tourism industries and government authorities. Iain has completed many projects both within Australia and overseas. Iain's specialities are the evaluation, development and management of groundwater resources, dewatering and groundwater control, and expert witness assignments.



WILL WRIGHT

Principal / Geotechnical & Groundwater Engineer

Will graduated from a Master of Engineering Science, majoring in Groundwater Studies in 1997. Will has significant experience in geotechnical and hydrogeological investigations in Australia and overseas, and his fields of expertise include groundwater assessment for coastal development, mining, landfills and dewatering assessments. Will is a specialist in groundwater flow and transport modelling and seepage analysis through dam walls.

“We believe that the hallmark of a good consultant is being a trusted business partner in whom clients have confidence.”

*Will Wright
Managing Director,
Douglas Partners Pty Ltd*

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Groundwater Specialists



CHRIS KLINE

Principal / Geo-Environmental Engineer

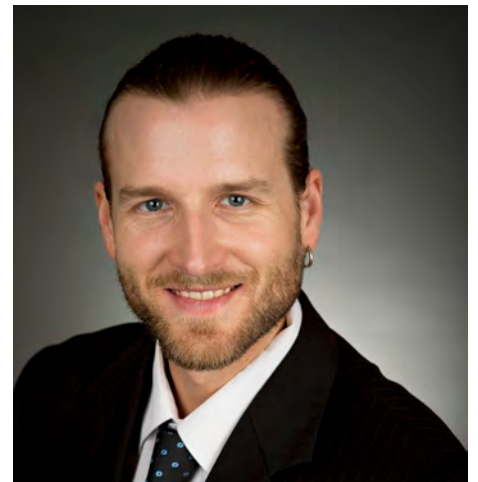
Chris is a Chartered Professional Engineer (Civil, Environmental) and completed a Master of Engineering Science, majoring in Hydrogeology in 2001. Chris has managed a broad range of projects throughout New South Wales, and has significant hydrogeological experience with construction dewatering assessments, dryland salinity and land management, aquifer testing, hydrogeological mapping, groundwater modelling, and groundwater contaminant monitoring and assessment.



FIONA MACGREGOR

Principal / Geotechnical Engineer & Hydrogeologist

Fiona is a qualified engineering geologist and geotechnical engineer having completed a Doctor of Philosophy in Geotechnical Engineering in 1993. She has gained significant experience through working on a wide range of projects around Australia and has undertaken hydrogeological investigations and numerical modelling of groundwater flows for a number of projects, including deep basement excavations, tunnels, and landfills.



JULIEN THOMAS

Hydrogeologist

Julien graduated from the University of Montpellier (France) in 2006, where he completed a Master of Science, majoring in Hydrogeology. Julien's experience includes groundwater resource assessments, groundwater monitoring and sampling, design and supervision of groundwater bores, supervision of CSG injection wells, aquifer hydraulic testing and analysis, and groundwater data management for the development of conceptual and numerical models.



DANA WILSON

Associate / Environmental Engineer

Dana is an environmental engineer and completed a Master of Engineering Science in 2016. Dana specialises in groundwater investigation for contaminated lands as well as baseline water quality and groundwater management/monitoring programmes. Dana has considerable experience the project management of a number long-term groundwater monitoring projects involving regulatory department review and audits.

“This team is efficient and service orientated and the level of mutual trust between our organisations ensures that Douglas Partners are our first choice consultant.”

*David Bobyreff
Director,
Minotaur Project Management*



Metropolitan and Regional Coverage

For information on how Douglas Partners can assist on your project, please contact one of our branches below or email info@douglaspartners.com.au

BALLINA	☎ (02) 6681 1744
BRISBANE	☎ (07) 3237 8900
CAIRNS	☎ (07) 4055 1550
CANBERRA	☎ (02) 6260 2788
CENTRAL COAST	☎ (02) 4351 1422
COFFS HARBOUR	☎ (02) 6650 3200
DARWIN	☎ (08) 8948 6800
GEELONG	☎ (03) 5221 0711
GOULBURN	☎ (02) 4822 8395
GOLD COAST	☎ (07) 5568 8900
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SYDNEY	☎ (02) 9809 0666
TOWNSVILLE	☎ (07) 4779 9866
WOLLONGONG	☎ (02) 4271 1836