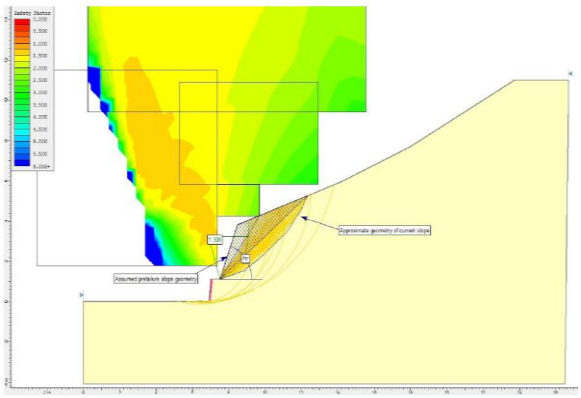
Providing practical, cost effective and innovative geotechnical engineering solutions for the mining and civil construction industries

Civil Geotechnics & Mine Infrastructure

- Shallow and deep foundation investigations, design parameters and advice.
- Soft soil engineering solutions.
- Settlement analysis (immediate and long-term settlement).
- Pavement investigation and design.
- Landslide risk assessment and management.
- Slope stability investigations and analysis.
- Slope stabilisation (soil nails, rock bolts, mesh and shotcrete).
- Rock fall analysis and risk management solutions.
- Retaining wall design (MSE, anchored and gravity walls).
- Soil mechanics.
- Site classification & onsite sewage assessment and design.
- Acid sulfate soil investigations and management.
- Pavement investigation and design.
- Crane pad analysis and design.
- Construction supervision and quality assurance.



Geotechnical Investigations, Data & Models

- Data management and development of useable geotechnical data management systems.
- Design and management of geotechnical investigations (e.g. drilling or mapping programs).
- Design of sampling programs and interpretation of laboratory test results.
- Data validation and training (perform check logging or mapping and provide feedback to engineers).
- Rock mass characterisation and domain modelling.
- Rock mass and defect shear strength estimates.
- Structural analysis.
- Development & validation of geotechnical models.

Tailings and Water Storage Facilities

- Geotechnical investigations.
- Stability assessments.
- Embankment design.
- Seepage and failure investigations.
- Risk assessments and compliance audits.

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Surface Mining (Open Pit)

Providing optimised pit slope design solutions (maximise ore recovery & minimise excavation costs) through:

- Understanding the mining method and operational constraints.
- Rigorous understanding of site geology and hydrogeology.
- Ground characterisation through statistical means.
- Identification and stability analysis of structural, mass and complex slope failure modes.
- Kinematic and limit equilibrium analysis using deterministic and probabilistic data inputs. Finite element analysis to identify & assess complex failure modes.
- Groundwater models, assessment & control for slope stability.
- Catchment hydrology and surface water management.
- Design of reinforcement or artificial support.
- Design of monitoring programs for groundwater and excavation performance, and slope deformation (long-term & real-time monitoring with alarms and response plans).
- Risk analysis and development of risk management strategies
- Blastability and diggability assessments.
- Investigation and remedial solutions for failed or failing slopes.
- Underground void interaction – evaluation & risk management.

Underground Mining

- Stability assessments, excavation and support design using empirical and analytical methods for tunnels, stopes & shafts.
- Ground support performance assessment.
- Instrumentation design.
- Risk assessments & ground control management plans.

Waste Dumps

Optimised waste dump design (minimized operating cost) through:

- Understanding regulatory requirements (height limits, post-mining land use, etc), operating environment & mine schedule.
- Assessment and classification of waste material types.
- Dump design considering waste rock shear strength, acid rock drainage potential, foundation conditions, hydrology and haulage profiles.
- Waste dump, tiphead and stockpile stability assessments.
- Risk assessment and closure planning.

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