



COAL CAPABILITY STATEMENT

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MINING ONE GROUP

Mining One was established in August 2005 to provide technical expertise in the fields of geotechnical engineering, resource geology and mining engineering to the mining industry. The group is led by Gary Davison, Kevin Dugan and Bill Frazer who collectively have over 90 years of technical experience. Their main criteria is to actively manage and provide quality, high performance services which will enable Mining One to deliver excellent results for their clients.

Our group has grown rapidly since its formation and now boasts of team of 60+ experienced and highly professional personnel. We have been involved in a wide variety of mining projects internationally including extensive work in South East Asia, Africa, South America and China.

We offer long term value to our clients by keeping up to date with new technologies and pride ourselves in being innovative with our designs and recommendations for new and existing mining operations.

Mining One strives to provide excellence and commitment to our clients with services ranging from high level strategic to hands on practical design and implementation. Our well respected team has extensive industry knowledge and experience in a diverse range of disciplines.

Mining Services

The mining group provides a diverse range of services in the fields of mine design, mine planning, mine operation and mine evaluation. Our safe, cost-effective and problem solving solutions help reduce mine operating costs, increase productivity and maximise economic extraction. This positions our clients for increased long-term profitability.

MINE EVALUATIONS



Studies

- ▶ Conceptual studies, pre-feasibility and feasibility examinations
- ▶ Due diligence examinations
- ▶ JORC reserve estimation
- ▶ Surface and underground mining method assessment
- ▶ Underground mine design, scheduling, and costing
- ▶ Open pit mine optimisation, design and scheduling
- ▶ Geotechnical examination of mine excavation and slope stability
- ▶ Assessment of ground support requirements
- ▶ Mine services design, transport, haulage, pumping
- ▶ Ventilation and underground environmental assessments
- ▶ Mine surface and underground infrastructure design
- ▶ Liaison with Chinese engineering and design bureaus on specifications
- ▶ Large scale project budgeting
- ▶ Design and management of large scale lignite mines
- ▶ Bucket Wheel Excavator extraction planning

Contracts

- ▶ Contract documentation
- ▶ Tender evaluation and negotiation
- ▶ Contract management for underground and open pit coal
- ▶ Review and technical advice on tender bids by Chinese contractors for overseas projects
- ▶ Liaison between foreign suppliers and local clients.
- ▶ Contract auditing
- ▶ Labour Hire

Finance

- ▶ Financial modelling
- ▶ Financial analyses
- ▶ Financial risk analysis
- ▶ Project costing
- ▶ Valuing mining prospects and projects
- ▶ Economic assessment

Corporate

- ▶ Independent technical audits
- ▶ Due diligence studies

- ▶ Independent mine valuation and expert reports
- ▶ Advice and assistance for corporate strategies
- ▶ Marketing and commercial advisory
- ▶ Due diligence, market penetration, and risk advice to overseas interests in China, general business start up consulting

Geology

- ▶ Competent people qualified under the JORC code
- ▶ Independent experts qualified under the VALMIN code and with ASIC regulations
- ▶ Preparation and management of drilling programs
- ▶ Geochemical interpretation
- ▶ Resource and reserve estimation and auditing
- ▶ Conceptual, scoping, pre-feasibility and feasibility studies
- ▶ Mineral resource and ore reserve estimation
- ▶ Valuation of mineral assets
- ▶ Prospectus preparation
- ▶ Due diligence for mergers and acquisitions

MINE OPERATIONS

Mining One personnel have extensive experience working with operating coal mines and are able to assist mining operations in a wide range of areas as summarised below:



Implementation

- ▶ Implementation of planning procedures and designs
- ▶ Implementation of work procedures
- ▶ Geotechnical training including ground support training for operators and professionals
- ▶ Workplace risk assessments and risk assessment training
- ▶ Mine emergency preparedness training
- ▶ Implementation of team based solutions to operational problems
- ▶ Relief mine management
- ▶ Experience within China and working with the Chinese
- ▶ Workforce management and union negotiations
- ▶ Longwall planning, operation, steering and re-direction
- ▶ Longwall face transfer, equipping and salvage
- ▶ Underground heading machine planning, installation, operation and salvage
- ▶ Ground support installation
- ▶ Large heavy ground fall recovery
- ▶ Coal mine ventilation and environmental management
- ▶ Underground and surface methane drainage system design and operation
- ▶ Mine pumping and dewatering
- ▶ Control and remediation of water and gas ingress
- ▶ Bucket Wheel Excavator implementation and management

Monitoring

- ▶ Installation of ground support monitoring systems
- ▶ Monitoring of rock mass movement
- ▶ Monitoring of underground coal pillars, loor heave and roof dilation.
- ▶ Checking the performance of ground support and the application of installation procedures
- ▶ Monitoring of working systems and procedures
- ▶ Stress measurement and modelling (2D and 3D)
- ▶ Management of surface and underground coal operations
- ▶ On site contractor management
- ▶ Project cost control and management
- ▶ Financial monitoring and cost reconciliation

Review of Operations

- ▶ Reviews and audits of operations
- ▶ Safety audits
- ▶ Insurance audits

- ▶ Cost reviewing and auditing
- ▶ Operational and business improvement reviews
- ▶ Tunnel and excavation inspection and reviews
- ▶ Technical review, productivity optimisation and cost modelling
- ▶ Mine performance reviews and business improvement in brown coal operations

Geology

- ▶ Competent people qualified under the JORC code
- ▶ Independent experts qualified under the VALMIN code and with ASIC regulations
- ▶ Geological mapping and interpretation
- ▶ Independent expert (geologist) reports
- ▶ Structural geology
- ▶ Exploration program management
- ▶ Geological logging and database preparation

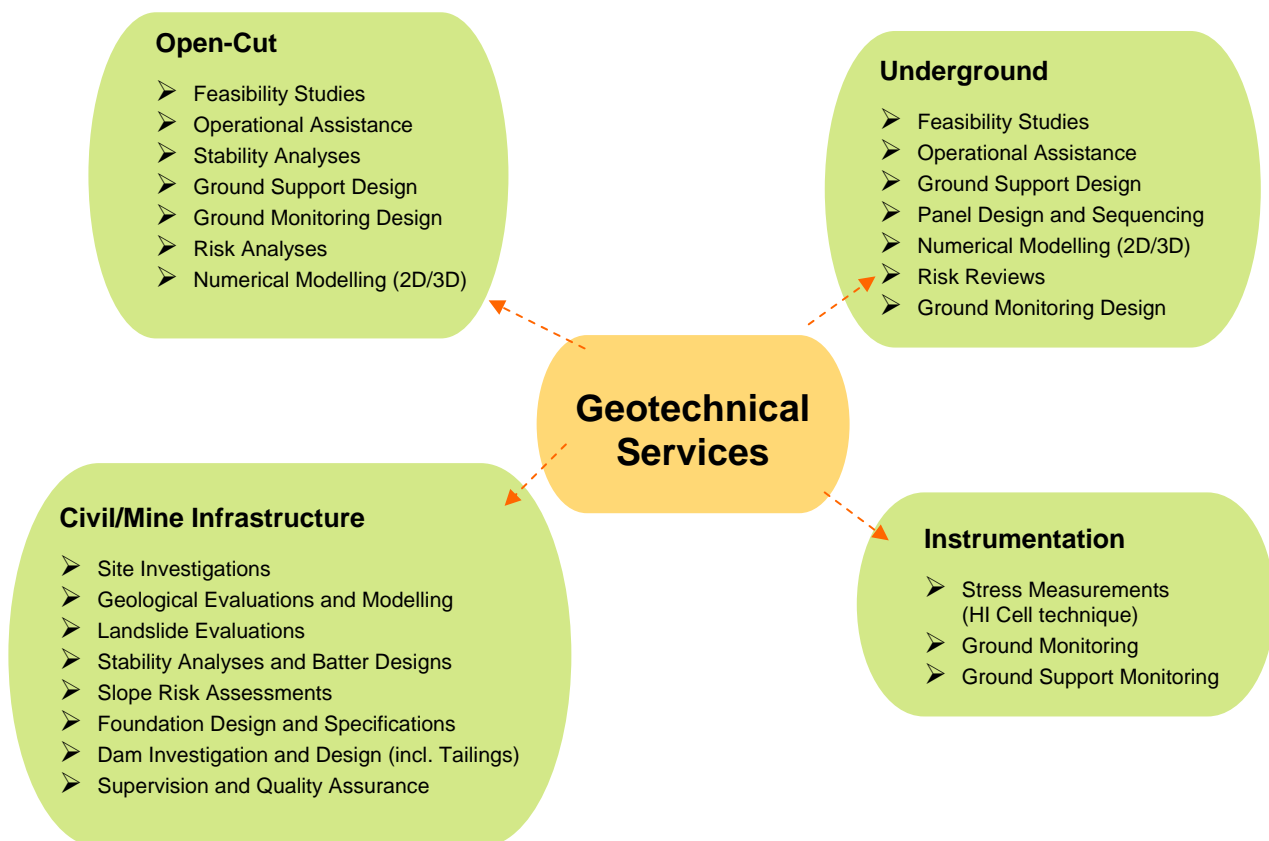
Planning

- ▶ Operational design and cost evaluation studies
- ▶ Design and implementation of pre-strip dig and dump plans
- ▶ Open-cut mine optimisation and design
- ▶ Underground mine design
- ▶ JORC reserve estimation
- ▶ Design and implementation of dragline and dozer push plans
- ▶ Mine planning and scheduling, conceptual and long term
- ▶ Short and medium term planning for overburden movement
- ▶ Truck shovel fleet studies
- ▶ Life of mine dump design for open cast coal operations
- ▶ Design and implement drill and blast plans
- ▶ Mine rehabilitation planning
- ▶ Budgeting, planning and management of project works
- ▶ Planning, installation and operation of underground transport systems
- ▶ Operation of underground coal mines in difficult geological conditions
- ▶ Planning and operation of coal mines at depth
- ▶ Engineering design of underground coal operations
- ▶ Design of outbye services and supply transport systems
- ▶ Shaft design and sinking
- ▶ Design of underground civil excavations
- ▶ Protection of surface structures and subsidence planning

- ▶ Shotcrete and concrete design and technology
- ▶ Concrete and lining repairs
- ▶ Grouting technologies

GEOTECHNICAL SERVICES

Mining One personnel have completed extensive geotechnical work for Australian and overseas mines. Our work extends to both underground and open pit mines, which has enabled us to cover a broad range of services to the mining industry. We also carry out civil geotechnical which covers designs for infrastructure foundations, tunnels, geotechnical hazard risk assessments, construction supervision, tailing dam investigations and landslide assessment.



Our geotechnical work in coal has covered open cut and underground mines, and has involved many aspects including:

- ▶ Geotechnical high-level reviews
- ▶ Stability assessments, modelling and analysis for pit walls and waste dumps
- ▶ Site investigations, drilling, in-situ geophysical testing, laboratory testing, and installation of piezometers and inclinometers
- ▶ Slope depressurisation design and supervision
- ▶ Long term mine planning and 3D visualisation using Surpac and MicroLYNX
- ▶ Geotechnical day-to-day site support and assistance

- ▶ Coal resource investigations and modelling
- ▶ Excavation monitoring design using state-of-the-art systems
- ▶ Pit slope stability analysis and design, including numerical stress modelling
- ▶ Conceptual, scoping, pre-feasibility and feasibility studies
- ▶ Geotechnical reviews and audits
- ▶ Stability assessment of natural slopes and waste dumps
- ▶ Ground awareness and geotechnical hazards training
- ▶ Geotechnical data collection training
- ▶ Civil geotechnical investigations

Mining One has an extensive suite of geotechnical software, including Rocscience programs (such as Slide, DIPS, Phase2), GALENA stability analysis software, and numerical stress modelling (Itasca UDEC).

Our approach with geotechnical investigations is to work interactively with the client, providing geotechnical input into mine planning that assists the mine in achieving an optimum outcome. Mining One personnel have extensive experience in geotechnical investigations and designs for both open-cut and underground coal mines.

MINE REHABILITATION

Mining One has a strategic alliance with Environmental Earth Sciences (EES), who focus in the fields of:

- ▶ Mine geochemistry evaluation and management
- ▶ Mine acid rock drainage and waste characterisation
- ▶ Tailings studies
- ▶ Hydrogeological investigations (including seepage monitoring, dewatering and supply)
- ▶ Compilation and management of baseline studies, EIS/PER and approvals process
- ▶ Rehabilitation and mine closure planning and implementation
- ▶ Landfill design, monitoring and management
- ▶ Contaminated sites – investigation and remediation (including heavy-end hydrocarbon bioremediation, phytoremediation and metal stabilisation)
- ▶ Acid sulphate soils
- ▶ Expert witness in legal matters

Services offered by Mining One and EES include:

- ▶ Contamination assessment
- ▶ Contamination remediation and validation
- ▶ Hydrocarbon management for industry
- ▶ Landfill environmental management plans

- ▶ Waste management and recycling strategies
- ▶ Health risk assessments
- ▶ Groundwater studies
- ▶ Groundwater monitoring of mines, facilities, smelters and tailings
- ▶ Waste water assessment
- ▶ Environmental monitoring
- ▶ Land capability
- ▶ Site compliance
- ▶ Hydrogeological assessments
- ▶ Statutory environmental audit

Recent examples of major coal mine geotechnical projects and operations assistance provided by Mining One personnel include:

- ▶ Design of a cap for coal wash/tailings dumps in the Hunter Valley
- ▶ Planting trials and capping of landfill and mine waste in Kosovo
- ▶ Landfill Capping and methane recovery in the UK
- ▶ Bengalla (NSW) - Reviews and stability analyses of life-of-mine dragline spoil designs
- ▶ Loy Yang mine (VIC) - Depressurisation and geotechnical strategic review
- ▶ Loy Yang mine (VIC) - Review of waste dump procedures, including stability assessment
- ▶ Loy Yang mine (VIC) - Long term mine planning study at Loy Yang
- ▶ Eaglefield mine (QLD) - Regular geotechnical review of open cut mine
- ▶ Yallourn mine (VIC) - Review of major failure of Latrobe River Batters
- ▶ Leigh Creek mine (SA) - Regular geotechnical reviews and stability analyses

OUR PEOPLE

The Mining One Coal Group have extensive experience in mine planning and geotechnical investigation/design for both open-cut and underground coal mines. In addition, our senior personnel all have extensive operation, managerial, and contracting experience.

Kevin Dugan

Director/Principal Geotechnical Engineer

Kevin Dugan is a Director of Mining One and is a Principal Geotechnical Engineer. His primary degree is in Geology with a Master in Rock Engineering. His experience covers over 30 years throughout Australia, SE Asia and East Africa, including 10 years at the Snowy Mountain Engineering Corporation (SMEC) and 17 years with BFP Consultants P/L. He has extensive experience in the practical aspects of rock mechanics covering major civils, tunnelling and large underground mining projects. Kevin's experience in the coal mining industry covers both surface and underground mines. His work has covered conceptual studies, bankable feasibility studies and on-going reviews at mine operations.

David Lucas

Principal Geotechnical Engineer

David has 23 years experience in mining and civil construction in Australia and Papua New Guinea of which 16 years have been in mining, with experience throughout a wide range of open-cut and underground projects, in the pre-feasibility, feasibility and operational phases. His civil experience includes hydro-electric construction projects, including dams and tunnelling in Tasmania and Queensland. David worked as a site-based geotechnical engineer in open cut mining for 12 years, and as a technical services manager with mine planning responsibilities, from which he gained an extensive practical understanding of mining operations.

His site-based roles bring a strong practical focus in geotechnical applications as well as a sound appreciation on mining operations. His experience as a consultant has included several major mining projects at the pre-feasibility, feasibility and operational phases in open-cut and underground projects. David specialises in geotechnical project management, slope stability analysis, numerical stress modelling and practical geotechnical applications and advice for operating mines.

William Sarunic

General Manager WA / Principal Geotechnical Engineer

William has 20 years of experience in the mining industry as a geologist and geotechnical engineer. This experience has been gained in a number of geotechnically complex large scale open cuts in both hard and soft rock environments including Leigh Creek Coal Field, Mt Keith Nickel Operation and Mt Newman Iron Ore mine. In more recent times, William has focused on consulting services to a variety of projects involving rock slope design and stability assessments for projects in various countries around the world as well as Australia. He has carried out in-house and external consulting, and worked on a range of commodities, including coal, industrial

minerals, phosphate, mineral sands, iron ore, platinum group elements, gold and nickel. William's most recent experience prior to joining Mining One, involved a change in focus from a pure technical role to that of a business development role undertaking tasks associated with coal project evaluation and acquisition and technology development.

Dr Robert Gaulton

Senior Coal Geologist/Senior Engineering Geologist

Robert Gaulton is a highly experienced Mining Geologist with over 35 years experience. His work up till the mid 1990's was mainly in open cut coal mines. At that time he became the Manager, Geology for the large open cuts in the LaTrobe Valley, Victoria. Since the mid 1990's his work has become more general and covered mainly project management and industry training.

Rob managed a team of earth scientists and technical specialists providing a wide range of geological services to SECV mining operations. He was involved in general resource delineation and exploration. He also managed SECV drilling activities between 1984 and 1987, and managed various scientific investigations and coal sampling projects.

Graeme Freshwater

Senior Civil Engineer/Coal Mine Manager

Graeme is a highly experienced coal mining engineer and mine manager with more than 40 years of service across a range of operations. He has conducted numerous due diligence studies and been closely involved in reviewing and assessing large scale mining operations in Australia and overseas. During his career, Graeme has also been instrumental in introducing and facilitating a number of significant technical and process improvements in various mining operations. Graeme's experience includes direct operational control of large surface mining operations and consultancy work involving due diligence on mines in Australia and overseas.

Michael Botting

Senior Mining Engineer

Mike Botting is a mining engineer with over 20 years underground and open pit mining experience. Mike has worked at senior mine management levels in Western Australia, Victoria and Queensland with both Mining Companies and Mining Contractors. Mike has extensive experience in project and contract management including contractual issues and estimation of rates for underground and open pit coal operations. He has mine planning experience and the implementation of value adding initiatives. Mike has recently been involved in mine planning, scheduling and cost estimation for both punch high wall long wall development and open pit coal mining as part of his role with Henry Walker Eltin.

Warwick Yarnton

Senior Coal Mining Engineer

Warwick possesses strong technical skills in Open Cut Mine Planning and Scheduling, Civil and Infrastructure Design. Road and Freeway Design and Planning. He is Microstation CADD literate to a level which enables provision of personnel training and technical systems advice. Expertise

includes: Work Co-ordination, Project Management, Contract Administration and Economic justification.

levan Ludjio

Mining Engineer

levan has 10 years experience in the mining industry. He has undertaken a wide variety of roles within various technical teams including short and medium term planning engineering, production engineering, drill and blast engineering, and project engineering. levan has a sound understanding of mine scheduling, pit-dump-ramp design, mine sequencing and spoil balance analysis. He has been responsible for the definition and monitoring of short-term mining direction, the generation of weekly and monthly mine plans, truck requirement forecast, and the production of KPIs review.

levan is well versed in various mining software packages, including Minex and Minescape and has a strong knowledge of computerized 3D design, 2D sections creation, reserve generation, margin ranking calculations, and dump reshaping.

Stuart Mackenzie

Consultant Mining Engineer

Stuart is a very experienced Mining Engineer with nearly 30 years in the industry. Stuart has experience with running a multi mine facility with both in-house and contract mining activity as well as extensive experience with coal project management on site.

Erin Sweeney

Engineering Geologist

Erin joined Mining One in Jan 2010 with five years experience in the mining industry, after graduating with Honours at the University of Wollongong in 2004. She has experience in various geological fields, including underground mining, open pit and exploration geology. Erin is proficient in various mining software programs, such as Minex, Datamine and Surpac and has a broad range of competencies including grade control and mineral identification, geological/geotechnical and structural mapping, geophysical survey interpretation and geotechnical assessments/hazard planning. Erin is currently completing a Graduate Diploma in Mining Engineering at the University of NSW.

Craig Saunders

Mining Engineer

Craig has several years of mining experience in both practical and technical applications. During his career he has undertaken a variety of short term planning roles in both coal and iron ore commodities. These roles have included drill and blast, truck and excavator, dragline and continuous miner engineering positions. He is currently in the final stages of completing a Masters of Finance.

Steven Keane
Mining Engineer

Since joining Mining One in 2008, Steven has gained experience in mine planning using Whittle and Datamine. His experience encompasses pit design, optimisation, scheduling, profit analysis and assistance in reserves calculation. Steven gained his graduate experience with Anglo Coal Australia working at a strip mining coal operation in Middlemount.

OUR EXPERIENCE

Examples of major coal study work and operational assistance undertaken by Mining One personnel include:

Waratah Coal – South Alpha Project (QLD)

- ▶ Mining reserves calculation and reporting for the underground mines
- ▶ Mine planning and scheduling of underground mines
- ▶ Subsidence report for EIS submission

Jellinbah Coal Mine (QLD)

- ▶ Technical services manager assignment
- ▶ Long and short term planning work including design and operations scheduling
- ▶ Overseeing drill and blast and explosives contracts
- ▶ Overseeing the geology, survey and coal quality functions

Tabas Coal Mine (Iran)

- ▶ EPCM contract to build an underground room and pillar and longwall operation. All design, engineering, procurement and construction

Sasol - Syferfontein Colliery (RSA)

- ▶ Mine planning and design for new open cast dragline operation. Margin ranking, boxcut design, strip layout, scheduling and costing

Sasol - Sigma Colliery (RSA)

- ▶ Underground mine planning study for a new section
- ▶ Life of mine scheduling and costing

Sasol – Waterkloof Colliery (RSA)

- ▶ Open cut truck and shovel pre-feasibility study

Greenside Colliery (RSA)

- ▶ Underground pillar section life of mine scheduling study

Tavistock Collieries (RSA)

- ▶ Margin ranking and mine design and scheduling study for the Arthur Taylor Open Cast mine

Douglas Coal (RSA)

- ▶ Short term dragline planning and operation study
- ▶ Life of mine scheduling study

- ▶ Open cast strip design

Markham Main Colliery (UK)

- ▶ Underground ventilation and dust studies
- ▶ Assistance with methane drainage system
- ▶ UNOR Tube bundle system implementation and operation
- ▶ Endless rope haulage study
- ▶ Longwall operations assignment

Bevercotes Colliery (UK)

- ▶ Underground management assignment on back shifts

Bilsthorpe Colliery (UK)

- ▶ Management of special projects underground, specifically coal face equipment salvage and new production face installation

Harworth Colliery (UK)

- ▶ Underground Management assignment

Sherwood Colliery (UK)

- ▶ Operational management and safety of development headings, coal face salvage, and replacements
- ▶ Transport system installation, safety, ground support. Setting up and co-ordinating and maintaining the heading systems, facilitate planned maintenance of heading equipment, Heading machines, ventilation, pumping, transportation, and heading equipment installation and salvage
- ▶ Longwall production face coordination and operation

Ashfordby New Mine (UK)

- ▶ Management of underground development/tunnelling contract

Ensham Coal Mine (QLD)

- ▶ Part of feasibility study team looking at the introduction of a large truck shovel fleet The study analysed the benefit of replacing contract operations with an owner operated, large electric rope shovel and rear dump truck fleet
- ▶ Life of Mine dump design for several pits using Vulcan software. Study included the mass-volume balance of waste and spoils with the final rehabilitated surface
- ▶ Study into the implementation of Dragline Pullback including range diagram design using DragSim software, sequence planning, and scheduling of different cases
- ▶ Drill and blast planning coverage

Mampun Pandan Project, Coal FE Resources (Indonesia)

- ▶ Design of an open cut coal mine in Indonesia using Vulcan software
- ▶ JORC Reserve estimation
- ▶ Life of Mine scheduling and a dump study
- ▶ Pit optimisation to determine economically mineable section of coal resource

Jembayan and Sebuke Coal Mines (Indonesia)

- ▶ Due diligence review of Jembayan and Sebuke Coal Mines in Kalimantan for a financing bank

Tambang Air Laya Coal Mine (Indonesia)

- ▶ Management and operation of Tambang Air Laya Coal Mine in South Sumatra
- ▶ Contributed to an improvement of BWE system utilisation from 26% to 50% and all previous production records were broken
- ▶ Advised the Board of Directors on mining and management matters relating to the PTBA Operation

RTL Yallourn Mine

- ▶ Plant upgrade programme for the Yallourn Mine
- ▶ Upgrades to coal and overburden excavating and conveying plant, control systems, fire services and power supplies
- ▶ Technical and operating assistance for the introduction of the slope mining method of coal excavation
- ▶ Review of mine performances and effects on production and mine plan as a result of a major batter failure and influx of Latrobe River into the mine
- ▶ Periodic reviews of mine performance
- ▶ Mine planning assignment
- ▶ Due diligence review of the Yallourn Mine prior to privatisation

Loy Yang Mine (VIC)

- ▶ Mine management assignment
- ▶ Review of mining operation proposal for Loy Yang Mine

Morwell Open Cut Mine (VIC)

- ▶ Mine Management assignment.
- ▶ Due diligence review of the Morwell Open Cut Mine prior to privatisation

Anglo Coal - Capcoal (QLD)

- ▶ Evaluation of mining projects and Life of Mine plan
- ▶ Mining One staff have worked in the following roles at Capcoal:
 - Dragline Engineer

- Medium Term Design Engineer
- Coal Parting Engineer
- Truck and Shovel Engineer

Satui Mine (Indonesia)

- ▶ Mining One staff have worked in the following roles at Satui Mine:
 - Senior Mining Engineer
 - Short Term Planning Engineer

PT Newmont NUSA Tenggara (Indonesia)

- ▶ Mining One staff have worked in the following roles at Tenggara:
 - Drill and Blast Engineer
 - Mining Engineer

PT Vietmindu Energitama (Vietnam)

- ▶ Mining One staff have worked in the following roles at Vietmindu Energitama:
 - Production Engineer

PT Kadya Carakamulia, (Indonesia)

- ▶ Mine design work

PT Nusantara Citra Jaya Abadi Rantau Bakula, (Indonesia)

- ▶ Feasibility study in Coal Belt-V Area

PT Baramarta, Rantau Bakula, (Indonesia)

- ▶ Feasibility Study in Coal Belt-V Area

PT Mandiri Intiperkasa, (Indonesia)

- ▶ Mine planning work

PT Kalimantan Energi Lestari (Indonesia)

- ▶ Mine planning work

Hail Creek Coal (QLD)

- ▶ Mining One staff have worked in the following roles at Hail Creek:
 - Drill and blast engineer
 - Drill and blast crew
 - Production engineer
 - Dragline engineer

Curragh Coal Mine (QLD)

- ▶ Mining One staff have worked in the following roles at Curragh:
 - Short term planning engineer

Bengalla Mine (NSW)

- ▶ Geotechnical reviews
- ▶ Geotechnical investigation of a spoil dump failure, highlighting operational practices that contributed to the failure which assisted the mine in preventing re-occurrences
- ▶ Spoil dump stability assessments involving: input into drilling investigations and testing, assessment of floor conditions and analysis of spoil dump designs

This work assisted the mine in optimising the spoil dump designs, which were previously short of space, to achieve the best outcome in terms of the floor conditions that influenced the stability.

Cameby Downs (QLD)

- ▶ Geotechnical investigation and design of proposed open cut coal mine in Surat Basin

Anglesea Coal Mine (VIC) - Alcoa

Mining One personnel have assisted Alcoa's Anglesea coal mine in Victoria for many years and this has involved:

- ▶ Regular inspections, reviews and reports
- ▶ Geotechnical investigations including downhole geophysical testing
- ▶ Slope stability investigations and analyses (limit equilibrium and finite difference, FLAC)
- ▶ Piezometer and inclinometer installations and slope monitoring reviews/advice
- ▶ Laboratory testing (soil and rock) at our NATA registered laboratory in Melbourne
- ▶ Slope de-pressurisation design and supervision
- ▶ Long term mine planning and 3D visualisation (using the SURPAC and MicroLYNX packages)
- ▶ Piezometer and inclinometer installations, slope monitoring and dewatering
- ▶ Regular inspections, reviews and reporting
- ▶ Mine planning and scheduling (conceptual and long term)
- ▶ 3D visualisation and fly-arounds

Yallourn Energy (VIC)

Mining One personnel have been involved in a supervision, logging and instrumentation contract (piezometers, extensometers) for Yallourn Energy in 1999. This was followed by a review of their geotechnical and hydrogeological issues at Eastfield. Specific aspects were:

- ▶ Supervision, logging and instrumentation contract (piezometers, extensometers), 1999
- ▶ Review of geotechnical and hydrogeological issues at Eastfield
- ▶ Peer reviews
- ▶ Data collection for drilling and instrumentation:
- ▶ Geotechnical
- ▶ Aquifer stratigraphy, water pressure control in deep aquifers

- ▶ Resource definitions
- ▶ Northern Extension Project – Evaluation of re-opening options
- ▶ Southern Batters slope stability geotechnical review
- ▶ Latrobe River Batters slope failure investigation – peer review

Maryvale Project 1999/2000

- ▶ Comprehensive review and documentation of about twenty two (22) previous geotechnical reports on Eastfield, the Eastfield buffer, the north-east surcharge area and the Maryvale buffer
- ▶ Detailed stability analyses using the UDEC/FLAC packages
- ▶ Design and costing work for the stability and support of the Maryvale channel excavation

The aims of our geotechnical work at Maryvale were to provide innovative ideas and this included:

- ▶ Reducing the proposal buffer widths at Eastfield to extend the mine life
- ▶ Examining the cost benefits versus increased risks for the various options available
- ▶ Reducing the Maryvale buffer width and steepening slope angles to mine additional coal

AngloCoal, German Creek Series Mines

- ▶ Highwall photogrammetry (Sirovision)
- ▶ Mapping and interpretation of major geological structures
- ▶ Co-ordination of selective mining/ grade control
- ▶ Geological modelling (Minex)
- ▶ Preparation and communication of dig plans with mining staff and contractors
- ▶ Supervision and education of selective mining protocols and requirements
- ▶ Design and implementation of exploration / definition drilling programs

Loy Yang Mine (VIC)

Mining One personnel were part of a geotechnical panel for the Loy Yang mine in the Latrobe Valley. Geotechnical work at Loy Yang has included:

- ▶ Geotechnical support to daily operations on open pits and waste dumps (i.e. inspections, stability reviews, etc.)
- ▶ Quarterly and annual geotechnical reviews of batter stability
- ▶ Hydrogeological support to pit dewatering operations
- ▶ Supervised coal resource and fault drilling program
- ▶ Annual reviews of power station structures

Hazelwood Coal Mine (VIC)

At Hazelwood, Mining One personnel were involved in completing annual geotechnical reviews of their operation (Kevin Dugan) while other work has involved: Annual dam safety inspections;

- ▶ Annual dam safety inspections
- ▶ Major dam safety review and investigation (Cooling Pond) and remedial design

- ▶ Liquefaction investigation
- ▶ Foundation investigation of Ash pond for future raising
- ▶ Annual geotechnical review of open pit batter stability

Rolleston (QLD)

- ▶ Geological engineering assessment for proposed railway route through Bowen Basin for new mine at Rolleston
- ▶ Cuts / fill stability assessment and design in coal etc.

Collie (WA)

- ▶ Hydrogeological assessment of Collie region for SRWC
- ▶ Developed regional groundwater model for area which focused on 3 open pit coal mines

Mt Owen (NSW)

- ▶ Geotechnical and production review of blast patterns for legal proceedings

Driffield Mine (VIC)

- ▶ Expert review on Morwell River diversion and stand-off distances
- ▶ Expert witness at Tribunal hearings

Mae Moh, Thailand

- ▶ Geotechnical review, stability analyses and Australian study tours for Thai personnel

El Cerrejon, Colombia, South America

- ▶ In association with the American consultants, Call & Nicholas Inc. carried out stability analyses and reinforcement design for the stabilisation of the 9km footwall

HP, Utah Mines (Goonyella and Blackwater) (QLD)

- ▶ Highwall and spoil pile stability analysis and redesign (M. Coulthard)

Lalat Prospect, Mindanao Coalfield (Philippines)

- ▶ Feasibility Study

Peabody's Eaglefield, Bowen Basin (QLD)

- ▶ Investigation of slope failures
- ▶ Slope stability / sensitivity analysis using Limit equilibrium modelling
- ▶ Conceptual pit designs

Leigh Creek Coalfield (SA)

- ▶ Geotechnical management and reviews
- ▶ Ongoing geotechnical assistance and advice

- ▶ Investigations for a major lowwall failure, stress modelling (using UDEC software) and designs of subsequent mining cuts that were successfully completed
- ▶ Advice and assistance on use of Slope Stability Radar
- ▶ Assistance with developing and maintaining a structural model, which is used for geotechnical input into mine planning in a challenging geotechnical environment
- ▶ Stability assessments and analyses
- ▶ Data collection and database management
- ▶ Designs, probabilistic analyses, stability analyses and groundwater assessments
- ▶ Investigations into a major lowwall failure (May 2001) which occurred due to a previously unforeseen stress-related mechanism, including numerical stress modelling using Itasca UDEC software
- ▶ Designs of future mining cuts using the same approach as the failure investigation, resulting in successful continuation of the mining operation
- ▶ Management of Slope Stability Radar for continued mining after the lowwall failure
- ▶ Workforce technical presentations on key issues including geotechnical hazard awareness

HEALTH, SAFETY AND ENVIRONMENT POLICY

All Mining One Pty Ltd operations are carried out in a manner that will protect the health and safety of employees, contractors, customers and the community. Mining One Pty Ltd's services will conform to this policy and adequate advice will be provided to encourage a safe and responsible service.

To achieve this, Mining One shall:

- ▶ Provide and maintain healthy and safe work places and ensure that equipment is in a safe condition
- ▶ Keep reviewing areas, equipment and work methods, to further improve safety and health in the belief that all occupational injuries and illness can be prevented
- ▶ Provide systems of work to prevent accidental spillages and releases and seek to minimise discharges to air, water and land that may harm the environment or cause harm to the health of employees, contractors and others living and working in the vicinity of our operations
- ▶ Provide health and safety training to employees and our sub contractors
- ▶ Implement an effective return to work policy for ill or injured workers
- ▶ Provide services that are safe, without endangering the health of employees, users and others
- ▶ Co-operate with clients to ensure that our policies and work methods are consistent with their requirements for site access

All managers, supervisors, operations personnel and sub contractors are accountable for health and safety performance in their areas.

Mining One's OH&S Manual can be provided upon request.

INSURANCES AND WORKCOVER

Mining One has the following current insurance:

- ▶ Professional Indemnity Insurance
- ▶ Public Liability Insurance
- ▶ WorkCover Insurance

Certificates of Currency for each of the above can be supplied upon request.