

Block Cave & Sub Level Cave Capability Statement



PMD |

*Integrating technical, operational and
financial consulting to maximize the value
of mining projects.*

KEY BLOCK CAVE & SUB LEVEL CAVE EXPERTISE

PMD has a proven record in studies, projects and operation of Block Cave & Sub Level Cave mines across Australia, Chile, Papua New Guinea, Indonesia, South Africa and Mali

KEY CAPABILITIES

- *Block cave and Sub level Cave business strategy aimed to reduce upfront capital expenditure and achieve early production*
- *Improve financial hurdles by developing multiple dynamic simulations*
- *Technical and operational reviews*
- *Business case development*

MINE PLANNING & STRATEGY

- Mining rate/mine size optimization (hill of value analysis)
- Single and multi lifts analysis and integration
- Transition from open pit to BC/SLC
- Footprint design and optimization
- Undercut & extraction level design
- SLC draw strategy and optimization
- Mine & infrastructure design
- Flow modelling and Life of mine production schedule (PGCA)
- Capital and operating cost estimate and economic evaluation
- Ventilation assessment
- Risk analysis and quantification

GEOMECHANICAL

- Cave management plan
- Numerical modelling
- Draw control & management plan
- Caveability assessments & Subsidence profiling
- Fragmentation analysis
- Seismic analysis and interpretations
- Stability assessment
- Ground control management plan
- Geomechanical risk assessments
- Geomechanical instrumentation & monitoring

Alberto Diaz | Principal Mining Engineer

B.ENG (Mining) MAusIMM

Alberto is an internationally recognised mining engineer with over 20 years' experience in the mining industry. He has worked for major resource companies in the corporate and operating mines in both in-house and independent consulting roles.

He has an established track record in consulting all aspects of open pit and underground mechanised hard-rock mining, including technical audits, concept to feasibility studies, due diligence, technical peer reviews, strategic mine planning and design, operational reviews, economic and financial evaluations.

Alberto brings a combined mining technical, operational, financial and management experience across a wide range of underground and open pit metalliferous, diamond and precious metals. He has experience in both mining operations and mining studies in Chile, Peru, Australia, PNG, Saudi Arabia, South Africa, Brazil, Ghana, Mali, Indonesia and New Zealand.

Alberto's areas of particular expertise include:

- Block cave and Sub Level Cave operations and business strategy
- Evaluation of mining options
- Mining financial modelling
- Mine design, planning & sequence
- Operational and performance reviews

Commodities experience includes copper, gold, silver, lead, zinc, nickel, iron ore and diamond.

Relevant Block Cave and Sub Level Cave experience

| Company | Mine / Project | Country | Stage Involvement |
|-------------------------|-----------------|--------------|-----------------------------------|
| Codelco | Andina | Chile | Operating mine |
| Codelco | El Teniente | Chile | Operating mine / Studies |
| Codelco | El Salvador | Chile | Operating mine / Studies |
| Rio Tinto | Argyle Diamonds | Australia | Operating mine / Studies |
| Newcrest | Cadia Valley | Australia | Technical Reviews |
| Newcrest | Telfer | Australia | Studies |
| Morobe (JV) | Wafi Golpu | PNG | Studies |
| Resolute Mining Limited | Syama | Mali | Studies/Strategy/technical review |
| Confidential | Confidential | Indonesia | Technical Reviews |
| Westgold Resources | Big Bell | Australia | Studies/Strategy |
| Vale – SP STM | Hu u | Indonesia | Studies/Strategy |
| Merdeka | Tujuh Bukit | Indonesia | Studies/Strategy |
| Confidential | Confidential | Australia | Technical review |
| AngloAmerica (DeBeers) | Venetia | South Africa | Studies/Strategy |
| BHP | Nickel West | Australia | Block cave Technical review |
| BHP | Nickel West | Australia | Studies/Strategy |

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