

Mine Risk Engineering

The mining industry is a significant segment within the Australian economy and contributes in excess of \$121 billion per year. Export revenues from the mining industry were in the region of \$168 billion in 2012. Over 187,400 people are employed directly by the industry with 599,680 employed in support type services. Australia is among the world's leading producers of bauxite, iron ore, alumina, lead, manganese, brown coal, gold, nickel, zinc, uranium, black coal, silver and tin. This represents a significant sector which is crucial to the Australian economy.

The Challenges

There are many challenges facing the Mining Industry which carry through the entire life cycle of a mine installation. With significant values associated with both the operation of the mine and the product being extracted, there is a need to invest in risk management techniques that will mitigate any potential interruption.

The inherent hazards facing the industry will depend on the material being mined, whether they are open cut or underground operations and their location relative to transport facilities. In general the risks associated can potentially involve the following aspects:

Above Ground	Below Ground	Port Handling
Crushing facilities	Conveyor/Drilling Equipment	Handling/Transfer Equipment
Ore Concentrators	Services & Utilities	Storage
Powerhouse & Utilities	Flammable Liquids & Gases	Port Blockage
Mobile Equipment	Combustible Ores	Environmental
Mineral Treatment	Collapse, Cave-ins, Rock Falls	
Explosives/Blasting Activities	Explosives/Blasting Activities	
Environmental	Environmental	

A deficiency within the management of any one of these aspects can lead to potential risks that could impact property, liability, machinery breakdown and business interruption at the site. Mine operators can adopt control measures that will help to mitigate these hazards. Mitigation measures can include:

Mitigation Measures		
Correct Design standards	Isolation Systems	Fire protection
Mine Planning	Maintenance	Gas detection system
Safe operating procedures	Change management	Permit to work
Ignition source control	Emergency planning	Business Continuity Management

The quality and implementation of these measures will be key in achieving a high standard of risk management that will deliver real protection for the mine operation.

Our specialist team can help you

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Our Solutions

Aon's Risk Engineering Team has the expertise to deliver highly protected risk management techniques to the mining industry across a wide variety of mine types. The assessments carried out by the team incorporate the complete life cycle of the mine from planning through to closure and from drilling and blasting to transport to client.

Aon will work with you to:

- Gain a better understanding of the inherent hazards associated with this sector.
- Develop risk mitigation measures that will deliver real results in terms of enhanced protection.
- Protect key assets in terms of fire, explosion and security.
- Evaluate current protection and risk management systems to verify if fit for purpose.
- Verify human element controls to ensure protection for both personnel and assets.

Our Experience

Aon's Australian risk engineering team has been providing risk engineering consultancy services to leading mine operators for a number of years, and has the expertise to help clients achieve high standards of asset risk management with the aim to minimise property and business interruption exposures.

Collectively, the risk engineering team have undertaken work with the following mining companies:

Company	Mineral
WMC Resources / BHP Billiton	Copper, Uranium, Nickel, Phosphate & Gold
Xstrata	Copper & Zinc
Newcrest	Copper & Gold
Kalgoorlie Consolidated Gold Mines	Gold
OK Tedi	Copper & Gold
Barrick Gold	Gold
Consolidated Minerals	Nickel, Chromite & Manganese
Aditya Birla	Copper
Jabiru	Copper, Gold & Zinc
Rio Tinto	Alumina, Coal & Iron
Hudson	Limestone
Yallourn	Coal
Van Dieman	Tin
ATW Venture	Gold
CITIC	Iron
Intrepid	Gold