

CASE STUDY

SPONTANEOUS COMBUSTION MANAGEMENT

Open Cut Coal Mine

Objective

Xenco was engaged to provide specialized support to address recurring spontaneous combustion (Spon Com) and dust management challenges at a major coal mining operation. The primary goal was to implement targeted solutions that would enhance site safety, improve operational efficiency, and minimise production losses.

The Challenges

The mine faced significant challenges related to spontaneous combustion (Spon Com) and dust management, creating operational risks and inefficiencies. Some key challenges were:

- High-temperature zones created safety risks and operational challenges.
- Excessive dust impacted visibility, air quality, and equipment performance.
- Significant loss of non-blasted material affecting production.
- Hot areas in the drill pattern led to delays and inefficiencies in blasting schedules.

AT A GLANCE

Challenges

- Safety risks due to spontaneous combustion
- Dust management problems
- Significant loss of non-blasted material
- Delays and inefficiencies in blasting schedules

Benefits

- Achieved a 95% blasting completion rate, a **30% increase**.
- Reduced Spontaneous Combustion Risks
- On-Time, On-Budget Delivery
- Enhanced Mine Planning

Xenco is a multi-disciplined, specialist service group that delivers executive and operational level support to businesses seeking significant improvements in productivity, efficiencies and company profitability.

Contact us

Xenco

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Our Approach

Working with site leaders, Xenco went through a process to assess plans to reduce Spon Com on site. On an initial visit, 17 recommendations were highlighted with **5 high value initiatives** identified in conjunction with client representatives to move to the trial stage.

A Xenco Project Manager led the onsite implementation of the initiatives, which included:

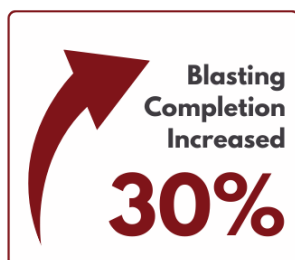
- Developing and managing the five trial projects
- Conducting project procurement
- Designing in-pit water cooling tools
- Creating and coordinating Risk Assessments, Job Safety
- Analysis and Work Instructions
- Providing new training procedures for employees
- Change Management



Our Results

Through the leadership, expertise, and engagement of the Xenco team, all five projects were successfully delivered on time and within budget. One of the key achievements was the implementation of a site temperature model, enabling the mine planning team to better navigate hot areas within the drill pattern.

Additionally, the introduction of a water manifold system to regulate high-temperature drill holes significantly improved blasting efficiency. As a result, the site achieved a 95% blasting completion rate - an impressive **30% increase** compared to the previous year. These advancements have enhanced operational safety, efficiency, and overall mine productivity.



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