



# SAFETY ALERT

## Ignition of gas leads to underground fire

### INCIDENT

An ignition of gas and a subsequent fire in the longwall goaf of an underground coal mine resulted in the evacuation of the underground workforce.

### CIRCUMSTANCES

An afternoon-shift crew was conducting maintenance on the longwall. The longwall had been on maintenance since the start of dayshift. The bulk of the crew was conducting maintenance at the main gate with one fitter working further in, about two-thirds of the way to the tailgate.

Midway through the shift there was an air blast of sufficient force to knock the fitter over and be strongly felt by the crew at the main gate. This was followed by a significant reversal of air.

The mine deputy proceeded to the tailgate where he found an open fire coming from the tailgate goaf. He evacuated the unit and alerted the control room to evacuate the mine.

At the time of the incident there was a severe lightning storm.

The seam being worked contained significant amounts of methane and the mine had a sophisticated drainage system, with both pre- and post-drainage in place.

The longwall panel was the first to be worked in this seam.

The seam being worked was overlain by a previously worked out seam.

## INVESTIGATION

An investigation into the cause of the ignition and the emergency response is continuing. The investigation process has taken some time because of the complexity of issues under investigation.

Areas investigated include:

1. Possible causes of the ignition
  - lightning strike
  - spontaneous combustion
  - electrical ignition
  - mechanical heat sources
  - contraband
  - frictional ignition
2. Mine safety systems and procedures
  - environmental monitoring
  - ventilation systems
  - trigger action response plans
3. Emergency response
  - training and competence of surface emergency personnel
  - use of emergency escape equipment
  - training of the workforce in the use of emergency equipment

## RECOMMENDATIONS

It is recommended that mine operators;

- Review emergency management procedures and training including the appropriate use of oxygen-generating emergency escape safety equipment
- Review the competence and training of surface emergency personnel
- Review the adequacy of gas monitoring including alarm setting, calibration and trigger action response plans.
- Review the adequacy of mine lightning protection and the removal, isolation or earthing of possible conduction paths
- Regularly review spontaneous combustion management plans to ensure its relevance in the current working environment
- Review the adequacy of engineering controls to prevent an ignition source

- Review procedures to eliminate contraband entering underground workings
- Review the need to inert goaf fringes to prevent a possible flammable mixture contacting ignition sources such as frictional sparking
- Remind managers, supervisors, other employees and contractors of their obligations under the *Occupational Health and Safety Act 2000* and the *Coal Mine Health and Safety Act 2002*

**NOTE:** Please ensure all relevant people in your organisation receive a copy of this Safety Alert, and are informed of its content and recommendations. This Safety Alert should be processed in a systematic manner through the mine's information and communication process. It should also be placed on the mine's notice board.

**Signed**



**Rob Regan**  
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**MINE SAFETY OPERATIONS BRANCH**  
**NSW TRADE AND INVESTMENT**

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