

# Safety Alert

Date: November 2023

## Unintended initiation of unidentified (misfired) explosives during excavation

This safety alert provides safety advice for the NSW mining industry.

### Issue

While excavating blasted material, an excavator unintentionally initiated an unidentified explosive.

Figure 1: Excavator in position at time of incident



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Figure 2: Flyrock impact damage to excavator windscreen



Figure 3: Inside the excavator cabin showing flyrock impact to windscreen and the position of the dozer after the incident



### Circumstances

An excavator was excavating blasted waste material at an open cut coal mine during night shift when an unplanned initiation of explosives occurred.

Multiple pieces of flyrock hit the windscreen and body of the excavator, damaging the windscreen. The operator's cabin was not breached.

Flyrock was scattered up to 63 metres from the dig face, damaging a side mirror of a truck being loaded and hitting a dozer that was cleaning the floor at the time of the incident.

The operator was not injured but this incident had the potential to cause serious injuries to the excavator operator and highlights that large amounts of energy are released when explosives are initiated.

Investigations are continuing into this incident.

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## Recommendations

Mine operators should:

- minimise the incidences of personnel on the ground or in unprotected cabins in proximity of mining activities in blasted ground
- review blast design processes to ensure that blast designs take into consideration any geological features, potential blast damage, priming and loading of explosives or other considerations that might contribute to misfires
- review explosives control plans to ensure that post-blast inspections are properly conducted to identify areas of potential misfires
- review explosives control plans to ensure any misfires that are identified are marked on dig/drill plans and are monitored until they have been completely excavated and cleared
- ensure equipment used for excavating blasted ground is suitable and able to withstand flyrock, over-pressure or other potential consequences of inadvertently initiated explosives, for example the use of hardened/laminated glass for operator cabins
- all shotfirers refamiliarise themselves with the requirement to take all reasonable steps to prevent misfires
- training excavator/dozer operators in identifying explosives and the risks associated with misfired explosives.

Every effort should be taken to identify and treat misfires, however it is still possible for misfires to go undetected until excavation activities are conducted.

It is necessary to ensure that equipment used in excavating previously blasted areas is adequately designed and maintained to provide a high level of protection for the operators.

**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 common area, such as your notice board where appropriate.

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