

INVESTIGATION INFORMATION RELEASE

DATE: DECEMBER 2021

Worker suffers serious burns in underground loader fire

Incident date: 25 October 2021

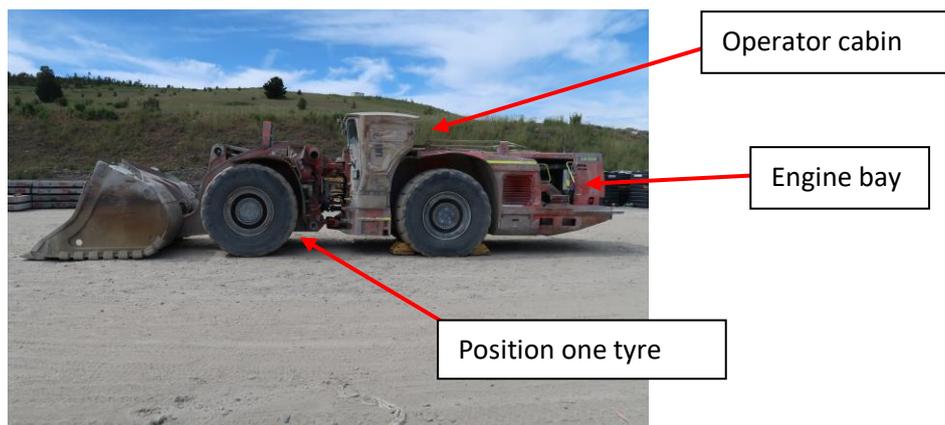
Event: Loader fire at an underground metal mine

Location: Cadia Valley Operations, Cadia East Underground Mine, Orange NSW

Overview

A worker was operating a LH621 Sandvik loader ('loader') in the underground workings of the mine when he observed a fire near the front left (position one) tyre. The worker turned off the machine, activated the fire suppression system and then exited the cabin. To escape the fire, the worker ran past the rear of the loader and sustained burn injuries when he was near the engine bay. Once clear of the loader the worker rolled on the ground to extinguish his clothing which had caught fire. The worker then ran to a nearby co-worker who called an emergency via radio and transported the worker to a refuge chamber. The worker was provided first aid, evacuated to the surface and transported to hospital for treatment.

Figure1: Example of LH621 Sandvik loader model involved in the incident



The mine

The Cadia East Underground mine forms part of the Cadia Valley Operations ('Cadia'), which is Australia's largest underground gold mine and one of the largest gold and copper deposits in the world. Cadia is owned and operated by Newcrest Mining Limited. The mine is located about 25 kilometres southwest from Orange in central NSW. The underground mine uses the block cave mining method to extract gold and copper which is transported to the surface for processing.

The incident

The incident occurred adjacent to a drawpoint in the Cadia East underground mine workings. A drawpoint is a location underground where loose material is extracted by loaders.

Figure 2: Drawpoint located in front of the loader



At the time of the incident, the worker was operating the loader to remove material from the drawpoint. While undertaking this task the worker observed a fire near the loader's position one tyre, (see figure 1) with flames travelling between the tyre and its mud guard flowing towards the ground. The worker turned off the loader, activated the fire suppression system and assessed the fire's location, size and flame path to identify the best route of escape. The worker exited the machine via the cabin door and ran past the rear of the loader (in the vicinity of the engine bay) sustaining burn injuries in the process. Once clear of the loader the worker immediately rolled on the ground to extinguish his clothing

which had caught fire. The worker then ran a short distance to a co-worker who radioed an emergency and transported the worker in a light vehicle to a nearby refuge chamber.

The worker was provided first aid, evacuated to the surface and transported to hospital for treatment. The worker suffered burns to approximately 25% of his body with severe burns to both hands, the back of an arm and shoulder.

Once alerted of the fire the mine initiated its emergency response procedures. Due to the presence of explosive charges in the roof near the loader, the mine determined it was not safe to fight the fire and elected to allow the fire to burn. All personnel were immediately directed to retreat to refuge chambers and were evacuated to the surface.

Figure 3: Cabin door of the loader



The investigation

The NSW Resources Regulator has commenced an investigation to determine the cause and circumstances of the incident. The investigation will, among other things, consider the design of the loader, fuel source and ignition point of the fire, presence of any contributing equipment failure mechanisms, service and maintenance history of the loader, training and supervision of the injured worker as well as the adequacy of policies and procedures relevant to the incident.

The Regulator's initial enquiries have indicated that:

- the fire had a relatively short-lived duration resulting in minimal damage to the loader
- while burn indicators on the loader suggest the fire was contained to the front left hand side (see figures 3 and 4), when interviewed the worker stated that he in fact sustained burn injuries while running past the rear left hand side of the loader in the vicinity of the engine bay
- the fuel source and ignition point for the fire has not yet been determined.

Figure 4: Fire affected position one tyre of loader



Safety observations

Mine operators are reminded of their duty to identify hazards and manage risks to health and safety in accordance with the provisions of the *Work Health and Safety Act 2011* and *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and regulations.

Mine operators should:

- ensure they have identified and assessed all hazards that may give rise to the risk of fire on vehicles and equipment used underground
- assess the flammability of fluids used in the hydraulic and braking systems of heavy equipment that operates underground and potential ignition sources
- ensure all hydraulic, braking and fuel systems on heavy equipment are inspected and maintained regularly to identify and prevent system failures that have the potential to produce high pressure leaks.

Workers should:

- ensure they undertake prestart inspections of heavy equipment including assessing the condition of the hydraulic, braking and fuel systems with identified hazards reported
- follow emergency response procedures when determining the most appropriate form of action to escape an underground fire safely.

Further information

Please refer to the following guidance materials:

- [NSW Code of Practice - Mechanical engineering control plan](#)
- [Investigation Report Haul Truck Fire - Tritton Copper Mine](#)
- [Fact Sheet - Testing of fire resistant hydraulic fluids and materials](#)
- [Review of in-service fires on mobile plant](#)
- [MDG15 Mobile and transportable plant for use on mines and petroleum sites](#)
- [MDG 1032 Guideline for the prevention, early detection and suppression of fires in coal mines](#)
- [Position paper – Preventing fires on mobile plant](#)

About this information release

The Regulator has issued this information to draw attention to the occurrence of a serious incident in the mining industry. Further information may be published as it becomes available.

Visit our [website](#) to:

- learn more about our work on causal investigations and emergency response
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