



Exploration

Issued April 2018

Drilling in any environment is potentially hazardous but mineral exploration in remote locations, such as those encountered in Western Australia, presents additional risk factors (e.g. extreme weather, lack of accessibility of workplace and distance from emergency services).

This snapshot covers the period from 1 January 2017 to 31 December 2017 when there were 1,226 injuries and 2,470 notifiable incidents (specific reporting categories). Of these, 27 injuries and 77 notifiable incidents involved exploration operations.

@DMIRS_WA

Department of Mines, Industry Regulation and Safety

Injuries by nature



17 of the 27 injuries were **musculoskeletal**

10 of the musculoskeletal injuries were **high-consequence** (amputations, fractures and crushing)

Injuries by severity



1 fatal injury



17 serious injuries



8 minor injuries

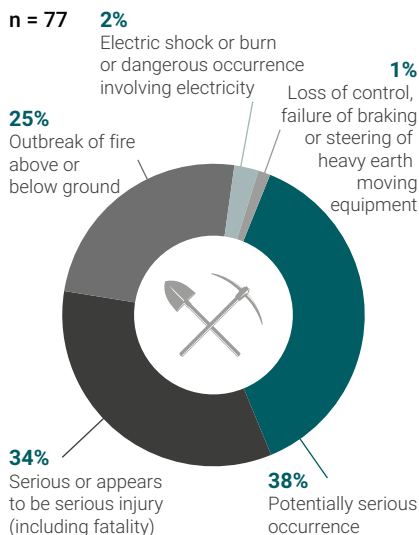


1 non-disabling injury

Injuries by employment type

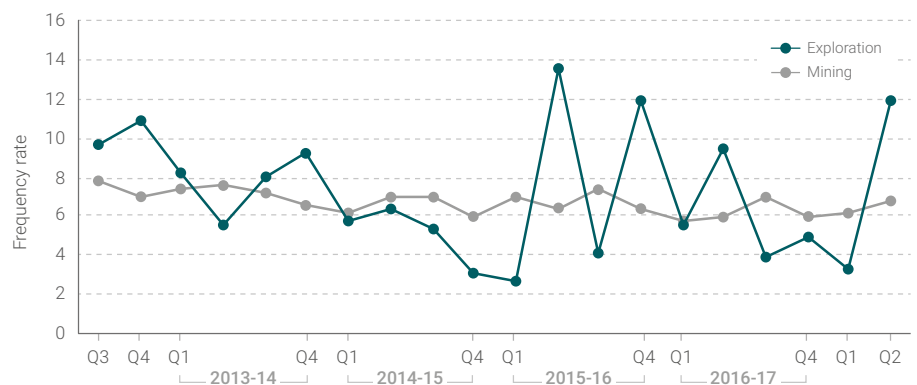


Notifiable incidents by reporting category



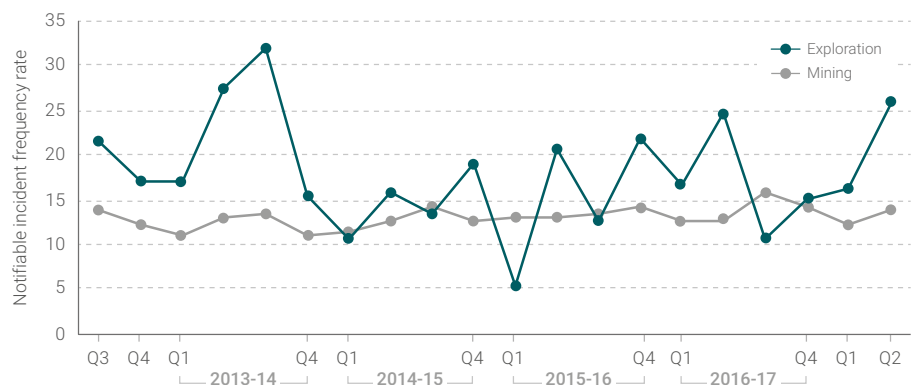
Injury frequency rate for 5 year period

(number of injuries per million hours worked)



Notifiable incident frequency rate for 5 year period

(number of injuries per million hours worked)



Note: The information in this snapshot has come from a keyword search of incident reports.

Some recent incidents



Incidents affecting registered plant 26/11/17

The driller on a reverse circulation (RC) drill rig restarted drilling after loading the booster. There was a loud bang followed by a cloud of smoke and the driller shut down the rig. An inspection revealed that the booster hose and pipework on the receiver tank were damaged. It is suspected that there was a "flash over" within the receiver vessel.



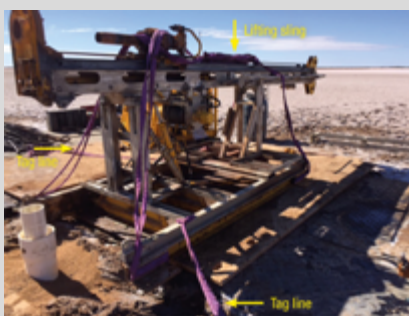
Potentially serious occurrence 21/11/17

Before returning it to service at an exploration site, a remote controlled track drill rig was undergoing a controlled downhill test on the brake system after hydraulic adjustments on its transmission drives. While tramping down a ramp onto an empty drill pad, the rig's brakes failed and it rolled uncontrolled for about seven metres onto the drill pad's soft ground where it came to a stop under its own weight.

Spotlight on Mines Safety Significant Incident Report No. 246

Fall from height during helicopter lifting operations

18 August 2016



Key message:

Before commencing helicopter lifting operations, complete a suitable task-based risk assessment that is approved by the supervisor. Confirm that those involved have the appropriate high risk work licence and have been assessed as competent.

Spotlight on Mines Safety Significant Incident Report No. 257

Field technician collapses during exploration activities – fatal accident

28 February 2018

In October 2017, two field service technicians were working in a remote area of the Pilbara, conducting field survey reconnaissance on an exploration tenement. After driving over an hour to the tenement, the two technicians parked the vehicle and walked about 16 km in temperatures reaching 36°C. They returned the next day, parked up, and walked about 18 km in around 7 hours, with the temperature peaking at 37°C. While returning to their vehicle, one of the field technicians collapsed and became unconscious. Within a short time the field technician stopped breathing and could not be resuscitated.

In January 2018 it was established that the cause of death was associated with dehydration and renal failure.

Contributory causes

- Neither the heat stress management plan or procedures were adequate.
- The fitness-for-work assessment process did not adequately address the capacity of individual workers to undertake field work.
- Hydration testing was not conducted prior to undertaking field work.
- There was no system to train or assess workers supervising or conducting reconnaissance work in remote locations (e.g. extreme temperature conditions).
- A task-based risk assessment [e.g. job hazard analysis (JHA)], was not performed before starting field work.
- The field technicians were unable to access a suitable cool-down area during field work (e.g. an air-conditioned vehicle).

The potential for heat stress should be minimised by appropriate heat stress management plans and procedures, regular monitoring of workers in the field and risk assessments for daily tasks.

Safe work practices

Examples include:



Do not rotate drill rods without guarding in place or a safe system of work (e.g. isolation protocols, cut-out or interlock devices).



Implement procedures for the safe removal of blockages in compressed air systems.



Provide weather protection (e.g. tents, shade) and cool rest and recovery areas.



When designing drill programs, assess the likelihood of encountering fibrous, radioactive or toxic metal-bearing minerals (e.g. using historical geological records).



Establish procedures to plan and monitor safe travel to and from work in remote locations.

For more information see *Mineral exploration drilling – code of practice*