Significant Incident Report No. 257

Subject: Field technician collapses during exploration activities – fatal accident

Date: 28 February 2018

Summary of incident

Note: The Department of Mines, Industry Regulation and Safety's investigation is ongoing. The information contained in this significant incident report is based on materials received, knowledge and understanding at the time of writing.

In October 2017, two field technicians, based in off-site accommodation, were conducting remote reconnaissance mapping on an exploration tenement in the Pilbara. On their first day in the field, 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.

His colleague contacted emergency services and provided treatment but, within a short time, the unconscious field technician stopped breathing and could not be resuscitated.

Note: Although this death was reported to the Department of Mines, Industry Regulation and Safety as being non-work related, it was treated as a possible work-related fatality and investigated. In January 2018, it was established that it was a work-related fatality, and the cause of death was associated with dehydration and renal failure.

Direct causes

- Inadequate hydration and management of heat exposure during field work on both days.

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).

Actions required

The following actions are recommended to operations to reduce the potential for incidents involving heat stress.

- Review heat stress management plans and procedures to confirm they address risk factors such as frequency and duration of exposure, acclimatisation, frequency and duration and intensity of physical activity, and medical conditions and medications.
- When planning field work, establish appropriate work–rest, acclimatisation and hydration regimes to address the risks posed by the environment (e.g. temperature extremes, terrain).
- Confirm that supervisors and workers are aware of the underlying causes of heat strain, recognise its symptoms and how to respond.
- Supervisors to review the risk-based field work plan before work commences.
- Supervisors to regularly monitor workers in the field and environmental conditions, and review the work plan if there are changes.
- Workers to undertake a risk assessment for daily task before commencing work, and review if conditions change.

Further information

- Department of Mines, Industry Regulation and Safety

  Guidance about heat and thermal stress management, www.dmp.wa.gov.au/Safety/Guidance-about-heat-and-thermal-6968.aspx

  Guidance about working in remote areas, www.dmp.wa.gov.au/Safety/Guidance-about-working-in-remote-6723.aspx

  Mining safety publications, Codes of practice, www.dmp.wa.gov.au/Safety/Codes-of-practice-16145.aspx

  Mineral exploration drilling – code of practice (Chapter 12 Working in hot environments)

  Mines safety alerts, www.dmp.wa.gov.au/Safety/Mines-safety-alerts-13194.aspx

  Mines Safety Significant Incident Report No. 95 Death of exploration worker

This Significant Incident Report was approved for release by the State Mining Engineer on 28 February 2018