



## **SIGNIFICANT INCIDENT REPORT NO: 120**

### **CONTAMINATION OF HIGH PRESSURE COMPRESSED AIR IN PLANT**

#### **INCIDENT**

Whilst attempting to clear a blockage from a cyanide delivery line in a gold treatment plant, the high pressure compressed air system in the plant was inadvertently contaminated with cyanide solution.

Shortly before this happened, cyanide solution was observed to be discharging from the pressure relief valve in the cyanide line indicating a partial blockage was present in the line to the CIL Header Tank.

Attempts were made to clear the blockage by flushing with raw water and high pressure plant air on the discharge side of the positive displacement cyanide pump.

When it was considered the blockage had cleared, cyanide solution was reintroduced into the line and the pump restarted. The compressed air supply to the line remained attached.

As the blockage had not properly cleared the pressure in the discharge section of the cyanide line began to exceed the pressure of the high pressure plant air. This allowed the cyanide solution to enter the air line and contaminate the compressed air system. The contamination spread through the high pressure air system of the plant to areas including the laboratory and mill lubrication pump facility.

During this occurrence two employees required treatment for mild cyanide poisoning.

#### **CAUSES**

The immediate cause of the incident was the use of compressed air to clear the blockage in cyanide delivery line.

Other causes include the use of raw water for mixing cyanide. Over time this may have provided a source of scale which then built up and blocked the line.

The plant design was not compatible to the operating practices for clearing blockages in the cyanide line.

#### **COMMENTS AND PREVENTATIVE ACTION**

During the preparation of safe working procedures detailed attention must be paid to all tasks to be performed. These procedures must be continually updated as maintenance becomes more complex and treatment plants age. To avoid a recurrence of this type of incident, the following action needs to be considered:

- Assess current work practices and procedures to ensure that safe systems of work are in place to prevent the risk of persons being exposed to cyanide.

- Conduct risk assessments for the clearing of blocked cyanide lines. Compressed air should not be used to clear such blockages.
- Reinforce the reporting of exposures to hydrogen cyanide and the role of supervision when receiving such reports.

M J Knee  
STATE MINING ENGINEER  
9 December 2002