



DEPARTMENT OF
MINERALS AND ENERGY
WESTERN AUSTRALIA

MINING OPERATIONS DIVISION

MINESAFE

DME Risk Taskforce: Catalyst for Replacement Iron Ore Shiploader



..... leaving North Fremantle



..... arriving at Finucane Island

.... see full story page 2

Cover story

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A proactive mining safety initiative from the Mining Operations Division in November 1996 was the genesis for the replacement of the shiploader at BHP Iron Ore's Finucane Island minesite. The Mining Operations Division established a taskforce which coordinated the development of risk management plans in conjunction with BHP Iron Ore, Hamersley Iron and Robe River Iron Associates for shiploaders, reclaimers and stackers operated by these companies in the iron ore industry. The division initiated the safety review following the structural failure of three machines in the iron ore industry, between 1993 and 1996, which resulted in the death of two operators and serious injuries to a maintenance engineer.

Essentially, a risk management plan identifies all possible risks that may jeopardise the structural integrity of a machine and formulates management processes which eliminate all identified risks. Such a plan is a "live" document that must be maintained throughout the life of the machine, and evolve to identify and manage any newly created risks associated with modifications or upgrades to the machine.

Mr Peter de San Miguel Principal Structural Engineer with BHP Engineering and member of the taskforce commenced a risk management plan for this shiploader in early 1997. The shiploader was commissioned in 1966. The plan involved detailed inspections of the shiploader and wharf structure, weighing the shiploader with hydraulic jacks and load cells and exhaustive structural engineering design analyses of the shiploader and wharf. Based upon the results of this plan, BHP Iron Ore decided that it was not economically viable to restore the shiploader for long term safe operation. Urgent critical repairs and strengthening were carried out on the shiploader and wharf in conjunction with operating restrictions to allow continued safe operation whilst a replacement shiploader was procured.

The \$11 million 520 tonne replacement shiploader was fabricated at North Fremantle by Krupp Engineering and transported by ship to Finucane Island. To support the new shiploader \$10 million was spent further upgrading the wharf structure. Commissioning was completed in early October 1999. For further information contact Mark Butson [telephone (08) 9222 3607].



Unloading the new to replace the old

Yuletide Message

SEASON'S GREETINGS & A SAFE NEW MILLENNIUM

As the Christmas period and a new millennium approaches, Minesafe and all staff at DME's Mining Operations Division take this opportunity to recognise and acknowledge the safety efforts undertaken by mine management, contractors, supervisors, safety representatives and employees throughout 1999.

Without doubt, industry's efforts have influenced the continuing downward trend of lost-time injuries and marked reduction in mining fatalities. While fatalities are down from seven (1998) to two in the current year to-date, an apparent increase in 'near-miss' incidents raises obvious concern and reminds us that safety outcomes could have easily been much worse.

Historically and worthy of note, the lead up to Christmas and the New Year is a period when accident rates noticeably increase. Contributing factors include increased complacency, loss of concentration while contemplating the next R&R or planned holiday, fatigue associated with extra hours to cover absenteeism or to increase holiday funds and generally being '*under the weather*' from partying the previous evening. Also relevant at this hottest part of the year is the effects of and need to manage physical dehydration (with water intake).

The new millennium elevates the forthcoming festive season to an historic global event and there is little doubt that many will celebrate this special occasion accordingly. However, we must all be mindful of how one serious accident can rapidly remove this 'gloss', and endeavour to ensure that this does not eventuate.

Take note and take care:

- Present yourself for work in a fit state,
- Stop and think before starting any hazardous task,
- Know the hazards and control them,
- Maintain full concentration on the job in hand,
- Don't take risks, minimise them,
- Work reasonable hours and avoid fatigue,
- Keep an eye on your workmates.

Minesafe and everyone at MOD wish you the best for the festive season and look forward to working with you all in the forthcoming year.

Y2K Message

The Department's Y2K Transition

A number of DME electronic services will be unavailable from the early hours of **Friday 31st December to 4pm Saturday 1st January 2000** due to Y2K compliance testing. Accordingly, there will be no internet access to;

- TENGRAPH
- TENDEX
- MINEDEX
- WAMEX
- EXIS

This brief shutdown will allow the Department to conduct year-end backup activity and a managed roll-over to the New Year, as well as critical systems verification. Clients will still be able to lodge applications and dealings, and attend to Mining Act requirements such as the payment of rents and lodgement of reports at the DME's Head Office and its regional offices.

Interesting press

A report by a British technology company named Australia as one of the world's safest New Year's Eve destinations. In an international survey of millennium bug risks, the report says Australia is among the 14 countries best prepared for the turn of the century.

However, the report also warns that many other destinations pose a definite danger to travellers - among them Russia, China, Liberia, Madagascar, Egypt and Somalia. (Source: ABC Online News, 1 Dec. 99)

ARE YOU SUSCEPTIBLE TO THE Y2K BUG ?



S-W Emergency Response Competition



Attending a casualty (Hazchem)



Teamwork counts in this exercise (Skills)



Using water pumped from the Blackwood River (Fire rescue)



Removing casualties from the water (Rope rescue)



Handle with care (First aid & extrication)



Overall winning team - Wesfarmers Coal - led by Captain Mick Marley (seen here with shield in hand)

Securing abandoned mines

The October edition of Minesafe featured an article which discussed the hazards associated with abandoned mines. In this edition we look at some appropriate methods of securing abandoned mine openings. Mine operators working in areas near abandoned mines may like to consider securing some of these workings as part of a good neighbour policy and are invited to discuss proposals with DME. In Western Australia, the number of abandoned mine openings that may present a hazard could exceed ten thousand.

As a minimum, abandoned mine openings should be identified with warning signs to alert individuals travelling in the area to their presence. However, to minimise or eliminate the hazards, mine openings need securing.

Securing Mine Openings

While signs can serve to warn about mine openings, they do not prevent access and eliminate the hazard. Physically securing a mine opening with a barricade or sealing with backfill are the only effective ways to reduce or eliminate the hazard. Before selecting a method of securing a mine opening, it is important to assess the type of hazard, the level of risk, the potential future economic or historical value of the mine opening, the associated cost and the effective life of the selected closure method.

Temporary Closure:

Temporary closure methods prevent deliberate or accidental entry into a mine opening, but do not alter the general condition of the opening. These methods are generally the least expensive and apply to openings which present a hazard but which also have potential near-future economic and/or historical value. Appropriate

temporary closure methods include fencing, wire screening and steel grating. Depending on the nature of the method, temporary closures can remain effective for up to 20 years. Regular inspections and maintenance can often extend the life.

Long-Term Closure

Long-term closure methods seal and prevent entry into a mine opening, but still preserve the general condition of the opening. These methods apply to openings which present a hazard but which may have potential long-term future economic and/or historical value or where permanent closure is not practicable. Appropriate long-term methods include pre-cast concrete caps, cast-in-place concrete caps, monolithic concrete caps and native rock or concrete block bulkheads. Long-term closure methods can remain effective for 30 to 50 years. Again, regular inspections and maintenance can often extend their life.

Permanent Closure:

Permanent closure methods completely close off an abandoned mine opening and eliminate access. This option applies to openings which present a significant hazard, are readily accessible to the general public and have no economic or historic value. Appropriate methods to permanently seal a mine opening include backfilling and closure through blasting. These methods typically do not require inspection or maintenance.

Identification and Records

A marker positioned over the location of an abandoned mine opening which is backfilled or capped will assist in locating the closure area in future.

The simplest type of monument is a concrete filled, rebar-reinforced pipe embedded into the backfill or affixed to a concrete cap and extending above the surface. The marker can be surveyed to record its location and painted to enhance visibility. Detailed records of the location and method of sealing employed should be kept for future reference.

Wildlife Habitat

Sealing or filling of abandoned mine openings can result in disruption of wildlife habitat which can affect bats, birds, small and even some large mammals and reptiles. Although backfilling prevents entry by fauna, specially designed openings in a wire mesh, steel grate or bulkhead barricade will permit access for small wildlife and reduce the impact on their habitat.

.....
(Based on material provided by Nova Scotia Dept. of Natural Resources)

Mining Joke

Two bush walkers came across an old abandoned mine shaft. To test the depth of the shaft they threw a small rock into it, leaned over and listened, but failed to hear the rock hit the bottom.

"It must be pretty deep. Get a bigger rock," said one. "No," replied the other, "Here's a railway sleeper, let's use this, we should hear this land however deep the shaft is."

Struggling, they carried the sleeper between them and threw it over the edge. As they bent over to try to hear the sleeper land, a nanny goat ran bleating out of the bush, pushed between them and jumped down the shaft. They couldn't believe their eyes.

As they were recovering from the shock, an old prospector appeared out of the bush and asked "Either of you two blokes seen a goat around here?"

"Yes," said one, "As a matter of fact, one just jumped down this old shaft right here."

"Couldn't have been mine," said the old prospector, "I left her tied up to an old railway sleeper so she wouldn't wander!"

The Mufulira Disaster



In the first of a 'Mining Disaster' series, Minesafe revisits the events of the 1970 Mufulira Mine tragedy where a massive inrush of mud flooded underground workings and claimed the lives of 89 miners. The purpose of this series is to remind and ensure that important mining lessons learned, often with great loss of life, are not forgotten with the passage of time.

"Those who do not remember the past are condemned to repeat it."

-George Santayana



The Mufulira Mine

Mufulira is a large mechanised underground mine on the Zambian Copperbelt which commenced production in 1933. Caving mining methods were introduced in 1944 and de-slimed concentrator tailings were used underground in sand fillings operations. For each tonne of sand fill placed underground approximately one tonne of slimes was deposited in an area at the surface known as No. 3 dam. From 1944 onward, progressive collapse of the hangingwall led to the formation a surface depression within which lay No.3 dam. The total tonnage of tailings in No.3 dam as at September 1970 was estimated to have been approximately 18 million tonnes.

In the 22 months prior to the disaster a number of related events had taken place, including the formation of three surface sinkholes, a depression in No.3 dam and two mud extrusions into the underground workings. The overall significance of these indicative events was not fully appreciated by management at the time.

working areas of the eastern half of the mine and extended horizontally up to 1000 m in places. A further 250,000m³ remained hung up in the stope voids.

Eighty-nine of the total labour force of 303 who were working in the affected



Disaster strikes!

At around 2.55 am on the 25th September 1970 large quantities of mud began entering the underground

workings at various points between the 434m - 580m levels and flowed into the lower levels via an internal shaft system. A chimney cave had propagated from the underground workings and broken through into the base of No.3 dam, the source of the mud.

The whole event occurred extremely rapidly, within 10-15 minutes around 450,000 m³ of mud inundated the

section of the mine perished. Many of the survivors reported that the initial inrush was accompanied by sounds varyingly described as '*a blasting sound, a shaking, an explosion, like thunder*'.

In the aftermath a sinkhole exceeding 100 m in diameter was observed at the base of No.3 dam, around 700,000 m³ of tailings had disappeared into the mine.

Commission of Inquiry Conclusions

Among other findings a Commission of Inquiry concluded:

- * Any hypothesis concerning the mechanism of the disaster must take into account the events which preceded it, namely the history of chimney caving in the area and the mud extrusions underground.
- * The practice of disposing of tailings on caving hangingwall ground was basically wrong. Some 15 million



Typical main haulage (8m x 4.5m) after the mudrush

~ ~ ~ Will history repeat itself ?

tonnes of tailings, approximately 75% of the total, were impounded since a critical decision was taken to infill a surface depression and prevent the accumulation of standing water.

- * A truly objective appraisal of the situation at Mufulira prior to September 1970 was almost impossible, since both the company staff and the Mines Department had to a large extent been 'conditioned' to the situation by long association. The disposal of tailings over caving ground at Mufulira was an established procedure, which was, with one exception, never queried, mainly because of the long period of time over which it had been practised.

Could History Repeat Itself in WA?

For those believing that large unfilled mining stope voids can be assumed to be completely stable, experience with sinkholes and intrushes at underground mines in WA over the last 25 years clearly demonstrates that this is not always the case. Water accumulation in surface depressions provides opportunity for saturated ground conditions to develop and resemble the conditions experienced at Mufulira. The presence of large unfilled stope



580m level Plat, looking down the shaft at Peterson #3 man/materials sub-incline shaft



580m level Plat, looking down the shaft, at Peterson #2 sub-incline rock shaft

voids, possibly in combination with large back spans, planes of weakness in the rock, stoping near the base of oxidation, poor ground conditions and accumulations of surface water has resulted in a number of unexpected sinkhole formations with attendant mud intrush.

Sinkholes and Intrushes in WA Mines

There have been at least four significant occurrences where sinkholes unexpectedly formed at WA minesites since 1974:

- * At the Scotia mine in July 1974 a large hangingwall collapse occurred in an open stope and resulted in the formation of a large sinkhole at the surface. A mine employee that witnessed the event tried unsuccessfully to contact company officials and set off to drive to a nearby camp to use the telephone. Tragically, the employee inadvertently drove his utility into the sinkhole. The body of the deceased and vehicle could not be recovered.

- * In December 1991 during the Christmas/New Year shut down at the Prince of Wales mine, a major

intrush of mud and water entered the mine following a crown pillar collapse in the floor of an open pit.

Previous underground workings had created a number of unfilled stope voids near to the mine's shaft and a small open pit mine had been established near the headframe in the late 1980's.

Heavy rainfall in late December 1991 resulted in large flows of water into the open pit. For reasons unable to be established, the floor of the open pit collapsed and allowed an intrush of mud and water to flood into the mine via the shaft and underground excavations. Due to the holiday period no employees were underground at the time. Had the timing of events been different the outcome and consequences would undoubtedly have been very serious. Shaft access to the mine was lost and the mine closed.

- * In February 1997 and June 1998 a large underground nickel mine experienced the sudden and unexpected formation of two large sinkholes. The February 1997 event was accompanied by the intrush of a considerable volume of mud and water into the mine. Again, it was most fortunate that the intrush occurred during shift change when no employees were in the mine. In both instances, the creation of large unfilled stope voids, close to the base of oxidation, in a weathered rock conditions contributed significantly to the collapse.

Bush spinifex & vehicle fires

We all have our problems. Recently a DME geologist and field assistant had to deal with a vehicle fire and thought it a good idea for Minesafe to publish the incident details and share their experience with those that have not had to contend with such.

Incident

Undertaking field survey work just east of Wiluna, the two involved were finishing off this year's mapping and making progress in a 4WD when they smelled burning.

Knowing there were no bush-fires in the area they decided to check out the vehicle and found the brakes to be inoperative when they attempted to stop.

With no traffic around and little drama, the vehicle was stopped using the handbrake and gears, and the two got out to find smoke billowing from beneath it. Tightly packed spinifex had accumulated above the gearbox 'bash-plate' and had been ignited by the hot exhaust.

Everything was hot and the driver burned his arm trying to smother the flames using a fire extinguisher which only served to partially control the outbreak before emptying. Fortunate to have plenty of water on-board and cups which allowed them to direct it onto the relatively inaccessible gearbox, the fire was finally extinguished. To ensure the fire was entirely extinguished the 'bash-plate' was later removed to allow thorough checking.

Aside from a burned arm, damage was confined to electrical wiring which affected the vehicle's instruments and to the vehicle braking system. Heat had temporarily boiled the braking system hydraulic fluid which returned to normal after cooling down.

Comments and recommendations

Following a heavy wet season the growth of spinifex had been profuse and several other vehicles in the same area were known to have previously caught fire under similar circumstances.

- * Spinifex needs to be cleaned from beneath vehicles on a regular basis when they are used in highly grassed regions in dry conditions. In a good growth year, this may mean cleaning daily.
- * Exercise caution when attempting to extinguish any vehicle fire, particularly underneath the vehicle. Contact with hot engine, transmission and exhaust parts is one hazard, and the risk of a sudden increase in flames while in a confined space is another.
- * If a vehicle fire is well established, no attempt should be made to put out the flames. The priority is for persons to move a safe distance away from the vehicle and warn others as appropriate.
- * Promptly investigate all 'unfamiliar' smells and vehicle noises. Fires have a habit of escalating rapidly

and can be controlled more easily in their early stages.

- * Be aware that when travelling at speed vehicle fires may show few, if any visible signs from inside the cab.
- * Further to a fire extinguisher, a supply of water may be necessary to quell some fires and requires appropriate means to apply it.
- * Following any fire, the vehicle must be fully checked and not be driven until entirely satisfied that it is safe to do so. Watching and waiting for up to 30 minutes may be necessary.
- * Any affected vehicle should be inspected and assessed by a competent mechanic at the first opportunity to ensure that it is road worthy.

The risks and hazards associated with bush-fires that may also arise from vehicle fires are apparent.



Fire damage to gearbox area shown with guard removed

Osborne wins top 'MINEX' Award

The National Minerals Industry Excellence Awards for Health and Safety (MINEX), run by the Minerals Council of Australia, were introduced in 1995 as an initiative to improve the occupational health and safety performance of the mining industry in Australia.

To be honoured with the MINEX award a mine must attained excellence in OS&H performance and this year's top award went to Placer Dome Asia Pacific's Osborne Mines.



Osborne Mines receiving their awards. From left - David Stewart, President Minerals Council of Australia presents the MINEX Award to the Placer Dome Asia Pacific - Osborne Mines team: George Paspalas, David Baker-Finch, Tony Horton, Martin Ardley and Dick Zandee.

- Corporate support for safety and health strategies is demonstrated at all levels and 'high performance culture' training is provided to enable strategies to be fully supported by every employee and business partner.
- The Osborne Mines 'WE CARE' management system, developed by Osborne employees, considers best practice and encompasses all elements that have been identified to ensure a safe workplace for employees, business partners and visitors.

Mr Dick Wells, Executive Director of the Minerals Council of Australia, said

"Osborne Mines has shown continuous improvement since 1996 and is demonstrating a very high level of achievement in safety and health performance".

- Newcrest Mining's Cadia Hill Gold Mine (NSW), commended for achieving a highly committed safety culture that successfully integrates safety and production.
- North Limited's Northparkes Mines (NSW), commended for an outstanding leadership culture which has been successfully integrated throughout the site.
- Peabody Resources' Ravensworth/Narama Mine (NSW), commended for an outstanding achievement in building a comprehensive systems approach to all aspects of safety and health management.
- Thiess Contractors' Mt Owen Mine (NSW), commended for achieving a safer workplace by implementing practical safety and health systems and procedures.

For further information about MINEX Awards contact the Minerals Council of Australia on (02) 6279 3600. Website address - www.minerals.org.au

This is the second time that Osborne has won the prestigious award. The mine first took top honours in the 1996 MINEX Awards and, as a previous winner, was not eligible to re-enter until this year.

Judges noted the following key components of the Osborne Mines approach:

- Safety and health issues are driven from all levels of the organisation and all employees and business partners have autonomy and accountability for safety and health actions.

Five other mineral sites recognised at the MINEX Awards ceremony were:

- Normandy Mining's Kaltails (WA), commended for achieving an effective and efficient safety management system.



David Stewart giving the Commendation Award to Dan Calvert from Normandy Kaltails.

Frequently Asked Questions

Q 1 *I have an occupational certificate issued in another State. Can I work in Western Australia?*

A 1 Yes, providing those qualifications have first been registered with the relevant regulatory authority and the occupation you intend to undertake is equivalent to that which you are already qualified for. Currently, this provision only applies within Australia and has been in place since proclamation of the Mutual Recognition (WA) Act 1995. Mining industry enquires may be directed to Alan Sheppard (08 9222 3269).

Q 2 *What happens to the information from MOD audits conducted at minesites?*

A 2 In the first instance, each individual mine is provided with an audit report, and secondly, the collective results of all audits are entered into a database called MODAMS (MOD Audit Management System). In this way, the information can be analysed to reveal industry trends and compliance performance. It is envisaged that controlled Internet access to this information will be made available within the next 12 months.

Q 3 *MSI Regulation 5.28 requires certain clearances for vehicles and machinery travelling under overhead powerlines; regarding haultrucks, does this mean with the tray up or down?*

A 3 Clearances are measured from each powerline conductor to the nearest part of the vehicle, its load or accessories. If the truck is simply travelling under a powerline, the clearances may be measured with the tray down. If the truck must be tipped in the vicinity of a powerline, the clearances may be either horizontal or vertical distances and need to be measured with the tray raised. In both cases, the regulation requires responsible persons at the mine to ensure that the prescribed clearances are **ASSURED** at all times.

'The Bottom Line'

Accidents involving vehicles and mobile plant that 'rolled away' simply because the parking brakes had not been properly applied occur all too often. Below is just a selection of recent events extracted from MOD's accident and incident database:

- *A person received suspected concussion when struck by a vehicle that rolled backward down the ramp towards her. The person tried to jump into the moving vehicle and was knocked to the ground by the door.*
- *An operator narrowly avoided being crushed by a loader that rolled into the excavation where he was working. The loader had been left on an incline with the parking brakes applied but without the machine bucket fully lowered.*
- *A compressor rolled 200 metres downgrade before finally stopping.*

- *A forklift rolled forward and pinned the operator's leg while he was attending to the load.*
- *A driver 'tagged out' a truck that had faulty parking brakes, got out and the vehicle rolled off.*
- *A loader was left on a slope without the parking brakes applied or the bucket fully lowered. After alighting, the driver noticed the machine moving off and quickly climbed aboard to stop it.*
- *A driver left his truck and returned to find that it had rolled away and collided with a concrete block.*
- *A vehicle rolled away, hit a water pipe and turned over even though the brakes were applied.*
- *A water truck rolled 124 metres downgrade and hit a pole.*
- *A haultruck rolled forward into concrete stops at the fuel bay.*

- *While being isolated, a haultruck rolled backwards because the parking brakes had not been applied.*

And the '**BOTTOM LINE**' is:

- Avoid parking on an incline, lower any implements and ensure the parking brakes are fully applied and effective before leaving the vehicle.
- Do not assume the brakes of a parked vehicle are applied (or working); check and use positive safeguards if danger may arise.
- Ensure maintenance practices are adequate and include brake testing.
- It is hazardous to chase after a runaway vehicle (to say the least).
- Refer MSIR 10.41 and 13.2

What's On

WA CERTIFICATE OF COMPETENCY EXAMINATIONS

- First Class Mine Managers
- Underground Supervisors
- Quarry Managers
- Restricted Quarry Managers

7 FEBRUARY 2000 Mining law examinations - Perth only
(Applications close on 7 January 2000)

1 MAY 2000 Mining law and practical examinations -
Perth & regional centres (Applications close 31 March 2000)
Contact Alan Sheppard at DME on 9222-3683 or 9222 3269
for application forms.
Application Fee is \$100

TAILINGS – CORPORATE RISK AND RESPONSIBILITY

Perth, Wednesday 15 March 2000

For senior management with the objective of emphasising
the responsibilities and risks to mining companies imposed
by the short and long-term containment of tailings.

For further information contact Christine Neskudla or Gillian
Macmillan at the Australian Centre for Geomechanics on:
9380 3300

MARCSTA INDUCTIONS (Perth)

**13 January, 17 January, 8 February, 23 February, 9 March,
22 March 2000**

A one day course designed for the mining industry by the
Mining and Resource Contractors Safety and Training
Association (MARCSTA) and delivered by IFAP using

MARCSTA accredited training providers. The objective being
to provide participants with standardised accredited industry
specific competency based training and nationally recognised
certification.

For further information contact Christine Williams at IFAP
on 9310 3760

VENTILATION COURSES

Perth, March 2000

**Surface Ventilation Technicians Course (30-31 March
2000):** for those who have been or wish to be appointed to
the role of Technician Officer assisting the Surface
Ventilation Officer.

Surface Ventilation Officers Course (27-29 March 2000):
for persons who have been or wish to be appointed to the
statutory role of Ventilation Officer.

For further information contact Christine Williams at IFAP
on: 9310 3760

New Publications

Safety Bulletin No 50: Crushed by Mesh Sheets – Fatal
Accident (November 1999)

Guideline: Geotechnical Considerations in Open Pit Mines
(August 1999)

Guideline: Safety and Health Risk Management (November
1999)

Staff Changes

The Division said goodbye to long term employee, Gwen
Swarbrick, as she retired as Secretary Perth Inspectorate after
21 years.

Special wishes go to Linda Ramsell on the birth of baby
Sophie, and Anna Patton on maternity leave.

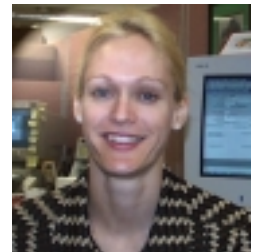
Morena Fullin is handling the Axtat monthly returns while
Linda is away.

Lindy Neild joined the Division as Systems Co-ordinator
Occupational Health. She is responsible for administering
the Minehealth Surveillance System.

We welcome two new support officers to the Environmental
Section - Dagma D'Costa in the Perth office and Lillian
Francis in Kalgoorlie.



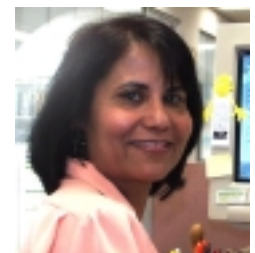
Lillian Francis



Morena Fullin



Lindy Neild



Dagma D'Costa

Incident Alert

Incident

How close was this? A treatment plant operator was dragged into a moving conveyor whilst attempting to clean a return idler with a scraper device. When the person's upper body was pulled between the roller and belt, his safety helmet wedged the belt against a weightometer carriage causing the conveyor to stall. After several minutes the person managed to free himself and escape with head lacerations, bruising to the jaw and ribs and considerable trauma.

Cause

The accident clearly resulted from the person's attempt to clean material from the return idler whilst the conveyor was still operating. Investigation also revealed that previously installed guarding had been removed and not reinstalled.

Comments and Recommendations

In the last 5 years there have been around 20 incidents involving employees that became caught up in moving conveyors at WA minesites. The majority of these resulted in serious injuries

Employees must recognise and avoid the extreme hazards associated with undertaking any work on an operating conveyor by ensuring that the plant is stopped and effectively isolated before commencing work.

Contrary to instruction and training, the person involved in this accident was well aware that he was taking a risk and that he should have stopped and tagged the conveyor before attempting the task.

He now realises how unsafe his actions were and how fortunate he was to escape serious injury (or worse).

Guards must be fitted to all dangerous parts of conveyors normally accessible to persons (in accordance with AS1755) and be replaced after removal to allow access for work.

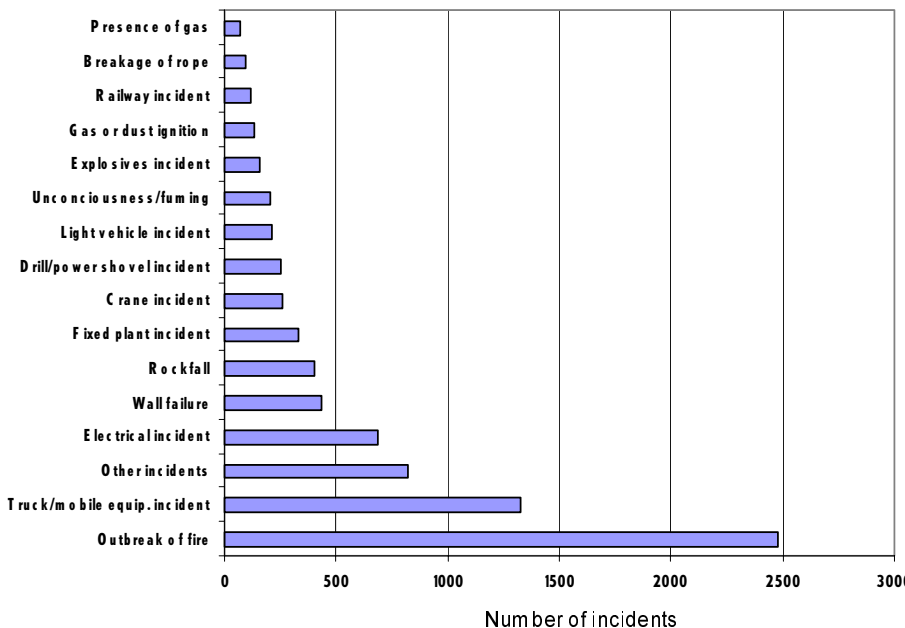
Bulk handling conveyors present a major fixed plant hazard at minesites. Heed this warning and don't be the next victim!



Accident scene showing entry point, scraper and helmet

Watch Out!

Number of incidents reported since 1994



Number of (caught by moving conveyor) injuries since 1994

