

> AUSTRALIAN MINERALS INDUSTRY SAFETY AND HEALTH

SAFETY SURVEY REPORT

ISSUE 4 2004

FOR 1 JULY 2003 – 30 JUNE 2004

QUARTER

4

2003-2004

The state of mind where we are constantly aware of the possibility of injury and act accordingly at all times

Minerals Council of Australia Safety Awareness

SUMMARY

- > Five (5) fatalities were recorded in the fourth quarter of the 2003-2004 reporting year. In the same reporting period last year, there were three recorded fatalities.
- > Three of the fatalities this quarter occurred in Western Australia and two in New South Wales.
- > The indicative total industry Lost Time Injury Frequency Rate (LTIFR) for the year is estimated at six which is the same as that reported last quarter and in the corresponding report last year.
- > After a significant improvement in the fourth quarter for the Total Recordable Injury Frequency Rate (TRIFR) to 21, the cumulative TRIFR for the year has improved from 27 (third quarter) to 25.

SAFETY NEWS

Inaugural Global Sustainable Development Conference

(incorporating a safety and health stream)

Melbourne – 26–28 October 2004

Partnerships and Pathways to Implementation

The future of the Australian minerals industry (our 'licence to operate') depends on our ability to develop, operate and close mines consistent with sustainable development principles – the protection of human life, health and the environment – building international competitiveness – adding value to the communities in which we operate.

The MCA's Inaugural Global Sustainable Development Conference:

- > engages more than 400 national and international decision-makers, opinion leaders and other stakeholders, including Indigenous groups, government, environmental and social NGO's, and ethics and governance specialists;
- > provides workable solutions, good practice models and effective business strategies to help companies embed sustainable development in their management systems and operational controls;
- > integrates leading global policy and practice across three days of plenary sessions and technical sessions in the key areas of global competitiveness, environmental performance and social responsibility; and
- > has a dedicated stream on Safety and Health Culture and Behaviour, in

recognition of the industry's commitment to zero fatalities, injuries and diseases, and the importance of integrating safety and health into the industry's sustainable development agenda.

For registration/program details go to:

www.minerals.org.au/sd04

2004 MINEX Safety & Health Excellence Awards

The 2004 MINEX Awards were presented in conjunction with the Queensland Mining Industry Health and Safety Conference in Townsville on 16 August. The MNE X Award and trophy was presented to AngloGold Ashanti's Sunrise Dam Gold Mine.

In total six operations were recognised at this year's ceremony:

2004 MINEX AWARD AND TROPHY

AngloGold Ashanti – Sunrise Dam Gold Mine
For excellence in promoting a culture of continuous improvement and achieving significant improvement in safety and health performance with a strong emphasis on people and rigorous risk management processes in a totally integrated operation.

HIGHLY COMMENDED

Rio Tinto – Pilbara Rail

In recognition of outstanding site leadership and a firmly-developed safety culture

integrated across the operation and an enviable safety and health performance attributable to robust safety and health management systems, and a focus on the individual in safety and health communication.

BMA Goonyella Riverside Mine

In recognition of outstanding corporate and site leadership committed to achieving a positive culture of continuous improvement and clearly-defined health, safety, environment and community management standards.

COMMENDED

International Power Hazelwood

In recognition of a committed leadership team and evolution of a safety culture which has delivered a safety conscious workplace where comprehensive safety management systems are consistently understood and applied across the whole site.

ACKNOWLEDGMENTS

Henry Walker Eltin – South Middleback Ranges Iron Ore

In recognition of an impressive and sustained safety

performance based on a well-integrated safety management system, demonstrated employee support and commitment, an embedded safety culture and a continuous improvement mindset.

Wheaton Minerals Asia Pacific – Peak Gold Mines

In recognition of leadership which actively seeks continual business improvement, a strong safety culture strengthened by a high level of commitment at all levels of the operation, and an improved safety performance at a time of organisational change.

The evaluation reports – which detail the applicants' safety and health strengths and opportunities for improvements – are being returned to the sites.

The **2004 MINEX Applicant Information Booklet**, highlighting each applicant's strengths, is available from the MCA website. There is considerable 'leading/innovative practice' outlined in the booklet from which the industry can learn and share.

Note: Although publications for 2005 MINEX process will not be available until the end of the year, companies may like to budget for MINEX participation in their annual business planning process and/or consider an opportunity to substitute a MINEX application for an annual audit or benchmarking exercise.

Safety & Health Innovations

The 2004 National Safety and Health Innovation Awards presentation was held on Monday 26 July 2004 in conjunction with the NSW Minerals industry *Safe Mining – Healthy Business* conference in the Blue Mountains.

Now in their sixth year, the Awards promote the development of innovative solutions to everyday safety and health issues identified by minerals operations across Australia. By conducting these awards, the MCA aims to:

- > recognise the positive safety and health initiatives of companies;
- > encourage the exchange of innovative ideas; and
- > provide an additional focus for safety and health promotion within the industry.

Congratulations to this year's Award winner – BMA Blackwater Mine in Queensland for their modifications to vehicle loading cranes. The modifications comprise an engineering solution that significantly reduces the risk of crush incidents involving operators of vehicle loading cranes. This is achieved through 'hard' and 'soft' controls including a 'bump bar' that, if contacted, ceases operation of the crane.

Three other sites were also recognised at the Awards presentation:

- > A Highly Commended Award was presented to BMA's Crinum Mine in Emerald, Queensland, for designing electronically controlled roof bolters that reduce injuries (eg shoulder, back, neck and arm) by eliminating the need for operators to stretch in awkward positions to insert drills or spanners into the drillhead chuck.
- > Boral Quarries (Metro) of NSW received a Commended Award for their innovation – an enhancement to the 'cut-out seat' in surface drill rigs (Atlas Copco F9) to include drill rods and drill bit. The cut-out switch eliminates the exposure of operators to rotating plant.

- > Rio Tinto Coal Australia's Kestrel Mine was awarded an Acknowledgement for the Minsup Isolation Lockout Device. The Device enables the econovalves in the mine's air-and-water reticulation system, to be positively isolated using personal danger locks.

Each of the finalists (seven) in this year's national Awards has been profiled in the 2004 **National Safety & Health Innovation Awards Profiles Booklet**, available from the MCA website. It is also intended that innovations will be incorporated in the online database known as **MIRMGate**.

WA – Safety and Health Innovation Awards

The Chamber of Minerals and Energy of WA (CME) will hold their inaugural Occupational Safety and Health Innovation Awards at a breakfast ceremony on Friday 1 October 2004. The Awards will be immediately followed by a one-day forum where the finalists will showcase their entries.

The venue for the Awards breakfast and the OSH Forum is the Parmelia Hilton, Perth. www.cmewa.com

NSW – Contractor Safety Management Workshops

With an increasing focus on the safety and health performance of contractors in the industry, the NSW Minerals Council is coordinating a series of workshops around NSW from 11 – 22 November. The workshops are aimed at employers who manage contractors and sub-contractors as part of their day-to-day responsibilities, eg maintenance managers, technical services managers, safety training officers, undermanagers and mine managers. Contractors/sub-contractors and contract company personnel responsible for safety will also benefit from attendance.

Further details (cost, dates and locations, session objectives) can be found at www.nswmin.com.au

NOHSC report: Design issues in Work-related Injuries Report

Design issues contributed to more than one-third of workplace fatalities over a two-year period, according to a study released by the National Occupational Health and Safety Commission (NOHSC) in July.

Using data from the National Coroners Information System for the period July 2000–June 2002, the research report on "The Role of Design Issues in Work-related Injuries in Australia 1997–2002" undertook a fatalities analysis which identified that 35% of the identified workplace fatalities were likely to have had design-related issues and another 14% "suggested" design issues. The report indicates that at least half of all incidents in mining ... were likely to have involved design issues, particularly regarding machinery, and fixed and mobile plant. A copy of the report is available from www.nohsc.gov.au

Occupational Health Management in the Quarry Industry

The UK's Health and Safety Executive (HSE) and the British Quarries National Joint Advisory Committee has recent published a guide entitled Occupational Health Management in the Quarry Industry.

The document encompasses broad issues of occupational health management which companies with existing occupational health programs can use as a benchmark of current leading practice.

The guide includes managing risks to ensure fitness for work, health surveillance, how to conduct occupational health surveillance and common hazards and issues to be addressed in quarries.

Joy Mining Machinery Safety Alert

Joy Mining Machinery has issued a world-wide safety notice on rib bolting rigs with mast-mounted ICM controls after an incident occurred at a NSW mine where a worker had his arm pinned while operating a rib bolting rig fitted to a Joy 12CM30 continuous miner.

Joy advises all mines using mast-mounted rib bolting rigs should immediately inspect the adequacy and condition of all guarding on and around drill rig controls. Original equipment manufacturer parts and technical manuals should be used to ensure compliance with original guarding specifications.

New Queensland Safety Statistics

The Queensland Department of Natural Resources and Mines now provides Qld safety statistics for two-year periods by:

- > sector (O/C, U/G, coal, metalliferous, metalliferous 'other' and quarries);
- > injury type (lost time, high potential, disabling); and
- > causal factors (human, equipment, environment, organisational, task/environment, team/individual or absent/failed defences).

For example, it is possible to download a chart for U/G metalliferous mining LTIs by organisational causal factors which indicates that 'procedures' were responsible for the highest number of LTIs, followed by 'error-enforcing conditions' and then 'design'.

Visit www.nrm.qld.gov.au/mines

DESCRIPTION OF MINERALS INDUSTRY FATALITIES

(1 APRIL– 30 JUNE 2004 ONLY)

There have been five fatalities during this fourth quarter of the 2003–04 reporting year, all in May.

Western Australia

O/C Metalliferous

1 May 2004 – Mr Cory Bentley, a 26 year old fitter, died after being struck on the head by the splitter gate in a transfer chute at an iron ore transport/processing facility on the coast of the Pilbara region of Western Australia.

Initial information indicates that the chute door had been changed from one position to another (to divert the ore stream) using the compressed-air powered cylinder attached to it for the purpose. The door would not re-locate properly, due to a blockage in the chute.

It appears that the deceased had his head inside the chute and was attempting to clear the blockage. When the blockage was freed, the door or gate moved, due to the air pressure in the system, and crushed his head against the side of the chute. It is not known at the time of publication, why the air pressure had not been bled from the system before attempts were made to remove the blockage in the chute.

WA Dept of Industry and Resources

Smelting/Refining

20 May 2004 – A gas explosion/jet fire in the reactor of an iron ore plant caused injuries to eight employees on the midnight of 19/20 May 2004. One of the injured workers, Mr James Wadley, died from his injuries on the evening of 21 May 2004. Three of the other employees suffered serious injuries and the other four had minor injuries.

The plant has four trains and each train has four reactors. The reactors are used to reduce oxide iron ore into iron. Fine ore is introduced into the reactors from one end and from the other end hot hydrogen/carbon monoxide gas mixture is introduced for reduction of iron ore.

The accident occurred in a reactor when a dip-leg was being cleaned. The train had been shut down, allowed to cool, purged with cool gases before cleaning of the dip-legs began. The dip-legs are 16–18m tall x about 0.5m in diameter vertical columns in a reactor. During the process, the dip-legs get blocked due to deposition of product and need to be cleaned. The dip-leg had been drilled through by an auger drill and was being cleaned by hydro blasting when the explosion occurred.

The reduced product reacts with water at elevated temperatures to produce hydrogen gas, which is highly explosive. Before water can be introduced into a reactor it should be ensured that it has been cooled to a safe level.

WA Dept of Industry and Resources

O/C Metalliferous

20 May 2004 – Mr Ross McKinnon, a 20-year-old apprentice fitter, received a head injury at an iron ore mine on 20 May 2004 from which he died on 21 May 2004.

The apprentice was tightening a suspension strut on a CAT 785 haul truck using a snap on, 250lb ratchet-type torque wrench. The torque wrench struck the deceased in the head causing fatal injury.

Mr McKinnon was in a crouching position on top of a steel work-bench handling the torque multiplier and torque wrench. He was in front of the strut. His assistant was behind the strut. It seems that the bolt had been satisfactorily torqued and the deceased was either going to recheck the bolt or to begin on another. To do either job it was necessary to release the multiplier and the wrench and to start again. This is when the accident happened. Externally the torque wrench appeared in good condition. The wrench will be examined and tested by an independent competent person.

WA Dept of Industry and Resources

New South Wales

U/G Coal

28 May 2004 – A 31-year-old mineworker was fatally injured while erecting roof supports in front of a roadheader machine. The roadheader was driving a cut-through in coal when production stopped to allow mesh and bolts to be installed. The roof bolts were being installed using a hand-held bolter. The workman appears to have been struck by roof strata in front of the last support.

NSW Dept of Primary Industries inc Dept of Mineral Resources

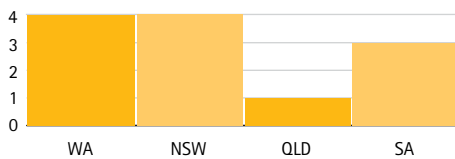
O/C Coal

28 May 2004 – An operator was fatally injured when changing a tyre on a rear dump truck while using a radio-controlled truck-mounted tyre handler. The operator was using a radio remote control transmitter to control the tyre handler, which was mounted on a service truck used for changing tyres on large earth moving machinery. A replacement tyre was being held in the clamps attached to the tyre handler. The operator became caught between the suspended tyre and the rear of the service truck.

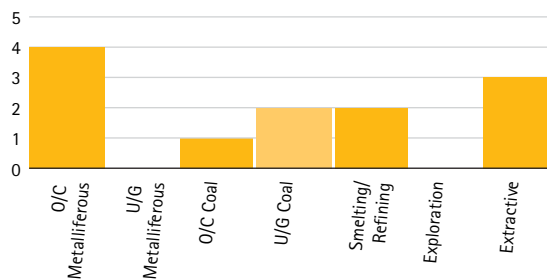
NSW Dept of Primary Industries inc Dept of Mineral Resources

These five fatalities bring the total fatalities for the 2003-04 reporting year to 12 – the same total as for the 2002-03 reporting year.

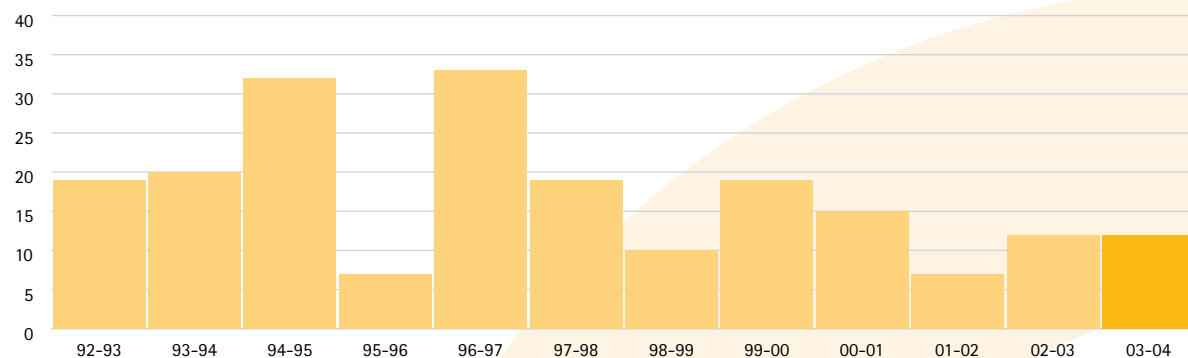
2003–2004 Fatalities by State



Fatalities by Sector 1 July 2003 – 30 June 2004



Fatalities 1992-93 to 30 June 2004



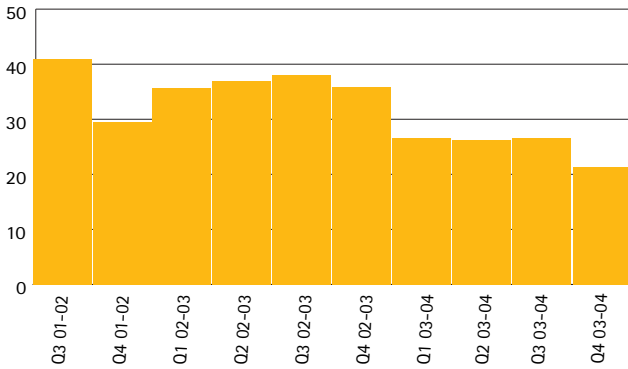
LOST TIME INJURY FREQUENCY RATE

The indicative total industry Lost Time Injury Frequency Rate (LTIFR) for the 2003-04 reporting year is estimated at six.

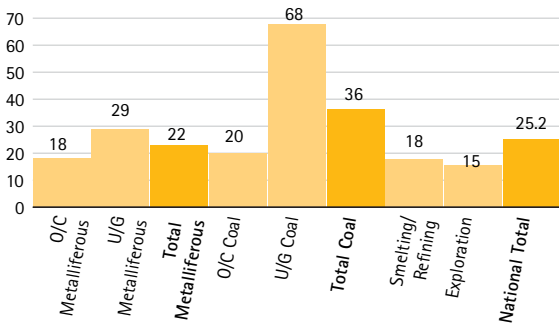
For the twelve-month period, the LTIFR for underground metalliferous (5), open-cut coal (4), total coal (9) and smelting/refining (3) show marginal improvements in comparison with

the same reporting period last year (seven, six, ten and four respectively). A deterioration in LTIFR is indicated for open-cut metalliferous (from three to four) and underground coal (from 16 to 19). Other sectors remain the same: total metalliferous at four and exploration at two.

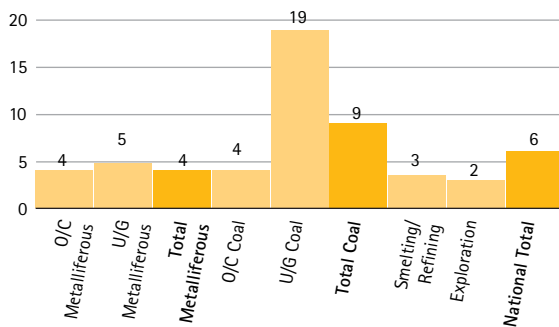
Total Recordable Injury Frequency Rate (TRIFR)



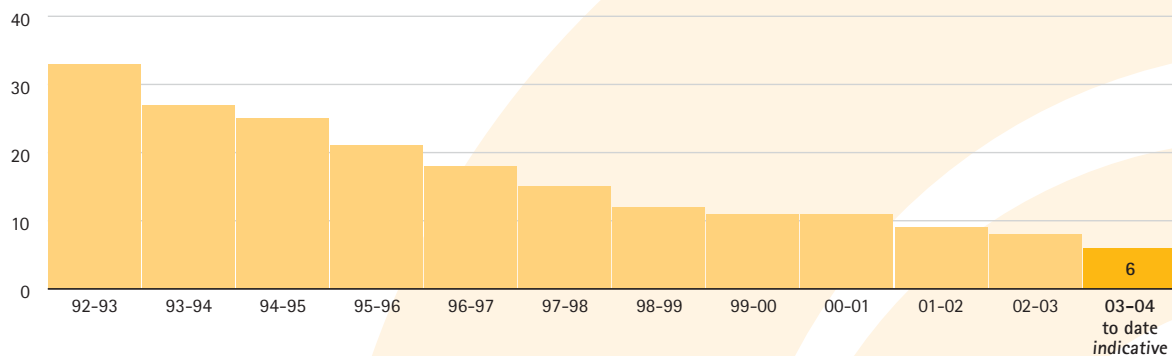
TRIFR by Sector 1 July 2003 – 30 June 2004



LTIFR by sector 1 July 2003 – 30 June 2004



Total Lost Time Injury Frequency Rate 1992-93 – 30 June 2004



Most Severe Injuries

Thirty-one (31) severe injuries were reported for the fourth quarter. This number is at the lower end of the reported range in recent quarters.

Survey responses indicated that there were two losses of body parts reported (finger tip, partial amputation of foot); no loss of body function; and 29 Other Severe Injuries which comprised:

- > fractures/breaks (12);
- > crush injuries (6);
- > burns (7); and
- > other (4) – oil injection of thumb, chipped bone – ankle, chipped bone – knee, eye injury (possible loss).

Medical Treatment Injuries

For the fourth quarter of the 2003-2004 reporting year, survey responses show a total of 447 Medical Treatment Injuries (613 – Q3; 483 – Q2; 599 – Q1).

Total Recordable Injuries

The industry is working in a voluntary and proactive way to improve safety and health performance by reporting broader outcomes measures and in particular Total Recordable Injuries (TRIs) which include all injuries except first aid cases. Jurisdictions are encouraged to adopt this measure.

A total of 950 TRIs have been reported this quarter (1169 TRIs – Q3, 1131 – Q2, 1207 – Q1). This equates to an indicative TRIFR of 21 which represents a significant improvement on previous quarters.

Companies may like to compare their TRIFR with this minerals industry indicative figure.

SAFETY PROFILES

The Australian minerals industry does not accept that there is any inevitability of accidents or fatalities. Through its commitment to leadership, and recognising and sharing good practice, the MCA is a strong advocate of preventative risk management.

There are a number of safety success stories which provide significant opportunities for industry participants to benchmark their own operations and to exchange ideas and information on safety and health issues.

This Report features AngloGold Ashanti's Sunrise Dam Gold Mine, recipient of the 2004 MINEX Award and BMA Blackwater Mine's Modifications to Vehicle Loading Cranes – winner of the 2004 National Safety & Health Innovation Awards.

2004 NATIONAL S&H INNOVATION AWARDS

Winner: Modifications to Vehicle Loading Cranes (VLCs) – BMA Blackwater Mine

The Problem

In April 2002, a worker died as a result of injuries sustained after being crushed while operating a truck-mounted vehicle loading crane on the BMA Blackwater site.

The Solution

Modifications designed to prevent a recurrence were developed and implemented on all VLCs at Blackwater Mine and across BMA.

Hard Controls:

- > An operational bump bar that allows only one control set to be operated at any one time.
- > Precise control over the movement of the crane in the operator zone – low speed.
- > Bump bar will cease operations if contacted.
- > Allows normal operation outside the operator zone.
- > Extreme difficulty operating the crane from the incorrect side.

Soft Controls:

- > No-go zones depicted by equipment maps/stickers.
- > Improved operational diagrams/decals.
- > Risk assessments.
- > Training packages that comply with the Black Coal Competency.
- > Training and awareness video.
- > Inspection checklist booklet.

Benefits/effects

- > Significantly reduces the risk of the operator being struck by the VLC.
- > Ensures an emergency stop can occur in the event of an unplanned movement.
- > Provides a significantly higher safety factor when operating the VLC, and moving and handling loads.
- > Cost-effective to implement: approximately \$4,000.

Significance

- > A significant safety improvement/enhancement for all operators using VLCs in any industry.
- > Provides a significantly higher safety standard than the current standard.
- > Significantly reduces an operator's exposure to this hazard/risk as well as providing controls to prevent a recurrence.

Transferability across industry

- > Applicable to all industries – the knowledge and technology is readily transferable. Can be implemented on all VLCs in all industries.
- > Australian Standards Committee has approved these modifications for their revised Standard.

Innovation and originality

- > This is a significant innovation, providing hard and soft controls to prevent a recurrence.

Application of risk management principles

- > Engineering: implement an engineering control to prevent the boom striking the operator.
- > Design: a system to tolerate human error in the operation of a vehicle loading crane.
- > Administration: training packages developed and delivered to the workforce.

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BMA Blackwater's Vehicle Loading Crane

MINEX AWARD 2004**Type of Operation**

Sunrise Dam is a fly-in fly-out (FIFO) mining operation which commenced in 1997. The open pit is operated by Roche Mining and the underground mine by Barmingo. The mine has a total workforce of 500 personnel. Approximately 65 million tonnes of rock are moved annually of which about 3.5 million tonnes is processed through the plant at a grade of 4 grams of gold per tonne.

Location

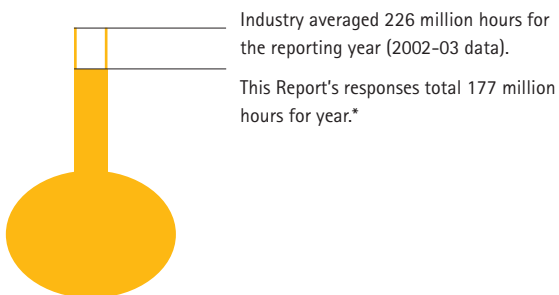
Four hundred kilometres north-west of Kalgoorlie, Western Australia

Safety and Health Contact

Nadine Neville
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Tel: 08 9080 3668
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Email: nneville@anglogoldashanti.com.au

Safety and Health Strengths

- > The SafeGold advanced risk management system aims to achieve high performance levels from employees and contractors and these standards/expectations have been embraced.
- > The leadership of both site management and contractors demonstrates commitment to a culture of continuous improvement in safety and health with an emphasis on devolution of responsibility to individuals.
- > Contractors are wholly integrated into the operations with effective two-way communication. All contractors are included in the management processes from the principal production contractors to the support services at the village.
- > A rigorous risk management process integrates proactive planning through to critical program evaluations through external audits and inspections. The systems in place allow program customisation to meet the needs of individual departments.
- > A culture of respect for the individual drives the selection of appropriate personnel, training and performance management, ensuring competencies are undertaken consistently and effectively. Protecting the health and welfare of people is a priority.
- > New and existing equipment is managed through detailed control processes covering the initial planning and purchase through to maintenance. Maintenance facilities are well organised and equipped, and there is obvious pride in the work done.

METHODOLOGY OF QUARTERLY SURVEY**Report coverage based on exposure hours**

* When the exposure hours for this reporting year (2002-03) are compared with official industry exposure hours for 2002-03, an indicative figure of 78% coverage in this Report is calculated. However, this figure may overestimate the Report's coverage.

The MCA acknowledges the limitations of the survey methodology, data consistency and reporting timeframe. Readers should note this Report is indicative only.

The MCA would like to thank all reporting companies, State/Territory Minerals Councils/Chambers, Coal Services and the Australian Aluminium Council who supplied information for this Report.

The MCA is aware that, for some fatalities, the circumstances at the time of the incident are unclear, including whether it is a workplace-related fatality. In these cases, the MCA is guided by the approach taken by the relevant State Government authority. Any revisions in fatalities will be included in future Reports as appropriate – see page 2 for such an amendment this quarter.

NB: From 1 July 2003, BHP Billiton changed their injury/illness definitions. This affects all BHP Billiton reporting data in this Report.

Lost Time Case - A Lost Time Case is a work-related injury or illness resulting in the employee/contractor being unable to attend work on the next calendar day after the day of the injury.

If a suitably qualified medical professional advises that the injured person is unable to attend work on the next calendar day after the injury, regardless of the injured person's next rostered shift, a lost time injury is deemed to have occurred.

Restricted Work Case - A Restricted Work Case is a work related injury or illness which results in the employee being unable to perform one or more of their routine functions, or from working the full day on or after the next calendar day after the injury/illness. An injury is not regarded as a restricted work injury when the medically imposed restrictions limit activities other than their routine functions.

Routine Functions - The work activities that the employee regularly performs at least once per week.

Minerals Council of Australia

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This document can be found on the MCA Website

Note to readers: if you would like future issues of this quarterly document emailed directly to you (as a PDF document), please contact Del Da Costa at the Minerals Council of Australia on 02 6233 0644, fax 02 6233 0699 or by email d.dacosta@minerals.org.au