

Commissioner for Mine Safety and Health

Queensland Mines Inspectorate Annual Performance Report 2014–15



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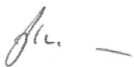
September 2015

The Honourable Anthony Lynham MP
Minister for State Development and
Minister for Natural Resources and Mines
61 Mary Street
Brisbane Qld 4000

Dear Minister

In accordance with section 73E(1) of the *Coal Mining Safety and Health Act 1999* I am pleased to submit to you the Commissioner for Mine Safety and Health's Queensland Mines Inspectorate Annual Performance Report for the year ending 30 June 2015.

Yours sincerely



Paul Harrison
Acting Commissioner for Mine Safety and Health

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Abbreviations and definitions

Abbreviations

AWU	Australian Workers' Union
AMWU	Australian Manufacturing Workers' Union
CFMEU	Construction, Forestry, Mining and Energy Union
CMSHAC	Coal Mining Safety and Health Advisory Committee
DNRM	Department of Natural Resources and Mines
ETU	Electrical Trades Union
HIAC	Health Improvement and Awareness Committee
HPI	high potential incident
IQA	Institute of Quarrying Australia
MSHAC	Mining Safety and Health Advisory Committee
NORM	naturally occurring radioactive material
OCE	open-cut examiners
OEM	Original Equipment Manufacturer
QMI	Queensland Mines Inspectorate
QRC	Queensland Resources Council
RIS	Regulatory Impact Statement
Simtars	Safety in Mines Testing and Research Station
SSE	Site Senior Executive
SWIIG	Serious Workplace Incident Interagency Group

Definitions

Coal mine	Mine subject to the <i>Coal Mining Safety and Health Act 1999</i> and associated regulation.
High potential incident	An event, or series of events, that causes or has the potential to cause a significant adverse effect on the safety or health of a person.
Lost time injury/disease	An incident resulting in a fatality, permanent disability or time lost from work of one shift or more. The shift on which the incident occurred is not counted as a shift lost.
Lost time injury frequency rate	The number of lost time injuries/diseases per million hours worked; abbreviated as LTIFR.
Metalliferous mine	Mine subject to the Mining and <i>Quarrying Safety and Health Act 1999</i> and associated regulation.
Quarry	Excavation of hard rock for use in construction (operations covered by the <i>Mining and Quarrying Safety and Health Act 1999</i> and associated regulation).
Queensland Mines Inspectorate	A regulatory unit within Mine Safety and Health, Department of Natural Resources and Mines.

Background

The office of the Commissioner for Mine Safety and Health was established under the *Coal Mining Safety and Health Act 1999* and the relevant provisions commenced under this Act and the *Mining and Quarrying Safety and Health Act 1999* on 1 July 2009.

The Commissioner for Mine Safety and Health's functions is to:

- advise the Minister for Natural Resources and Mines on mine safety and health matters generally
- fulfil the roles of chairperson of the Coal Mining Safety and Health Advisory Committee under the *Coal Mining Safety and Health Act 1999* and chairperson of the Mining Safety and Health Advisory Committee under the *Mining and Quarrying Safety and Health Act 1999*
- monitor and report to the Minister and to Parliament on the administration of provisions about safety and health under the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*
- perform the functions given to the Commissioner under the provisions of the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*.

In addition, the Commissioner is required under section 73E(1) of the *Coal Mining Safety and Health Act 1999*, to provide a report to the Minister on the performance of the department in regulating mine safety. The Queensland Mines Inspectorate enforces the provisions of the *Coal Mining Safety and Health Act 1999*, the *Coal Mining Safety and Health Regulation 2001*, the *Mining and Quarrying Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Regulation 2001*, and advises, mentors and educates the mining industry about safety and health.

The Mines Inspectorate is well resourced, competent and dedicated to improving health and safety outcomes in the mining and quarrying industries. Remuneration provides attraction, retention and qualification incentives approved by the Public Service Commission.

A stable operating environment with low staff turnover has been maintained. The Mines Inspectorate has continued to successfully recruit staff to key roles over the past 12 months as vacancies have arisen commensurate with industry activities.

The activities of the Mines Inspectorate for 2014–15 are summarised in the body of this report. In addition, information on the operations of the Board of Examiners, the advisory committees and more comprehensive mining industry safety and health information can be obtained in the following reports:

- Board of Examiners Annual Report
- Coal Mining Safety and Health Advisory Committee Annual Report
- Mining Safety and Health Advisory Committee Annual Report
- Queensland Mines and Quarries Safety Performance and Health Report
- Department of Natural Resources and Mines Annual Report

A copy of these reports can be obtained from www.publications.qld.gov.au Search for the title of the report.

From the Acting Commissioner for Mine Safety and Health



The past year has been a challenging one for the mining industry. While Queensland maintains a high safety standard, this standard has been marred by a number of incidents that have resulted in serious injury and the loss of life.

In an industry experiencing contraction and organisational change, it is important to recognise

factors that could potentially lead to compromises in worker safety and health. Uncertainty about responsibilities, increased psychosocial stress, and loss of expertise may weaken safety and health systems. Now, more than ever, the industry needs to support a positive safety culture and reaffirm its commitment to safety and health leadership.

Chief Inspector of Coal Mines

I would like to take this opportunity to thank Andrew Clough who resigned as Chief Inspector of Coal Mines to take up a position in the New South Wales mining industry. Andrew is a man of many strengths; who not only had a great ability to communicate compassionately with the families and friends of workers involved in serious workplace accidents, but could equally show his fortitude when it came to addressing unsafe practices or non-compliance. He is well respected both within the mining community and government for his mining safety knowledge and experience, professionalism and integrity. We are very sorry to see Andrew go, but wish him all the very best in his move back to mining operations.

Our Deputy Chief Inspector of Coal Mines, Russell Albury, has been acting in the position of Chief Inspector of Coal Mines since Andrew's departure on 10 April 2015. I would like to thank Russell for stepping into the breach and for his continued commitment to the role.

The Chief Inspector of Coal Mines recruitment process has commenced with the position advertised on 18 June 2015.

Fatal accidents

I am saddened to report the deaths of four mine workers in mining accidents during 2014–15. One of these accidents also resulted in a serious injury to another worker. I extend my most sincere sympathies to those who were injured, to their family and friends, and to the family and friends of those who lost their lives:

- Ian Downes was fatally injured when he was struck by a piece of coal which fell from a sidewall in an underground coal mine in December 2014.

- Jason Braid died following injuries sustained when he was struck by a rock in the drawpoint of an underground metalliferous mine in February 2015.
- Steven Cave was killed and Joshua Jones was seriously injured at a surface coal mine when the locking ring on a tyre they were fitting to a truck detached while the tyre was being inflated in February 2015.
- Laurie Donovan was killed when a four wheel drive bus that he was a passenger in rolled at a surface coal mine in March 2015.

These fatal accidents come after the deaths of two mine workers, Paul McGuire in May 2014 and Brett Kelly in June 2014. That makes six fatalities in Queensland mines during an 11 month period and is the worst fatality record since 1997.

The Mines Inspectorate is continuing to investigate five of these fatalities and I cannot comment further on the particulars of the incidents. However, I can report that I have commenced prosecution proceedings in relation to the death of Paul McGuire in May 2014.

The deaths of Ian Downes, Steven Cave, Laurie Donovan and Jason Braid at Queensland Mines in 2014–15 follow on from the loss of Paul McGuire and Brett Kelly and the lives of 14 other Australian mine workers in 2013–14. As I stated in last year's report, which I reiterate here, improved training, competency and support of line supervisors are key areas requiring improvement across the mining industry. Poor knowledge and competency have been shown to be precursors to major mining accidents.

Queensland Mine Safety Framework

In my report last year, I noted that the Mines Inspectorate released a consultation regulatory impact statement (RIS) detailing substantial reforms to the Queensland Mine Safety and Health Regulatory Framework including proposals to improve industry competency standards.

Public comment on the RIS closed on 11 November 2013 and 246 submissions were received. The public comment on the proposed reforms is still being analysed and considered before recommendations are put to government for deliberation and before the decision RIS is released.

Electrical hazards

The number of electrical incidents in mines and quarries continues to be a concern. A review of reported electrical related events for 2014–15 has shown an increasing failure in compliance with safe working procedures. Of note is a case where emergency stop devices and other safety critical components had been knowingly and deliberately bypassed. Other trends during the year indicate there is also a rise in arc

faults and electric shocks while failure of explosion protection techniques remains a serious concern.

The 2014–15 period has seen a sharp increase in the number of arc faults. Some of the causes of arc faults included:

- insufficient clearances of live parts from earth parts of an installation
- catastrophic component failures during commissioning (these types of failures cast doubt over the engineering applied during the design and installation phases)
- workers dropping a wire across live conductors.

The increasing trend in electric shock can be attributed to failing to isolate or isolating incorrectly with 10 cases of mine workers being exposed to an unacceptable level of risk or possible death over the past year. Isolation is a basic control for energy and has been intrinsic to safety in the mining industry for many years. It is being disregarded too often. Electrical work must only be carried out on properly isolated and tagged out de-energised plant. It beggars belief such a fundamental safety principle is being ignored.

Incidents relating to the failure of explosion protected equipment continued to put the lives of mine workers at risk during 2014–15. While there has been a slight decrease in the incidence of these events, it is disturbing that these failures are still occurring. One failure in an explosive atmosphere is enough to destroy a mine. Diligence by all mine workers and statutory officials is essential to ensure these types of failures are eliminated from the industry.

As the alarming trend in the number of reported electrical related incidents continues, the Mines Inspectorate will be concentrating on the following during the next 12 months:

- The people in control of electrical work onsite and how they manage electrical installations.
- How workers identify and control energy sources in their work activities.
- Electrical work practices, particularly those used to de-energise and isolate systems.

Stone dust application

The effective use of incombustible stone dust plays an important role in the prevention and suppression of coal dust explosions in underground coal mines. In response to poor industry practices reported in *Safety Bulletin 134 Review of Queensland underground coal mines' stone dust application and sampling and analysis of roadway dust*, Simtars rolled out an accredited stone dusting training package to assist industry in carrying out appropriate stone dust sampling and analysis. The training was taken up by four mine sites during 2014–15. This is a disappointingly low uptake, so it has been

necessary to assign an inspector of mines specifically to work in collaboration with industry to improve capacity and performance in this area.

It is heartening to see one Queensland underground coal mine has opted to further reduce the risk of coal dust explosion by introducing stone dust bag barriers. It is the Mines Inspectorate's view that the addition of explosion barriers to supplement the stone dusting of roadways is necessary to adequately manage the risk of coal dust explosion. Stone dust bag barriers are an example of a proven explosion barrier.

Pike River implementation

Planning is an important aspect of ensuring the safety and health of workers. In addition to developing a safety and health management system, the system needs to be checked to ensure it is fit for purpose and controls risks to an acceptable level. An effective safety and health system is the key to preventing catastrophic events. As part of the Mines Inspectorate's response to the Royal Commission of Inquiry on the Pike River Coal Mine Tragedy, *Guidance Note QGN09 – Reviewing the effectiveness of safety and health management systems* has been reviewed and updated. The updated guidance note will be considered by the Coal Mining Safety and Health Advisory Committee by the end of 2015.

Five year strategic health plan

Traditionally the number of disorders and diseases caused by exposure to workplace hazards such as dust, noise and hazardous chemicals, has been under-represented in workers' compensation statistics. For example, it has been estimated that of the 5000 cancer cases per year caused by occupational risk factors across all industries in Australia, less than eight per cent have been compensated.¹ As a result, typically many risk factors for occupational disease and ill health are overlooked in the management of safety and health risks. This is a concern for the mining industry when just considering the risk of cancer alone, as research has shown up to 70 per cent of Australian mine workers are exposed to cancer causing substances or agents at work².

To focus the activities of the Mines Inspectorate on occupational health hazards that are a priority for the mining and quarrying industry in Queensland, I have initiated the development of a five year strategic health plan. This plan will ensure adequate Mines Inspectorate resources are targeted toward reducing the incidence of death, injury and illness caused by exposure to chemical, biological and physical health hazards present at Queensland mines and quarries.

¹ Cancer Council, Western Australia. Occupational exposures to carcinogens in Australia: workers' compensation claims paid in Australia 2000–2012. The Cancer Council Australia; 2015. p.17

² Fritschi L & Driscoll T. Cancer due to occupation in Australia. Aust N Z J Public Health. 2006 Jun; 30(3): 213–219.

Health Improvement and Awareness Committee review

The Health Improvement and Awareness Committee (HIAC) was established in 2008 in an effort to enable the Mines Inspectorate to work together with unions and industry to minimise worker exposure to health hazards and reduce occupational disease and ill health.

Late in 2014, I asked Emeritus Professor Tony Parker AM to chair a tripartite review of HIAC to evaluate whether or not its vision and purpose remain relevant, and if it is achieving its goals. Assisting Professor Parker are industry representatives Simon Delander and Mark Parcell, union representative Greg Dalliston and Greg Manthey from government. I look forward to receiving the review team's report.

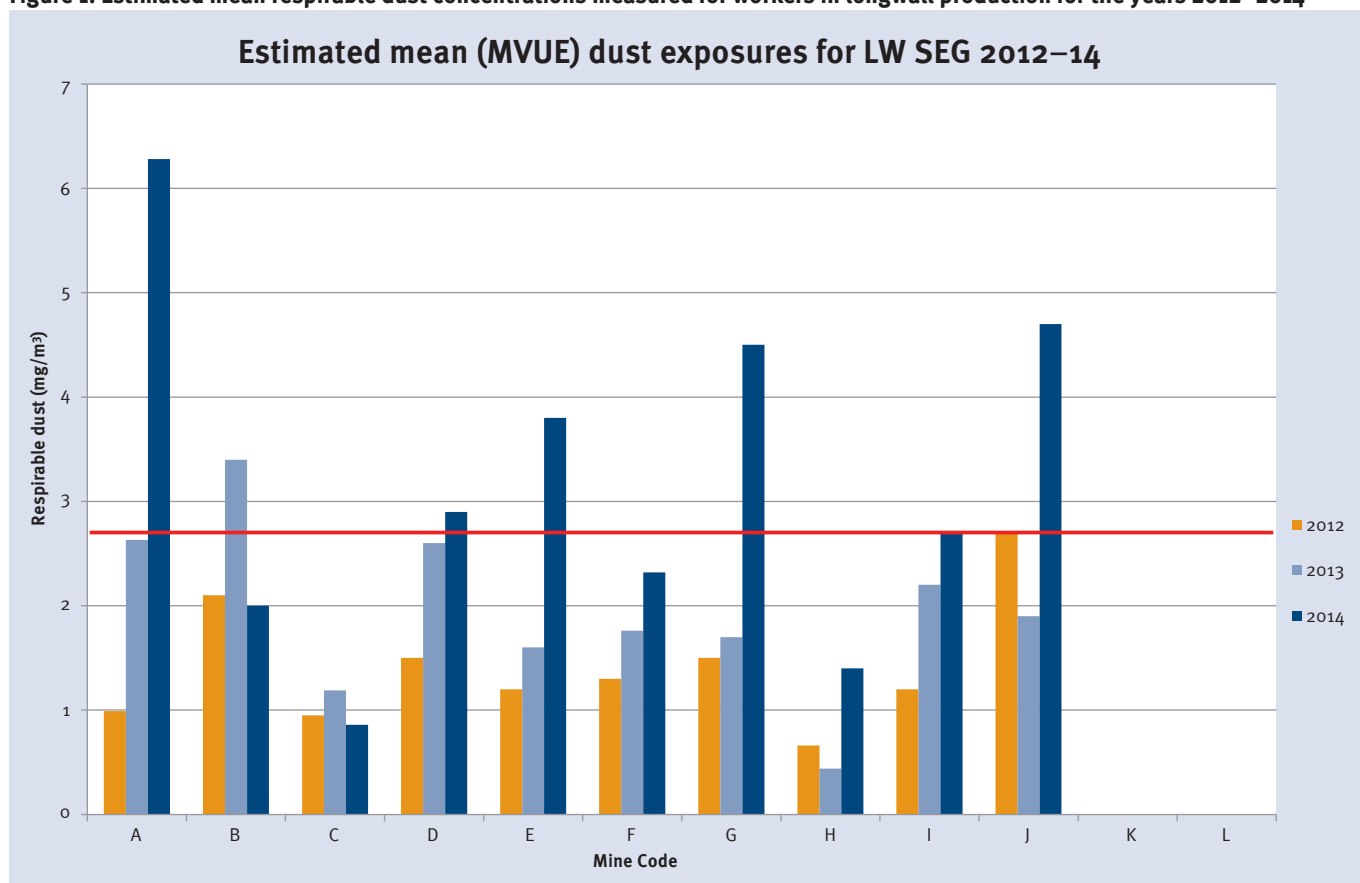
Hazardous dust exposures

Concern has been raised by the Mines Inspectorate in relation to the exposure of underground coal mine workers to dust generated by mining activities. In response to these concerns, all underground coal mines were requested to provide appropriate personal respirable dust exposure records for statistical analysis. This analysis has shown workers in production areas, particularly development and longwall areas, may be exposed to hazardous levels of respirable dust (Figure 1 and 2). Long term exposure to dust at these levels puts workers at a high risk of developing disabling lung diseases such as coal workers' pneumoconiosis (black lung).

The first case of coal workers' pneumoconiosis in a Queensland coal miner in 30 years was reported this year.

Although I am not suggesting that this particular case is linked to the current dust levels, there has been a significant upward trend over the last two years in average dust exposures for longwall and

Figure 1: Estimated mean respirable dust concentrations measured for workers in longwall production for the years 2012–2014



Notes:

1. The respirable dust (coal dust) exposure limit under the Coal Mining Safety and Health Regulation 2001 is 3 mg/m³. Each coal mine adjusts this regulatory limit where persons work more than eight hours a day or more than 40 hours a week. The most common adjusted exposure limit used in Queensland coal mines is 2.8 mg/m³.
2. Two Queensland underground coal mines did not have an operating longwall during 2012–14 and no data was available for analysis.

development mining across most sites. Sixty per cent of mines exposed longwall operators to levels equal to or greater than the adjusted regulatory exposure limit during 2014 compared with 10 per cent in 2012. The average dust exposure for longwall operators at one mine was found to exceed twice the adjusted regulatory exposure limit. The average dust exposure for development operators has risen sharply at a number of mines. In 2012 the average exposure at all mines was below the adjusted regulatory exposure limit compared with 25 per cent rising well above this limit in 2014. Where exceedances in development activities have occurred they have been significant and average exposures have increased by 250 to 450 per cent between 2012 and 2014.

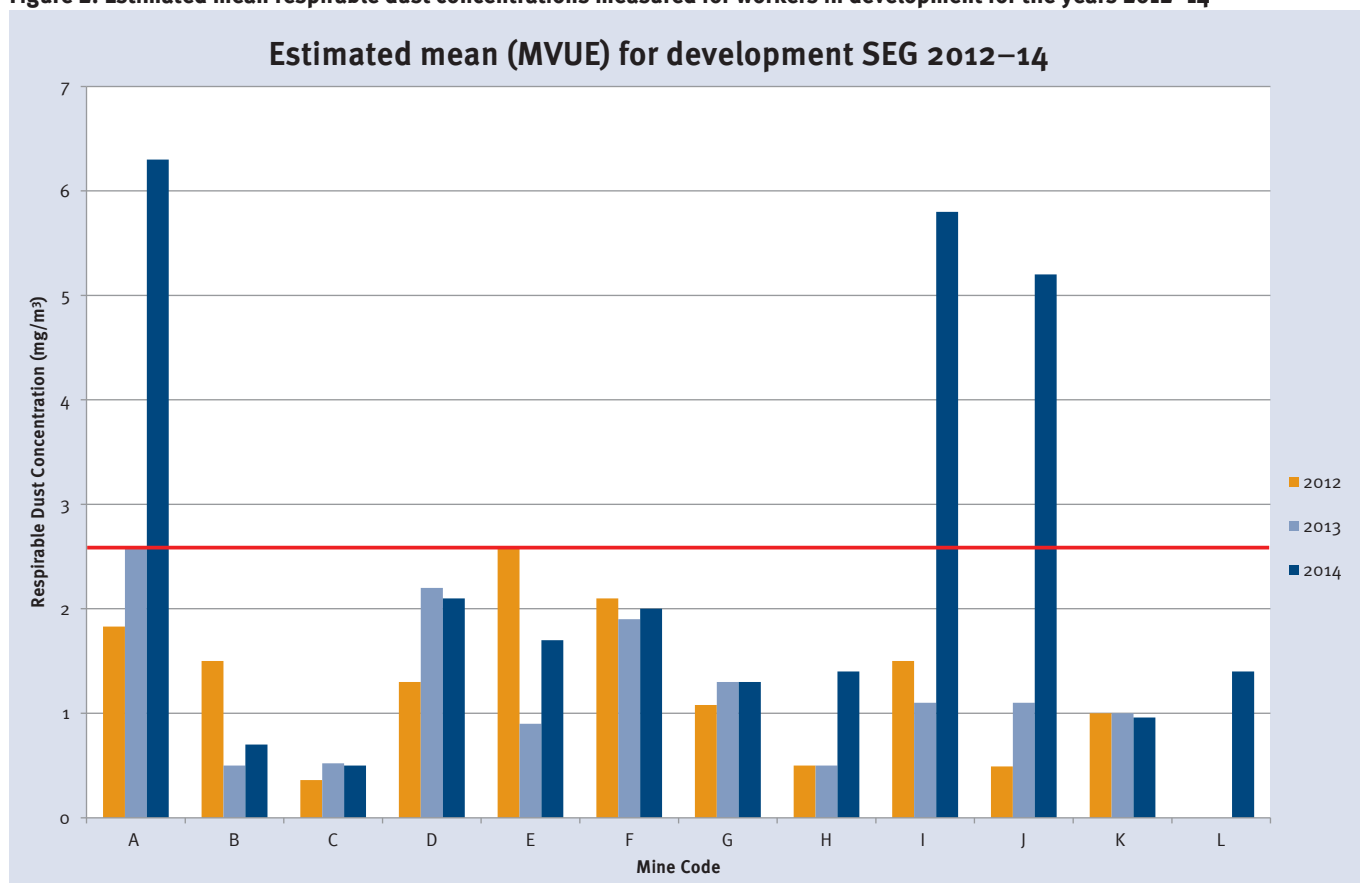
The Mines Inspectorate has been working with mine sites, where groups of workers have been identified as high risk, to reduce worker exposure and achieve compliance with statutory exposure standards. The inspectorate will continue working with industry to minimise worker exposure to hazardous dust levels.

Emergency response

The annual *Level 1—State Emergency Exercise*, carried out at Kestrel South Coal Mine on 29 October 2014, provided an opportunity for coal mine workers, mine management, Queensland Mines Rescue Service and DNRM to assess industry’s preparedness for an underground emergency. The exercise revealed many positive aspects to mine emergency response in Queensland. However, it also drew attention to a deficiency in our mines rescue capability.

The exercise scenario included a trapped and injured coal mine worker who required extraction from a shaft. The benefits of rescue capsules designed for this purpose have been demonstrated in a number of underground mine emergencies, most notably during the rescue of nine mine workers from the Quecreek Coal Mine in the United States in 2002 and 33 mine workers from Chile’s San José Copper Mine in 2010. The lack of emergency winding capability in Queensland to extract a trapped worker shows a significant shortfall in industry’s ability

Figure 2: Estimated mean respirable dust concentrations measured for workers in development for the years 2012–14



Notes:

1. The respirable dust (coal dust) exposure limit under the Coal Mining Safety and Health Regulation 2001 is 3 mg/m³. Each coal mine adjusts this regulatory limit where persons work more than 8 hours a day or more than 40 hours a week. The most common adjusted exposure limit used in Queensland coal mines is 2.8 mg/m³.
2. One Queensland coal mine did not have adequate dust exposure data for the 2012–13 period and was not included in the analysis for this period. The mine has since implemented a more rigorous dust exposure monitoring plan.

to effectively undertake this type of rescue. It is my view that the Queensland Mines Rescue Service must have emergency winding capability including suitable capsules for extracting mine workers out of boreholes and shafts.

Importance of tripartite role in mine safety and health in Queensland

Contemporary occupational safety and health legislation, including the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*, incorporates the concepts of self-regulation and advocates for consultation between employers and workers. There is strong evidence representative worker participation in workplace arrangements for safety and health, through trade unions and other consultative mechanisms, is effective in reducing injury rates. Worker participation in safety and health management systems provides a significant avenue to detect hazards and reduce the risk from those hazards.

It is only through cooperation and consultation between workers, employers, unions and regulators that we will see effective safety and health management. As I have said previously, industrial matters have no place in mine safety and health, and adversarial differences must be set aside so we can work together to ensure all workers return home safe and well after working a shift at any Queensland mine.



*Coal mine workers top up their CABA and check the fill gauge during the 2014 level 1 exercise
Photo: DNRM*

The Commissioner for Mine Safety and Health's significant achievements for 2014–15

During the year, the Commissioner for Mine Safety and Health:

- attended and presented at a broad range of mining industry conferences, meetings and seminars on mine safety and health issues currently facing the industry, including:
 - o Queensland Mining Industry Health and Safety Conference 2014, Townsville
 - o 13th Annual Quarrying Safety and Health Seminar, Brisbane
 - o 52nd Australian Mines Rescue Competition, Oaky Creek North coal mine, Middlemount
 - o Queensland Mines Rescue 43rd E K Healy Cup Competition, Broadmeadow mine, Moranbah
 - o memorial service to commemorate 20 year anniversary of Moura No. 2 tragedy, Moura
 - o 2014 Mines Inspectorate annual briefing to the mining industry, Parliament House, Brisbane
 - o senior executive service workshops, Brisbane
 - o *Taking an outcomes-based approach to regulatory reform seminar* featuring Harvard University Professor Malcolm Sparrow, Brisbane
 - o innovation master class, Brisbane
 - o five year strategic health plan sessions, Brisbane
 - o Simtars board meetings, Redbank
 - o project oversight committee meetings for the University of Newcastle and Centennial Coal Projects, Newcastle
 - o Queensland economic development forum, Brisbane
 - o Parliamentary science briefing to industry, Parliamentary Annexe, Brisbane
 - o power of explosives demonstration, Helidon.

Appendix 1 provides a full list of the presentations carried out in 2014–15.

The Commissioner also:

- visited mines and quarries including Mount Morgan
- conducted two level 4 compliance meetings with mining companies
- hosted mining industry delegations from India, Korea and Turkey.

The Commissioner chaired and participated in advisory meetings, including:

- four Coal Mining Safety and Health Advisory Committee meetings (Chief Inspector of Coal Mines chaired in the Commissioner's absence)
- three Mining Safety and Health Advisory Committee meetings
- two Queensland Mines Rescue Service Technical Advisory Committee meetings
- the 2014 Queensland Mining Industry Health and Safety Conference organising committee
- the planning and delivery of the Miners Memorial Day Service held on 19 September 2014 in Moura (planning for the 2015 Miners' Memorial Day Service in Mount Morgan has commenced)
- Mount Isa Lead Health Management Committee meeting.



Paul Harrison presenting at the 2014 briefing to mining and quarrying leaders
Photo: DNRM

Mines Inspectorate and staff activities for 2014–15

The significant activities for the Mines Inspectorate and its inspectors during 2014–15 are listed below.

Conducting audits, inspections and compliance meetings

- conducted 70 audits and 1538 inspections of mine sites throughout Queensland totalling 1876 inspectorate days
- conducted 118 investigations of mine accidents and incidents throughout Queensland totalling 1485 inspectorate days
- issued 238 directives and 1054 substandard condition or practice notices to mines
- conducted two level 4 and 12 level 3 compliance meetings with the mining industry
- published eight safety alerts, four safety bulletins, one guideline and one guidance note.

Participation in committees and workshops

- Participated in the HIAC.
- Participated in the Coal Mining Safety and Health Committee and Mining Safety and Health Committee.
- Participated in the Australasian Mining Competency Advisory Council (AMCAC).
- Participated in the Diesel Particulate Matter Steering Committee which met on 21 July 2014 and 20 February 2015.
- Participated in the review and further development of a diesel exhaust guideline.
- Member of Fume Steering Group and contributed to development of guidance note.
- Hosted mechanical engineering managers' forums in Capella on 29 October 2014 and 29 April 2015.
- Chair of and attendance at the Queensland Mine Electrical Safety Association Inc. (MESA) committee meetings.
- Regulators representative on the Cement Concrete and Aggregates Australia (CCAA) occupational health and safety subcommittee.
- Hosted and attended the mining and quarrying legislation workshop.
- Hosted the small mines and quarry workshops (various locations and dates – refer to Appendix 1).
- Member of the organising committee for the 13th Annual Quarrying Safety and Health Seminar held at the Brisbane Convention and Exhibition Centre on 10 June 2015.
- Honorary member of the South West Resources Industry Skills Association Inc. (RISA).
- Participation in a national working group to develop a national code of practice for winders.
- Member of the Queensland resources occupational health symposium organising committee.

- Attended Mechanical engineers mining conference in Capella.
- Attended Winder forum in Mt Isa.
- Coordinated and co-chaired the HIAC biological hazards and water management seminar.
- Participated in Mount Isa District Disaster Management Group.
- Convened facilitated and chaired biannual surface mine Electrical Engineering Managers meetings.
- Hosted the 2014 Mines Inspectorate annual briefing to the mining industry, Parliament House, Brisbane
- Convened, facilitated and chaired biannual underground coal mine Electrical Engineering Managers meetings.
- Participated in Electrical Engineering Managers group on lightning in mines.
- Member and secretary of the Queensland Mining Industry Health and Safety Conference organising committee.
- Member and secretary of the Coal Mining Safety and Health Advisory Committee.
- Member and secretary of the Mining Safety and Health Advisory Committee.
- Member of the Simtars Certification Advisory Committee.
- Member of the Mining Electrical Safety Association.
- Member Ex Technical Association (Australia and New Zealand).
- Development of the recognised standard for place change mining operations.
- Development of recognised standard for polymeric chemicals.
- Development and implementation of recognised standard of effective management structures and safety and health management systems.
- Hosted a small mines' seminar in Rubyvale about the implementation of small mines safety and health management systems.
- Convened and chaired the State Emergency Exercise Management Committee comprising the Mines Inspectorate, Simtars, CFMEU, Minerals Industry Safety and Health Centre (MISHC), and industry. The Mines Inspectorate involvement included participation in the planning and execution of the level 1 mine emergency exercise at Kestrel South Coal Mine on 29 October 2014.

Appendix 1 and 2 provides a full list of Mines Inspectorate participation.

Conference participation and professional development forums

- Co-hosted Queensland Mining Industry Health and Safety Conference ‘Improving health and safety in challenging times’, with Queensland Resources Council (QRC) and mining unions, 17–20 August 2014.
- Attended Northern Regional Engineering Forum 2015.
- Attended Rio Tinto Bingham Canyon Mine wall failure – Geotechnical investigation findings seminar.
- Mine Site Automation and Communication QLD 2015 conference, 21-22 April 2015 in Brisbane.
- Participated in a forum on the ACARP project C22003 Investigation of the potential lightning impacts on underground coal mines.
- Attended and presented a paper at the annual electrical safety conference in Brisbane.
- New South Wales (NSW) electrical engineering safety conference, 4 November 2014 in Sydney.
- Attended Institute of Quarrying Australia quarrying safety conference, 10 June 2015 in Brisbane.
- Facilitated Open Cut Examiner seminars. Eight seminars with over 320 mining industry participants in July and August at Biloela, Moranbah, Blackwater and Toowoomba.
- Attended the 13th Annual Quarrying Safety and Health Seminar held at Brisbane Convention and Exhibition Centre.
- Attended the north region safety and health seminars in Townsville and Cairns.
- Attended the participatory ergonomics seminar.
- Participation of the Chief Inspector of Mines (Metalliferous) and Chief Inspector of Coal Mines in the 56th Conference of Chief Inspectors of Mines held in Queensland from 12–17 October 2015.
- Attended at fitness for duty, drugs and alcohol seminar.
- Attended the NSW mechanical engineering seminar.
- Attended rock mechanism seminar.
- Attended and presented at the Australian Manufacturing Workers’ Union coal shop stewards conference at Rockhampton.
- Attended the NSW inspectorates’ mechanical engineering safety seminar.
- Attended Mine Managers Association continued professional development workshops.
- Attended a mine seismicity seminar in Launceston, Tasmania.
- Attended mine electrical safety conference.
- Attended Australian Institute of Occupational Hygienists conference.
- Attended the Australian Cancer Council kNOw cancer risks at work forum.

- Attended the Moranbah drug seminar run by the Queensland Police Service.
- Attended outburst seminar, 23-24 July 2015 in Wollongong, New South Wales
- Attended site safety and health representatives’ conference.
- Inspectors also attended professional and/or vocational training sessions to update skills, knowledge and understanding of current technical, regulatory and administrative practices.

Refer to Appendix 1 for a full list of presentations.

Contribution to reviews and development of Australian Standards

Committees

The Mines Inspectorate chaired and/or participated in these standards committees:

- Standards Australia committee SF 001 – Occupational health and safety management systems JF
- Standards Australia Committee EL 023 – Electrical equipment in mines and quarries
- Standards Australia Committee ET 006-1 – Australian IEC Ex conformity assessment
- Standards Australia Committee MS 067 – Ex mark
- Standards Australia Committee ME 018 – Underground mining mechanical
- Standards Australia Committee ME 018-02-01 – Control systems and brakes
- Standards Australia Committee ME 018-03 – Guides and rubbing ropes
- Standards Australia Committee ME 018-03-01 – Conveyances for inclined shafts
- Standards Australia Committee ME 018-04 – Diesel engine systems
- Standards Australia Committee ME 063 – Surface mining mechanical
- Standards Australia Committee – ME-006 refrigeration
- Standards Australia Committee – ME-070 Liquefied natural gas storage and handling

Review and development of standards

The Mines Inspectorate participated in the review and/or development of these standards:

- ISO/CD 45001 – Occupational health and safety management systems – Requirements with guidance for use
- AS/NZS 1299 – Electrical equipment for mines and quarries – Explosion-protected three-phase restrained plugs and receptacles for working voltages up to and including 3.3 kV

- AS/NZS 1300 – Electrical equipment for mines and quarries – Bolted explosion-protected three-phase cable coupling devices
- Standards Australia – Electrical protection handbook
- Standards Australia – Cable management handbook
- AS/NZS 3584.1 – Diesel engine systems for underground coal mines - Fire protected - Heavy duty
- AS/NZS 3584.2 – Diesel engine systems for underground coal mines - Explosion protected standards
- AS/NZS 3584.3 – Diesel engine systems for underground coal mines - Explosion protected - Maintenance
- AS/NZS 3785.6 – Fixed guides, rope guides and rubbing ropes
- AS/NZS 3785.8 – Underground mining - Shaft equipment - Personnel conveyances in other than vertical shafts
- AS/NZS 4730.5 – Winder control systems
- AS/NZS 4730.3 – Mechanical brakes

Working together with inspectors from other jurisdictions

- Conducted electrical inspections of New Zealand underground coal mines and Auckland Tunnel.
- Queensland electrical inspectors meetings which included attendance by NSW mining electrical inspectors.
- Attended NSW electrical inspectors meeting, discuss points of common interest.
- Met with NSW electrical inspectors regarding compliance issues with 3rd party overhauls.
- Met with NSW electrical inspectors regarding the possible development of a handbook for high voltage electric vehicles.
- Collaborated with NSW inspectorate in the Mining Equipment/Personnel Interaction Advisory Group (MEPIAG).
- Attended the NSW mechanical inspectors' meeting.
- Participated in the Australian governmental occupational hygienist representatives' meetings.
- Consulted with NSW Mines Inspectorate and interested parties on polymeric chemicals.
- Worked with the NSW Mines Inspectorate in relation to the mechanical engineering safety seminar at Homebush, Sydney.
- Conducted audit of tyre management practices for the Queensland Coroner for investigations into an incident at Foxleigh Mine Site, Middlemount; case management system 2010/4299, findings reserved.

Working together with other agencies and partners

- Developed joint inspection agreement for high risk plant licencing assessments with Workplace Health and Safety Queensland.
- Developed south of Embley project jurisdictional agreement between DNRM, Workplace Health and Safety Queensland and Marine Safety Queensland.
- Worked with Queensland Electrical Safety Office on electrical licencing and electrical incidents.
- Met with the Serious Workplace Incidents Interagency Group discussing notification issues with fatalities and serious accidents.
- Worked with the Petroleum and Gas Inspectorate in an electrical industry working group.
- Presented to international inspectors on drill and blast.
- Facilitated electrical awareness seminars on behalf of the Institute of Quarrying Australia.
- Worked with the Queensland petroleum and gas inspectorate on overlapping tenures legislation changes.
- Worked with Queensland explosives inspectorate on major investigations.
- Inspectors participated in the joint Anglo American and BP Australia trials for underground coal diesel engines. NSW Mines Inspectorate mobile lab also took part in the measurement and analysis of the particulate and gases pollutants in the exhaust stream.
- Assisted the Department of Environment and Heritage Protection in a court hearing with regard to Mount Chalmers.
- Inspectors provided electrical and engineering advice to the Department of Environment and Heritage Protection and the Abandoned Mines Lands Program with regards to Mount Chalmers.
- Provided electrical and engineering advice to Abandoned Mines Lands Program with regards to Mount Morgan.
- Interacted with Simtars with regard to virtual reality mine safety training planned for 2015.
- Presented to CFMEU at site safety and health representatives' conference
- Represented Queensland mining regulator on a review of the Managing Hazardous Materials Manual.
- Observed the joint Anglo American and BP Australia fuel trials to compare the impact of standard diesel fuel and ultimate diesel on diesel particulate matter production and other emissions.
- Provided support and attended the Queensland Mines Rescue Service memorial cup competition held at Grasstree mine.
- Worked with the Electrical Trades Union safety delegates in relation to electrical safety in the mining industry.

- Participated in an industry group for high density compressed natural gas drive trucks for a trial in a Queensland surface coal mine.
- Member of the Interagency Asbestos Group along with Workplace Health and Safety Queensland, Department of Health, Department of Environment and Heritage Protection, Department of Housing and Public Works, Department of Premier and Cabinet and Local Government Association of Queensland.
- Member of the Mount Isa Lead Health Management Committee chaired by Queensland Health.
- Worked in collaboration with HIAC, Workplace Health and Safety Queensland and WorkCover Queensland in the development and delivery of three seminars on occupational health issues.

Appendix 2 provides a full list of training undertaken in 2014–15.



Mines inspector checking guarding Meandu Mine, Queensland
Photo: DNRM

Looking ahead: the Queensland Mines Inspectorate's strategic priorities

Management of noxious and flammable gasses in underground coal mines

The Mines Inspectorate has carried out a number of ventilation workshops across the state to assist mine ventilation officers in managing the risks associated with flammable and noxious gases. Further workshops are planned for 2015–16. The competency of statutory officials and others who have responsibility for managing these risks will continue to be reviewed by the inspectorate. A joint ventilation code of practice is being developed in collaboration with the NSW Mines Inspectorate

Statutory officials and their obligations

In response to ongoing concerns about the level of understanding by statutory officials of their safety and health obligations, the Mines Inspectorate has conducted a series of seminars targeted at open cut examiners (OCEs). These seminars, conducted in the Bowen Basin and southern Queensland, have focussed on how to meet statutory obligations and achieve good practice.

During 2015–16 the Mines Inspectorate intends to develop a specific structured inspection guide for each of the statutory positions listed in the coal and metalliferous legislation, focussed on the explicit and implicit functions of each position, including supervisors. These documents will then be used to evaluate how effectively the positions are functioning.

Hazardous dust exposure

The Mines Inspectorate is currently working with a number of underground coal mines to reduce the exposure of coal mine workers to respirable dust and we will continue to monitor the results of dust monitoring of all underground coal mines and intervene where required to reduce exposure.

Mines Inspectors are working closely with Simtars to find innovative solutions, such as the use of real time respirable dust monitoring and the development of a database that will facilitate the ready analysis of dust data.

Stone dust application

The Mines Inspectorate has appointed Inspector Neil Randolph as the champion for control of combustible dust. Neil's scope includes monitoring stonedust application and analysis at coal mines, and training and monitoring of competence of samplers at coal mines.

Competency of appointed persons

A guideline on how to integrate health and safety competencies into mine management has been developed as part of the commitment to assist industry to raise competency standards.

Guidance Note QGN23 – For coal mines to develop and implement a management structure, was presented at the Queensland Mining Industry Health and Safety Conference in August 2014 and is scheduled to be released in late-2015. It will provide guidance on how to identify the competencies required by managers to effectively manage mine safety and health risks. The Mines Inspectorate will continue to work with industry to raise safety and health competency standards.

Emergency response and post-incident management

The ability of mines in Queensland to respond effectively during and after an emergency continues to be an important focus for the Mines Inspectorate. To assist industry in improving the ability to plan for and respond to mine emergencies, a recognised standard on emergency response for underground and open cut mines is being developed.

The Level 1—State Emergency Exercise, held annually, provides a realistic simulation of a mine emergency and identifies improvement opportunities for responders. The implementation of the improvements identified during the exercise across the industry is vital to building a robust emergency response system and these will be audited by the Mines Inspectorate during 2015–16.

Management of polymeric strata support materials

A recognised standard on the safe use, storage and transport of polymeric chemicals is in the final stages of development and should be published in 2015. This standard, being developed in collaboration with the NSW Mines Inspectorate, will assist mine sites to ensure the safe application of polymeric chemicals.

Management of contractors

In recent years contractors have been over-represented in mining injuries and fatalities. An effective contractor safety and health management system is critical in improving performance in this area. Mines Inspectors commenced a series of audits and inspections of contractor management systems during 2013–14 that will continue during 2015–16.

Proximity detection

Collision avoidance system technology continues to improve and its implementation at mine sites is increasing. Due to its ability to reduce the risk of vehicle-vehicle and pedestrian-vehicle collisions the Mines Inspectorate will continue to encourage its use in suitable mining operations.

Interaction of pedestrians and light vehicles with front end loaders in surface mines and quarries

As a result of a series of accidents and incidents at surface mines and quarries, the Mines Inspectorate has been monitoring the implementation of the risk reduction recommendations made in *Safety Bulletin 135 Pedestrian and light vehicle interaction with loaders at surface mines and quarries*. During 2015–16, the Mines Inspectorate will continue to monitor the response to these recommendations during surface metalliferous mines and quarries inspections.

Small mines initiative

The small mines initiative continues to be a priority for the Mines Inspectorate. Inspections and audits of small operations indicate site senior executives (SSEs) continue to need support and training to implement effective safety and health management systems in their operations. In 2015–16 the Mines Inspectorate will continue to run workshops to meet this need.

The Mines Inspectorate is continuing to develop the gem and opal mining guidance note.

Electrical safety at surface metalliferous mines and quarries

In recent years the Mines Inspectorate has been concerned with the number of electrical incidents in mines and quarries throughout Queensland. In response to these concerns the Mines Inspectorate commenced development and delivery of electrical safety awareness workshops for SSEs and supervisors in small mines and quarries during 2012–13. These workshops continued on an as-needs basis and were complemented in 2014–15 with a modified version of the workshops delivered as toolbox talks to workers.

To build on these workshops and in acknowledgement of the continuing upward trend in the number of electrical incidents, the Mines Inspectorate will be paying attention to the following issues at mines and quarries during the next 12 months:

- The person in control of electrical work onsite and how they manage electrical installations.
- How workers identify and control energy sources in their work activities.
- Electrical work practices, particularly those used to de-energise and isolate systems.

The Mines Inspectorate will continue to disseminate the practical field guide on working safely with electricity, developed in conjunction with the Institute of Quarrying Australia (IQA), to small mines and quarries. Many electricians employed as contractors at small mines and quarries have

a domestic electrical background, rather than an industrial electrical background. In collaboration with the IQA and other industry representatives, the Mines Inspectorate will develop a more comprehensive handbook for electricians and electrical supervisors during 2015–16.

Conveyor safety at surface metalliferous mines and quarries

The Mines Inspectorate continues to identify ineffective or inadequate guarding of conveyors during audits and inspections, despite the death of a young worker in June 2012. To help raise awareness about conveyor safety, the Mines Inspectorate, in conjunction with the IQA and other industry representatives, developed and published a conveyor safety field guide. We will continue to disseminate the field guide to metalliferous mines and quarries during 2015–16, as well as enforcing appropriate guarding standards across the industry.

Understanding drill and blast practices at surface metalliferous mines and quarries

In recognition of the increase in outsourcing of drill and blast activities to contractors in surface metalliferous mines and quarries, the Mines Inspectorate and the Explosives Inspectorate developed a one day drill and blast awareness training course. This course provides SSEs and supervisors with an awareness of the hazards and risk controls required for safe drilling and blasting activities. We will continue to deliver this course during 2015–16. In addition, the Mines Inspectorate and the Explosives Inspectorate, with assistance from IQA, will commence development of a safe drill and blast awareness field book, based on the course and a proposed industry workshop.

Managing exposure to diesel engine exhaust in underground metalliferous mines

During 2015–16, the Mines Inspectorate intends to conduct an audit of underground metalliferous mines (using *QGN21 Management of diesel engine exhaust in metalliferous mines* as a reference) to assess how exposure to diesel engine exhaust is being managed.

Managing naturally occurring radioactive material during exploration, mining and processing activities

In conjunction with Simtars, the Mines Inspectorate will deliver training on managing naturally occurring radioactive material based on the department's guideline *QGL1 Management of naturally occurring radioactive material (NORM) in metalliferous mines*. This course will be delivered in conjunction with audits of exploration sites and other mines where NORM is a hazard.

Support of next of kin following a serious or fatal workplace accident

The Mines Inspectorate is supporting the government's election promise to consult with surviving family members following a serious or fatal workplace incident. The Mines Inspectorate is a member of the Serious Workplace Incident Interagency Group (SWIIG)—an outcome of a families' forum held on 2 June 2015. During 2015–16, SWIIG will work towards developing a whole-of-government approach the practical field guide on working safely with electricity, developed in conjunction with the Institute of Quarrying Australia (IQA), to small mines and quarries initiatives identified at the forum, including publishing an advisory document for next of kin, providing a counselling service for those affected and providing a single point liaison service for next of kin. The aim of these initiatives is to provide timely and ongoing information from the initial contact after a fatal accident, through to the completion of the coronial process.

Managing the risk of operating on-highway trucks on metalliferous mines and quarries

A high potential incident occurred in January 2014 on the ramp of a large surface mine, involving the loss of braking and subsequent roll-over of an on-highway agitator truck. The incident again highlighted the hazards involved in operating on-highway trucks in an off-highway environment that involved sustained travel down ramps.

During 2015–16, the Mines Inspectorate will audit metalliferous mines and quarries where on-highway trucks are being operated on ramps, to determine whether their systems are managing the risks to an acceptable level.

We will also run workshops with on-highway truck original equipment manufacturers (OEM), and appropriate metalliferous mines and quarry representatives. The workshops will discuss the limitations of the various on-highway trucks in off-highway situations and explore potential controls that can be introduced to help mine workers better manage the risks. Representatives from the Department of Transport and Main Roads will be invited to participate.

The results of these workshops will provide the basis of a guideline about the operation of on-highway trucks in off-highway situations—and will assist the Mining Safety and Health Advisory Committee (MSHAC) assess the adequacy of Section 10, Mining and Quarrying Safety and Health Regulation 2001 in addressing operation of on-highway trucks at metalliferous mines and quarries.

Fatal hazard focused structured inspection guides

Since the introduction of the current mining and quarrying safety and health legislation in 1999, there have been 21 fatalities at metalliferous mines and quarries. These fatalities have broadly resulted from the following hazard categories which also predominate in high potential incidents (HPIs):

- falls (workers from height, fall of equipment or fall of equipment/material onto workers) (11)
- collisions (of equipment and/or of equipment with workers) (5)
- uncontrolled pressure release (tyre failures) (2)
- entanglement (of workers in equipment) (2)

The Mines Inspectorate will continue development of structured inspection guides for use at metalliferous mines and quarries. The guides will focus on the individual hazards, initially focusing on falls, and will be incorporated into the mines inspection planning system.

Development, review and update of Mines Inspectorate guidance material

The Mines Inspectorate will continue to either develop new guidance notes or review and update existing guidance notes during 2015–16 including:

- shaft construction – new, development in progress
- site safety and health representatives – new, development in progress
- facility description – new, development in progress
- reporting accidents and incidents – review and update in progress
- isolation – review and update in progress
- working near the face – new, development in progress
- exploration – review and update in progress
- tyres and rims – new, development in progress.

Mine plans

Under the safety and health legislation for both coal mining and mining and quarrying, the, SSEs must submit plans of mine workings to the Chief Inspectors at specified times.

DNRM is building an electronic submission facility for mine plans, allowing safe online storage and retrieval along with their use in conjunction with the Queensland Globe interactive online tool. Launch of the facility is planned for the end of this year. This system will provide industry with a better and more reliable process than the current manual submission process.

Providing advice to the Minister on mine health and safety matters

As required by the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*, the Commissioner provides advice to the Minister on mine health and safety matters.

In undertaking this role, the Commissioner met regularly with the Honourable Anthony Lynham MP, Minister for State Development and Minister for Natural Resources and Mines,

and Mr Andrew Cripps MP, former Minister for Natural Resources and Mines and/or their ministerial staff.

The Commissioner kept the Ministers fully apprised of all important safety and health matters and provided independent advice on legislative reviews and policy issues relevant to the administration of Queensland's mining legislation.

Mining and coal mining safety and health advisory committee meetings

The Coal Mining Safety and Health Advisory Committee (CMSHAC) and the Mining Safety and Health Advisory Committee (MSHAC) were established to give advice and make recommendations to the Minister on promoting and protecting the safety and health of people at coal mines, metalliferous mines and quarries.

The Committees consist of nine members representing the Mines Inspectorate, workers and operators who are nominated to and appointed by the Minister. The membership term is three years. The Committee Chairperson is the Commissioner for Mine Safety and Health.

CMSHAC includes members from the CFMEU, Electrical Trades Union (ETU), QRC and the Mines Inspectorate, while MSHAC has members from the Australian Workers' Union (AWU), Australian Manufacturing Workers Union (AMWU), Queensland quarrying industry, QRC and the Mines Inspectorate.

In 2014–15, both committees made significant contributions to improving the safety standard at all mines and quarries (Tables 1 and 2).

Table 1: Coal Mining Safety and Health Advisory Committee meetings and key achievements for 2014–15

Meeting number	Date
64	17 September 2014
65	10 December 2014
66	4 March 2015
67	3 June 2015
Activities	
Updated recognised competencies	<p>A major role of the committee is to recognise the competencies required for roles and positions mentioned in mine safety and health legislation. Recognised competencies are available on the department's website.</p> <p>Updating and adding to these competencies from time to time is a necessary committee function. The committee recognised updates to surveyors' competencies, and also a general update to competency unit designators due to changes implemented by the training industry.</p>
Codes of Practice subcommittee	<p>The committee convened a tripartite 'codes of practice' subcommittee, the role of which includes reviewing and making recommendations on national codes of practice. The subcommittee utilised subject experts and consulted industry as required. It also worked on the following four draft recognised standards during 2014–15:</p> <ul style="list-style-type: none"> • Use of polymeric substances at Queensland underground coal mines • Emergency preparedness and response • All tyres and rims (resulting from the Coroner's findings and recommendations in the Wayne MacDonald Inquiry) • Place change mining. <p><i>Recognised Standard No. 1 Underground electrical equipment and electrical installations</i>, was amended and updated.</p>
Review of strategic direction	<p>The committee spent time reviewing its strategic direction and created a vision statement. <i>To be seen as the prime advisory body to the Minister and the industry, ensuring continuing improvement in safety and health in coal mining.</i></p> <p>The following mission statement was also developed:</p> <ul style="list-style-type: none"> • To engage stakeholders in developing strategies for the improvement of safety and health through participation and co-operation with coal operators, SSEs and coal workers to achieve the objects of the Act. • To represent and influence the industry to improve safety and health. • To develop and maintain effective communication with the Minister. • To review and recommend improvements to safety and health in coal mines. <p>The committee discussed its current concerns and determined the following key focus areas:</p> <ol style="list-style-type: none"> 1. Engagement 2. Representation and influence within the industry 3. Ministerial relationship – advice and support 4. Committee obligations under Section 76 of the <i>Coal Mining Safety and Health Act 1999</i>.

Table 1: Coal Mining Safety and Health Advisory Committee meetings and key achievements for 2014–15 (continued)

Health Improvement and Awareness Committee (HIAC)	The Committee received regular updates from HIAC on its activities during the year, including participation in a Participatory Ergonomics Seminar, a Seminar in collaboration with WorkCover covering Musculoskeletal Injury – immediate and ongoing management, and a Seminar arranged by WorkCover on working together to improve mental health.
Legislative changes	During the year, the committee considered several proposals to change the mining safety legislation, specifically sections of the Coal Mining Safety and Health Regulation 2001 on: <ul style="list-style-type: none"> • strata control activities • levels of electrical protection and other options • operations that are excluded from the mine’s responsibility. Further evaluation of these submissions is currently underway.

Table 2: Mining Safety and Health Advisory Committee meetings and achievements for 2014–15

Meeting number	Date
43	25 September 2014 (cancelled due to lack of a quorum)
44	11 December 2014
45	19 March 2015
46	25 June 2015
Activities	
Legislation changes	The committee was briefed at each meeting on the progress of implementing changes to the <i>Mining and Quarrying Safety and Health Act 1999</i> proposed as options in Queensland’s Mine Safety Framework Consultation RIS which was issued for comment in September 2013 with 246 submissions received by the closure date of November 2013. The Committee approved a list of reportable diseases for inclusion in the Mining and Quarrying Safety and Health Regulation 2001. The committee is also considering changes to the working in heat provisions of the Regulation, specifically lowering of the wet bulb temperature.
Guidance notes, guidelines and safety bulletins	One function of the committee is to peer-review the appropriateness of industry guidance information and create awareness of other information sources. During this period a number of guidance notes and other industry advice were drafted and discussed. These included guidance notes on facility description, major accident hazards such as falls, roles and responsibilities of site safety and health representatives, exploration activities, shaft construction, and a safety bulletin on health and fitness assessments. A recent report issued by the WA government on the impacts of FIFO work on mental health was circulated as was some other fatigue education material. This material was produced by the Queensland police in consultation with industry following a coroner’s recommendation into the fatigue related death of several motorists in Central Queensland mining areas.
Naturally occurring radioactive materials	A guideline on naturally occurring radioactive minerals (NORM) was also issued during the period. An industry training course for the ‘person appointed to supervise a radiation monitoring program’, which is a mandatory position identified in the NORM guideline, has been developed in conjunction with Simtars. Simtars will also assist with delivery of the course and with certification of the course at Certificate IV level.
Mining competency framework	The committee received updates on the Chief Inspector’s participation in the Australasian Mining Competency Advisory Council (AMCAC), which is a product of the National Mine Safety Framework process, aimed at progressing consistency of statutory competencies between Australian State and Trans-Tasman mining regulators. The committee also received updates from the Australian Institute of Mine Surveyors (AIMS) on current and planned mine surveying competencies and initiatives to maintain and improve current survey standards. The Committee tabled its concerns regarding the standards of training and competencies being offered by Registered Training Organisations (RTOs). Advertising by two RTOs had been identified which indicated that competencies for certain metalliferous and quarrying training courses, involving mobile equipment, could be obtained within a questionable timeframe.
Emergency response capability	The lack of mine rescue competitions for underground metalliferous mines in recent years is a concern for the committee. Mutual emergency response agreements are being progressed for mines in the Charters Towers area.
Health Improvement and Awareness Committee (HIAC)	Each of the meetings included a brief update on various activities by HIAC. This group is currently undergoing a review led by Emeritus Professor. Tony Parker AM with the assistance of industry, union and Simtars representatives.

Health Improvement and Awareness Committee

HIAC was established in 2008 to assist the mining and quarrying industries anticipate, identify, evaluate and control occupational health hazards.

Mine workers (through unions), industry and the Mines Inspectorate are represented on the committee.

HIAC met four times during the year:

- 9 October 2014
- 26 November 2014
- 11 March 2015
- 11 June 2015.

At the November meeting the committee reviewed membership and priorities for 2015. A representative for metalliferous mines has now been appointed as a member of HIAC.

HIAC seminars

HIAC collaborated with the Mines Inspectorate and WorkCover Queensland on the following seminars during 2014–15:

Musculoskeletal disorders awareness

October 2014: Musculoskeletal disorders awareness. Presented by Kylie Newton, Practice Leader, Health and Human Factors, Department of Industry, Resources and Energy (NSW). This seminar was well attended with a large number of attendees from the quarrying sector.

Musculoskeletal disorder management

March 2015: Acute management of musculoskeletal disorders and good practice in musculoskeletal injury management in the mining industry. Seminar was presented by specialist musculoskeletal therapist David Brentnall, occupational physician Dr Rob McCartney and occupational health physiotherapist Bronwen Otto. A video of this seminar was made available on the WorkCover Queensland's website to assist in delivering this message to industry stakeholders.

Biological hazards and water management

11 June 2015: Biological hazards and water management. Presented by Dr Richard Bentham (Flinders University), Dr Michael ten Lohuis (Water Services Australia), Patricia Coward (Workplace Health and Safety Queensland) and Dr Penny Hutchinson (Queensland Health). The seminar provided information on infectious diseases, the role of Queensland Health in disease outbreaks, principles of water quality management and water borne disease outbreaks. A video of this seminar was made available on WorkCover Queensland's website.

Other HIAC activities

Mental health

The committee's mental health working party met with representatives of WorkCover Queensland and 'Mates in Construction' to facilitate promotion of mental health initiatives in mining and resources.

Health effects of shift work

HIAC members and networks were kept up to date with information on sleep and health by the Inspector of Mines (Occupational Health).

Diesel particulate matter

HIAC continued to receive and discuss updates from the diesel particulate matter subcommittee.

Review of the *Coal Mining Safety and Health Act 1999* and the *Mining and the Quarrying Safety and Health Act 1999*

The NMSF reforms started as an initiative of the Conference of Chief Inspectors of Mines from all jurisdictions. The reforms then became one of 27 Council of Australian Governments reforms under the National Partnership Agreement to Deliver a Seamless National Economy. Queensland's response to the NMSF is outlined in Queensland's Mine Safety Framework consultation RIS.

The consultation RIS recommends mostly retaining the current legislation, together with amendments; to, where possible, improve safety and health; and increase regulatory consistency with the other large mining states of NSW and Western Australia.

The current legislation was developed by government, industry and unions following the Moura mining disasters and has contributed to Queensland being recognised internationally for its good mining safety and health record since the disasters. Recent tragic deaths in the mining industry are however, a poignant reminder that safety laws and systems must always be reviewed following incidents and, where possible, improved.

The proposed mine safety and health improvements in the RIS are the result of government, industry and union consultation through the NMSF. Key changes proposed in the RIS include:

- additional certificates of competency for statutory safety critical positions
- explosion barriers for underground coal mines
- improved contractor management
- safety and health obligations applying to executive officers.

Responses to the consultation RIS closed on 11 November 2013 and 246 submissions were received. Many of the submissions were lengthy and detailed. It has taken significant time to complete a thorough analysis and to ensure the best outcomes for legislative change are recommended.

DNRM will continue to promote the tripartite approach to collaboration and cooperation with industry and union representatives, required by the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999* in order to finalise consultation and the proposed legislative amendments. Many of the proposed amendments would still be progressed irrespective of the national reform process, because they address some of the strategic priorities of the Mines Inspectorate, based upon ongoing concerns, and add further rigour to the existing safety framework.

Part 7 of the *Statutory Instruments Act 1992* prescribes the automatic expiry of subordinate legislation after 10 years, unless the subordinate legislation is exempted from expiry for a further period of review. The *Coal Mining Safety and Health Regulation 2001* and the *Mining and Quarrying Safety and Health Regulation 2001* are to be remade once the mine safety framework amendments to the Acts have been finalised and progressed.



Acting Chief Inspector of Coal Mines inspecting an environmental monitoring station at Cameby Downs mine
Photo: DNRM

Published material

Guidelines

QGL 1 Guideline for management of naturally occurring radioactive material (NORM) in metalliferous mines. July 2014.

Guidance notes

QGN 22 Management of noise in mines. August 2014.

Safety alerts

Safety alert 308 Arc flash and blast when 1000V circuit breaker reset. 12 August 2014

Safety alert 309 Fatal accident from falling into an ore pass. 16 September 2014

Safety alert 310 Missing exploration worker. 29 October 2014

Safety alert 311 Serious accident at longwall maingate AFC drive. 12 November 2014

Safety alert 314 Four wheel drive bus rollover fatality. 19 March 2015

Safety alert 315 Damaged cable results in feeder breaker fire. 7 April 2015

Safety alert 316 Working from rills. 13 April 2015

Safety alert 317 Dust sampling pumps used in underground coal mines. 13 May 2015

Safety bulletins

Safety bulletin 144 Skidding and sliding on mine roads. 17 December 2014

Safety bulletin 145 Highwall failures. 7 January 2015

Safety bulletin 148 4 bolt primary roof support patterns. 23 January 2015

Safety bulletin 149 Emergency response plans. 27 March 2015

All recognised standards, guidelines, guidance notes and other published material can be found on the department's website <https://www.business.qld.gov.au/industry/mining/safety-health/mining-safety-health>



Twin boom development jumbo drilling out a face for charging
Photo: DNRM

Our staff

Recruitment and retention activities

DNRM continues to ensure sufficient suitably qualified individuals are available to respond to safety and health incidents and assist the mining industry to maintain world's best practice in safety and health.

Table 3: Positions supporting the activities and functions of the Queensland Mines Inspectorate

Unit	Location	Positions	
		Title	Number
Queensland Mines Inspectorate	Central Region: Rockhampton District	Manager	1
		District Inspector of Mines	1
		Inspector of Mines (Electrical)	2
		Inspector of Mines (Coal)	1
		Inspector of Mines	3
		Principal Investigation Officer	1
		Inspection Officer (Mechanical)	1
		Administration Officer	2
		Administration Officer (part time)	1
	Central Region: Mackay District	District Inspector of Mines	1
		Senior Inspector of Mines (Electrical)	1
		Inspector of Mines (Coal)	1
		Inspector of Mines	4
		Inspector of Mines (Mechanical)	1
		Inspector of Mine (Occupational Hygiene)	1
		Inspector of Mines (Occupational Health)	1
		Principal Investigation Officer	1
		Manager	1
		Senior Inspector of Mines	1
	North Region: Townsville District	District Inspector of Mines	1
		Inspector of Mines (Mechanical)	1
		Inspector of Mines (Geomechanics)	1
		Inspector of Mines (Small Mines Strategy)	1
		Inspector of Mines (Metalliferous)	1
		Senior Principal Occupational Hygienist	1
		Principal Investigation Officer	1
		District Workers' Representative	1
		Operational Support Officer	2
	North Region: Mount Isa District	District Inspector of Mines	1
		Inspector of Mines (Electrical)	1
		Inspector of Mines (Chemical/Metallurgical)	1
		Inspector of Mines (Geotechnical)	1
		Inspector of Mines (Metalliferous)	1
		Inspector of Mines	1
		Inspection Officer (Mechanical)	1
		District Workers' Representative	1
		Administration Officer	1

Table 3: Positions supporting the activities and functions of the Queensland Mines Inspectorate

Unit	Location	Positions	
		Title	Number
	South Region	Regional Inspector of Mines	1
		Inspector of Mines (Electrical)	1
		Inspector of Mines (Mechanical)	1
		Inspector of Mines (Small Mines)	1
		Inspector of Mines	1
		Inspection Officer	2
		Principal Investigation Officer	2
		District Workers' Representative	1
		Administration Officer	1
		Head Office Inspectorate	Chief Inspector of Mines
	Chief Inspector of Coal Mines		1
	Deputy Chief Inspector of Coal Mines		1
	Executive Assistant		1
	Senior Inspector of Mines (Chemical/Metallurgical)		1
	Senior Inspector of Mines (Electrical)		1
	Senior Inspector of Mines (Occupational Hygiene)		1
	Senior Inspector of Mines		1
	Senior Inspector of Mines (Coal)		1
	Principal Occupational Hygienist		1
	Health Surveillance Unit	Head Office	Director Health Surveillance
Senior Statistician			1
Senior Project Officer			1
Occupational Physician (part-time)			1
Administration Officer			1
Administration Officer (Medical Records Officer)			3
Board of Examiners	Head Office	Secretary, Board of Examiners	1
		Administration Officer	1
Directorate	Head Office	Commissioner for Mine Safety and Health	1
		Deputy Director-General Safety and Health	
		Executive Director Statewide Operations	1
		Director Statewide Services	1
		Executive Assistant	1
		Director Policy and Coordination	1
		Principal Finance Officer	1
		Principal Project Manager	1
		Principal Advisor	1
		Project Officer	1
		Senior Project Officer	1
		Principal Project Officer (part-time)	1
		Training Officer	1
		Executive Officer	1
		Levy Manager	1
		Levy Administration Officers	2
		Senior Administration Officer	1
		Finance Officer (part-time)	1
		Lotus Notes Developer	1

Note: The positions listed in this table are restricted to those directly aligned with or who support the functions and activities of the Mines Inspectorate. However, the directorate positions also provide the same support for the Explosives Inspectorate and the Petroleum and Gas Inspectorate.

Appendix 1: Workshops, seminars, conferences, presentations 2014–15

Mines inspectors delivered presentations, workshops and seminars to industry, interstate regulators and other stakeholders on a range of safety and health issues as detailed in Table 4.

Table 4: Presentations given by Mines Inspectorate staff 2014–15

Date	Audience	Topic	Presenter/s	Location
3 July 2014	Mining industry	Small mines workshop	Wayne Scott	Warwick
7 July 2015	Mining industry	Lightning protection working group update	Peter Herbert	Brisbane
8 July 2014	Mining industry	Blueprint workshop	Executive team	Rockhampton
9 July 2014	Electrical trades union safety delegates	Electrical safety in the mining industry	Neville Atkinson	Brisbane
22 July 2014	Mining industry	Blueprint workshop	Executive team	Toowoomba
28 July 2014	Mining industry	Stonedust	Neil Randolph	Crinum Mine
29 July 2014	Mining industry	Stonedust	Neil Randolph	Broadmeadow Mine
30 July 2014	Mining industry	Electrical awareness	Lionel Smith	Canberra
30 July 2014	Mining industry	Blueprint workshop	Executive team	Mount Isa
30 July 2014	Mining industry	Stonedust	Neil Randolph	Crinum Mine
31 July 2014	Mining industry	Stonedust	Neil Randolph	Crinum Mine
4 August 2014	University	History of risk management and mine safety legislation lecture – University of Queensland	Dr Tilman Rasche	Brisbane
5 August 2014	Mining industry	Blueprint workshop	Executive team	Cairns
7–9 August 2014	Electrical industry	Annual electrical safety conference	Lionel Smith	Brisbane
11 August 2014	Mining industry	Electrical awareness	Lionel Smith	Adelaide
11 August 2014	Mining industry	Blueprint workshop	Executive team	Emerald
18–20 August 2014	Mining industry	Queensland Mining Industry Health and Safety Conference	Paul Harrison	Townsville
19 August 2014	Mining industry	Queensland Mining Industry Health and Safety Conference – A simplified, risk-based approach to the control of naturally occurring radioactive materials	Ian Ellison	Townsville
19 August 2014	Mining industry	Queensland Mining Industry Health and Safety Conference – Too close for comfort – the case for proximity detection and vehicle collision avoidance systems	Dr Tilman Rasche	Townsville
19 August 2014	Mining industry	Queensland Mining Industry Health and Safety Conference – Selection of a collision management system utilising MDG2007	Lionel Smith	Townsville
20 August 2014	Mining industry	Queensland Mining Industry Health and Safety Conference - How can we improve the mining industry's capacity to learn?	Julie Devine	Townsville
1 September 2014	University	Proximity detection and collision avoidance lecture – University of Adelaide	Dr Tilman Rasche	Adelaide
1 October 2014	Mining industry	Small mines workshop	Wayne Scott	Brisbane
23 October 2014	Resources industry	3rd annual RISA Conference Debate – A statement of attainment (SoA) proves competence	Trevor Brown	Townsville

Table 4: Presentations given by Mines Inspectorate staff 2014–15

Date	Audience	Topic	Presenter/s	Location
28 October 2014	Mining industry	Electrical awareness	Lionel Smith	Perth
28–31 October 2014	Mining industry	Silica dust awareness	Deon Esterhuizen	Sandstone Mines in Helidon
21 November 2014	Mine Managers Association Australia	Maintaining frictional resistance on mine roads	Cres Bulger	Moranbah
3 December 2014	Mining industry	Small mines workshop	Wayne Scott	Brisbane
5 December 2014	Australian Institute of Occupational Hygienists (AIOH)	Deep underground mines in the tropics: evaluation of heat strain risk	Mark Desira	Melbourne
29 January 2015	Mining industry	Drill and blast	Wayne Scott	Rockhampton
3 February 2015	Mining industry	Drill and blast	Wayne Scott	Townsville
5 February 2015	Mining industry	Drill and blast	Wayne Scott	Cairns
11 February 2015	Mining industry	Electrical awareness	Lionel Smith	Toowoomba
18–19 February 2015	Eastern Australia Ground Control Management Group (EAGCG)	EAGCG meeting and Seismicity seminar	Asok Sur	Tasmania
3 March 2015	Mining industry	Drill and blast	Wayne Scott	Mackay
4–5 March 2015	Mining industry	Legislation and risk	Wayne Scott	Sydney
14 April 2015	Exploration site senior executives	Interaction with the Mines Inspectorate	Lionel Smith	Brisbane
21–22 April 2015	Mining industry	Proximity detection systems – A step towards automation	Peter Herbert	Brisbane
22 April 2015	Small mines and quarry operators	IQA Seminar – Incident investigation presentation – Lock it or lose it!	Jacqui Vinnicombe	Townsville
23 April 2015	Small mines and quarry operators	IQA Seminar – Review of Mines Inspectorate activities	Phil Goode	Cairns
23 April 2015	Small mines and quarry operators	IQA Seminar – Incident investigation presentation – Lock it or lose it!	Jacqui Vinnicombe	Cairns
5 May–1 June 2015	Steel Authority of India	Risk management	Dr Tilman Rashce, Martin Watkinson, Deon Esterhuizen	India
11 May–1 June 2015	Indian mining industry	Management of geotechnical issues in mining	Deon Esterhuizen	India
13–14 May 2015	Mining industry	Stonedust	Neil Randolph	Moranbah North Mine
21 May 2015	Mining industry	Drill and blast	Wayne Scott	Redbank
27 May 2015	Drilling professionals	Graduation ceremony for the students of the Envizioning Drilling Careers community learning program and the Drill Skills FNQ indigenous training program	Jacqui Vinnicombe	Cairns
2–5 June 2015	Mining industry	Stonedust	Neil Randolph	Grasstree Mine
16–17 June 2015	Royal Australian Chemical Institute	HazMat Conference & Exhibition	Damian Lee	Sydney

Appendix 2: Training and professional development 2014–15

The Mines Inspectorate’s role is to ensure acceptable safety and health standards are established and practised within the mining and quarrying industries. As part of this role inspectors carry out audits, investigations and inspections to monitor and enforce compliance. As such, inspectors need to be highly

skilled and have a thorough understanding of the issues facing industry. To this end, inspectors undergo continuing training and development to ensure their skills and knowledge are kept current and relevant. The courses and training programs undertaken by inspectors in 2014–15 are given in Table 5.

Table 5: Courses undertaken by inspectors from the Mines Inspectorate 2014–15

Courses undertaken by mines inspectors in 2014–15

Apply initial first aid
Assessment of seismic hazards in mines
Certificate IV in training and assessment
Code of conduct and ethical decision making
Complaints management
Conduct fire team operations
Coordinate resource allocation and usage
Diploma of surface coal operations management
Drill and blast training
eDocs training
Enter and work in confined spaces
Establish and maintain the risk management system
Establish and maintain an occupational health and safety management system
Exploration drill rig safety awareness
Gas test atmospheres
Geotechnical engineering
Good decision making
Heavy duty off-the-road tyre application
Lead investigator - human factors
Lead investigator - incident cause analysis method
Manage personal work priorities and professional development
Managing fatigue
Occupational hygiene and health
Operate and maintain a four wheel drive vehicle
Perform rescue from a live LV panel
Practical rock mechanics and ground support in mining
Principal investigations officer induction - conducting records of interviews
Principal investigations officer induction – electronic investigations manual
Principal investigations officer induction – evidence handling
Principal investigations officer induction – initial incident response
Principal investigations officer induction – official notebooks
Taking an outcomes-based approach to regulatory reform
Promote compliance with legislation in the public sector
Promote the values and ethos of public service
Provide cardiopulmonary resuscitation
Provide first aid
Provide first aid in remote situations
SharePoint 2010 site managers training
Work health and safety
Work safely at heights

