

# Commissioner for Mine Safety and Health

Queensland Mines Inspectorate

## Annual Performance Report 2012–13



Cover photo: Lauren Forrester checking a sampling line in the Simtars Mobile Mine Gas Laboratory, DNRM.

This publication has been compiled by Stewart Bell, Commissioner for Mine Safety and Health, Department of Natural Resources and Mines.

© State of Queensland, 2013.

The Queensland Government supports and encourages the dissemination and exchange of its information. The copyright in this publication is licensed under a Creative Commons Attribution 3.0 Australia (CC BY) licence.



Under this licence you are free, without having to seek our permission, to use this publication in accordance with the licence terms.

You must keep intact the copyright notice and attribute the State of Queensland as the source of the publication.

For more information on this licence, visit <http://creativecommons.org/licenses/by/3.0/au/deed.en>

The information contained herein is subject to change without notice. The Queensland Government shall not be liable for technical or other errors or omissions contained herein. The reader/user accepts all risks and responsibility for losses, damages, costs and other consequences resulting directly or indirectly from using this information.

September 2013

The Honourable Andrew Cripps MP  
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 annual performance report for the year ending 30 June 2013.

Yours sincerely

A handwritten signature in black ink that reads "Stewart Bell". The signature is written in a cursive, flowing style.

Stewart Bell  
**Commissioner for Mine Safety and Health**

# Contents

Commissioner for Mine Safety and Health	iv
Contents	ii
List of tables	iii
Abbreviations and definitions	iv
Abbreviations	iv
Definitions	iv
Background and context for this report	v
From the Commissioner for Mine Safety and Health	1
Mine safety and health statistics	1
Pike River implementation	2
Emergency response	2
Importance of tripartite role in mine safety and health in Queensland	2
Fatigue guidelines	2
Polymeric chemicals	3
Health Improvement and Awareness Committee	3
New faces in the Queensland Mines Inspectorate	5
The Commissioner for Mine Safety and Health's significant achievements for 2012–13	6
Queensland Mines Inspectorate and staff achievements 2012–13	7
Providing advice to the Minister on mine health and safety matters	10
Mining and coal mining safety and health advisory committee meetings	11
Reviews of the <i>Coal Mining Safety and Health Act 1999</i> and the <i>Mining and Quarrying Safety and Health Act 1999</i>	13
Safety and health regulation	14
Published material	16
Guidance notes	16
Recognised standards	16
Safety alerts	16
Office of the Commissioner for Mine Safety and Health	16
Safety bulletins	16
Serious accidents and high potential incidents	16
Our staff	18
Recruitment and retention activities	18
Looking ahead: the Queensland Mines Inspectorate's strategic priorities	21
Safety and health management systems	21
Management of contractors	21
Commissioner for Mine Safety and Health Annual Performance Report 2012–13	ii

Statutory officials and their obligations	21
Competency of appointed persons	21
Principal hazard management	21
Emergency response and post-incident management	22
Proximity detection	22
Interaction of pedestrians and light vehicles with front end loaders in surface mines and quarries	22
Fitness for work	23
Small Mines Initiative	23
Electrical safety at surface metalliferous mines and quarries	23
Conveyor safety at surface metalliferous mines and quarries	24
Exploration safety guidance	24
Mining face risk reduction in underground metalliferous mines	24
Understanding drill and blast practices at surface metalliferous mines and quarries	25
Managing exposure to diesel engine exhaust in underground metalliferous mines	25
Managing naturally occurring radioactive material during exploration, mining and processing activities	25
Next of kin notification and ongoing briefings	26
Appendix 1: Workshops, seminars, conferences, presentations 2012–13	27
Appendix 2: Training and professional development 2012–13	31

## List of tables

Table 1: Coal Mining Safety and Health Advisory Committee meetings and key achievements for 2012–13	11
Table 2: Mining Safety and Health Advisory Committee meetings and achievements for 2012–13	12
Table 3: Safety and health statistics 2011–12 to 2012–13	14
Table 4: Positions supporting the activities and functions of the Queensland Mines Inspectorate	18
Table 5: Presentations given by Queensland Mines Inspectorate staff 2012–13	27
Table 6: Courses undertaken by inspectors from the Queensland Mines Inspectorate 2012–13	31

# Abbreviations and definitions

## Abbreviations

<b>CFMEU</b>	Construction, Forestry, Mining and Energy Union
<b>CWP</b>	coal workers' pneumoconiosis
<b>DPM</b>	diesel particulate matter
<b>HIAC</b>	Health Improvement and Awareness Committee
<b>IARC</b>	International Agency for Research on Cancer
<b>IQA</b>	Institute of Quarrying Australia
<b>LTIFR</b>	lost time injury frequency rate
<b>NORM</b>	naturally occurring radioactive material
<b>QGN</b>	Queensland guidance note
<b>QMI</b>	Queensland Mines Inspectorate
<b>QPS</b>	Queensland Police Service
<b>QRC</b>	Queensland Resources Council
<b>RCS</b>	respiratory crystalline silica
<b>RIS</b>	regulatory impact statement
<b>SHMS</b>	safety and health management system
<b>Simtars</b>	Safety in Mines Testing and Research Station
<b>SSE</b>	site senior executive
<b>SSHR</b>	site safety health representative

## Definitions

**Coal mines:** mines subject to the *Coal Mining Safety and Health Act 1999* and associated regulation.

**Disabling injury:** a work-related injury or disease resulting in a worker being unable to fully perform their regular job. Alternative duties are performed.

**Duration rate:** the average time (days) lost and the time (days) on alternative duties for each lost time injury or disabling injury. Time lost includes time lost for an incident to date.

**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 or disease 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 or disease per million hours worked; abbreviated as LTIFR

**Lost time and disabling injury frequency rate:** the number of lost time injuries or diseases and disabling injuries per million hours worked.

**Metalliferous mines:** mines subject to the *Mining and Quarrying Safety and Health Act 1999* and associated regulation.

**Quarries:** excavations of hard rock for use in construction (operations covered by the *Mining and Quarrying Safety and Health Act 1999* and associated regulation).

**Queensland Mines Inspectorate:** a regulatory unit within Mine Safety and Health, Department of Natural Resources and Mines.

**Severity rate:** the time (days) lost and time (days) on alternative duties per million hours worked.



## Background and context for this report

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 are to:

- advise the Minister for Natural Resources and Mines of 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 (QMI) administers 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 QMI is well resourced, competent and dedicated to the regulation of the mining and quarrying industries. The remuneration base provides attraction, retention and qualification incentives approved by the Office of the Public Service Commissioner. This remuneration structure has maintained a stable staffing environment with low staff turnover. QMI has continued to successfully recruit staff to key roles over the past 12 months as vacancies have arisen.

The QMI's activities for 2012–13 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 annual reports:

- Board of Examiners Annual Report
- Coal Mining Safety and Health Advisory Committee Annual Report
- Department of Natural Resources and Mines Annual Report 2012–13
- Queensland Mines and Quarries Safety Performance and Health Report 2011–12.

Copies of these reports can be obtained from the DNRM website [www.dnrm.qld.gov.au](http://www.dnrm.qld.gov.au)





## From the Commissioner for Mine Safety and Health



The Queensland mining industry has experienced reduced growth in 2012–13 due to a number of factors. However, it appears that mine safety and health data have improved over the reporting period, which gives me confidence that the QMI is working well with industry and the mining unions to ensure that miners do get home safe and healthy to their families every day.

This year has been particularly eventful for me with my retirement from the department on 25 January 2013 and my subsequent return on 22 April 2013 as part-time Commissioner for Mine Safety and Health until 31 March 2014. I would like to take this opportunity to thank Paul Harrison, Acting Deputy Director-General, Mine Safety and Health for fulfilling this role most capably from appointment on 26 January 2013 to 22 April 2013. There was also a successful contribution from Gavin Taylor, Chief Inspector of Coal Mines who was appointed to the role of Commissioner from 20 February 2013 until 9 March 2013 while Paul Harrison was away on business.

One of the key messages from our work with industry, unions and mine workers is the need to remain vigilant about safety despite further improvements in the industry's performance over the past 12 months.

The key areas on which we have focused in 2012–13 are summarised below.

### Mine safety and health statistics

Unfortunately there were two fatalities during 2012–13; both of these occurred at surface metalliferous mines. In one case a worker was struck by a loader and in the other a piece of equipment being carried by a crane fell and struck a worker. I would like to extend my condolences to the family and friends of these workers.

However, we should also recognise that surface coal mines have remained fatality-free for two years and underground coal mines for six years. This does not mean we can lower our vigilance: on the contrary, our first and foremost thoughts and practices should always centre on having the safest and healthiest workplaces possible. The protection of workers from the hazards associated with the mining industry is always paramount.

Encouragingly there have been significant improvements in the underground metalliferous and quarry sectors and a reduction in lost time injuries and disabling injuries across the board. For example, the data tell us the number of lost time injuries and disabling injuries experienced by workers fell from 1182 in 2011–12 to 947 in 2012–13; at the same time the severity rate for these injuries dropped from 302 per million hours to 222 over the 12 months. The only notable increase is the lost time injury frequency rate (LTIFR) for surface coal mines which increased from 3.1 to 3.5. Across all sectors, the LTIFR actually fell from four injuries/diseases per million hours worked to 3.5 per million hours worked over the same period.

There has also been an increase in the reporting of high potential incidents (HPI) by industry operators: up from 2390 reported in 2011–12 to 2406 during 2012–13. High potential incidents are events in which worker safety could potentially have been placed at risk; it does not necessarily mean any person was injured as a result. The continued increase in reporting of HPIs is a positive sign because reporting enables the QMI and the industry to learn from these incidents and make improvements to prevent injuries and fatalities.

## Pike River implementation

The final report of the Pike River Royal Commission was handed down in October 2012 and matters of relevance to the Queensland underground coal mining industry are being examined by the QMI to ensure that potential safety issues are addressed. These areas include blast panels on main fans, variable speed drives on electrical equipment and next of kin notification processes. Terrestrial robots were used at Pike River to explore the mine but they were singularly unsuccessful.

I have been heavily involved in the dissemination of the Pike River learnings at seminars and conferences across Australia to ensure that the valuable lessons gained from this mine disaster are passed on to Australian miners. I have found through my discussions with the mining industry representatives at these events that the lessons relating to the application of risk assessment techniques to mining hazards are of particular interest to them. Minimising risk should be about the implementation of appropriate and verifiable controls, rather than trying to get from the red to the green zone of a five-by-five matrix.

Post-incident management and emergency response systems will continue to be a major focus of the QMI's compliance and inspection audits to ensure we make the most of the lessons learned from the Pike River disaster.

## Emergency response

As any underground coal miner knows, one of the biggest safety threats to an underground coal mine is spontaneous combustion, or 'spon com': the spontaneous self-heating of coal as it reacts with oxygen in the air.

If left unchecked, spon com can trigger a methane explosion. Such events have been the cause of many mining disasters and loss of life throughout centuries of coal mining.

Reemphasising my earlier statement about the importance of emergency response systems, Simtars state-of-the-art emergency response mobile mine gas laboratory was called upon to attend a 'spon com' emergency at the Carborough Downs underground coal mine. The services of the mobile laboratory were required at the mine from 8 June 2012 to 29 October 2012 to assist mine management to bring the situation under control.


## Importance of tripartite role in mine safety and health in Queensland

To achieve the objectives of the coal mining safety legislation we need to work together in true tripartite fashion to enable all mine workers to return home safely to their families each and every day. Industrial matters that have no legitimate bearing on or role in mine safety should be put aside for other arenas. I encourage all sides of the industry to focus on mine safety and not allow industrial disputation matters to detract from our primary focus of safety and health in mining operations. Mine safety and health must not become a casualty of deteriorating relationships in the Queensland mining industry.

Priority issues addressed and outcomes achieved over the past 12 months through tripartite and collaborative engagement are highlighted below.

### Fatigue guidelines

The *Guidance Note for Fatigue Risk Management* (QGN16) was published in February 2013 with the approval of the Coal Mining Safety and Health Advisory Committee and the Mining



Safety and Health Advisory Committee. Being a contentious subject, this document was subject to considerable tripartite debate and subsequently took some time to finalise. This document assists mine sites in developing and implementing a plan to systematically manage fatigue risks in the workplace and will be periodically reviewed and updated.

### **Polymeric chemicals**

The QMI is examining possible mechanisms to control the use of polymeric chemicals such as polyurethanes used in strata control to ensure that worker exposure to these chemicals is minimised. Consultation with the mining industry on this issue has commenced through the relevant advisory committees.

### **Health Improvement and Awareness Committee**

The Health Improvement and Awareness Committee (HIAC) continues to update the mining industry on the key issues addressed from each meeting via the site senior executives (SSEs) and health contacts. There is now formal liaison between the Safety and Health Advisory Committees and the HIAC chair. HIAC continues to promote the role of an evidence-based approach to the health hazards in mining at industry forums.

The HIAC met three times during the year: on 6 December 2012, 6 March 2013 and 13 June 2013. At the December meeting the committee proposed mining health priorities for 2013 to 2015 using qualitative risk prioritisation, with participation from the Petroleum and Gas Inspectorate and the QMI. The HIAC priorities for the Queensland mining and petroleum and gas industries for 2013–15 are listed below.

### **Noise**


Noise is a physical hazard that affects mineworkers in all mining sectors in Queensland (underground coal and metalliferous, surface coal and metalliferous, quarries and exploration). The department continues to receive a very high number of notifications of permanent disability each year due to noise-induced hearing loss. Some key areas in mining and quarrying where excess noise exposure occurs are listed below:

- use of handheld power tools, including grinders, compressed air, and pneumatic tools, particularly in a confined space
- work with or near compressors
- work with or near mobile plant and fixed plant
- garnet or water blasting
- drilling, particularly when not in an enclosed cabin
- underground equipment and ancillary plant such as fans

### **Airborne dust**

Airborne dust is generated by many activities in mining and quarrying. The most prevalent dust exposure for mine workers in the quarrying and metal mining sectors is respirable crystalline silica (RCS), as well as exposure to toxic heavy metal dusts such as lead, cadmium and arsenic in some operations.

Coal mine workers may be exposed to airborne dust while undertaking exploration, mining and processing activities. The health effects associated with exposure to respirable coal dust are well documented. These include coal workers' pneumoconiosis (CWP), bronchitis and emphysema. The most notable of these is CWP which is caused by cumulative exposure to respirable coal dust. The potential also exists for coal mine workers to be exposed to RCS that may be present in the coal matrix (typically less than 3%) and in more significant quantities in the strata that surrounds the coal seam.



Significant work by the department has included a number of dust surveys and analysis of exposure, as well as monitoring being undertaken for RCS exposure in a number of Queensland quarries. The results of this assessment work will help mine management utilise new technology and better work practices to reduce respirable dust exposure.

### ***Mental health***

The March and June 2013 HIAC meetings included presentations and discussions with speakers with background and experience in mental health or psychosocial risk management. The goal of these meetings was to assist with identifying and clarifying the role of the HIAC in coordinating mental health information for the mining industry.

### ***Health effects of shiftwork***

Research in other industries has shown that long-term exposure to shift work can have health effects such as cardiovascular, gastrointestinal and endocrine disorders such as insulin resistance and diabetes, and more recently a link to possible occupational cancers through very long-term exposure. The department is monitoring the research and providing information to the HIAC.

### ***Musculoskeletal disorders***

Musculoskeletal disorders as a whole (including soft tissue injuries, nerve or neurological conditions such as carpal tunnel syndrome, degenerative conditions of the joints and spine, and sprains/strains) form the majority of the lost time injuries reported to the department. A number of initiatives between the department ergonomist and the mining sector have been undertaken, and HIAC has recently formed relationships with QComp and Workcover Queensland to promote good practice.

### ***Ultraviolet /solar radiation***

Ultraviolet/solar radiation exposure in mining is a concern for mine workers operating in outdoor environments. Leading expert in skin cancer and melanoma, Professor Adèle Green, Deputy Director, the Queensland Institute of Medical Research, presented to the HIAC, along with other speakers from industry. The department previously published *Safety Bulletin 93 Sunlight and other ultraviolet radiation risk management* and continues to monitor the research and effective risk management of ultraviolet/solar radiation.

### ***Diesel particulate matter***

Diesel particulate matter (DPM) exposure has been a known health hazard in underground mining for years.

Significant work on underground coal includes a DPM working group of the Coal Mining Safety and Health Advisory Committee that meets regularly. Importantly, they have drafted a code of practice for the management of diesel engine exhaust in underground environments and published *Safety Bulletin 127 Shift adjustment of the guideline limit for diesel particulate matter* which recommends exposure limits for DPM (24 December 2012).

In light of the June 2012 decision by the International Agency for Research on Cancer (IARC) to declare DPM an actual human carcinogen, the department is also preparing a guidance note for the management of DPM in underground mining.

## New faces in the Queensland Mines Inspectorate

Gavin Taylor retired from his role as the Chief Inspector of Coal Mines in June 2013.

Gavin was in this role for five years and had been instrumental in setting the high standards that resulted in Queensland having one of the best mine safety records in the world. Gavin is a man of integrity, which was plain to all of us who worked with him during his tenure as Chief Inspector of Coal Mines. Getting every miner home safe and healthy was Gavin's core belief and mantra, and it is one that the new Chief Inspector of Coal Mines will echo.

I welcome Andrew Clough as the new Chief Inspector of Coal Mines.

Andrew commenced in the mining industry in the Illawarra in 1980 as a miner while studying a bachelor of mining engineering part time at Wollongong University. He progressed through a number of operational positions before commencing a masters degree in mining geomechanics at the University of New South Wales.

Following his masters degree, Andrew worked as a geotechnical consultant before joining the underground metalliferous mining industry. He was underground manager for the Ashanti Goldfields Operations in West Africa, held the position of mine manager for the Mount Lyell Copper Mine in Tasmania, and the Enterprise Deep copper mine and George Fisher lead-zinc mine at Mount Isa. He also gained an MBA through Deakin University.

Andrew also has previous experience as a regulator because he joined the QMI in 2003 as the District Inspector of Mines based in Mackay. After two years, Andrew returned to coal mine operations as the production manager at Crinum Mine. He holds Queensland first class mine managers certificates for underground coal and underground metals.

In 2012–13, the QMI welcomed other new inspectors with them a wide range of experience and expertise including uranium mining, open-cut coal mining, ventilation engineering, mechanical engineering and occupational hygiene.



**Image 1: (Left) Gavin Taylor, former Chief Inspector of Coal Mines**



**Image 2: (Right) Andrew Clough, Chief Inspector of Coal Mines**

## The Commissioner for Mine Safety and Health's significant achievements for 2012–13

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:
  - Emergency Management in Mines, Perth
  - Queensland Mining Industry Health and Safety Conference 2012, Townsville
  - Resources Registered Training Organisation Association Conference, Yeppoon
  - Queensland Mines Rescue Service—GAG seminar, Mackay
  - Australian Institute of Occupational Hygienists' 30th Annual Conference, Adelaide
  - Queensland Drug Seminar, Brisbane

(refer to Appendix 1 for a full list of the Commissioner' Bell's presentations)

- made a number of mine and quarry visits including Collinsville, Commodore Mine, Moranbah and Mount Morgan
- consulted with stakeholders throughout the year on a wide range of issues and QMI activities
- conducted six Level 4 compliance meetings with mining and petroleum companies
- issued a safety alert on occupational noise
- conducted numerous radio interviews and provided media statements to raise awareness in the community about the safety and health issues facing the mining industry
- helped draft the report from the Royal Commission on the Pike River Coal Mine tragedy
- shared information and discussed knowledge exchange opportunities regarding Queensland's mine safety laws, safety performance and regulatory activities with delegations from Ghana, China, Laos and India.

Commissioner Bell chaired a range of expert advisory meetings including those listed below:

- one Coal Mining Safety and Health Advisory Committee meeting (Chief Inspector of Coal Mines chaired in the Commissioner's absence)
- three Mining Safety and Health Advisory Committee meetings (Acting Chief Inspector of Mines chaired in the Commissioner's absence)
- three Technical Advisory Committee Queensland Mines Rescue meetings
- the 2012 Queensland Mining Industry Health and Safety Conference
- the planning and execution of the Miners Memorial Day Service held on 19 September 2012 at Redbank and the planning committee for a permanent Queensland Miners Memorial site at Redbank. A Queensland artist was engaged to design and create the monument. Site preparations and detailed planning for the construction of the memorial were progressed. Planning for the 2013 Miners' Memorial Day Service in Townsville has been completed.

Commissioner Bell attended miners memorial services in Ipswich, Redbank and Collinsville.

## Queensland Mines Inspectorate and staff achievements 2012–13

The significant achievements for QMI and its inspectors during 2012–13 are listed below.

### Conducting audits, inspections and compliance meetings:

- conducted 33 audits and 1588 inspections of mine sites throughout Queensland totalling 1938 staff days
- conducted 173 investigations of mine accidents and incidents throughout Queensland totalling 1273 inspectorate days
- issued 265 directives and 1089 substandard condition or practice notices to mines conducted two Level 4 and 10 Level 3 compliance meetings with mining companies
- published eight safety alerts, eight safety bulletins, one guidance note and updated one recognised standard.

### Participating in various committees and workshops:

- Queensland mining industry Health Improvement and Awareness Committee (HIAC) which met on 6 December 2012, 6 March 2013 and 13 June 2013. This committee develops health hazard advice and control information that is published on the DNRM website and distributed via established channels and relationships with key stakeholders.
- Diesel Particulate Matter Steering Committee met on 29 August 2012, 12 November 2012 and 13 March 2013
- National Mine Safety Framework meetings including the Non-Core Legislative Working Group, the Non-Core Regulators Group and the National (Mine Safety) Regulators' Forum.
- attendance at the Queensland Mine Electrical Safety Association Inc. Committee meetings. The purpose of the committee is to identify electrical safety problems within the



**Image 3: John Kabel, Senior Inspector of Mines**

- mining industry and, by consultation, make recommendations with a view to improving safety and productivity.
- various workshops associated with the Australian Coal Association Research Program (ACARP) project RISKGATE (workshop topics included isolation and interfaces)
- QMI convened and chaired the State Emergency Exercise Management Committee, which comprised QMI, Simtars, Construction, Forestry, Mining and Energy Union (CFMEU), Minerals Industry Safety and Health Centre and a range of mining company personnel. QMI involvement included participation in the planning and execution of the Queensland Level 1 mine emergency exercise at Oaky North coal mine on 7 October 2012.

### Participating and presenting at conferences:

- Queensland Mining Industry Health and Safety Conference 'A new era in health and safety', with the Queensland Resources Council (QRC) and mining unions from 19-22 August 2012, co-hosting role
- 54th Conference of Chief Inspectors of Mines

in Port Moresby, Papua New Guinea from 13–19 September 2012, Chief Inspector of Mines in attendance

- Eighth Annual Quarrying and Small Mines Safety and Health Seminar, 'Challenging our ways', in Townsville on 23 April 2013
- 11th Annual Quarrying Safety and Health Seminar at the Brisbane Convention and Exhibition Centre on 12 June 2013, assisted with organisation

Refer to Appendix 1 for the list of presentations.

#### **Contributing to reviews and development of various Australian Standards:**

- *Recommencement of Uranium Mining in Queensland: A Best Practice Framework*, published by the Uranium Mining Implementation Committee in March 2013, authored chapter on safety and health
- AS3007 Electrical installations— Surface mines and associated processing plant
- AS/NZS 3785.6 Guides and Rubbing Ropes for Conveyances
- AS 4024 series of standards AS 4024.3610— Conveyors, General Requirements, AS 4024.3611 Belt conveyors for bulk materials handling, travelling trippers and shuttle conveyors and 4024.15— Mobile and transportable conveyors
- AS/NZS4240.3—Remote control systems for mining equipment – Part 3: Operation and maintenance for underground coal mining
- AS/NZS 4730.3—Winder Brakes
- AS/NZS 4730.4—Winder Drum Assemblies
- AS/NZS 4730.5—Winder Control Systems


#### **Working together with inspectors from other jurisdictions:**

- participated in an audit of the Waihi Gold mine in New Zealand alongside New Zealand inspectors in November 2012
- former Chief Inspector for Coal Mines and the New South Wales Chief Inspector of Mines met with representatives of every coal mining company to highlight a possible risk to main ventilation fans in the event of an underground explosion as a result of the Pike River investigation findings
- attended various meetings with the New South Wales Mines Inspectorate and the Mining Equipment Personnel Interaction Advisory Group in New South Wales to develop a mining design guideline titled Guideline for the selection and implementation of collision management systems for mining
- developed a New South Wales version of the Queensland electrical awareness seminar in conjunction with the New South Wales Mines Inspectorate
- worked with New South Wales and South Australian mines inspectorates to develop a gemstone miners code of practice and guidance booklets based on the New South Wales opal mining safety guidelines and the South Australian *Safety in opal mining: Opal miner's guide*, with updates, additions and editing to take into account Queensland sapphire mining practices
- Worked with New South Wales and Northern Territory mines inspectorates to standardise a regulatory approach to occupational health and safety issues around handling naturally occurring radioactive materials (NORM).

#### **Working together with other agencies:**

- participated in the Interagency Asbestos Group (IAG).  
The group represents government agencies that have a regulatory responsibility or could have responsibilities to manage and respond to an asbestos incident. The lead agency for the group is the Department of Justice and Attorney-General, Workplace Health and Safety Queensland. DNRM is a member of the group and has responsibilities as the lead response agency for asbestos incidents at mines, abandoned mines and quarries. The key achievements of the IAG include developing the Statewide Strategic Plan for Safe





Management of Asbestos in Queensland 2013–2018 and the Memorandum of Understanding—Multiagency Asbestos Incident Response 2013.

- the QMI in collaboration with the Queensland Police Service (QPS) State Drug Investigation Unit ran a series of seminars throughout key mining communities. The theme for the seminar series ‘Don’t undermine your workmates’ safety’ focused on contemporary drug-related issues relevant to the health and safety of mine workers. The seminars were conducted in each of the regional mining centres and consisted of a number of presentations by officers of the QPS State Drug Investigation Unit with a panel discussion at the end of each seminar involving the presenters, inspectors and a relevant union representative. The seminars were designed to provide stakeholders with an awareness of traditional, as well as new and emerging drugs that are currently available and distributed through the illicit drug industry in mining communities and to mineworkers. Discussion also focused on the drugs effect on individuals and the indicative signs and symptoms of an individual that is affected by drugs. Nearly 500 people attended the seven seminars held in 2012–13.
- 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 2 for training undertaken in 2012–13



## 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 Minister for Natural Resources and Mines, the Honourable Andrew Cripps MP and/or his ministerial staff. The Commissioner kept the Minister 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<sup>1</sup>

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

Union and industry representatives and the QMI are represented on both committees. The Coal Mining Safety and Health Advisory Committee includes members from the CFMEU, Electrical Trades Union, the QRC and QMI. The Mining Safety and Health Advisory Committee is comprised of the Australian Workers' Union, Australian Manufacturing Workers' Union, the QRC, Queensland quarrying industry representatives and the QMI.

In 2012–13 both committees made significant contributions to improving the safety standard at all mines and quarries which are detailed in tables 1 and 2.

**Table 1: Coal Mining Safety and Health Advisory Committee meetings and key achievements for 2012–13**

Meeting number	Date
56	26 September 2012
57	27 November 2012
58	27 March 2013
59	26 June 2013
<b>Achievements</b>	
<b>QGN 16:</b> The Committee participated in the review and approval of the QGN 16 Fatigue Risk Management to address recommendations from the Wilson, McKenzie and Brown Coronial Inquest. The committee chair will write to industry six months after publication, seeking views on whether it is working, whether changes are needed, and how it is being used.	
<b>Fatigue-related competencies:</b> The committee is investigating competency based fatigue training for the mining industry.	
<b>Recognised new competencies:</b> The committee recognised seven new competencies required for diesel engine systems maintenance for underground coal mines and two brake testing competencies for all coal mines, which will become mandatory on 1 January 2014.	
<b>Reviewing competencies:</b> The committee expressed concerns about the provision of the S1, S2 and S3 coal mining competency units (covering risk management, safety and health investigations and communications) and will look at the outcome of a review of the adequacy of these units with a view to further action.	
<b>Guidance note on place change mining:</b> the committee agreed to and has commenced drafting a guidance note on the place change mining method for underground coal mines, by a tripartite subcommittee.	
<b>Emergency seals:</b> the committee decided to convene an out-of-session, tripartite working group to review emergency seals in underground coal mines.	

<sup>1</sup> The Coal Mining Safety and Health Advisory Committee and the Mining Safety and Health Advisory Committee submit two separate annual reports to the Minister.

**Table 2: Mining Safety and Health Advisory Committee meetings and achievements for 2012–13**

Meeting number	Date
35	27 September 2012
36	6 December 2012
37	21 March 2013
38	27 June 2013
<b>Achievements</b>	
<b>QGN 16:</b> The committee participated in the review and approval of the QGN 16 Fatigue Risk Management to address recommendations from the Wilson, McKenzie and Brown Coronial Inquest.	
<b>Development of new guidance notes:</b> the committee reviewed current epidemiological trends and industry hazard knowledge and approved the development of guidance notes for diesel engine exhaust management and noise management	
<b>Review of NORM management practices:</b> the committee approved development of guidelines for the management of NORM management in exploration, mining and processing.	
<b>Pike River Coronial Inquest review:</b> the committee approved development of a guidance note for next of kin notification.	
<b>Review of synthetic drugs issues:</b> the committee reviewed trends and issues associated with increased synthetic drug use provided by the QPS; and the suitability of regulatory framework and industry practice regarding the control of improper use of drugs.	
<b>Supervisor qualifications and competencies review:</b> the committee commenced gathering industry best practice as part of the supervisor competency review process.	



## **Reviews of the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999***

The national mine safety 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.

One of the strategies under the mine safety reforms is to develop a nationally consistent legislative framework; the consultation regulatory impact statement (RIS) will detail the impact and nature of the changes proposed.

The major mining states of Queensland, New South Wales and Western Australia have collaborated to achieve a higher level of consistency. Queensland participated on the basis that there would be no weakening of its current high standards. Other states and territories, with less significant and less complex mining industries, chose to regulate mine safety under their general work health and safety legislation.

Queensland is retaining most of its current mine safety legislation unchanged. The changes proposed are intended to achieve greater consistency with New South Wales and Western Australia with respect to:

- practising certificates for statutory safety positions;
- explosion suppression for underground coal mines;
- notification of high-risk activities to the regulator;
- improved contractor management;
- streamlining the elections of site safety representatives; and
- industry concerns about drugs, alcohol and fatigue in the workplace.

The consultation RIS contains discussion about a confidential complaints system for reporting safety issues as recommended by the Queensland Ombudsman.

The consultation RIS supports these amendments with minimal associated costs that are offset by safety and health benefits.

Many of the proposed amendments would still be progressed irrespective of the national process, because they address some of the strategic priorities of the QMI, based upon current concerns, and add further rigour to the existing safety framework.

The feedback received through the consultation RIS will be analysed and included in the decision RIS and, following a formal assessment by the Office of Best Practice Regulation, submitted for consideration by the Queensland Government.

## Safety and health regulation

The QMI collects accident and incident data from Queensland mines and quarries that are subject to the provisions of the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*. This information allows QMI and industry to assess and benchmark safety and health performance. The data also informs QMI of:

- legislative changes needed to reduce accident and incident rates; and
- areas of concern that need to be targeted, highlighted and assessed.

A measure of an open and efficient safety and health management system and an empowered workforce is the number of high-potential incidents reported. The QMI encourages reporting of high-potential incidents because this allows the industry and the QMI to learn from these incidents and work to prevent injuries and fatalities.

More detailed and comprehensive data on safety performances are published in the annual *Queensland Mines and Quarries Safety Performance and Health Report*, [www.dnrm.qld.gov](http://www.dnrm.qld.gov). and follow the prompts.

**Table 3: Safety and health statistics 2011–12 to 2012–13**

### All sectors<sup>#</sup>

Outcomes	2011–12	2012–13
Lost time injuries and disabling injuries	1182	947
High potential incidents	2390	2406
Fatal injuries	1	2
Lost time injury frequency rate	4.0	3.5
Lost time injury and disabling injury frequency rate	10.0	8.2
Lost time injury and disabling injury severity rate	302	222
Lost time injury and disabling injury duration rate	30.1	27.2

### Coal mines<sup>#</sup>

Outcomes	Underground		Surface*	
	2011–12	2012–13	2011–12	2012-13
Lost time injuries and disabling injuries	314	247	556	478
High potential incidents	398	428	1380	1397
Fatal injuries	0	0	0	0
Lost time injury frequency rate	7.1	5.7	3.1	3.5
Lost time injury and disabling injury frequency rate	18.1	13.5	8.7	7.9
Lost time injury and disabling injury severity rate	472	337	290	217
Lost time injury and disabling injury duration rate	26	24.9	33.4	27.4

### Metalliferous mines<sup>#</sup>

Outcomes	Underground		Surface*	
	2011–12	2012–13	2011–12	2012–13
Lost time injuries and disabling injuries	142	88	134	121
High potential incidents	216	240	302	270
Fatal injuries	0	0	0	2
Lost time injury frequency rate	3.5	1.2	3.7	3.0
Lost time injury and disabling injury frequency rate	10.0	5.9	6.7	6.0
Lost time injury and disabling injury severity rate	310	201	172	161
Lost time injury and disabling injury duration rate	31	34.2	25.8	26.8

### Quarries<sup>#</sup>

Outcomes	2011-12	2012-13
Lost time injuries and disabling injuries	36	13
High potential incidents	94	71
Fatal injuries	1	0
Lost time injury frequency rate	11.8	5.7
Lost time injury and disabling injury frequency rate	16.3	6.1
Lost time injury and disabling injury severity rate	437	108
Lost time injury and disabling injury duration rate	26.8	17.6

\* Exploration statistics have been included in the surface numbers for coal and metalliferous mines

# The data is derived from the QMI's lost time accident database and information, including survey responses supplied by mining and quarrying operators throughout Queensland.

Some data have been summarised or consolidated to present a standardised format.

**Note:** The figures reported in this document are collected from mine sites on an ongoing basis. The figures are not finalised until the following year. For this reason there may be variation in the figures reported for 2011–12.

Although the department makes every effort to verify supplied data, it accepts no responsibility for data that was incorrect when supplied. The data may not be fully representative of the industry or any component of it.

## Published material

### Guidance notes

QGN 16 Guidance note for fatigue risk management. 8 February 2013. *Coal Mining Safety and Health Act 1999, Mining and Quarrying Safety and Health Act 1999*.  
<http://mines.industry.qld.gov.au/safety-and-health/guidance-notes.htm>

### Recognised standards

Recognised Standard 11 Training in coal mines. July 2012 *Coal Mining Safety and Health Act 1999*  
<http://mines.industry.qld.gov.au/safety-and-health/standards-policies-directives-letters.htm>

### Safety alerts

Safety Alert 292 Rear dump truck collision and fatigue. 14 August 2012  
Safety Alert 293 Failure to implement controls: blast exclusion zone. 12 September 2012  
Safety Alert 294 Fatality involving front end loader. 12 September 2012  
Safety Alert 295 Heavy rigid truck runaways on the increase. 16 October 2012  
Safety Alert 296 Aerosol propellant ignition. 21 November 2012  
Safety Alert 297 Unplanned movement of material in ROM hopper. 3 December 2012  
Safety Alert 298 Explosion in an industrial vacuum truck. 31 January 2013  
Safety Alert 299 Load falls from crane hook causing fatal head injury. 19 June 2013  
<http://mines.industry.qld.gov.au/safety-and-health/mines-safety-alerts.htm>

### Office of the Commissioner for Mine Safety and Health

Safety Alert 4 Occupational noise. 29 August 2012  
<http://mines.industry.qld.gov.au/safety-and-health/mines-safety-alerts.htm>

### Safety bulletins

Safety Bulletin 120 Exposure to toxic gases associated with spontaneous combustion at surface coal mines. 20 September 2012  
Safety Bulletin 122 Drowning hazards at mines. 1 November 2012  
Safety Bulletin 126 Storm season is coming – be prepared. 1 November 2012  
Safety Bulletin 127 Shift adjustment of the guideline limit for diesel particulate matter. 24 December 2012  
Safety Bulletin 130 Distraction and inattention due to using mobile devices. 14 January 2013  
Safety Bulletin 131 Fatigue failure of drill mast bolts. 3 June 2013  
Safety Bulletin 132 Xanthates in mining. 27 March 2013  
Safety Bulletin 133 Preventing serious hand injuries. 3 May 2013  
<http://mines.industry.qld.gov.au/safety-and-health/mines-safety-bulletins.htm>

### Serious accidents and high potential incidents

Serious accidents and high potential incidents – Mining and Quarrying Compilation of reports for July 2012



Serious accidents and high potential incidents – Mining and Quarrying Compilation of reports for August 2012

Serious accidents and high potential incidents – Mining and Quarrying Compilation of reports for September 2012

Serious accidents and high potential incidents – Mining and Quarrying Compilation of reports for October 2012

Serious accidents and high potential incidents – Mining and Quarrying Compilation of reports for November 2012

Serious accidents and high potential incidents – Mining and Quarrying Compilation of reports for December 2012

<http://mines.industry.qld.gov.au/safety-and-health/accident-incident-reports.htm>



**Image 4: Lionel Smith, Inspector of Mines**

## Our staff

### Recruitment and retention activities

All coal mine inspectors (mining) are required to hold statutory certificates of competency. As such, the department has continued to recruit people, including from interstate and overseas, with relevant experience and who will be able to obtain Queensland statutory certification in a short period of time. In this way, we will ensure the correct level of competence and numeric strength to continue regulatory inspection at a high level, particularly with respect to underground coal mines.

We, as the mine safety and health regulator, are working diligently to ensure sufficient suitably qualified individuals will continue to be available, so that the mining industry can maintain sustainable growth within the regulatory requirements to maintain world's best practice with respect to safety and health in the mining industry.

**Table 4: Positions supporting the activities and functions of the Queensland Mines Inspectorate**

Unit	Location	Positions	
		Title	Number
Queensland Mines Inspectorate	Central Region: Rockhampton District	Manager, Safety and Health	1
		District Inspector of Mines	1
		Inspector of Mines (Electrical)	2
		Inspector of Mines	5
		Principal Investigation Officer	1
		Inspection Officer (Mechanical)	1
		Administration Officer	1
		Administration Officer (part time)	2
	Central Region: Mackay District	District Inspector of Mines	1
		Senior Inspector of Mines (Electrical)	1
		Inspector of Mines (Coal)	2
		Inspector of Mines	1
		Inspector of Mines (Mechanical)	1
		Inspector of Mines (Mining)	1
		Senior Inspector of Mines	1
		Inspector of Mines, Occupational Health (Senior Principal Ergonomist/Principal Human Factors Adviser)	1
		Principal Investigation Officer	1
	Administration Officer	2	
	North Region: Townsville District	Manager Safety and Health	1
		Senior Inspector of Mines	1
		District Inspector of Mines	1
		Inspector of Mines (Mechanical)	3
		Inspector of Mines (Small Mines)	1
		Inspector of Mines (Metalliferous)	1
		Senior Principal Occupational Hygienist	1
		Principal Investigation Officer	1
		District Workers' Representative	1
Administration Officer	1		

Unit	Location	Positions		
		Title	Number	
	North Region: Mount Isa District	District Inspector of Mines	1	
		District Workers' Representative	1	
		Inspector of Mines (Electrical)	1	
		Inspector of Mines (Chem/Metallurgical)	1	
		Inspector of Mines (Geomechanical)	1	
		Inspector of Mines (Metalliferous)	1	
		Inspector of Mines	1	
		Inspection Officer (Mechanical)	1	
		Administration Officer	2	
	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	2	
			Administration Officer	1
	Head Office Inspectorate	Chief Inspector of Mines	1	
		Chief Inspector of Coal Mines	1	
		Deputy Inspector of Mines	1	
		Executive Assistant	1	
		Senior Inspector of Mines (Chemical/Metallurgical)	1	
		Senior Inspector of Mines (Electrical)	1	
		Senior Inspector of Mines	2	
Senior Inspector of Mines (Coal)		1		
Health Surveillance Unit	Head Office	Director Health Surveillance	1	
		Senior Statistician	1	
		Senior Project Officer	1	
		Occupational Physician (part-time)	1	
		Senior Occupational Health Advisor	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	1	
		Executive Director Statewide Operations	1	
		Director Policy and Coordination	1	
		Principal Project Manager	1	
		Principal Advisor	1	
		Principal Project Officer	1	
		Training Officer	1	
		Executive Officer	1	
		Levy Manager	1	
		Levy Administration Officers	2	
		Senior Administration Officer	1	

Unit	Location	Positions	
		Title	Number
		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 QMI. However, it should be noted that the directorate positions also provide the same support for the Explosives Inspectorate and the Petroleum and Gas Inspectorate.



## Looking ahead: the Queensland Mines Inspectorate's strategic priorities

### Safety and health management systems

An emerging issue is the ongoing management of safety and health management systems (SHMS). Many of the original documents in mine site systems are past their review date or no longer reflect operational changes. This situation is exacerbated by poor document control and often a lack of ownership in the system.

The QMI, with a number of senior safety professionals and industry safety and health representatives, has commenced discussions on how to simplify the SHMSs while remaining effective for those conducting the task. This will be a major focus for the QMI.

The QMI considers that the over-complexity of SHMSs within metalliferous mines and quarries has two causes: operators failing to adequately audit the effectiveness of the SHMSs; and corporately developed SHMSs being imposed on site senior executives (SSE). The QMI intends to review SHMS audits and audit programs undertaken by operators of metalliferous mines and quarries to identify whether this is occurring and to take appropriate corrective action.

### Management of contractors

Although the number of contractors dropped in 2012–13, the effective management of contractors remains a continuing concern. The QMI will audit and inspect contractor management systems and induction programs.

### Statutory officials and their obligations


The level of commitment to, and understanding of, the legislation by some statutory officials causes the QMI concern. In 2011–12, two explosion risk zone controllers were successfully prosecuted. Despite this, in recent cases, statutory officials have not safely discharged their obligations. The QMI will monitor this situation closely and take action against statutory officials not meeting their obligations.

### Competency of appointed persons

The QMI will be auditing people appointed to the management structure at coal mines and also the competencies that must be held by a supervisor. A number of people appointed to senior positions do not, in the inspectorate's opinion, have the competencies to effectively manage the risks associated with hazards on mine sites.

### Principal hazard management

The management of principal hazards at mine sites will become a major focus for the QMI. These are hazards that have the potential to cause multiple fatalities, including incidents relating to the management of methane underground and the management of geotechnical risks in surface operations.



The QMI must prioritise its resources to support activities that control these hazards. The QMI will use education, auditing and inspections, and compliance actions as required, to encourage a better standard in the management of principal hazards.

## **Emergency response and post-incident management**

The Pike River mine disaster in New Zealand provided an opportunity for the QMI to review the emergency response systems and post-incident management capability of Queensland mines.

The QMI is working with industry to improve incident management planning and mine infrastructure design that will assist in bringing a major event under control. This initiative is supported by industry workshops and presentations.

The annual level 1 emergency exercise is also used as a test of current practices at Queensland underground coal mines. The improvement opportunities identified in the level 1 emergency exercise are made available to industry and agencies that work with the department to respond in an emergency situation.

## **Proximity detection**

The QMI continues to investigate and encourage the use of collision-avoidance equipment, incorporating proximity-detection and warning systems. These systems are designed to reduce the risk of mine vehicles colliding with moving or stationary objects. Their use will prevent harm to people and damage to property. The QMI is also monitoring promising emerging innovations in these systems and is assessing their suitability for mining operations.

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

Front end loaders killed pedestrians in three incidents at surface metalliferous mines and quarries in 2004, 2006 and 2012. The QMI believes that the speed and manoeuvrability of front end loaders coupled with the loader operator's limited visibility from the cab make these vehicles hazardous to any pedestrian or light vehicle that are in the vicinity.

Consequently, during the first quarter of 2013–14 the QMI will be issuing a safety bulletin which will make recommendations to reduce the risk. These include designation and delineation of front end loader operating areas, with a mandatory requirement for the loader to cease operations whenever a pedestrian or light vehicle enters and remains within these areas. The use of proximity-detection and collision avoidance technology will also be recommended.

During the second and third quarters of 2013–14 all surface metalliferous mines and quarries will be inspected to review the responses to the recommendations.



## Fitness for work

The effectiveness of the Fatigue Risk Management Guidance Note (QGN16) will be reviewed and assessed in consultation with industry in 2013–14. The issue of fatigue will continue to be monitored.

Over the period April to June 2013 QMI conducted a fitness for work management of drugs survey under the title of "Drug monitoring and control programs on coal mines". The response was 93% from 57 operating coal mines (including coal mines under construction) in Queensland. The collated report is scheduled for completion in September 2013.

## Small Mines Initiative

The Small Mines Initiative continues to be a strategic priority for the QMI. Most existing small mines and quarries in the State participated in the small mines safety and health management system training. Follow-up audits and inspections of these small operations indicate that the SSEs require further training and support to implement their systems effectively.

Support is needed for risk management practices (particularly those associated with ground control, traffic management and maintenance activities), contractor management, supervision, training and competency assessment. Training material has been developed and workshops will be arranged during 2013–14 to meet this need.

Many new small quarries are being established to satisfy the demand for quarry products for regional councils' flood reconstruction programs. Their SSEs will be encouraged to attend these workshops.


The QMI will continue to run workshops on an as-needs basis to train gem and opal miners to develop a basic safety and health management system with a focus on the fundamentals of risk management. These workshops will be supplemented by a code of practice on gem and opal mining. The QMI is developing the code in conjunction with industry representatives and the New South Wales Mines Inspectorate and industry representatives based on the New South Wales opal mining safety guidelines and the South Australian *Safety in opal mining: Opal miner's guide*. The code will take into account Queensland sapphire mining practices.

## Electrical safety at surface metalliferous mines and quarries

There was a low level of awareness and understanding of electrical hazards in small mines and quarries so since the beginning of 2012, the QMI developed and delivered electrical safety awareness workshops for SSEs and supervisors. A modified version of these workshops will be presented as toolbox talks to workers at mines and quarries during 2013–14.

In conjunction with the Institute of Quarrying Australia (IQA), and assisted by representatives from small mines and quarries, the material from these workshops has been transformed into a practical guide, *Working safely with electricity field book* (in press).

Many of the electricians employed as contractors at small mines and quarries have a domestic electrical background, rather than an industrial electrical background. The QMI intends, again with assistance from the IQA and industry representatives, to develop a more



comprehensive handbook for electricians and electrical supervisors during 2013–14, with the intention of publishing in 2014–15.

## **Conveyor safety at surface metalliferous mines and quarries**

Despite the fatality in June last year where a young worker was killed when he became entangled in a conveyor, the QMI continues to see during its audits and inspections of operating conveyors that drums and idlers are not effectively guarded. More often than not, ineffective guarding is due to damaged and/or removed components that have not been repaired or replaced or guards that have been removed during maintenance and have not been replaced when a conveyor is restarted after the maintenance is complete.

Many SSEs, supervisors and workers do not understand what needs to be guarded on conveyors and why it needs to be guarded. Most mines or quarries fail to address the entanglement hazard associated with working around conveyors in either induction or operator training. SSEs, supervisors and mine workers need to ensure they are taking appropriate safety precautions in relation to operating conveyors as recommended in Safety Alert 291 issued following an investigation by the QMI into the 2012 fatality.

To assist in raising awareness about conveyor safety, the QMI in conjunction with the IQA and industry representatives are developing a conveyor safety field guide which will be published by the end of 2014. The guide will include a strategy to effectively disseminate the information to workers.

## **Exploration safety guidance**

Expansion in coal and metalliferous exploration activities across the State prompted a review of the *Minerals Exploration Safety Guidance Note*, last updated in 2004. The review is being conducted by a small team of QMI officers and experienced exploration industry representatives. A workshop on legislative requirements and general safety at exploration sites (August 2012) identified additional information to be included in the guidance note. After publication in 2013–14, the review team will present the new document to the industry in a series of workshops.

## **Mining face risk reduction in underground metalliferous mines**

Over the last 20 years, due to improvements and changes in ground support practices in underground metalliferous mines, there has been an overall decrease in rockfall incidents. However rockfall incidents continue to occur at the development mining face, where mining crews interact closely with the exposed unsupported rock face. Consequently a specific project to reduce the risks of working at the mining face was undertaken in 2012–13. This involved two workshops with representatives from industry, including mine managers and superintendents, supervisors and miners in November 2012. The workshops focused on managing the risks of rockfalls at the mining face and unplanned detonation of misfires in the mining face.

The information gathered at the two workshops has been collated and converted into a guidance note, the final draft of which is currently being circulated to the workshop participants for comment prior to publication in the second quarter of 2013–14.





## **Understanding drill and blast practices at surface metalliferous mines and quarries**

With an increasing trend for surface metalliferous mines and quarries to outsource their drill and blast activities to contractors in the form of 'rock on ground contracts', there is a tendency for site management to disconnect themselves from the day to day involvement and oversight of these activities and their associated hazards, especially the generation of flyrock. This is also removing the opportunity for the next generation of mine/quarry manager/supervisor from gaining the hands on experience and understanding they would have received in the past.

To counteract this development the QMI, in conjunction with the Queensland Explosives Inspectorate, is proposing to develop a one day drill and blast awareness training course for SSEs and supervisors where the hazards and risk controls for safe drilling and blasting activities will be presented and discussed. This will be similar to the slope stability training course that the QMI developed and periodically runs in conjunction with the IQA.

## **Managing exposure to diesel engine exhaust in underground metalliferous mines**

In November 2012, following the June 2012 declaration by the IARC that diesel engine exhaust is an actual carcinogen in humans, a presentation on diesel exhaust emissions was made to representatives of both safety and health advisory committees by University of Wollongong Associate Professor Brian Davies. Subsequently the Mining and Quarrying Safety and Health Advisory Committee supported the development of a guidance note for management of diesel engine exhaust in metalliferous mines. Following a review by committee members it is anticipated that this document will be published before the end of 2013 with an appropriate roll-out strategy and subsequent auditing of the management of diesel engine exhaust during the second quarter of 2014.

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


Following the announcement by the Queensland Government in October 2012 to recommence uranium mining in Queensland, a detailed review and report was prepared and released on 18 March 2013 by the independent Uranium Mining Implementation Committee (UMIC).

The report findings and recommendations cover a wide range of issues examined on the key elements of a best practice framework for uranium mining and export to be considered by government including a chapter prepared by the QMI on uranium mining safety and health.

The government has considered the UMIC report and prepared an action plan detailing how the policy framework will be delivered. The action plan includes a considered response to each recommendation as well as timelines for implementation activities.

One of the recommendations from the chapter on safety and health was for the QMI to update its safety guidelines for the uranium industry by drafting three documents based on the Australian Radiation Protection and Nuclear Safety Agency code of practice on exploration, uranium mining, and uranium milling and ore processing operations.

The Mining and Quarrying Safety and Health Advisory Committee supported the development of these guidance notes. A draft guidance note dealing with managing NORM



on exploration sites, based on the current guidance note QGN12, was circulated to committee members for review and comment. This document is planned to be published before the end of 2013 followed by an appropriate roll-out strategy and subsequent auditing of the management of NORM on exploration sites during the second quarter of 2014.

A draft memorandum of understanding was developed between the QMI and Queensland Health to formalise a collaborative approach to efficient inspection and monitoring of radiation on mines in Queensland, especially where operations may involve purposeful or accidental mining of uranium-containing ore bodies.

### **Next of kin notification and ongoing briefings**

Recommendations from coronial inquests about next of kin notifications was progressed with the QPS at a workshop organised by the QMI in November 2012. Attendees at the workshop included representatives from QMI, QPS, Queensland Fire and Rescue Service, industry and unions.

The output from the workshop has been a draft guidance note which has been circulated to the Mining and Quarrying Safety and Health Advisory Committee members for review and comment and will also be provided to the members of the Coal Mining Safety and Health Advisory Committee for their input at their September 2013 meeting. It is anticipated that the document will be published in the third quarter of 2013–14.

## Appendix 1: Workshops, seminars, conferences, presentations 2012–13

Inspectors from the QMI travelled across the Queensland and interstate to deliver presentations, workshops and seminars to share information about the QMI's work with industry, interstate regulators and others interested in improving safety and health in the mining industry.

**Table 5: Presentations given by Queensland Mines Inspectorate staff 2012–13**

Date	Audience	Topic	Presenter/s	Location
3 July 2012	Mine ventilation officers	Certificate of competency for ventilation officers	John Sleight	Brisbane
4 July 2012	Mine ventilation officers	The reality behind the standards in mine ventilation legislation and practice	John Sleight	Brisbane
4–6 July 2012	Mining Electrical Safety Conference	Electrical statistics report	Lionel Smith	Brisbane
11 July 2012	Opal and gemstone miners from Winton and surrounding areas	Opals and gemstone SHMS presentations	Phil Casey Steve Firth	Winton
19–22 August 2012	Queensland Mining Industry Health and Safety Conference	A legislation journey	Rob O'Sullivan	Townsville
19–22 August 2012	Queensland Mining Industry Health and Safety Conference	Mine disaster: the role of the Royal Commission	Stewart Bell	Townsville
19–22 August 2012	Queensland Mining Industry Health and Safety Conference	Where does health fit in fatigue risk management?	Trudy Tilbury	Townsville
19–22 August 2012	Queensland Mining Industry Health and Safety Conference	The case for quantitative risk analysis in the mining industry	Tilman Rasche	Townsville
30 August 2012	Exploration operator/SSE information session	Legislative requirements and general safety at exploration sites	Ken Singer Theo Kahl Lionel Smith	Brisbane
11 September 2012	Newcrest Electrical Engineers	Electrical engineering in mining	Lionel Smith	Brisbane

Date	Audience	Topic	Presenter/s	Location
17–19 September 2012	Underground coal operations	Proximity detection systems - mandating fitment to promote a collision free environment in Queensland's underground mines	Peter Herbert	Brisbane
17–19 September 2012	Underground coal operations	Streamlining compliance requirements across states and enhancing Australian mining's reputation through practical consistency: progress towards the national mine safety framework	John Sleigh	Brisbane
24 September 2012	Parsons Brinkerhoff staff	Mine electrical safety and compliance	Lionel Smith	Brisbane
18 October 2012	Registered training organisations	Issues relating to harmonisation	Stewart Bell	Yeppoon
31 October 2012	Downer EDI contractors	Obligations under Section 39 of the <i>Coal Mining Safety and Health Act 1999</i>	Keith Brennan	Goonyella Riverside
15 November 2012	Surface Ventilation Fan meeting	Possible fan damage following an underground explosion (Pike River investigation)	John Smith/Gavin Taylor	SIMTARS
19 November 2012	Mine managers, OH&S managers, unions, QFRA & QPS officers	Next of kin notification and recovery workshop	Ken Singer	Brisbane
20 and 22 November 2012	Mine managers, supervisors, superintendent & workers	Safe work at the face in underground metalliferous mines workshops	Phil Casey, Katie Ormonde	Townsville and Mount Isa
5 December 2012	Western Australia Electrical Safety in the Resources Sector Conference	Impact of changes in Queensland mines as a result of the WHS changes	Lionel Smith	Perth
17 December 2012	Condamine electricians	Obligations and responsibilities of electrical workers on a mine site	Lionel Smith	Dalby
4, 5 & 15 April 2013	Wilkie Creek mineworkers	Workers' obligations	Lionel Smith	Wilkie Creek Coal Mine
8 February 2013	Small Mines industry group	Small mines refresher training	Wayne Scott	Townsville
15 March 2013	4 <sup>th</sup> Collision Avoidance Forum	Integrating RISKGATE into collision awareness – prevention through regulation, guidance notes and codes of practice	Lionel Smith	Brisbane

Date	Audience	Topic	Presenter/s	Location
8 April 2013	8 <sup>th</sup> Annual Quarrying and Small Mines Seminar	The philosophy and future direction of the Mines Inspectorate	Phil Goode	Townsville
28–29 May 2013	7 <sup>th</sup> Annual Mine Rescue and Emergency Management Conference	Recommendations and findings from the Pike River Royal Commission	Stewart Bell	Brisbane
28–29 May 2013	7 <sup>th</sup> Annual Mine Rescue and Emergency Management Conference	Lessons learned from Queensland's 15 underground coal mine annual emergency exercises	John Sleigh	Brisbane
28–29 May 2013	7 <sup>th</sup> Annual Mine Rescue and Emergency Management Conference	Managing risks through effective risk assessments and controls	John Sleigh	Brisbane
6 June 2013	Underground SSHR Conference	Interaction between SSHRs and inspectors	Keith Brennan and Tim Watson	Mackay
12 June 2013	11 <sup>th</sup> Annual Quarrying Safety and Health Seminar	The philosophy and future direction of the Mines Inspectorate	Phil Goode	Brisbane
13 June 2013	Inspectors and various industry personnel	Design of high voltage electric drive trucks	Lionel Smith	Brisbane
18 June 2013	Surface SSHR Conference	Interaction between SSHRs and inspectors	Andrew Clough	Mackay
20 June 2013	Surface SSHR conference	Interaction between SSHRs and inspectors	John Sleigh and Keith Brennan	Mackay
25 June 2013	Evolution Mining Mine Managers and OHS Managers	Review of Queensland mining safety performance and future direction of the Mines Inspectorate	Phil Goode	Brisbane
27 June 2013	Mining Electrical Safety Association	Mining and safety – Queensland statistics	Lionel Smith	Brisbane
27 June 2013	Mining Electrical Safety Association	Opening address	Paul Harrison	Brisbane
Various dates	Mining industry workers, managers, supervisors, inspectors, IQA	Electrical awareness	Lionel Smith	10 locations across the state region and in Sydney

Date	Audience	Topic	Presenter/s	Location
Various dates	Uranium mining companies and the New South Wales & Northern Territory Mines Inspectorates Working Group on Handling Naturally Occurring Radioactive Materials in Mining	Development of National Code of Practice and Guidance on Handling Naturally Occurring Radioactive Materials in exploration activities	Dr Ian Ellison	Brisbane / Fremantle
Various dates	National Technical Advisory Group on Gemstone Mining	Development of National Gemstone Mining Code of Practice and Guidance	Dr Ian Ellison	Brisbane/ Dubbo

## Appendix 2: Training and professional development 2012–13

As a regulator, the QMI's role is to ensure acceptable safety and health standards are established and practised within the mining and quarrying industries and to enforce compliance. The QMI relies on its inspectors to carry out audits, investigations and inspections to monitor and enforce compliance. As such, the inspectors need to be highly skilled and to have a thorough understanding of issues facing the industry. To this end, the QMI requires its inspectors to undergo comprehensive training to ensure their skills and knowledge are current and relevant. The courses and training programs undertaken by inspectors in 2012–13 are given in the table below.

**Table 6: Courses undertaken by inspectors from the Queensland Mines Inspectorate 2012–13**

Courses undertaken by mines inspectors in 2012–13	
Advanced spontaneous combustion	Low voltage rescue resuscitation
Apply first-aid	Manage conflict
Basic and advanced shock investigations	Mines Inspector SavOx and compressed air breathing apparatus: Underground Kestrel South
Certificate IV training and assessment	Notebooks/Interviews/exhibit handling
Code of Conduct and ethical decision making (QG)	Official notebooks
Establish and maintain the OHS management system	Outburst training
Establishing effective workplace relationships	Operate vehicles in the field
First 5 Minutes Training on fire & evacuation	Practical electrical wiring standards
Global minerals industry risk management	Practical power system protection
Graduate Diploma mine ventilation	Report writing skills
Hazmat Conference	Self escape: session 1
Human factors workshop	Theory and practice of radiation safety in mining and processing of uranium, mineral sands, and rare earth ores, and handling of NORM
Incident lead investigator training program	Using complex workplace communication strategies
Lead auditor OHS management systems	Underground coal mines electrical equipment hazardous areas training
Supervise and carry out complex inspections and monitoring	Working at heights training
Evaluate workplace legislative compliance	Investigate possible breaches of workplace legislation



**Call: 13 QGOV (13 74 68)**

**Visit: [www.dnrm.qld.gov.au](http://www.dnrm.qld.gov.au)**

