

16 November 2016

Mrs Jo-Anne Miller MP  
Chair Coal Workers' Pneumoconiosis Select Committee  
Parliament House  
George Street  
BRISBANE QLD 4000

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Dear Mrs Miller

The Queensland Resources Council (QRC) welcomes the inquiry of the Coal Workers' Pneumoconiosis (CWP) Select Committee into "the re-emergence of CWP amongst coal mine workers in Queensland".

The Queensland coal mining industry was shocked when cases of CWP began to be identified among the State's coal mine workers in 2015. That shock has been made worse with the revelation that the long-standing respiratory screening process within the Coal Mine Workers' Health Scheme had become dysfunctional. While controlling respirable dust levels is the most important factor in preventing coal mine dust lung disease, industry had placed enormous faith in the scheme, believing it was demonstrating that dust control measures were highly successful.

Companies engaged in the Queensland coal industry regards the health and safety of their workers as their highest priority, and the re-identification of CWP as the number one health issue facing industry at this time. To assist our members in addressing this matter the QRC has proactively and positively engaged with coal mine workers, their unions and the Department of Natural Resources and Mines, and wishes to do the same with the CWP Select Committee. It is in this spirit that the QRC makes its submission to the Committee.

The QRC believes that none of the tripartite participants involved in ensuring safety and health in Queensland coal mines realised the extent of the issues that led to the re-identification of CWP. The QRC believes that the situation resulted from a process of "risk normalisation" around the coal mine dust hazard, stemming from the inherent delay in disease expression and

the fact that there were no reports of CWP for many years. This established a precondition for a “drift to failure” in the Health Scheme, where a number of weaknesses together added up to make the scheme ineffective.

The QRC submission to the inquiry sets out the factors that industry believes contributed to the normalisation of risk and the drift to failure. While a number of these issues had been the subject of previous reviews their cumulative effect went unrecognised and there is not one single person or organisation that is to blame for this issue. Employers, along with the department and its inspectors and the unions all have a shared responsibility.

QRC has been advised by member companies that they have also been summoned to provide information directly to the inquiry. For that reason, the QRC submission does not provide any details on current mine-specific dust control and hazard reduction measures, but rather provides for broader industry input into the inquiry and the policy issues it is seeking to address.

The QRC submission also sets out what appears to have been known about the CWP risk prior to the disease being re-identified last year, and describes some industry initiatives to address the risk of dust exposure.

The submission also explains industry’s desire to ensure that coal mine workers who have contracted CWP receive fair compensation, and to ensure that retired workers who are worried about the disease have access to testing at no cost to themselves. While industry accepts that employers should fund this, they believe it is more efficient to do so through the workers’ compensation scheme; they do not believe there is a need to establish a new system of compensation. As explained in the submission, the QRC has written to the Minister for Employment and Industrial Relations recommending the establishment of a taskforce to investigate potential gaps in the scheme and report by end March 2017.

It is important to understand what allowed the occurrence of a disease that everyone believed had been eradicated in Australia, primarily to ensure that it never happens again. Industry fully supports the important role of the CWP Select Committee in achieving this goal, and officers from the QRC would be happy to assist the Committee in any way that is needed.

If you have any further questions in regard to the submission, or other measures being taken by industry, please contact Ms. Judy Bertram of the QRC on 07 3316 2508.

Yours sincerely

**Michael Roche**  
**Chief Executive**

# QRC Submission

## Select Committee Inquiry into Coal Workers' Pneumoconiosis

16 November 2016

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## Executive summary

The Queensland Resources Council (QRC) welcomes the opportunity to provide a submission to the Coal Workers' Pneumoconiosis (CWP) Select Committee. QRC's membership includes all the major producers and many of the contractors involved in the Queensland coal mining industry.

Part 1 of the submission outlines industry initiatives to address the risk of coal mine dust lung disease and to improve the safety net for miners who have, or may have, CWP. Part 2 deals with the question as to whether the arrangements to eliminate and prevent CWP had become ineffective. Part 3 provides comments on the the recommendations of the review of the respiratory component of the Coal Mine Workers' Health Scheme (the Monash/UIC Review) and the fifth interim report of the Senate Select Committee on Health. The submission does not deal with specific measures for the control and monitoring of dust at particular mine sites, as that information will be provided by coal mine operators who make individual submissions and/or appear before the Committee.

The Queensland coal industry regards the health and safety of coal mine workers as a core value, and the industry prides itself on ensuring the highest standards of health and safety. Industry has therefore proactively and positively engaged with coal mine workers, their unions, the Department of Natural Resources and Mines and health experts in addressing the re-identification of CWP.

Coal mine operators were represented on the Reference Group assisting the Monash/UIC Review and fully co-operated with the Senate Select Committee on Health's CWP inquiry. On 12 July 2016 senior executives of the major coal producing companies wrote jointly to the Minister for Natural Resources and Mines the Honourable Anthony Lynham MP confirming industry's commitment to providing Queensland coal mine workers with a safe workplace by transitioning to an improved Health Scheme, and to working with the Minister, his department and medical experts to address CWP.

As a first step in reviewing and improving coal mine dust control the QRC has conducted a workshop in Moranbah on 19 October 2016, so that operators could collaborate and share their learnings about successful practices for dust management. The workshop allowed coal mine operators to share good practice controls, innovations or activities that have been put in place at mines to protect workers from being exposed to harmful levels of respirable dust.

The QRC has also met with coal mine workers who have been diagnosed with CWP. Both at that meeting, and in the evidence given to the ongoing Inquiry, those workers have raised concerns about the difficulty in accessing workers' compensation experienced by some workers who have CWP. The first concern involves cases of CWP where there is little or no impairment to work but there is likely to be a negative impact on future earning capacity through excluding the worker from working where there is a risk of dust exposure. The second concern relates to retired workers who need ready and affordable access to screening tests such as X-rays, CT scans and reviews by respiratory specialists to determine whether they have the disease.

The QRC believes that coal mine workers who have contracted CWP should receive assistance and compensation in a timely fashion, and that coal employers should fund this through the workers' compensation scheme. The QRC has therefore written to the Minister for Employment and Industrial Relations requesting the urgent establishment of a multi-stakeholder taskforce to consider whether amendments to the workers' compensation scheme are necessary to plug any gaps in the scheme that result from the long latency that is associated with CWP.

The QRC does not believe that there is a need to establish a new process and a new fund to allow these things to happen – doing so would be overly bureaucratic and inefficient by unnecessarily duplicating processes and systems that are already in place.

In regard to the re-identification of CWP, the QRC submits that it is important to acknowledge that there is not one person, organisation or group responsible for this issue. Employers, along with the department and its inspectors, the health sector and the unions all have a shared responsibility.

The QRC submits that the situation resulted from a process of “risk normalisation” in regard to coal mine dust (which stemmed from the inherent delay in disease expression coupled with the fact there were no reports of the disease for many years) and a resulting “drift to failure” of the Health Scheme. While dust control is the most important factor in preventing CWP, industry had placed enormous faith in the long-standing respiratory screening process, believing that it was demonstrating that dust control measures were highly successful.

Prior to 2015 it was widely accepted by coal mine workers, managers, operators and regulators that Australia had effectively eradicated CWP, and that the Australian coal mining industry had much lower rates of all types of pneumoconioses than other seemingly comparable coal mining jurisdictions. This preconditioned everyone in the industry to under-estimate the extent of the potential risk that respirable coal mine dust still posed.

The QRC and the coal mining companies it represents were genuinely surprised by the revelation that there were numerous systematic and operational failings in the Health Scheme. While the QRC has over recent years raised a number of concerns about health assessment and related issues within the coal mining industry, employers had no idea of the nature or extent of the problems with the respiratory screening program.

The QRC believes that none of the other tripartite participants with a role in ensuring safety and health in the coal mining industry realised the extent of the issue either. The QRC submits that the factors that contributed to the normalisation of the risk and the drift to failure included the following.

#### *Lack of reports of any CWP cases*

It is impossible for the QRC to speculate with certainty as to whether there were unreported cases of CWP occurring in the thirty plus years since the Rathus and Abrahams report was released in 1984 (or at least since the Annual Report of the Queensland Coal Board in 1996 which discussed 8 cases of unspecified respiratory disease). There also remains the unresolved question about the potential for previously unknown workers compensation claims that were made before the disease had been formally re-identified in 2015; the Office of Industrial Relations is currently investigating that matter for the Inquiry. There is however no knowledge of such cases within the current group of coal mine operators, and it appears that there were no formal reports to the mines inspectorate of the disease in that period.

#### *Limited focus on CWP as a health issue*

There have been limited references to the risk of CWP in Australia in the safety literature, reflecting the widespread mistaken belief that it was no longer a significant issue. In regards to specific information that was distributed to coal mine operators, Mines Safety Bulletin no. 88 of 23 February 2010 dealt with the management of dust that contains crystalline silica, but there was no particular or detailed information on CWP in the Australian context until Mines Safety Bulletin



no. 151 on preventing dust-related lung diseases was released on 30 October 2015. By that time three cases of CWP had been confirmed.

#### *Lack of adaptability in the Health Scheme*

The scheme was unable to adapt and change as a result of the decision of the Supreme Court in the case of *Edwards v North Goonyella Coal Mines Pty Ltd* (QSC 2005). This ruling restricted the ability for a doctor to seek additional expert opinion on any potential health issues faced by a worker, and it precluded any attempts by the medical professionals to improve the scheme without specific amendment to the regulations. Requesting additional testing was open to legal challenge, and there was strong opposition to any change to the regulation to rectify that situation.

Not ensuring the ongoing availability of the most robust medical assessment methodology was not conducive to maintaining an effective health screening process.

#### *The need to maintain privacy*

While it is a basic and inviolate tenet of any health screening process that individuals' privacy must be protected, it is also inevitable that privacy concerns can affect the free dissemination of information about the occurrence of a disease. Thus privacy can also be a contributing factor to the lack of availability of clear information and warnings, and thus is likely to have contributed to the normalisation of risk and the drift to failure.

Privacy requirements are likely to continue to restrict the distribution of information about specific cases; it is worth noting that their effect can be seen in the most recent cases of CWP. Industry has still not been given a comprehensive synopsis of the 16 confirmed cases or any analysis of the factors that might have contributed to disease presentation.

#### *Lack of reporting to the ILO Standard*

Up until 2001 the assessment form for the Health Scheme included a field to record the ILO Classification of a worker's chest X-ray interpretation. The Monash/UIC Review identified not reporting to the ILO Classification as a major failure in the scheme. It is apparent that the detection of early stage simple CWP is not straightforward, and the application of the Classification through the comparison of a coal mine worker's screening X-ray with standard radiographs provides a strict protocol that improves the chance of detection.

Industry also notes however that the new process of "dual reading" to the ILO Classification appears to be resulting in a significant number of false positives. It appears that high resolution CT scanning has become necessary for certainty of diagnosis.

#### *The relationship of the Health Scheme with fitness for work*

The inter-relationship of the Health Scheme with fitness for work issues was identified by DNRM as a significant issue back in 2013, and a plan to rectify this situation was, and still is, supported by the QRC. That this is also a factor that contributed to the Health Scheme's drift to failure was recognised in the Monash/UIC Review, with the reviewers stating:

"After discussion with stakeholders and reviewing the relevant documentation, it is clear that the focus of the respiratory component of the scheme is on fitness for work rather than the detection and management of early CMDLD."

It is essential that the recommendation of the review to separate health monitoring and fitness for work is delivered fully. Fitness for work should be the concern of the employer, not the

regulator, and the Health Scheme should be focused on the detection and management of occupational disease.

#### *The information backlog*

One of the clearest signs of a drift to failure in the Health Scheme was the fact that by the end of 2015/early 2016 there were around 170,000 coal mine workers' health assessments awaiting entry into the database. It shows both the lower priority that the scheme was being given, as well as the resulting lack of resources and oversight that were being applied to it.

#### *Lack of effective surveillance*

The Monash/UIC Review identified that failing to ensure that the data from the respiratory component of the Health Scheme was used for group health surveillance to monitor trends in CMDLD was a significant deficiency. While the availability of health surveillance reports would not of itself have prevented the reappearance of CWP, it is now apparent that the lack of any such reporting was another indication that the Health Scheme had drifted to failure.

#### *Missed opportunities*

Part 2 of this submission also identifies that many of the issues raised in the Monash/UIC Review had been identified previously, and there were proposals for some of them to be addressed. A number of problems with the Health Scheme were discussed in a Regulatory Impact Statement that was released by DNRM in 2013; however no changes were made, despite support from industry to do so. While it may be instructional for the Committee to understand why these issues were not progressed, the QRC still does not think that blame should be placed on any one party. The overall processes for reviewing and revising the safety and health management arrangements in Queensland coal mines is a tripartite one, and it is clear that none of the three parties knew the system had become so dysfunctional that cases of CWP were going undetected.

It is a fundamental part of any review and oversight process that not every issue raised will be dealt with. Efforts are generally greatest where the most need is apparent. The fact remains that there were no clear signals that respiratory disease was not being adequately addressed – if there was, these issues would have been given the highest priority. It is the nature of risk normalisation for people not to realise the extent of the risk involved, and it is the nature of a drift to failure for people not to appreciate the extent of the danger presented by the combined effect of a number of known problems within a system.

#### **Looking forward**

Part 3 of this submission addresses the recommendations of the Monash/UIC Review and the Senate Select Committee on Health, which have already identified a number of ways to address the re-identification of CWP. While the QRC will seek ongoing engagement in the development of amendments to the Health Scheme and any other regulatory amendments that are required, initial comments are provided on the recommendations to inform the CWP Select Committee's consideration of these, as they are required to do under the terms of reference for their inquiry.

Mine sites must continue to work cooperatively with the inspectorate and their work-force to ensure that statutory dust limits are met, and that worker exposure to respirable coal mine dust is as low as reasonably achievable. As part of this, the QRC supports an evidence-based review of Australian dust exposure limits being undertaken by SafeWork Australia. The QRC has long advocated the adoption of uniform best practice safety requirements across mining jurisdictions, and a review of the Australian Standard is in line with this. However, we also need to ensure that



the application of the standard is similar across jurisdictions – doing so would be consistent with establishing a best practice approach.

The QRC believes that workers who have contracted CWP should receive support and fair compensation in a timely fashion, and coal employers should fund this through the workers' compensation scheme. There is evidence that there might be gaps in the current scheme that need to be addressed. To achieve this the QRC has requested that a taskforce be established and report to the Minister for Employment and Industrial Relations by end March 2017.

The QRC believes that the CWP Select Committee can play an important role in ensuring there is a proper systematic review undertaken to gain whatever knowledge can be drawn from the recent confirmed cases of CWP. Industry has not been given comprehensive details around the work history and diagnostic process of the disease in the sixteen confirmed cases, noting that there are a small number of cases with an apparently atypical history of exposure to coal mine dust.

All parts of the industry need to work together to use the recommendations of the Monash/UIC Review as the basis to build an improved and sustainable respiratory Health Scheme. While we need to be careful about building overly bureaucratic systems that are unsustainable, the screening process needs to be auditable to ensure effectiveness is maintained. DNRM should present an implementation plan for the recommendations and progress against it should be reported on a regular basis through bulletins to the major stakeholders.

There is a need to disentangle the issue of screening for occupational disease from fitness for work. That is a central recommendation of the Monash/UIC Review, and it is consistent with the long-standing position of the QRC. There is also a need to improve the overall feedback of important health information to the mine site, with appropriate privacy protections, so that any health issues can be effectively managed on site.

There is a need to minimise the potential for both false positive and false negative respiratory assessments. The development of a pathway to diagnose CWP within the Coal Mine Workers' Health Scheme is essential for this to be achieved. Follow-up investigation and referral is required if the screening program is to be fully effective, however doing so may be inconsistent with Supreme Court ruling QSC 05-242 without regulation amendment. The QRC believes such amendments should be broad enough to cover all aspects of the Health Scheme and not be restricted to a narrow range of specified respiratory health investigations. The QRC believes that the doctors administering the Health Scheme should not be unreasonably fettered in the clinical examinations that can be undertaken to ensure the health and safety of coal mine workers.

Industry must share information about best practice dust control across all stakeholder groups; we should never stop seeking to innovate, and innovation can come from any sector. The coal mining industry is at the forefront of innovative techniques that will continue to minimise exposure to dust, such as the application of technology to enable workers to operate remotely. The QRC supports the use of the existing advisory committee process to coordinate this information sharing and innovation seeking process. A priority for the Advisory Committee should be to facilitate the introduction of real time dust monitoring in Queensland coal mines.

Finally, industry is open to hearing ideas about what more can be done to ensure worker health and safety. The QRC and the companies it represents, hope that the Coal Workers' Pneumoconiosis Select Committee inquiry reveals further positive mechanisms that can be put in place to protect the workers who play a crucial role in Queensland's economic wellbeing.

## Background

The Queensland Resources Council (QRC) welcomes this opportunity to provide a submission to the Coal Workers' Pneumoconiosis (CWP) Select Committee, which was established by the Parliament on 15 September 2016 to conduct an inquiry and report on "the re-emergence of CWP amongst coal mine workers in Queensland".

The QRC is the peak representative organisation of the Queensland minerals and energy sector. The QRC's membership encompasses minerals and energy exploration, production and processing companies and associated service companies. The QRC works on behalf of its members to ensure Queensland's resources are developed profitably and competitively, in a socially and environmentally sustainable way.

The effective management of the CWP risk is of direct importance to the operations of a number of QRC member companies, including the major coal mine operators, contractors and other service companies that are associated with the Queensland coal mining industry. These member companies regard the health and safety of their workers as a core value, and they are keen to assist the Government and the Department of Natural Resources and Mines (DNRM) to ensure that no coal mine worker contracts an occupational disease.

QRC has been advised by a number of relevant member companies that they have also been summoned to provide information directly to the inquiry; it is QRC's understanding that the primary purpose is for producers to provide the Select Committee with specific information on the measures for dust control and monitoring being taken at their mine sites. The QRC notes that this approach provides the Committee the opportunity to review the information that arises from the legislative requirement for each mine to develop a safety and health management system that addresses risks associated with hazards at that mine. For that reason, this submission will not provide detail on current mine-specific dust control and hazard reduction measures, but will rather provide for broader industry input into the inquiry and the policy issues it addresses.

It is important to understand what allowed the occurrence of a disease that everyone believed had been eradicated in Australia, primarily to ensure that it never happens again. The QRC believes that its main role is to assist in the development and implementation of industry wide solutions for the management of the coal mine dust hazard, for ensuring that any cases of coal mine dust lung disease (CMDLD) are detected at the screening level and to make sure that affected workers receive fair treatment. For that reason Part 1 of this submission will briefly outline ongoing initiatives that are being implemented at an industry wide level to address the risk of CMDLD and to improve the safety net for ex-miners who have been diagnosed with CWP, or are concerned they might have the disease.

Part 2 of the submission will then concern itself with the Committee's task of considering the arrangements that have been in place to eliminate and prevent CWP, and will postulate some reasons as to why industry believes those arrangements might have become ineffective.

Because the Committee's terms of reference specifically call out the review of the respiratory component of the Coal Mine Workers' Health Scheme (the Health Scheme) and the fifth interim report of the Senate Select Committee on Health, Part 3 of this submission will then address some of the findings and recommendations that are set out in those reports.

# 1. Recent industry action to address CWP

Queensland's coal mining industry has proactively and positively engaged with coal mine workers, their unions and the Department of Natural Resources and Mines in addressing the re-identification of CWP. This process started with open and active participation in the review of the respiratory component of the Health Scheme that was undertaken by the Monash Centre for Occupational and Environmental Health and the University of Illinois in Chicago (the Monash/UIC Review).

Coal mine operators were represented on the Reference Group that was established by DNRM to assist the Monash/UIC Review, and those representatives ensured that industry did everything possible to provide the reviewers with the information they needed. Industry also assisted the reviewers to gain a greater understanding of coal mining operations and associated dust exposure hazards by cooperating with officers from the Mine Safety and Health division of DNRM to arrange for the review team to visit working coal mines and coal handling sites.

The QRC and the coal mining companies it represents were genuinely surprised by the findings of the Monash/UIC Review, which revealed numerous systematic and operational failings in the Health Scheme. The industry had enormous faith in the Health Scheme to reveal any problems with the respiratory health of its workers. The QRC has over recent years raised a number of concerns about health assessment and related issues within the coal mining industry, however industry had no idea of the nature or extent of the issues within the respiratory screening program that were revealed by the review. There was no reason for companies engaged in mining Queensland coal to suspect that the Health Scheme would not detect any cases of CWP, or other respiratory disease, that might have occurred.

Industry also fully co-operated with the Senate Select Committee on Health's CWP inquiry, and as discussed below and in Part 3 of this submission, is taking steps to address some of the issues that were raised in the Committee's fifth interim report. The QRC does however have concerns about how some of that inquiry's findings were arrived at and the language with which they were delivered, and this is also further discussed in Part 3.

## 1.1 CHEST X-RAY INTERPRETATION

Immediately following the release of the report of the Monash/UIC Review, industry started looking at what it could do better, both in terms of the prevention and detection of the disease. On 12 July 2016 senior executives of the following eight major coal producing companies wrote jointly to the Minister for Natural Resources and Mines the Honourable Anthony Lynham MP, expressing their shared concern about CWP:

Anglo American  
BHP Billiton  
Caledon Resources  
Glencore  
Idemitsu  
Peabody Energy  
Rio Tinto Coal Australia  
Vale

For reference that letter is included as Attachment A to this submission.

The letter confirmed industry's commitment to providing Queensland coal mine workers with a safe workplace, to transitioning to an improved Health Scheme that is informed by outcomes of

the Monash/UIC Review, and to working with the Minister, his department and medical experts to address the issue.

The letter further undertook to provide ongoing reassurance to coal mine workers by committing to an improved interim protocol to screen for CWP. Subsequently DNRM has developed a screening protocol that is aimed at ensuring that all chest X-rays taken for the Health Scheme are first read by a Queensland radiologist and then subjected to analysis under the B reader assessment process to NIOSH standards through the University of Illinois at Chicago. Coal mining companies have supported this initiative, and have facilitated new chest X-rays for analysis for those workers who are concerned about their respiratory health.

## 1.2 DUST MANAGEMENT

In mid-July the QRC made a commitment to the Minister for Natural Resources and Mines that the coal mining industry would hold a workshop on the control and mitigation of respirable coal mine dust in underground coal mines. The purpose of the workshop, which was conducted in Moranbah on 19 October 2016, was for industry to collaborate and share their learnings about successful practices for dust management.

The workshop was extremely successful and was well received by the participants - all eight companies with underground mines attended and contributed.

The intent of the workshop was to share good practice controls, innovations or activities that can be put in place at mining operations to protect workers from being exposed to harmful levels of respirable dust.

Each underground company openly shared examples of successful dust mitigation strategies, with a focus on the following areas:

- Coal transfer equipment
- Development operations
- General operations
- Longwall equipment
- Machinery in development
- Mine planning
- Monitoring
- Operational (longwall)
- Outbye operations

Health and safety is a shared value for all industry participants. This initiative reflects industry's commitment to prevent CMDLD by reducing dust levels in mines, and its commitment to sharing important safety information.

One issue of particular interest that was raised is the importance of real-time monitoring of respirable dust levels. While cumulative dust levels measured by individual monitors may be of greatest significance in relation to overall exposures, testing the efficacy of dust controls requires monitoring results to be available in real time. The QRC supports expediting the approval of real time dust monitoring devices for use in underground mines in Queensland, as is further discussed in Section 3.2 of this submission.

Based on the value of the workshop, dust control and monitoring will now be a standing agenda item on QRC Health and Safety Committee meetings and at forums the QRC Secretariat conduct with coal mining site senior executives.

### 1.3 WORKERS COMPENSATION SYSTEM

The QRC is aware that there have been calls for a dedicated compensation fund to be established to address the perception that workers with CWP may not get appropriate compensation, and that retired workers are not receiving enough support. This was originally flagged through recommendation five of the Senate Select Committee on Health's review into CWP – which is further discussed in Section 3.2 of this submission.

The coal mining industry believes it should support any worker who has contracted an occupational disease because of their work in the mining industry. The QRC has proposed the establishment of a taskforce which would engage with Government and unions to look at reforms to the Workers Compensation scheme to address any identified gaps in the current system due to specific issues related to CWP.

The suggested guiding principles for this review are:

1. Workers who contract CWP at work should receive compensation, in a timely fashion, and the coal mining industry should fund this;
2. Retired workers should be able to have the required screening tests (e.g. chest X-rays, CT scans and reviews by respiratory physician) undertaken, and the coal mining industry should also fund this.

The QRC is of the view that this can best be achieved by building on, and if necessary fixing the existing workers compensation scheme, rather than establishing an expensive new fund with associated additional bureaucratic systems and duplicated processes. The existing scheme is funded through premiums paid by employers. It is accepted that such premiums may need to increase to cover additional costs from CWP, however those premiums are set actuarially, so the current system is already able to ensure that funding is achieved in a fair manner.

The specific changes to the workers' compensation regime that may be considered and have been identified by the QRC to date include:

1. A streamlined claims process to reduce delays if a claim is inadvertently made with the wrong insurer/company, i.e. it is paid out quickly and then recovered between insurers.
2. Whether there is a need to compensate individuals diagnosed with CWP who are found to have "zero impairment" (no loss of lung function), if they can no longer work underground.
3. Funding for health screening of retired workers.
4. Whether the current time limit on claims for CWP of six months post-diagnosis is appropriate.

The QRC has written to the Minister for Employment and Industrial Relations suggesting the establishment of a taskforce to report to the Minister by no later than end-March 2017, but at the time of making this submission had not yet received a response. That letter is included as Attachment B to this submission.

## 2. The arrangements to prevent CWP

This submission will now turn to considering the arrangements that have been in place to eliminate and prevent CWP, and whether they have been adequately and effectively maintained over time, to assist the Committee in addressing its terms of reference. With the re-identification of CWP it may seem apparent that they have not, however it is important to try and understand the reasons the system failed if a new system is to be put in place that avoids repeating those mistakes.

### 2.1 WAS CWP ERRADICATED?

There has been speculation through the Committee hearings as to whether CWP ever truly went away, or if there was simply a failure to recognise that cases were still occurring.

It is impossible for the QRC to speculate with certainty as to whether there were unreported cases of CWP occurring in the thirty plus years since Rathus and Abrahams report was released in 1984 (see Section 2.2). None of the QRC's member companies that currently operate within the coal mining industry are aware of any such cases, but that of itself is not necessarily a guarantee that there were no cases in mines that are no longer operational, or that there were no cases in mines that are now operated by a different entity, or that there were no cases amongst retired workers that were not reported to industry.

In recognition of this uncertainty however, this submission refers to the "re-identification" of CWP, rather than its "re-emergence", which is the term used within the Committee's terms of reference.

CWP is generally subject to an extended period of latency from the time a person commences long term exposure to respirable coal dust, until the time when the disease is expressed (NIOSH 2011). While there is clearly individual variability in workers' responses to dust exposure, CWP has most usually been associated with lengths of exposure involving decades of coal mining experience (NIOSH 2012). It follows then that the re-identification of the disease over the last two years is not solely a reflection of current mining practices, nor is it likely to be the result of more recent exposures to respirable dust.

Because of this lengthy time lag to disease expression, it also follows that the circumstances providing the opportunity for disease presentation in each of the confirmed cases may not be immediately apparent, and that the re-identification cannot be accounted for by any one shift in the dust control and health management framework. It is also important to acknowledge that there is not one person or organisation to blame for this issue. Employers, along with the department and its inspectors, the health sector and the unions all have a shared responsibility.

Whilst acknowledging this shared responsibility, the QRC believes that two factors are at play, both of which have had roles in documented failures in other occupational health and safety management systems. The first of these factors is "risk normalisation", and the second is "the drift to failure".

*Risk normalisation.* It is an unfortunately common phenomenon that a workforce may become so used to dealing with certain hazards that they come to consider them a normal part of the workplace. If work tasks are repeatedly carried out without any resulting severe consequence, this experience entrenches the perception that the risk from that hazard is not actually of significance. The term has come into more general use but was originally termed "normalisation of deviance" to describe the failure of NASA to adequately identify and address the safety risks that lead to the Challenger space shuttle disaster (Vaughan 1996). The QRC believes that an



appreciation of the danger of risk normalisation could assist the Committee to understand why focus was lost on an issue which once was at the forefront of the thoughts of every coal mine worker, particularly in the underground environment. It is easy to see such failures after an incident has occurred, but it is often not easy to truly understand a risk by placing yourself outside the cultural norm of the environment you are operating in.

*Drift to failure.* It is widely acknowledged that safety incidents are often preceded by lengthy periods of increasing but unrecognised levels of risk, including the likelihood of safety system failure. Events can accumulate which go unnoticed because it is not recognised that together these events can result in a drift towards failure of the system (Dekker and Pruchnickic, 2013). The QRC believes that the Inquiry will need to acknowledge a range of factors that together meant the Health Scheme failed to effectively identify cases of simple CWP, and thus failed to alert the industry of the true nature of the CWP risk in a timely enough fashion.

The QRC suggests that the underlying conditions that provided the opportunity for the normalisation of risk and the associated drift to failure to compromise the system managing the risk of CWP in Queensland coal mining are twofold, and related. Those conditions are the delay in disease expression, and the fact that there were no reports of the disease for many years.

Since the lack of reports of CWP has been the subject of considerable discussion, this submission will consider what is known by industry about the incidence of respiratory disease in Queensland coal mines.

## 2.2 REPORTS ON RESPIRATORY HEALTH

### *The Rathus and Abrahams report*

The only systematic examination of the incidence of CMDLD, and more specifically CWP, that the QRC is aware of is the study that was undertaken in 1983 and 1984 for the Queensland Coal Board (Rathus and Abrahams 1984). That study visited 33 coal mines and 6 towns where the respiratory health of 7,784 working and 123 retired coal mine workers was examined. The study found that the incidence of simple CWP (i.e. ILO classification 1/0 or higher) among the coal mine workers was almost 1% overall (75/7,907) and was about 2.4% for the retired workers who participated (3/123). The report also indicated that mining experience in the UK was a significant factor in 12 of the identified cases.

The report does not advise the identities of the mines visited, the companies who operated those mines, nor which mines the coal mine workers who were diagnosed with CWP were from or had previously worked at. The 1983/84 Annual Report of the Queensland Coal Board (QCB 1984) provides a list of operational mines for the purpose of reporting the tonnage of coal that they produced. Taking into account the fact that some operations had multiple pits, the QRC has identified that there appeared to have been 35 mining operations functioning for at least part of the year in 1983/84. Only 12 of those identified mines are still operating, and the current operators have checked their records but have been unable to locate any evidence of whom, if any, of the workers from their coal mine were included in the 72 active miners that were found to have simple CWP in 1983/84.

It should be noted that, even if such files were to be located, coal mine operators are unlikely to have any useful information in personnel files due to privacy constraints.

This difficulty in locating information on the affected workers is a good illustration of the fact that the Rathus and Abrahams (1984) report was produced in the relatively distant past. It is not surprising that few people even remember it being undertaken, nor is it surprising that they may not have been aware of the lessons it contained for industry. The QRC does not believe there is

any evidence to support claims that the report was in some way hidden – in fact evidence is presented below that it was widely distributed at the time; but it was a long time ago, and many of the people who participated in the review and/or received and read it would now be retired.

There do appear however to be surprisingly few references to the report in the literature. The QRC was only able to locate five references to it in the public record, prior to it being raised by the ABC's 730 Report on 1 December 2015 and the publication of the Monash/UIC Review. The second most recent reference located was in a 2004 review of the Health Surveillance Unit which was undertaken by DNRM (DNRM 2004). The most recent was in the response to the National Mine Safety Framework Regulatory Impact Statement that was submitted by the CFMEU in 2013 which was published on the DNRM website at that time (CFMEU 2013), which quoted the DNRM 2004 review extensively, including on page 6 a reference to the findings of the Rathus and Abrahams (1984) report.

The rest of the references were in earlier reports of the Queensland Coal Board as discussed below.

### ***Queensland Coal Board reports***

The annual reports of the Queensland Coal Board, who commissioned the Rathus and Abrahams review, made some references to that 1984 report, and thus to the issue of CWP. The 1983-84 annual report of the Board (QCB 1984) described the outcomes of the review and stated on page 42, about the report:

"The medical Consultants identified 499 cases of abnormality and appropriate action was taken in each instance. A complete follow-up involved 75 cases of pneumoconiosis and 47 emphysema diagnoses. All other personnel were advised that their X-ray was considered quite satisfactory.

.....

"Copies of the Medical Consultants' report have been widely circulated and the Board has requested comments on the findings and recommendations"

The 1984-85 annual report (QCB 1985) made a further brief reference to the Rathus and Abrahams review on page 33 where it stated:

"Employees who had been advised of an abnormality as a result of the X-ray programme, which was completed last year, have been contacted again. The Queensland Coal Mines Research Safety Committee is to have further discussions with these employees."

The last published report that is known to the QRC to have addressed the contemporaneous occurrence of CMDLD in Queensland, was the 1994/95 Annual Report of the Queensland Coal Board (QCB 1995). Page 12 of that report states that eight cases of "respiratory disease" had been detected in the "current screening program", which is assumed to be a reference to the program of pre-employment and regular rescreening of all coal mine workers that has been in place since 1993. The report notes that none of those eight cases had a long history of exposure to coal dust, and that all cases but one were considered to have been contracted outside of the coal mining industry. In relation to that one case the report states:

"Only one case has a long work history in the coal industry and this employee worked on open cut drills. This highlights the need for caution in relation to silica dust."

While it appears unlikely that any of the cases were CWP, the report does not provide any details on the affected workers' identities or on the nature or severity of the respiratory disease that was experienced by them.

A later report from the Queensland Coal Board presented at the 1996 Annual Mine Safety and Health Conference (Ham 1996) also reference the Rathus and Abrahams (1984) report but did not provide any additional information regarding respiratory disease. The report commented:

“Information for mines in planning their occupational health strategies is that in excess of 10% of the workforce are not fit to work without restrictions being placed on their duties.”

No details were provided about the nature of those restrictions, and no mention was made of CWP.

### ***The need for privacy***

The lack of detail in all these reports is likely to reflect the over-riding requirement to protect the privacy of the affected workers. While it is a basic and inviolate tenant of any health scheme or screening process that such privacy be maintained, it is also inevitable that privacy concerns can affect the free dissemination of information about the occurrence of a disease or the circumstance behind an accident.

It is worth noting that the effect of such privacy concerns can also be seen in the information that is available about the most recent cases of CWP. Industry has never been given a comprehensive synopsis of the 16 confirmed cases or any analysis of the factors that might have contributed to disease presentation and diagnosis in these workers. The Monash/UIC Review contained a one-page chapter on the then seven confirmed cases, but does not provide even basic information about the length of time the workers were exposed to coal mine dust in Queensland coal mines or what other jurisdictions and industries they worked in.

While it is important to protect each individual's medical records, there needs to be an analysis of these confirmed cases so that industry can learn as much as possible from them. There are, in particular, a small number of cases with an atypical history of exposure to coal mine dust. This might be similar to the situation described in the 1994/95 annual report of the Queensland Coal Board (QCB 1995), which indicated that the majority of cases may not have been contracted within the Queensland coal mining industry. All parts of the industry need to work together to try and understand the specifics of what went wrong and where. With the latest case coming from the open cut sector, which historically has a lower exposure risk than the underground sector, this need is highlighted.

Thus, while privacy is a fundamental requirement, it can also be a contributing factor to the unavailability of clear information and specific warnings, and thus is likely to be a component of the prevailing circumstances that allowed the normalisation of risk and the drift to failure to occur. Privacy requirements are likely to continue to restrict the distribution of information about specific cases. The QRC therefore believes that the Select Committee can play an important role in ensuring a proper systematic review is undertaken to gain whatever knowledge can be drawn from the recent confirmed CWP cases.

It is also important moving forward to ensure that in future other important health information is made available to an affected mine site, while still making sure there are appropriate safeguards to privacy in place.

### ***DNRM reports***

Partly because of privacy concerns, but sometimes to also ensure that ongoing investigations are not compromised, the information that is disseminated on health and safety incidents tends to be broader rather than specific. In Queensland, this information most usually takes the form of generalised reports and bulletins that are issued by the regulator. Since the Queensland Coal Board was disbanded there have been numerous such health and safety reports and bulletins published by the Queensland Government mining regulator.

The DNRM website currently lists over 470 mining safety alerts, bulletins and significant incident reports that have been released over the last ten years to provide industry with information on specific hazards and incidents. An audit of these documents has shown that ten are in some way related to respiratory health. Most of the earlier bulletins relate to hazardous chemicals and gases, however Mines Safety Bulletin no. 88 of 23 February 2010 dealt with the management of dust that contains crystalline silica. Respirable crystalline silica can cause silicosis, which is another form of pneumoconiosis involving scarring of the lungs, and an irreversible, progressive and potentially fatal condition.

QRC has also obtained from a member company a copy of a relevant report that was produced by DNRM in 2010. This document discusses a previous survey of coal mine operators that examined operators' awareness of issues related to respiratory health, and the measures that were in place to address that risk. A search of the DNRM website has failed to locate a current version of this report, however its publication was referenced in the Queensland Mines Inspectorate 2010/11 Annual Performance Report (DNRM 2011). A copy was located on a proprietary electronic "magazine" distribution website, and this is the version that is referenced in this submission (DNRM 2010). The relevant report is Part A of the document, which deals with coal; the unsighted Parts B and C dealt with metalliferous mines and quarries respectively.

It appears that bulletin No 88 was published after the 2010 DNRM report to highlight the concerns that DNRM had around respirable silica dust, and silicosis. If DNRM had held similar levels of concern that respirable coal mine dust was a significant health risk in Queensland coal mines then it is probable that there would have been an equivalent bulletin issued that dealt with the dangers of respirable coal dust. Other limited references to the risk of CWP have been presented to the Inquiry by DNRM on 4 November 2016, however the only comprehensive notification on the matter was Mines Safety Bulletin no. 151 on preventing dust-related lung diseases, which was released on 30 October 2015. By that time three cases of CWP had been confirmed, and the bulletin appears to have been issued when it was realised that the problem may have been more wide-spread than had initially been believed.

The fact that a further 13 cases of CWP have been identified since the release of bulletin 151, making a total of 16 confirmed cases in the last eighteen months, makes it difficult to understand how there could have been no cases reported in the preceding 20 or 30 years, i.e. at least since the 1994/95 QCB Annual Report but seemingly not since the 1984 Rathus and Abrahams report itself. As discussed in the previous section of this report, the QRC is as surprised about this as anyone else. The apparently sudden "re-emergence" of a disease that results from chronic exposure to a hazardous substance has led some to believe that there must actually have been cases detected within that time, and that those cases must have been subjected to some sort of cover up.

The QRC is not aware of any evidence of any such cover-up; it appears that if there were any cases they were not reported to anyone who had the capacity to (or awareness that they should) make industry or the regulator aware of it. It is worth noting that similar claims of cover-up have been made regarding the Rathus and Abrahams (1984) report and that the workers with CWP may not even have been advised. However, there are references to the report in the

public domain, including evidence from the annual reports of the Queensland Coal Board (QCB 1984, 1985) that the workers were advised and received appropriate follow-up, and that the report itself was in fact widely distributed at the time. Even the CFMEU quoted it (CFMEU 2013).

One issue that requires clarification is the recent revelation that there have been a number of workers' compensation claims, some prior to the re-identification of the disease through the Health Scheme. In evidence to the Committee the Office of Industrial Relations has to date tabled information on 19 claims that have been lodged for possible CWP since 2006 (CWP Select Committee Proceedings 2016), which exceeds the number of known confirmed cases.

While the precise nature of these claims is unknown because the details have been kept confidential to the Committee, their existence is not evidence of a cover-up. It is more likely evidence that the possible relevance of the information was not recognised at the time. As far as the QRC can tell, there have been two CWP compensation cases prior to the re-identification of the disease in 2015. One appears to have been related to disease outside the coal mining industry, and the second worker appears to have no longer been employed in the industry at the time of diagnosis, having previously worked with an employer who is no longer operating.

### 2.3 MAIN CONTRIBUTORS TO THE DRIFT TO FAILURE

#### ***Lack of awareness there was a problem***

Prior to 2015 it was widely accepted by coal mine workers, managers, operators and regulators that Australia had effectively eradicated CWP, and that the Australian coal mining industry had much lower rates of all types of pneumoconioses than other seemingly comparable parts of the world. As an example of the extent of this belief Joy *et al.* (2012) examined the disparity in CWP prevalence between Australia and the United States and hypothesised that higher rates of silica exposure in the US may have been responsible for the difference in the overall rates of pneumoconioses in the two jurisdictions.

Another example of the universal belief that the system in place was working, or at least that the part of the system that was intended to detect the disease was working, is presented by submissions to the Consultation Regulatory Impact Statement for the National Mine Safety Framework, which was released by DNRM in the second half of 2013 (the 2013 RIS). The 2013 RIS (DNRM 2013), as well as many of the submissions received from stakeholders [including those of both the mining industry (QRC 2013) and the Construction, Forestry, Mining and Energy Union (Mining and Energy Division) (CFMEU 2013)], were published on the DNRM website. One proposal within the 2013 RIS was to refocus the Coal Mine Workers' Health Scheme onto the health surveillance activities that are intended to determine whether the mining process in general or the work environment at particular mines was harming the health of coal mine workers.

While the CFMEU (2013) response did discuss ways to address the concerns raised by DNRM, the union's response to this proposal is best summarised on page 7 of their paper, where they stated the following:

"The current Health Scheme is an excellent example of best practice at work in the Queensland coal mining industry. In our submission, the health scheme is not broken and does not, therefore, need to be refocused."

The QRC does not bring this to the attention of the Committee to malign the position that the CFMEU held in 2013 using the benefit of hindsight – the intent is just to demonstrate the depth of the belief throughout industry that the scheme was effective. In fact, the QRC also used the same terminology in its submission to the Senate Inquiry into CWP (QRC 2016) in reference to the

QRC's understanding of the scheme's apparent ability at that time to have detected seven cases of CWP.

If coal mine workers, their representatives or the operators or contractors of the mines in which they worked had had any awareness of the extent to which the Health Scheme had fallen into disrepair, then the QRC believes that the issue would have been raised and dealt with.

The most likely forum for such discussion, had it occurred, would have been the tri-partite based Health Improvement Awareness Committee (HIAC), which was formed by the Commissioner for Mine Safety and Health in 2008 with the express purpose of raising the profile of important health matters in the mining industry. An examination of the minutes of its meetings has revealed that HIAC was not tasked with addressing problems within the Health Scheme, nor with addressing the matter of respirable coal mine dust. HIAC was only made aware of the issue of CWP after the cases were diagnosed in 2015.

To demonstrate that respiratory contaminants were within the purview of HIAC, the Committee has spent considerable time discussing the management of exposure to diesel particulate matter since the International Agency for Research on Cancer classified it as carcinogenic to humans on 12 June 2012 (IARC 2012).

The 2013 RIS itself, in raising the issue that the Health Scheme needed to be refocused, did however demonstrate that DNRM was indeed concerned that the Scheme was to some extent "broken". In the terminology being used in this response, it is clear that DNRM wanted to address some of the factors that QRC believes have since proven to have contributed to the Health Scheme's drift to failure. Some of these factors are discussed below.

### ***Lack of adaptability in the Health Scheme***

One important shortcoming was the inability of the scheme to adapt and change, and it would have required the regulatory amendment that was proposed within the 2013 RIS to allow such adaption to occur effectively. A significant contribution to the stasis of the scheme was the decision of the Supreme Court in the case of *Edwards v North Goonyella Coal Mines Pty Ltd* (QSC 2005). This case concerned the question of whether or not North Goonyella Coal Mines Pty Ltd, could compel an employee to undergo a particular medical examination under the *Coal Mining Safety and Health Regulation 2001* (CMSHR). The employee Mr David John Edwards was represented by the CFMEU in the case.

While it is acknowledged by QRC that this case did not deal with respiratory health, it did have important implications for the Health Scheme overall, which includes the respiratory screening function of the scheme. The Supreme Court ruling read in part:

"... on the proper construction of s 46 of the Regulation, a health assessment carried out by or under the supervision of a nominated medical adviser can only be lawfully carried out:

- (a) on the terms specified in s 46(2) of the Regulation; and
- (b) without consideration to any other medical or other reports."

The restriction specified in point (b) meant that a nominated medical advisor (NMA) could not seek additional expert opinion on any potential health issue faced by a worker. The ruling also precluded any attempts by the medical professionals employed within the Health Scheme, or within DNRM, to improve the scheme without an amendment to section 46(2) of the CMSHR. An NMA knew that requesting additional testing would open them to legal challenge, and DNRM knew that the union would strongly oppose any change to the regulation to rectify that situation.



QRC contends that not ensuring the ongoing availability of the most robust medical assessment methodology is clearly not in the best interest of workers, nor is it in the best interest of the functioning of the Health Scheme that is designed to detect whether they had contracted an occupational disease. As an example of how unreasonable this situation is, it potentially affects the use of CT scanning or biopsy to confirm a preliminary diagnosis of CWP; the CMSHR only provides for the use of chest X-ray imaging under the scheme.

The use of additional testing, and indeed the involvement of respiratory physicians, is however enshrined in the process that is now being used by DNRM and the NMAs for checking a diagnosis that is made via an interpretation of the chest X-rays of potentially affected workers.

No-one amongst the coal mine operators or their contractors, the regulator or the union is opposed to the use of CT scans and expert physicians in this way, however it is technically at odds with QSC 05-242. The purpose of making this point therefore is to demonstrate the potential danger of limiting the type of testing that can be used, not to advocate that there is something wrong with implementing the transitional screening process now being used. Every effort must be made to minimise the potential for either a false positive or a false negative diagnosis of CWP.

The dangers to the effectiveness of the Health Scheme posed by ruling QSC 05-242 were not recognised by the CFMEU, which continued to support the Supreme Court's finding in its response to DNRMs 2013 RIS (CFMEU 2013). At page 8 of that submission ruling QSC 05-242 was quoted as particular proof that "the health scheme can be properly characterised as being certain, equitable and comprehensive".

Again, this statement has only been proven amiss with the benefit of hindsight; the Health Scheme was clearly not comprehensive enough to reliably detect CWP, despite both the union's written comments in 2013 and the QRC's written comments earlier this year.

However, while the QRC was always as unaware as the union as to how dysfunctional the Health Scheme had become, the record does show that the QRC was supportive of the RIS proposal as part of its goal of ensuring health assessment overall can be used to assess and manage health and safety risks at a mine site. At page 74 of its response (QRC 2013) the QRC stated:

"The QRC supports in principle the RIS proposal to refocus the Coal Mine Workers' Health Scheme only onto health surveillance activities that are intended to determine whether the work or the work environment at particular mines is harming the health of coal mine workers.

....

Unreserved endorsement of this proposal by the QRC is related to and dependent on the outcomes of the proposal to address fitness for work dealt with under section 4.18 of this response. If mines are able to manage pre-placement health assessments as part of the employment process in the same way most other industries do, a significant proportion of the current impacts on the health scheme would be transferred from DNRM to employers."

### ***Reporting to the ILO Standard***

In its evidence to the Committee on 9 November 2016 (CWP Select Committee 2016) the Department of Natural Resources and Mines presented a synopsis of changes to the Health Scheme over the years. This synopsis showed that up until 2001 the approved

form for the Health Scheme included a field to record the ILO Classification of the chest X-ray interpretation.

It is apparent from the Monash/UIC Review that the detection of early stage simple CWP is not straightforward. The application of the ILO Classification involves comparing coal mine workers' X-rays with standard radiographs, which provides a strict protocol that improves the chance of detection. The use of dual reading provides a further check that should reduce errors and provide a feedback mechanism about the competence of the radiologists interpreting the X-rays.

Industry also notes however that the current "dual reading" process utilising US based B readers appears to be resulting in a significant number of false positives. As previously touched upon briefly, it appears that high resolution CT scanning is currently necessary for certainty of diagnosis, and it is unclear to what extent quality issues with the radiographs are responsible for this situation. False positives need to be minimised to limit unnecessary impacts on workers, and false negatives can mean that workers are not removed from potential exposure to respirable dust. There is therefore a need to establish a clear diagnostic pathway, including quality analysis of the radiographs, to minimise the potential for incorrect diagnoses.

### ***The relationship of the Health Scheme with fitness for work***

As mentioned previously, the inter-relationship of the Health Scheme with fitness for work issues was identified by DNRM as a significant issue in the 2013 RIS, and rectifying this situation was, and still is, supported by the QRC. The fact that this situation is also a factor that contributed to the Health Scheme's drift to failure was subsequently recognised by the Monash/UIC Review. At page 7 of their report the reviewers summarised their findings in relation to the lack of a correct focus in the purpose of the scheme as follows:

"After discussion with stakeholders and reviewing the relevant documentation, it is clear that the focus of the respiratory component of the scheme is on fitness for work rather than the detection and management of early CMDLD."

This focus on fitness for work continues to raise issues for industry, even after the Monash/UIC Review finding was published and everyone involved quickly started trying to establish a more reliable interim screening program until the regulation can be amended.

As discussed earlier in this submission, without reservation coal mine operators have fully supported initiatives to introduce this in the form of a system of re-reading chest X-rays against the International Labour Organisation Standard for the Classification of Pneumoconioses in the United States. However, this so-called "dual reading" system has introduced an inevitable delay in the NMA signing off that the worker is clear of CWP. The NMA can only do this once the X-ray is read in the US, and perhaps even only after the worker has had a CT scan and/or seen a respiratory physician.

The scheme currently captures the NMA's sign-off on the assessment in an endorsement that the worker is either "fit for work", "fit for work with restrictions" or "unfit for work". It would be typical that a person with simple CWP would be found fit to work with restrictions, that restriction being that they can no longer be subject to the risk of exposure to respirable dust; for example having to work in a very low dust environment such as non-production areas underground, or in other duties above ground. The fitness or otherwise of a worker cannot be demonstrated until the entire respiratory health assessment process is completed.

The proper purpose of a respiratory assessment within the Health Scheme is to ensure that any worker with CMDLD, including CWP, is identified, made aware, and that appropriate action is taken, including removing them from a higher level of potential dust exposure. It is not to make a statement as quickly as possible as to their fitness or otherwise for working in a dusty environment. In light of the adverse implications of a false positive for the individual, the most important issue is to ensure that the diagnosis is correct.

There is no equivalent rush to finalise a diagnosis under the NIOSH system as it applies to the US coal miners that choose to participate in that scheme. This recognises the fact that there is no extreme urgency in removing the worker due to the chronic nature of the disease. The requirements for action following the detection of simple CWP are best summarised by the Ratus and Abrahams (1984) report, which at page 17 made the following observation:

"There is a need to establish early evidence of pneumoconiosis for a number of reasons which are obvious in the light of the history of the condition...

It is important to realise that men with well defined pneumoconiosis do not necessarily evidence any disability. The discovery of the changes permits counselling – the avoidance of smoking in particular – which may delay the onset of symptoms and/or disability. Minor degrees of pneumoconiosis do not necessarily imply ill-health or premature death."

Because of the current inter-relationship of the respiratory health assessment with fitness for work, DNRM has had to implement a work-around whereby the NMA issues a conditional assessment as fit for work on the basis of the Australian radiologist report, with a review following receipt of the final determination of the worker's CWP status. To do otherwise risks delays for some workers to get access to mine sites, impacting both on the individuals involved and the mines at which they are scheduled to work. It should be noted that QRC fully supports this "work around"; however, if the detection of CWP was not a fitness for work issue, and if there was otherwise effective regulation supporting the role of the employer in monitoring fitness for work, it would not be necessary.

While the interim screening process is a good demonstration of how industry and the regulator have worked together to remedy the situation as quickly as possible, it also highlights problems associated with entangling the Health Scheme with fitness for work and the resulting lack of adaptability in the Health Scheme. If that entanglement was not present, the implementation of the new interim X-ray assessment scheme would have been far smoother.

It is essential that the recommendation of the Monash/UIC Review to separate health monitoring and fitness for work is delivered fully. Fitness for work should be the concern of the employer, not the regulator, and the Health Scheme should be focused on the detection and management of occupational disease. Maintaining such a strong focus, in conjunction with the new disease reporting requirements in place from 1 January 2017, will be important in ensuring a repaired Health Scheme does not once again drift into failure.

It is perhaps unsurprising in an environment where everyone thought that CWP had been eradicated, that the health screening system to detect the disease became dysfunctional, and that the full nature of the risk that respirable coal mine dust posed had been normalised to the point it was no longer regarded as significant by the work force. That is not to say that the drift to failure went completely unnoticed, or that industry did not have measures in place to manage the risk. Other previous concerns about some of the issues ultimately raised by the Monash/UIC Review are discussed below.

## 2.4 PREVIOUS REVIEWS AND MISSED OPPORTUNITIES

It is apparent that there were reviews prior to that undertaken by Monash/UIC that had raised concerns about the functioning of the Health Scheme, as well as the failure to effectively use the information that was being collected. However, these concerns ultimately went unheeded, and were not addressed. The 2013 RIS, which has already been discussed, is the most recent example; the RIS said that DNRM proposed:

“Refocusing the Coal Mine Workers’ Health Scheme to address the hazards such as dust and noise. This will enable the Mines Inspectorate to focus its efforts towards health surveillance activities to determine whether the work or the work environment at particular mines is harming the health of coal mine workers. In this way measures can be taken to address a hazard harming workers’ health before it results in chronic illness.”

Exactly three years have now passed since the deadline for comment on the 2013 RIS, and no changes have been made to the Health Scheme or fitness for work provisions as was proposed. It may be instructional for the Select Committee to consider the reasons why the regulatory amendments proposed were never progressed.

The 2013 RIS made it clear that a huge increase in the number of medical assessments being received and a resulting backlog in recording the data that is contained on the forms was a significant factor in DNRM wanting to refocus the scheme. Under the CMSHR, DNRM has ownership of all the medical records that are generated by the scheme, and until several years ago, data from those assessments was being entered onto a database soon after it was received. The RIS advised however that DNRM had received 47,747 health assessments in 2012 compared to 24,529 in 2009, and that the continual increase in the number of assessments had put DNRM under significant administrative strain.

According to the *Queensland Mines and Quarries Safety Performance and Health Report 1 July 2014–30 June 2015* (DNRM 2015) the number of assessments being received had fallen significantly from this peak, however it was clear that the backlog was still having a major impact on DNRM’s ongoing ability to enter the information into the database. The 2014/15 safety and health report advised that of 16,463 health assessments received in 2014/15 just under 3,000 had been entered into the database, and that there was a total backlog of 150,040 health assessments awaiting database entry. The report of the Monash/UIC Review subsequently advised that the number of un-entered medicals had actually risen to about 170,000 at its peak. The report also clarified that the entry of raw medical data into the database was so time consuming that the focus had shifted to simply scanning the hard copy of the medical so that it could be efficiently stored and recalled.

The *Queensland Mines and Quarries Safety Performance and Health Report 1 July 2013–30 June 2014* (DNRM 2014) had previously advised that a successful pilot project using optical character recognition (OCR) software to automatically ‘read’ scanned health assessments into the CMWHS database was piloted in that year. A full-scale project was to be initiated in 2014/15 to use the OCR software to reduce the backlog of un-entered health assessments, however the 2014/15 Annual Report (DNRM 2015) noted that this project “did not produce the expected results and has been suspended”.

The 2013 RIS also made it clear that DNRM wanted to use the data collected through the Health Scheme to undertake effective group health surveillance of the industry. The RIS said:

“The purpose of health surveillance is to obtain baseline data of workers new to the industry and periodic data throughout the period the worker is employed in the industry. This data will enable the regulator to identify factors which have a

higher than acceptable association with illness or injury and common problems across the industry or at a particular mine. The regulator can then issue guidance material, directives to address the problems, or consider some other form of regulatory intervention.”

The safety performance and health reports (DNRM 2014, 2015) demonstrated that DNRM has been trying to deal with the backlog in order to undertake better reporting on health issues in the coal mining industry. Wanting to refocus the Health Scheme to reduce the amount of data collected, and thus the quantity of information that had to be entered, was clearly an important step in fixing the database issues. This initiative was supported by QRC, however our response to the RIS (QRC 2013) also highlighted the need to still address the backlog, and to focus on the analysis of information related to people who were in the industry long enough to have been exposed to the risk of occupational disease or illness:

“The QRC believes the actual problem is the sheer number of medicals that have been generated due in part to this perception, driven by expansion phases of the mining industry coupled with the ongoing need for additional contractors in existing operations. Table 7.1 in the *Queensland Mines and Quarries Safety Performance and Health Report 1 July 2011–30 June 2012* shows that the number of medicals “awaiting entry into the database” grew from 10,157 in 2008 to 91,320 in 2012. It is unclear how many of these medicals relate to people who did not obtain employment in the industry, and the QRC questions how this will be determined and how the backlog will be managed if the scheme is to be of any value into the future.”

In making its comments in the 2013 RIS about the need to use health data for effective surveillance, DNRM was echoing the advice it had been given in a review that it had previously commissioned into the annual safety and health reports it produces. On page 47 of that report Parker and Cliff (2007) stated:

“The DME collects medical information on workers in the Queensland coal mining industry. However this information is not included in the annual report and similar information is not collected for the metalliferous sector. Given the appropriate resources to adequately maintain and analyse this information, this data set would constitute an important component of health surveillance and provide useful health performance data. In addition it would allow analysis of trends and change in health status over time.”

The Monash/UIC Review also identified that failing to ensure that the data from the respiratory component of the Health Scheme was used for group health surveillance to monitor trends in CMDLD was a significant deficiency in the scheme.

The QRC does not believe that the availability of health surveillance reports would have prevented the reappearance of CWP, and accepts that while there is no regulated obligation on the regulator to produce such reports, it was clearly their desire to do so, at least in the form of guidance material based on the data. QRC does believe however that it is now apparent that the lack of any such reporting, and the sheer extent of the information backlog itself, was another indication that the Health Scheme had drifted to a point of failure, if possibly a contributor to the failure itself.

The 2013 RIS also advised that DNRM believed it was a particular concern that many NMAs had little to no experience or expertise in occupational medicine, and had no knowledge of mine conditions or the coal mining industry more broadly. DNRM was concerned that without the occupational health experience and detailed knowledge of the employer’s coal mining

operations to assess the health of a worker against the job demands, that many NMAs may not have been providing an appropriate medical assessment. The RIS stated:

“DNRM will require through regulation, medical practitioners with appropriate qualifications and/or experience to carry out health surveillance assessments. This will be consistent with the approach in the core mining Regulations requiring appropriate expertise and the approach in the Mining and Quarrying Safety and Health Regulation 2001, requiring an ‘appropriate doctor’ for a health surveillance or health assessment of a person at a mine.

“The approved form will need to be amended to focus on health surveillance concerns only. DNRM can require that the medical practitioners have experience in the mining industry and if necessary require appropriate training for them in audiometry and spirometry to ensure an appropriate standard of assessment.”

Again, these concerns were very similar to many of the issues and failings highlighted by the Monash/UIC review. In particular DNRM clearly had some concerns about the quality of spirometry, which was ultimately shown by the Monash/UIC Review to be severely compromised.

The Monash UIC review findings regarding NMAs more broadly are summarised by recommendations 7 and 8 of their report:

*Recommendation 7*

There should be a much smaller pool of approved doctors undertaking the respiratory component of health assessments under the scheme, taking into account geographical considerations and other workforce needs.

*Recommendation 8*

Doctors should undergo a formal training program, including visits to mine sites, prior to being approved by the DNRM, to ensure they reach a suitable standard of competence and have the necessary experience to undertake respiratory health assessments under the scheme.”

Thus it appears clear that many of the issues identified in the Monash/UIC Review had been identified and discussed previously, many were proposed to be addressed, but ultimately were not, despite support from industry to do so.

Having made this point however, the QRC again cautions the Committee from concluding that a disproportionate level of blame can necessarily be placed on any party for the re-identification of CWP. The overall processes for reviewing and revising the safety and health management arrangements in Queensland coal mines is a tripartite one, and it is clear that none of the three parties knew the system had become completely dysfunctional and had provided an opportunity for cases of CWP to go undetected.

It is a fundamental part of any review and oversight process that not every issue raised will be dealt with. Efforts are generally greatest where the most need is apparent. The fact remains that there were no clear signals that respiratory disease was not being adequately addressed. It is the nature of risk normalisation for people not to realise the extent of the risk, and it is the nature of the drift to failure for people not to appreciate the extent of the danger presented by the combined effect of a number of problems within a system.



## 3. Previous recommendations

As mentioned in the introduction to this submission, because of the emphasis placed on the Monash/UIC Review and the Senate Inquiry in the Select Committee on CWP's terms of reference, the QRC believes it is important to address a number of the findings and recommendations of those documents.

### 3.1 MONASH/UIC REVIEW

The QRC was strongly supportive of the Minister for Natural Resources and Mines commissioning the review of the respiratory component of the Coal Mine Workers' Health Scheme, and coal mine operators readily provided any information that was sought by the reviewers. Operators did this through their representatives on the reference group for the review that was formed by DNRM.

While shocked at the findings the QRC applauds the Minister for ensuring the review was as thorough in its conduct and as comprehensive in its recommendations as it could be, while still being delivered in as timely a way as possible.

Industry therefore supports the findings of the review and is committed to working with DNRM and other government agencies, medical professionals, coal mine workers and their representatives to address the recommendations. The QRC will seek engagement in the development of amendments to the Health Scheme and any other regulatory amendments that are required, but puts forward some initial comments on the recommendations to inform the Committee's consideration of these, as they are required to do under the terms of reference for the inquiry.

#### **Recommendation 1**

*The main purpose of the respiratory component of the scheme should explicitly focus on the early detection of CMDLD among current and former coal mine workers.*

This is entirely consistent with DNRM's proposal in the 2013 National Mine Safety Framework RIS, that being to "focus the scheme" (DNRM 2013). That proposal was fully supported by the coal mining industry at that time (QRC 2013) as was discussed extensively in Part 2 of this submission. QRC will continue to advocate for the removal of any linkages between fitness for work and screening to detect occupational disease, along with appropriate legislative amendments to ensure that the coal mining industry can effectively manage fitness for work and adequately address any health issues that pose a health and safety risk in the coal mining industry.

#### **Recommendation 2**

*Clinical guidelines for follow-up investigation and referral to an appropriately trained respiratory or other relevant specialist of suspected CMDLD cases identified among current and former coal miner workers should be developed and incorporated into the scheme.*

QRC believes that it is essential that follow-up investigation and referral is provided for if the screening program is to be fully effective, however as noted in Part 2 of this submission, doing so would currently be inconsistent with the Supreme Court ruling QSC 05-242 without regulation amendment. The QRC believes such amendments should be broad enough to cover all aspects of the Health Scheme and should not be restricted to only a narrow range of specified respiratory health investigations. The QRC believes that the doctors administering the Health Scheme should not be unreasonably fettered in the clinical examinations that can be undertaken to ensure the health and safety of coal mine workers.

It is apparent that the detection of early stage simple CWP is not straightforward. The application of a dual reading system under the ILO Classification provides a strict protocol that should improve the accuracy of detection. However, the current "dual reading" process utilising US based B readers appears to be resulting in a significant number of false positives. It is unclear to what extent quality issues with the radiographs are responsible for this situation. There is a need to establish a clear diagnostic pathway including quality analysis of the radiographs to minimise the potential for incorrect diagnoses.

### **Recommendation 3**

*DNRM should require the reporting of detected cases of CWP and other CMDLDs in current and former coal miners identified by the scheme.*

QRC supports compulsory reporting of CMDLDs within the current workforce, and notes that the extension of this requirement outside the industry is problematic as discussed by representatives of Queensland Health at the Committee's departmental briefing on 14 October 2016 (CWP Select Committee 2016).

For current workers, privacy restrictions mean that the Site Senior Executive (SSE) of a coal mine may not always be informed of the nature of a health condition, therefore the QRC believes this reporting requirement should apply to the NMA and be extended to require any occupationally related condition that indicates there may be a significant risk to health and safety at a coal mine to be reported to DNRM.

DNRM in turn should be required to report summarised de-identified information to industry to inform the development of effective measures to address those conditions. The QRC proposes restricting this reporting to occupational conditions, consistent with its position that the issue of general fitness for work should be entirely separated from the Health Scheme, with appropriate regulation amendments being made to ensure that the SSE can have fitness for work issues effectively assessed and managed.

### **Recommendation 4**

*There should be a separate respiratory section of the health assessment form which includes all respiratory components, including the radiology report using the ILO format and the spirogram tracings and results.*

The QRC supports this recommendation as it facilitates refocusing the Health Scheme onto the most important issues. Allowing the ILO reporting requirement to lapse was a significant contributor to the drift to failure of the Health Scheme. It is also clear that the utility of spirographic testing is seriously limited unless the results of previous tests are also considered.

### **Recommendation 5**

*The form should include a comprehensive respiratory medical history and respiratory symptom questionnaire.*

The QRC supports this recommendation because aggregated information from the questionnaire may provide important epidemiological data on conditions and behaviours that might increase the risk that a person will contract CMDLD, and would assist in risk management if such information is made available to coal mine workers. DNRM should therefore ensure any data collected under the Health Scheme is available for analysis and is reported to all of industry as part of a respiratory health surveillance program.

### **Recommendation 6**

*The criteria to determine workers "at risk from dust exposure" should be based on past and current employment in underground coal mines and designated work categories in open-cut coal mines and CHPPs.*

Total risk exposure is clearly important when dealing with a chronic condition. The QRC notes that the recent detection of CWP in an open cut coal mine worker means that there will be a growing focus on this sector, including discussion about which tasks will trigger the requirement to have a chest X-ray. The discussion on which workers, aside from those who work underground, should undergo screening for CWP, and at what frequency this is required, should be undertaken by the Coal Mining Safety and Health Advisory Committee, but it will need to be informed by the best available scientific advice. It should also be noted that the work history of a coal mine worker will only ever be available to the employer or the NMA at the level of detail the worker is willing to provide.

### **Recommendation 7**

*There should be a much smaller pool of approved doctors undertaking the respiratory component of health assessments under the scheme, taking into account geographical considerations and other workforce needs.*

The QRC supports this recommendation in principle, but notes that there will need to be significant policy development to ensure that the number of approved doctors remains manageable without having unnecessarily anti-competitive side effects. It is noted that the same requirements will apply to smaller contractors as will apply to coal mine operators, and needlessly driving up costs would not be reasonable, particularly for a number of such smaller contractors.

The primary issue is to maintain a quality respiratory health assessment process, and while the number of doctors undertaking the task may affect quality, it is not the only issue to be considered. While agreeing that the number of NMAs that performed or supervised assessments during the resources boom was excessive, and probably contributed to the drift to failure of the Health Scheme, the QRC also believes that any new system has to be sustainable in the long term.

### **Recommendation 8**

*Doctors should undergo a formal training program, including visits to mine sites, prior to being approved by the DNRM, to ensure they reach a suitable standard of competence and have the necessary experience to undertake respiratory health assessments under the scheme.*

Requiring doctors to undergo specific training is consistent with having competency requirements on statutory position holders within the mine management structure, however these requirements are set by CSMHAC. A separate process might be required; at the very least CSMHAC would need to be provided specialist guidance on how to set such competency standards.

### **Recommendation 9**

*The approval of doctors to undertake the respiratory health assessments for the early detection of CMDLD under the scheme should become the sole responsibility of the DNRM.*

While the QRC provides in principle support for doctors administering the Health Scheme to meet set requirements to maintain an appropriate standard, it is important that industry

participants also retain a choice in deciding which doctor is engaged in the health assessment of their workforce. The Monash/UIC Review also highlighted the importance of the NMA understanding the mining operation relevant to the health assessment being undertaken; it also emphasised the importance of the NMA being involved in the management of respirable dust risk exposures overall. It is important that mine operators have some degree of choice in the person they engage to have such an intimate involvement in their operation.

### **Recommendation 10**

*Doctors approved to undertake respiratory health assessments should have a different designation from 'NMA', which should reflect their specific responsibility for respiratory health assessments under the new scheme.*

While the QRC is not opposed to this recommendation, if it is required in order to make a fresh start for the Health Scheme, consideration needs to be given to ensuring that the regulated requirements are not unnecessarily complex. It is noted that while the Monash/UIC review dealt only with the respiratory component of the scheme, it is possible that other aspects of occupational health assessment may in the future also be subject to a specific set of requirements. As an example the QRC is aware that concerns have previously been raised in regard to the lack of quality assurance processes around audiometric testing, similar in some ways to concerns around spirometry raised in the Monash/UIC review.

It may be more efficient in the longer term to keep a single set of regulatory requirements for the appointment of doctors under the scheme, but provide that specific requirements may be set for doctors undertaking the assessments to be set by policy. This would then allow specific requirements to be set for radiology, X-ray interpretation and spirometry, for example through a recognised standard. Then, if it becomes apparent in the future that specific requirements should be set for things like audiometry, this could be achieved without the need for regulation amendment, simply by the Minister making another recognised standard.

### **Recommendation 11**

*Chest X-rays should be performed by appropriately trained staff to a suitable standard of quality and performed and interpreted according to the current ILO classification by radiologists and other medical specialists classifying CXRs for the scheme.*

The QRC supports this recommendation and believes that allowing the requirement to have chest X-rays reported to the ILO Classification to lapse was a significant contributor to the drift to failure of the Health Scheme. It should be acknowledged however that the key component of this recommendation is that staff be appropriately trained.

It is clear that simply reporting to a standard is not necessary in the detection of CWP, nor would it guarantee detection. The ILO Classification is an epidemiological tool that allows comparison of the rate and severity of pneumoconioses between separate jurisdictions. A radiologist should be able to detect the presence of CWP without reference to the ILO Classification. What a system of training in the Classification does, is to expose a radiologist to the standard radiographs to ensure they are familiar with what they are looking for. Competence testing is required because it demonstrates whether or not they are in fact able to detect the disease reliably.

### **Recommendation 12**

*Spirometry should be conducted by appropriately trained staff and performed and interpreted according to current ATS/ERS standards.*

The QRC fully supports this recommendation. Given these are specialist functions that were integral to the effective operation of the respiratory screening program, QRC was extremely surprised to find out through the review that both chest X-ray and spirometry components were being undertaken by inadequately trained and experienced people.

**Recommendation 13**

*DNRM should transition to an electronic system of data entry and storage, whereby doctors undertaking these respiratory assessments enter the data for their assessment and can access previously collected data for the mine worker and to facilitate auditing.*

This is consistent with what industry has requested as the only realistic way to enter data in a timely manner. The Monash/UIC Review also highlighted the importance of doctors accessing previous records, particularly spirometry, to detect temporal changes.

**Recommendation 14**

*All coal mine workers, including contractors, subcontractors and labour hire employees, who meet the revised criteria for being "at risk from dust exposure" should be registered in the DNRM database on entry into the industry for the purposes of ongoing medical surveillance.*

In theory this already happens when the data from a workers' first medical is entered onto the database. The problem is that the data entry process is so far behind.

**Recommendation 15**

*DNRM should conduct ongoing individual and group surveillance of health data collected under the scheme, to detect early CMDLD and analyse trends to disseminate to employers, unions and coal mine workers.*

QRC supports this recommendation, and notes it is consistent with previous industry requests to improve the availability of information as dealt with in detail in Part 2 of this submission.

**Recommendation 16**

*Coal mine workers should have exit respiratory health assessments regardless of whether they leave the industry due to ill-health, retirement or other reasons.*

QRC supports this recommendation, noting that such a requirement will now apply from 1 January 2017. QRC does however also note potential difficulties in having someone undergo testing if they choose not to. Once a worker leaves industry they are no longer a coal mine worker and no longer subject to the regulatory requirements. In some cases, it is also difficult to determine if an employee is leaving the industry permanently or whether they may again work in the industry in the future.

**Recommendation 17**

*An implementation group, including representatives of stakeholders and relevant medical bodies, should be established to ensure that the necessary changes to correct the identified deficiencies with the respiratory component of the current scheme are implemented in a timely manner.*

While no such group has been established to date, the QRC suggests that CSMHAC could act as a de facto implementation group. It should however be noted that the Minister announced in March that changes to the NMA system would be progressed as a priority but industry is still yet to see a firm proposal.

### **Recommendation 18**

*There should be a further review of the revised respiratory component of the scheme within 3 years to ensure that it is designed and performing according to best practice.*

DNRM should present an implementation plan for the recommendations and progress against it should be reported on a regular basis through bulletins to the major stakeholders.

## **3.2 SENATE SELECT COMMITTEE ON HEALTH INQUIRY**

### **Recommendation 1 - National Dust Monitoring Group**

- 4.12 *Establish a National Coal Dust Monitoring Group to establish the cause of the serious and widespread breaches of dust mitigation measures in the industry, develop and implement a work program for effective coal dust mitigation measures aimed at the immediate reduction of coal mine workers' exposure to harmful levels of coal dust.*
- 4.13 *Safe Work Australia review coal dust exposure levels and develop a best practice national maximum exposure level. Safe Work Australia should report its findings to the National Coal Dust Monitoring Group, including whether the exposure level should be measured as a dust load of milligrams per tonne of coal cut, as distinct from time weighted averages for exposure.*
- 4.14 *All Australian States and Territories adopt the national standard for coal dust exposure. The standard would then be subject to regular review by the National Coal Dust Monitoring Group, with the review being based on dust reading and disease data provided by the mine regulators in Australian jurisdictions.*
- 4.15 *In the short-term, coal mining companies adopt the lowest Australian level (2.5 mg/m<sup>3</sup>) for coal dust exposure until a national standard has been agreed upon and implemented with a more rigorous, independent testing regime instigated as soon as practical in Queensland.*
- 4.16 *State governments advise mining companies that coal workers should be withdrawn from areas subject to unsafe dust levels without penalty.*  
*The Queensland government and DNRM instigate a process of formal warnings followed by naming in a public register for non-compliant companies, along with additional sanctions for non-compliance.*
- 4.17 *Mining companies, in consultation with the Queensland Government, technical experts and industry stakeholders, urgently employ more effective coal dust mitigation measures to immediately reduce coal mine workers' current exposure to coal dust.*

The QRC is not opposed to the consideration of dust control measures and exposure limits across jurisdictions; in fact the QRC has long supported the implementation of uniform mining regulations throughout the major mining states in Australia, provided these regulations are evidence based and represent best practice. However, the decade-long process undertaken to develop the proposed model regulations under the National Mine Safety Framework, and the eventual failure to have those outcomes implemented, is a salient lesson about the difficulties in achieving such uniformity.

The basis for any cross-jurisdictional discussion has to be an honest dialogue between equals, and the QRC is disappointed that the language employed by the fifth interim report of the Standing Committee on Health was not conducive to such an approach. If the Commonwealth was seeking a leadership role in such discussions, then it is unfortunate that the Inquiry has failed to set an appropriate tone.



CWP is a very serious matter, and it is understandable that people, particularly those affected by the disease, will take an emotional approach. However it is not conducive to a shared responsibility for dealing with the issue to allow unproven and untested statements to be accepted as fact in an inquiry report. To the QRC the wording of subrecommendation 4.12 of the Standing Committee is a case in point, directing as it does that the proposed National Dust Control Monitoring Group should investigate the causes of the “serious and widespread breaches of dust mitigation measures”.

While the QRC supports the concept of sharing information and learnings across jurisdictions, it would not support the establishment of a group whose terms of reference were based on the unproven premise that there has been any deliberate circumvention of dust control measures, as suggested by the term “breaches”, let alone that these practices were widespread.

The QRC also believes that the process of improving dust control and mitigation measures should not have to wait for a National group, which is likely to be subject to bureaucratic process delaying its establishment and to political considerations in the delivery of its outcomes. The QRC believes that first and foremost the Queensland coal mining industry needs to use existing National practices, and processes that are under Queensland’s control in order to address the issues in as timely a manner as possible. The establishment of a new National group should not detract from that.

From a National perspective the QRC is fully supportive of Safe Work Australia undertaking an evidence-based review of coal dust exposure levels to develop a best practice national maximum exposure level. The standard should also provide clear guidance on the basis for statistical calculation of actual exposures, and the temporal and procedural application of the exposure standard to ensure that all jurisdictions are employing the same methodologies.

Queensland coal mining companies already have a legislative requirement to ensure respirable coal dust levels are as low as reasonably achievable, and have dust management plans in place to achieve that goal. In regard to the use of additional sanctions where dust levels are exceeded, Queensland already has a detailed compliance approach which includes a range of formal warnings in the form of compliance meetings between the operator and the inspectorate. Through their powers of direction the inspectorate can already implement the full range of potential sanctions. In the use of these sanctions, the inspectorate takes into account all of the potential impacts of these sanctions on the overall safety of a working mining operation.

### **Recommendation 2 - Coal dust monitoring in Queensland**

4.31 *State governments identify best practice dust monitoring devices or similar best practice technology to be used in all Australian coal mines.*

*The Queensland government should review the protections provided under the Coal Services New South Wales model and identify which aspects should be applied to any new legislative regime in Queensland.*

4.32 *State governments require that dust monitoring be undertaken in a consistent and methodical way, which monitors dust levels in all relevant parts of the mine during both maintenance and production times.*

4.33 *State governments increase public transparency and accountability around dust monitoring. Dust monitoring data should be made publicly available as a means of increasing accountability and restoring coal mine workers' confidence in the regulatory system.*

The QRC is already involved in the development of Recognised Standards *Monitoring Respirable Dust in Coal Mines* and *Underground Respirable Dust Control* through its representatives on the Coal Mining Safety and Health Advisory Committee (CMSHAC). DNRM has engaged with Coal Services in the process of CMSHAC discussing the review of Queensland dust monitoring standards, and CMSHAC has been considering what aspects of the NSW approach might be applicable to the standard. QRC is advised that the standard is expected to be finalised by 1 January 2017.

While the application of a consistent and methodical dust monitoring program is already required through the risk-based approach under the *Coal Mining Safety and Health Act 1999* (CMSH Act), the QRC supports the introduction of the Recognised Standard *Underground Respirable Dust Control* to help coal mines identify the best way to manage risk. Section 37 of the CMSH Act states that a safety and health obligation may be discharged by following a Recognised Standard, or by adopting and following another way that achieves a level of risk that is equal to or better than the standard provides.

Industry has identified the lack of real-time dust monitors certified for use where methane concentrations may exceed 0.5% as a significant impediment to improved monitoring of respirable dust levels. Longwalls are typically the most heavily monitored area of a mine, and methane concentrations on longwall faces typically range up to 1.0%.

While cumulative dust levels measured by individual monitors may be of greatest significance in relation to overall exposures, they are of limited use in measuring changes in dust levels over shorter time periods in a controlled manner. To best test the efficacy of changes in engineering controls for respirable dust requires dust levels to be measured and for results to be available in real time. For this reason, the QRC supports initiatives within CMSHAC to expedite the approval of real time dust monitoring devices for use in underground mines in Queensland.

Regarding the transparency and accountability of information from coal mines, and the restoration of confidence, it should be noted that it is already a requirement that coal mines keep such records in a location that is easily accessible by each coal mine worker at the mine [s89(5)(b) CMSHR]. The data is therefore already available to the affected coal mine workers, for whom the re-establishment of confidence in the system is most important. What has changed is that coal mine workers will now undoubtedly be more attuned to the relevance of that data to their own health. The risk is no longer "normalised", and the QRC believes that the approach in the regulations is appropriate, provided there is vigilance to ensure that awareness of the risk posed by respirable coal mine dust is maintained.

The Recognised Standard *Monitoring Respirable Dust in Coal Mines* will require mine operators to routinely report their respirable dust data to DNRM. From 1 January 2017 regulation 89A will introduce new requirements for the investigation and notification of dust level exceedances. These changes will increase the level of transparency and provide for independent review of reported dust levels if required.

### ***Recommendation 3 - Database of coal dust suppression techniques***

- 4.34 *The proposed National Coal Dust Monitoring Group in consultation with mining companies, state governments, technical experts and industry stakeholders, and with the support of Safe Work Australia, create and manage a database of best practice dust suppression techniques and management of dust sampling data.*
- 4.35 *The establishment of the database, and its day to day running costs, be funded by the state government and the coal mining industry.*

- 4.36 *Legislation requiring mining companies' input on, and compliance with the database be instigated at both federal and state government levels.*
- 4.37 *The National Coal Dust Monitoring Group, and state based bodies, also facilitate cross-jurisdiction information sharing about coal dust mitigation measures.*

DNRM already maintains a hazards management database as required by section 280(1)(a)(i) of the CSMH Act, and has indicated that it will use that to collect and maintain a catalogue of dust management and sampling techniques. This approach is supported and already funded by the Queensland coal mining industry. The database will be called up through the proposed Recognised Standard *Underground Respirable Dust Control*. The recognised standard will provide a comprehensive approach for managing respirable dust using known risk management concepts and best practice dust management controls. This approach is consistent with the legislative approach already in place in Queensland.

#### **Recommendation 4 - Best practice dust control forum**

- 4.40 *The Queensland Government, in consultation with mining companies, technical experts, unions, and industry stakeholders, form a standing dust committee or similar forum, in the near to medium term, to achieve best practice dust control in Queensland coal mines and to address the concerns raised about the current mitigation and monitoring issues.*

In anticipation that DNRM will convene such a forum in the near future, the QRC conducted an industry workshop on the control and mitigation of respirable coal mine dust in Moranbah on 19 October 2016. This workshop was extremely successful and all eight companies with underground mines attended and contributed, which reflects industry's commitment to prevent the disease by reducing dust levels in mines.

The workshop allowed companies to share good practice controls, innovations or activities that can be put in place at mining operations to protect workers from being exposed to harmful levels of respirable dust. Examples of successful dust mitigation strategies focused on the following areas:

- Coal transfer equipment
- Development operations
- General operations
- Longwall equipment
- Machinery in development
- Mine planning
- Monitoring
- Operational (longwall)
- Outbye operations

Through Recognised Standard *Underground Respirable Dust Control* Queensland coal mining industry will soon have a way of calling up best practice methods for dust control that are maintained on the DNRM database.

#### **Recommendation 5 - Fund for former coal mine workers**

- 4.54 *The mining industry, through its representative bodies, must create an industry-wide fund to provide compensation for coal mine workers who contract CWP. The fund's aims should include identification of, and communications with former mine workers who may require CWP screening and compensation for travel, medical, and other costs associated with undergoing CWP screening and diagnosis. Workers' access to compensation from this fund should not be time-limited in any way.*

- 4.55 *State governments provide a means for former and current miners to seek assistance which is independent of their employers and Nominated Medical Advisors such as a hotline or helpdesk, to be funded by the industry and independently administered by an organisation such as the Lung Foundation Australia*

The QRC believes that workers who contract CWP at work should receive compensation in a timely fashion, and that industry should fund this. The QRC also believes that retired workers should be able to have screening tests such as X-rays, CT scans and reviews by respiratory specialists, and that industry should also fund this. Industry does not however support the establishment of a specific industry wide fund to allow this to happen. Establishing a new fund would be overly bureaucratic and inefficient through the unnecessary duplication of processes and systems that are already in place through WorkCover Queensland and self insurer arrangements.

While the current Queensland workers' compensation scheme is generally fit for purpose it appears that the current scheme may be deficient in its cover for workers for the effect of latent onset occupational illness, and in its coverage of retired workers more generally. As discussed in Section 1.3 of this submission the QRC has proposed a review of the workers' compensation provisions to ensure that all workers who contract CWP receive industry funded compensation, in a timely fashion.

The QRC believes such a review should also ensure that retired workers can have industry funded screening tests. However, the QRC believes that this should be done by building on and if necessary fixing the existing workers compensation scheme, which is funded through premiums paid by the employer. The premiums of affected companies may need to increase, since they are subject to actuarial review, if there are significant additional costs because of CWP; however, the existing system would cater for that to occur.

In addition to these proposed changes, the QRC notes that the Government has recently amended the CMSHR to introduced new employer obligations from 1 January 2017 to provide retiring coal mine workers the opportunity to voluntarily undergo a retirement examination. Employers will be required to organise and pay for a retirement examination for any eligible retiring coal mine worker who requests one. The obligation will apply for all retiring coal mine workers who have worked in the coal mining industry for at least 3 years and who have not already undergone such examinations as part of a routine health assessment during the past 3 years.

#### **Recommendation 6 - Queensland Government's review of regulations**

- 4.68 *The Queensland Government gives the highest priority to its review of coal dust regulations as part of its five point action plan. To achieve this the committee recommends that the Queensland Government take note of the concerns expressed by the committee in relation to the mine Directives, particularly the enforcement of these Directives and the need for the information contained within the Directives and rates of compliance to be able to be audited and reported on. Directives issued by government departments should use standardised language and have a rigorous process for auditing, compliance, and data collection.*

The QRC is generally supportive of this recommendation in the promotion of a rigorous and clear compliance approach. While not necessarily reflected directly in the recommendation the QRC is however aware that the background discussion and questioning around the issues of dust control and monitoring legislation was critical of the risk based approach applying to Queensland's mining safety and health legislation.

The CSMH Act is based on a risk management model based on the concept of an acceptable level of risk that applies to all duty holders at a mine. The Queensland acceptable level of risk approach was influenced by the safety culture theories of Professor James Reason and the contemporary risk management movement. Acceptable level of risk dates to the occupational health and safety reforms of the mid-1990s around risk management and the technical analysis of acceptable and intolerable risk.

Acceptable level of risk as expressed through the Queensland Acts is a practical, adapted version of the acceptability of risk theories and focuses on the quality of management and risk management systems and processes over time. The QRC does not support an approach that would diminish the risk-based system of regulation in the Queensland mining industry.

### **Recommendation 7 – Regulatory capture**

- 4.72 *The Queensland Government direct relevant officials to undertake independent, high level, training on avoiding regulatory capture.*
- 4.73 *The committee recommends that in developing this training the Queensland Government have regard to the Better Practice Guides developed by the Australian National Audit Office in relation to regulatory capture.*

The Queensland coal mining industry strongly refutes that there is any degree of regulatory capture of the coal mining inspectorate by industry. The QRC has always maintained a position that the mining safety and health laws should be applied without fear or favour, and any breaches of the legislation should be dealt with consistently, thoroughly and professionally.

However, the theme of regulatory capture represents another area where the Senate Inquiry adopted an accusatory tone without presenting any real basis for the concerns being raised. No evidence of any inappropriate behaviour by mine operators or mines inspectors was put forward, however the concept of “regulatory capture” was a dominant premise that underlay much of the approach taken by senate Select Committee members at inquiry hearings.

Having made this point however, the QRC does believe it is appropriate for the Queensland Mines Inspectorate to have access to the best training in the performance of their duties that is available. While the precise nature of that training is largely a matter for DNRM, the QRC has long maintained that there is a need to modernise the enforcement approach and to improve the capacity of the inspectorate to undertaking their duties efficiently and effectively. Being aware of the potential for regulatory capture, and perhaps more importantly the perception that there might be regulatory capture, should be a part of that.

### **Recommendation 8 – Nominated Medical Advisors**

- 4.78 *In the short term the Queensland Government mitigate the risk of regulatory capture of the Nominated Medical Advisors by making the role an independent statutory position, selected through a rigorous process conducted by Queensland Health in consultation with the Department of Natural Resources and Mines and specialists groups such as the Thoracic Society and the Lung Foundation.*

The Queensland coal mining industry strongly refutes that there is any degree of regulatory capture of Nominated Medical Advisors by industry. Industry does however support the recommendations of the Monash/UIC Review regarding improving the training, appointment and management processes applying to the medical practitioners who undertake respiratory health assessments for the Queensland coal mining industry.

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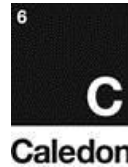
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**ATTACHMENT A QRC letter to Minister Lynham**

**ATTACHMENT B QRC letter to Minister Grace**



12 July 2016

Hon Dr Anthony Lynham MP  
Minister for State Development and  
Minister for Natural Resources and Mines  
PO Box 15216  
CITY EAST QLD 4002

Dear Minister Lynham

As representatives of Queensland's eight underground coal mining businesses, we share your concerns about the re-emergence of coal workers' pneumoconiosis.

We reaffirm our commitment to providing our employees with a safe workplace and transitioning to an improved Coal Mine Workers' Health Scheme informed by the outcomes of the Monash Review.

We will continue to work with you, the Queensland Government, and medical experts to inform our workplace protocols.

In order to provide ongoing reassurance to our current workforce, we commit to the following interim protocol for the conduct and review of chest x-rays (CXR) whilst longer-term health assessment processes are established and legislated.

We will:

1. Offer any of our underground coal mine workers who has a concern about their respiratory health:
  - A review of their existing CXR, read to the International Labour Organisation (ILO) classification, by a radiologist nominated on the Royal Australian and New Zealand College of Radiologists (RANZCR) endorsed list, or by a "B" reader physician certified by the USA National Institute for Occupational Safety and Health (NIOSH), where they have a digital CXR that is less than two years old.
  - A new digital CXR read to the ILO classification by a radiologist nominated on the RANZCR-endorsed list, or by a "B" reader physician certified by NIOSH, where they have a CXR that is more than two years old, and/or on an analogue film.
2. All new chest x-rays taken as part of new coal mine worker medicals are to be digital x-rays, read to the ILO classification, by a radiologist nominated on the RANZCR-endorsed list, or by a "B" reader physician certified by NIOSH.

3. Adopt a two reader chest x-ray screening protocol, once an appropriate model is established.

Yours sincerely

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David Diamond  
**Anglo American**

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Rag Udd  
**BHP Billiton**

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Peter Trout  
**Caledon Resources**

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Ian Cribb  
**Glencore**

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Steve Kovac  
**Idemitsu**

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Charles Meintjes  
**Peabody Energy**

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Ivan Vella  
Rio Tinto Coal Australia

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Rob Bishop  
**Vale**

10 November 2016

The Hon Grace Grace  
Minister for Employment and Industrial Relations  
Minister for Racing and Minister for Multicultural Affairs  
GPO Box 611  
BRISBANE QLD 4001

Email: [employmentIR@ministerial.qld.gov.au](mailto:employmentIR@ministerial.qld.gov.au)

Dear Minister

I am writing to you in regards to concerns about the Workers' Compensation Scheme (the Scheme) that have been raised through the Parliamentary Select Committee Inquiry into Coal Workers' Pneumoconiosis (the Committee) and in my own discussions with workers diagnosed with CWP.

Officers from the Office of Industrial Relations briefed the Inquiry on the Scheme on 14 October 2016, and compensation issues have been raised by several workers who have contracted the disease and who appeared before the Committee on 4 November 2016.

First, I note the information provided by Mr Paul Goldsborough Executive Director, Safety, Workers' Compensation and Policy Services, that a streamlined process for considering compensation claims for Coal Workers' Pneumoconiosis (CWP) has been introduced. I congratulate you as the responsible Minister and your department on this important initiative.

The QRC believes that workers who contract CWP at work should receive fair compensation in a timely fashion, and that coal employers should be able to provide the needed funding through the existing Scheme.

Until recently the QRC was firmly of the view that since the Scheme was of long standing and proven effectiveness, it was fit for purpose to deal with CWP. However, some of the evidence provided to the Committee and directly to QRC has suggested that some workers with CWP have had difficulty in accessing workers' compensation benefits because of their particular circumstances.



Evidence has been presented that the scheme may be challenged in dealing fairly with cases that have been confirmed as so-called “simple” CWP, i.e. those individuals who have little or no impairment to work and if removed from dust exposures are likely to live long and healthy lives. The concern is that such workers will experience a negative impact on their future earning capacity.

It appears that workers in this situation have been advised that their only recourse may be to make a common law claim for loss of earnings. QRC believes the process to give these workers fair compensation could be streamlined and if possible non-adversarial.

The QRC also believes that concerned retired workers should be able to have screening tests such as X-rays, CT scans and reviews by respiratory specialists, and that industry should also fund this through the existing scheme.

Finally, we are concerned that retired workers with an acknowledged diagnosis of CWP and who have had multiple employers should not have to wait to receive support from the Scheme while insurers debate the apportionment of responsibility.

It appears therefore the scheme may need some revision so that it can better deal with the issues raised by CWP, and in particular, the diagnosis of the disease in workers after they leave industry or retire.

The QRC is seeking your support to establish as a matter of urgency a multi-stakeholder Taskforce to review and recommend any necessary amendments to the Scheme in order to address these issues.

QRC recommends that this Taskforce be supported by the Office of Industrial Relations, be chaired by an independent and eminent relevant expert, and include representatives from WorkCover, self insurers, the Queensland Resources Council and the mining unions. We would recommend that the Taskforce be asked to report to you by no later than end-March 2017.

If there are gaps in the scheme that need to be rectified to effectively deal with workers with CWP, then the QRC wholeheartedly supports that happening.

I look forward to hearing of your support for our Taskforce proposal.

Yours sincerely

Michael Roche  
**Chief Executive**

15 March 2017

Mrs Joanne Miller  
Chair Coal Workers' Pneumoconiosis Select Committee  
Parliament House  
Cnr George and Alice Streets  
Brisbane Qld 4000

Dear Mrs Miller *Joanne*

I am writing to you further to the letter you received from the former Chief Executive of the Queensland Resources Council (QRC) Mr Michael Roche dated 16 November 2016. That letter prefaced the QRC's submission to the inquiry of the Coal Workers' Pneumoconiosis (CWP) Select Committee into "the re-emergence of CWP amongst coal mine workers in Queensland".

As Mr Roche stressed in his correspondence, the Queensland coal mining industry regards the health and safety of its workers as a core value, and the industry prides itself on ensuring the highest standards of health and safety. Since making its submission through the QRC, industry has continued to proactively and positively engage with coal mine workers, their unions, the Department of Natural Resources and Mines (DNRM) and health experts to address the re-identification of CWP.

On behalf of its members the QRC has also monitored the progress of your inquiry, and has taken particular interest in the evidence presented at hearings and in the submissions that have been made. The QRC has consequently identified some key issues where it feels that additional comment from industry may be of benefit to the Committee in achieving the Inquiry's goal of ensuring CWP is eradicated.

These issues are:

- Real time dust monitoring;
- Dust exposure levels;
- Risk-based regulation;
- Chest x-rays and the detection of CWP;
- Respiratory Protective Equipment;
- Labour Hire; and
- Airborne dust.

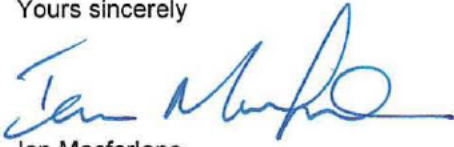
Some additional input into these issues follows in Attachment A. Because of the particular importance QRC places on real time dust monitoring, and the technical nature of the issues involved, a separate short submission on that matter is also attached.

I believe it is critical that your inquiry assists the coal mining industry to address the respirable coal mine dust hazard. There is a risk that an overly prescriptive outcome could have unintended adverse effects, and for that reason the attached commentary also deals with the need to maintain the current risk-based approach to health and safety. The potential for prescription to unintentionally stifle innovation is demonstrated by the current exclusion of newer personal dust monitoring technology through the relevant standards. This constitutes an unnecessary hurdle, over and above the crucial requirement of ensuring that adequate levels of explosion protection are achieved.

We need to do everything we can to ensure that such hurdles are removed, and that new constraints are not introduced. The ability for industry to innovate is essential if the risks associated with coal mining are to be as low as reasonably achievable, which is moral and the legislated obligation. For example, I am interested in industry exploring the potential to link real time personal dust exposure data with location information as a way to fully understand the dust hazard, and to provide immediate feedback to mine management and affected workers on the effectiveness of dust control measures.

Such comprehensive approaches will only be possible if unnecessary impediments are not placed on future innovation.

Yours sincerely



Ian Macfarlane  
Chief Executive

Enclosed:  
Attachment A  
QRC Submission – Real time monitoring of respirable coal mine dust

## Attachment A

### ***Real time dust monitoring***

The capacity to monitor respirable dust levels in real time has been raised as a potential improvement in the management of the coal mine dust hazard, however there appears to be some confusion about when it can be introduced and what doing so might achieve. Industry is actively seeking to improve the accuracy and timeliness of monitoring respirable coal mine dust levels. In the immediate future, real time monitoring is essential to improve the measurement of control effectiveness. In the longer term, it also has potential for use in demonstrating compliance; however how that might occur will require tripartite consultation through the Coal Mining Safety and Health Advisory Committee (CMSHAC).

While there has been support for the use of real time dust monitors in a number of submissions and in evidence given to the Inquiry, the submission from the Department of Natural Resources and Mines (DNRM) dated 11 December 2016 deals with the issue in greatest detail. That submission was not optimistic about achieving approval for real time monitors in what industry believes is a timely enough manner. The submission notes the extensive use of such monitors in the United States and South Africa, however DNRM also advises, quite correctly, that "the technology has not been deemed IECEx7 approved as intrinsically safe for use in Australian mines".

The limitations of real-time monitoring devices are explained by DNRM; in particular their submission notes that neither laser photometry nor tapered element oscillating microbalance (TEOM) technologies calculate dust levels in accordance with *Australian Standard 2985: Workplace atmospheres – method for sampling and gravimetric determination of respirable dust (AS2985)*, which means that such measurements currently cannot be used to assess compliance against Queensland regulations.

The DNRM submission advises that manufacturers and mining companies are working with SIMTARS to review and test products for intrinsic safety, but in summary states that "the approval of a unit that meets IECEx standards is 2-3 years away".

The QRC believes that moving toward real time monitoring of the levels of respirable coal mine dust is one of the highest priority proactive steps that can be taken in addressing the risk of CWP. Industry understands the comments that DNRM makes in its submission, and does not believe that the Mines Inspectorate is anything other than fully supportive of real time monitoring; therefore the QRC hopes that the CWP Inquiry may be able to assist in moving this issue forward more quickly than seems likely from reading the DNRM submission. While the issue of compliance monitoring will take some time to resolve, the QRC believes it is possible to move the measurement of control effectiveness forward more quickly. The two issues are not inextricably linked.

As mentioned previously, a brief submission on this matter is attached to better explain the technical issues, however in summary the following suggested actions are provided (in priority order):

- With oversight from the Coal Mine Safety and Health Advisory Committee (CMHSAC), a working group consisting of a cross-section of industry representatives could undertake a risk assessment with the view to temporarily amending Recognised Standard 01 to specifically allow the only commercially available real time dust monitor that appears suitable for use in Queensland coal mines (the PDM3700) to be used in atmospheres containing up to 1.25% methane. This would allow rapid deployment of real time monitoring in areas where workers are at greatest risk of respirable coal mine dust exposure.
- The new Recognised Standard 14 on monitoring respirable dust in coal mines could be amended to ensure it does not specifically exclude the use of TEOM technology as a means of gravimetric sampling to determine respirable dust concentrations.
- AS2985 could be amended to include TEOM as an accepted means of gravimetric sampling and to require new technologies to be considered in the future.
- CMSHAC could identify the remaining operational and technical issues around the use of real time dust monitors with a view to undertaking tripartite consultation on their use as a compliance tool.

## ***Dust exposure levels***

There have been a number of submissions to the inquiry stating that the current respirable dust exposure level is too high, and several questioned why the NSW limit is lower than Queensland's. The current Queensland legislative limit of 3 mg/m<sup>3</sup> is a time-weighted average based on long term exposure through a five-day working week of eight-hour work shifts over a person's entire working life. In practice under AS2985 the most common adjusted exposure limit used in Queensland coal mines is 2.8 mg/m<sup>3</sup>.

The legislated exposure limit in NSW is 2.5 mg/m<sup>3</sup>, however there are a number of differences in how this limit is applied and measured, making a simple direct comparison between the requirements of the two jurisdictions invalid.

Up until 2005 the NSW respirable dust limit was also 3mg/m<sup>3</sup>. In 2004, AS2985 was amended to adopt a new algorithm for the calculation of dust concentrations. This new sampling curve required a change in the flow rate of the sampling device from 1.9 L/min to 2.2 L/min. The QRC is advised that Coal Services NSW concluded at that time that this increase in flow rate may result in a change to the measured dust concentration and potentially cause an underestimation of the actual exposure. NSW therefore reduced their coal dust exposure limit to 2.5 mg/m<sup>3</sup>.

On face value this decision may seem unexpected; it seems to disregard the increased flow rate being accounted for in the new sampling curve. Intuitively it also seems more likely that an increased flow rate would, if anything, collect more dust particles and result in over-estimation of the total dust mass. However, it should be noted that, unlike Queensland, NSW does not require the regulated exposure limit to be shift adjusted. In this circumstance the adoption of a more precautionary limit is perhaps more understandable.

The QRC is not aware of any similar concerns being raised in Queensland regarding the change in sampling flow rate through amendment of AS2985 in 2004.

The monitoring of respirable dust in both Queensland and NSW must be conducted in accordance with AS2985, but there are also differences in the sampling methods used. These differences include the proportion of the shift for which the sampling device must be worn, the location where the sampling device is worn on the worker and the locations in the mine where sampling is to occur. These differences mean that direct comparisons between the limits in the two jurisdictions are impossible, and may also help explain why the 2004 changes to AS2985 were viewed differently in the two jurisdictions.

It is important to note that the QRC is not necessarily opposed to a reduced exposure limit per se; the QRC simply believes that the limit should be based on the best available science. Just basing it on the level that applies in NSW, or for that matter in any other jurisdiction, without understanding why those levels are set and the methodology by which they are monitored, is too simplistic.

The QRC believes that mine sites must continue to work cooperatively with the inspectorate and with their workforce to ensure that any statutory dust limits are met, and that worker exposure to respirable coal mine dust is as low as reasonably achievable. The QRC fully supports the development of a best practice national maximum exposure level through the evidence-based review of Australian dust exposure levels currently being undertaken by SafeWork Australia. The QRC has long advocated the adoption of consistent best practice safety requirements across mining jurisdictions, and a review of the coal mine dust exposure levels set by AS2985 is in line with this.

The QRC also believes however that the Australian standard should provide clear guidance on the basis for statistical calculation of allowable actual exposures. This would ensure consistent temporal and procedural application of the exposure limit by ensuring that all jurisdictions are employing the same methodologies.

### ***Risk-based regulation***

A number of people providing evidence to the inquiry have voiced the opinion that coal mining operators should not be allowed to "self-regulate", and some have stated that they have lost faith in the legislative system. The above discussion about regulated dust levels provides a good basis for understanding the nature of the legislative framework that applies in Queensland. Risk-based regulation does not equate to self-regulation; rather it means that mine sites must assess all their risks in order to determine how best to manage those risks.

Nor does the legislative framework for Queensland mining provide an entirely risk-based model. There are many instances where a specific limit or other statutory requirement is set by the legislation; generally this occurs where it is considered that there is only one "right" answer that should apply across all possible situations. The shift adjusted exposure limit for respirable coal dust is an example of such a limit. As stated in the previous section, the QRC believes this limit should be reviewed considering the best available scientific information.

However, even though the legislation sets a statutory limit, the regulation also specifically requires that respirable dust levels must be as low as reasonably achievable. The QRC believes that this is a good model; it tells the industry that just staying below the regulated requirement is not enough – dust levels not only have to be below 3 mg/m<sup>3</sup>, they must actually be as low as can reasonably be achieved.

The legislative framework also provides for guidance on how risks can be assessed and managed through the establishment of Recognised Standards, which set the minimum requirements for how the assessment of risk and the management of a hazard is to occur. Queensland coal mine operators now have two new comprehensive recognised standards that directly relate to the management of the risk from respirable coal mine dust. These standards are supported by QRC, with the exception of the above request for an amendment to ensure that the use of TEOM technology is not excluded as a means of gravimetric sampling to determine respirable dust concentrations.

There is an extensive body of scholarly discussion about the regulation of hazards in high risk work. Much of this discussion is informed by the forensic examination of previous disasters, starting with the Aberfan mining disaster in 1966. The overwhelming consensus is that empowering those who bear the burden of a risk to assess and manage that risk is the best way to achieve good health and safety outcomes. Simply setting all requirements prescriptively in regulation encourages the mentality that risk management is "someone else's business" and stops people searching for their own best practice solution. It stifles innovation. In coal mining, it also ignores the fact that no two mines are the same.

For this reason, the QRC believes that the CWP Inquiry should be cautious about considering any recommendations to amend the fundamental nature of the Queensland legislation to make it more prescriptive overall. The QRC believes that the inquiry should consider the capacity for the changes that have been made to the regulation, including the new recognised standards, to drive the required improvement in respirable coal dust management and monitoring.

### ***Chest x-rays and the detection of CWP***

Many people providing evidence to the inquiry have raised issues around the process for detecting CWP through the use of screening X-rays for CWP.

As dealt with in detail in its submission to the Inquiry dated 16 November 2016, the QRC is fully supportive of measures to improve the screening process for coal mine dust lung disease; that information will not be restated here. It should be noted however, that one issue the QRC believes needs speedy resolution is to ensure that local radiologists have the required skills to reliably detect CWP at the screening X-ray level.

While industry has been fully supportive of an interim process for dual reading in the US through the University of Chicago in Illinois, this process is inevitably delaying the clearance of workers to work in Queensland coal mines. This is causing difficulties for both employers and workers, who have a reasonable expectation that they will be advised as soon as possible of their health status.



Again, the QRC submission clearly explained industry's position that health screening needs to be completely separated from fitness for work, so that will not be reiterated here. That issue will inevitably be the subject of conflicting positions, and the QRC understands the need for full consultation on such matters. However, it is clear that all industry parties support ensuring Queensland radiologists are demonstrably competent to read to the ILO Standard, which was one of the major recommendations of the Monash/UIC review.

The QRC believes that there is good reason in this instance for DNRM to immediately move to require dual reading of screening chest X-rays by two Australian radiologists that have been certified as competent to read to the ILO Classification under the US National Institute for Occupational Safety and Health (NIOSH) system. The University of Illinois at Chicago's system of adjudication used in a case where the two primary readers disagree with each other, could also be immediately implemented.

While the QRC supports the position of Queensland-based medical practitioners in wanting an entirely locally-based system, it appears that this will take some time to be established. Since there are immediately available systems of certification and quality assurance that would be acceptable to both employers and employees, the QRC believes they should be adopted for local radiologists as an interim measure as soon as possible.

### ***Respiratory Protective Equipment***

There have been conflicting comments regarding the use and availability of respiratory protective equipment in the coal mining industry; however, a number of submissions have stated that it was not supplied consistently, in particular that the availability of RPE differed between mine employees and contractors. There have also been changes to the regulation governing the use of RPE and a new recognised standard effective from 1 January 2017. While the use of RPE is the lowest risk management strategy on the hierarchy of control it is essential that sensible provisions for its use are retained.

The coal mining safety and health legislation requires that there be a single safety and health management system (SHMS) for a mine, and QRC member companies believe that all coal mine workers are entitled to the same high level of protection for their respiratory health. The QRC is not aware of any incidences where appropriate RPE, if required, would not have been available to contractors. Specific details of any such failures to provide required protective equipment should be provided to the mines inspectorate for investigation.

Clarification of the definition of the single SHMS and how to apply the requirement to all contractors has in the past been requested by many in industry, and a proposal in the 2013 Mine Safety Framework Regulatory Impact Statement to do so was supported in principle by the QRC. Provided it is developed in consultation with industry, particularly those involved in contractor management, there is a potential for such an amendment to aid in the overall application of the single SHMS. In turn this may have benefits in further clarifying that all coal mine workers are entitled to the same level of respiratory protection.

There has recently been an amendment to the *Coal Mining Safety and Health Regulation 2001*, with (according to the explanatory notes for the amendment regulation) the intent of "removing the potential for long-term reliance on low-level administrative controls such as personal protective equipment". The QRC has some concerns over the amended regulation 89 related to this goal.

Subsection 89(1) establishes a requirement to ensure a "worker's exposure to respirable dust at the mine is kept to an acceptable level", and to ensure that the worker "does not breathe an atmosphere" with a dust concentration above the exposure level. Subsection (3) requires a review of controls and mandatory use of RPE if the dust concentration in the atmosphere cannot be reduced to the exposure level. Subsection (5) requires the SHMS to provide for monitoring and recording concentrations of respirable dust "in the atmosphere of the work environment". Introducing the term "atmosphere of the work environment" may have reduced the clarity of the obligation.

In addition, it needs to be acknowledged that there will be areas of a working coal mine where it is impossible to reduce dust levels. This does not represent an unacceptable level of risk unless a worker is exposed to that risk by breathing the atmosphere. There is concern that the use of the term "work environment" may inadvertently capture areas where dust is being generated, before it can be

health. The Department of Environment and Heritage Protection's Environmental Protection (Air) Policy 2008 (EPP (Air)) – Schedule 1 specifies air quality objectives for health and wellbeing related to dust (PM10 fine particles of less than 10 microns in diameter) and for long-term nuisance total suspended particulates (TSP).

# QRC Submission

Real time monitoring of respirable  
coal mine dust

Select Committee Inquiry into  
Coal Workers' Pneumoconiosis

15 March 2017

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QUEENSLAND  
resources  
COUNCIL



## Background

The QRC is the peak representative organisation of the Queensland minerals and energy sector. The QRC's membership encompasses minerals and energy exploration, production and processing companies and associated service companies. The QRC works on behalf of its members to ensure Queensland's resources are developed profitably and competitively, in a socially and environmentally sustainable way. This includes assisting industry in its goal of ensuring the highest standards of health and safety.

The effective management of the CWP risk is of direct importance to the operations of a number of QRC member companies, including the major coal mine operators, contractors and other service companies that are associated with the Queensland coal mining industry. These member companies regard protecting the health of their workers as a core value, and they are keen to assist the Parliamentary Inquiry into CWP to ensure that no coal mine worker contracts any occupational disease.

During the course of the Inquiry there have been a number of issues raised in relation to the monitoring of respirable coal mine dust, and the management of the risk of exposure to that hazard.

The capacity to monitor respirable dust levels in real time has been raised as a potential improvement, however there is some confusion about when it might be introduced and what doing so would achieve. Industry is actively seeking to improve the accuracy and timeliness of monitoring respirable coal mine dust levels; in the immediate future this is essential to improve the measurement of control effectiveness but can also improve compliance checking in the medium term.

Evidence provided in a number of submissions to the CWP dealt with the potential to introduce real time dust monitoring into Queensland coal mines. In particular Professor David Cliff at the Inquiry's public hearing of 11 November 2016 voiced the opinion that there were no insurmountable issues preventing their rapid introduction, saying "There are some personal real-time monitors that are in use in some of the mines. Anglo particularly have them. Simtars have them. They are not what we call intrinsically safe or flame-proof or certified in Australia; however, that is a relatively straightforward process to overcome because they are certified in the United States." (page 39 of transcript CWP Select Committee 2016a).

The QRC, in the course of that same hearing, made reference to delays in introducing real time monitors in Queensland due to "electrical issues". In making that reference the QRC was only reflecting what was understood from discussions through CMSHAC regarding timeframes for approval and the limitations in meeting the legislative requirements. The QRC fully supports the immediate use of real time monitoring devices for the purposes of testing the effectiveness of dust controls as raised by Professor Cliff, and also supports CMSHAC considering how they might be used in demonstrating compliance in as short a time frame as possible.

The QRC and a number of its member companies supported the use of real time dust monitors in their evidence and submissions, however QRC notes that the submission from the Department of Natural Resources and Mines dated 11 December 2016 remained less than optimistic about the approval process (DNRM 2016). While their submission notes the extensive use of such monitors



in the US and South Africa, DNRM advises that "the technology has not been deemed IECEx7 approved as intrinsically safe for use in Australian mines".

The limitations of real-time monitoring devices are also emphasised by DNRM, particularly the way in which direct reading instruments calculate the mass of the particles being sampled. The use of laser photometry and tapered element oscillating microbalance (TEOM) technologies are explained. The submission notes that neither method calculates dust levels in accordance with *Australian Standard 2985: Workplace atmospheres – method for sampling and gravimetric determination of respirable dust*, meaning that such measurements cannot be used to assess compliance against Queensland regulations.

The DNRM submission then advises that manufacturers and mining companies are working with SIMTARS to review and test products for intrinsic safety, but in summary states that "the approval of a unit that meets IECEx standards is 2-3 years away".

This approval to the International Electrotechnical Commission system for certification to standards relating the equipment in explosive atmospheres (IECEx) is of course the "electrical issue" referred to at the 11 November hearing.

The QRC believes that in supporting the rapid introduction of real time dust monitors in the Queensland coal mining industry the CWP Inquiry could make a significant contribution to improving respiratory health outcomes for coal mine workers. In the first instance this would provide an operational means to measure the effectiveness of dust control measures, which was the focus of Professor Cliff's submissions. This would greatly improve worker confidence that the risk of respirable dust exposure is at an acceptable level.

Once the regulatory framework, and AS2985 is amended, real time monitors could potentially provide a means to measure compliance. That process will inevitably take some time, and will require extensive consultation to ensure operators, coal mine workers and the Mines Inspectorate understand how real time monitoring might best be used to ensure that there is an acceptable level of risk.

## **TECHNICAL CONSIDERATIONS**

Since the limitations of the available technology are described at length in the DNRM submission they will not be discussed in depth here. Suffice it to say that units based on light scattering photometry estimate dust mass from particle size and therefore do not have the accuracy to be considered for use as a compliance tool. Units based on tapered element oscillating microbalance (TEOM) measure mass directly and are therefore far more accurate; monitors based on this technology have been used in the US for compliance determination since February 2016.

For this reason, the QRC believes that focusing on a unit or units based on TEOM technology in the first instance will provide the greatest potential benefit in the longer term.

Monitors that have limited potential for compliance can of course be of use in monitoring dust control effectiveness where relative dust levels are important, however given the significant safety issues involved it is considered best to concentrate on obtaining approval to use a unit that might ultimately also be able to be used for compliance.

## THE PDM3700

In 1992 the United States Secretary of Labour's Coal Mine Respirable Dust Task Group recommended the development of monitoring technology that was capable of providing short-term and full shift dust exposure measurements. The research and development program that was consequently undertaken by the National Institute for Occupational Health and Safety (NIOSH) produced a personal dust monitoring unit called the PDM3600. This device underwent over 8000 hours of rigorous underground field testing.

The next generation of monitor, the PDM3700, is the only currently commercially available device which meets the requirements for continuous personal dust monitors in the US. Its explosion protection has also been verified and the unit was approved for use in underground coal mines in South Africa by that country's legislative Mining and Surface Certification system (MASC).

One of the significant advantages of the PDM3700 is that it can continually measure dust levels and instantaneously display the cumulative exposure of the miner wearing it. The QRC believes that this information is a key requirement in the effective eradication of CWP.

The current drawback is that the PDM3700 has not been certified under Queensland's Recognised Standard 01 *Underground electrical equipment and electrical installations* which establishes the minimum standards for the selection, installation, maintenance and operation of electrical equipment and electrical installations in an underground coal mine. The standard requires that electrical installations in an underground coal mine have particularly high standards of design, installation and maintenance, especially in explosion risk zones.

In practice this currently prevents the use of the PDM3700 in any area where the percentage of methane in the general body of air exceeds 0.5% by volume. This means it cannot be used near the working face on many of Queensland mines' production faces – the area where coal mine workers are at the greatest risk of exposure to respirable dust.

## PROPOSAL TO USE THE PDM3700 IN ATMOSPHERES UP TO 1.25% CH<sub>4</sub>

While it is vital that coal mining operations do not compromise the explosion safety standards established by Recognised Standard 01, the QRC believes that one-off approval of the PDM3700 could be considered as a special case. Such consideration would examine the relevance of the assessment conducted by the MASC in South Africa to the compliance standards that are set through the International Electrotechnical Commission system for certification of equipment in explosive atmospheres (IECEx).

As a temporary measure, until full IECEx certification can be gained, a specific temporary amendment to Recognised Standard 01 would be required to allow for the use of the PDM3700 in atmospheres with greater than 0.5% methane. The QRC believes that it would be reasonable for the CWP Committee to consider recommending that DNRM have an urgent risk assessment undertaken by a cross-section of industry representatives and endorsed by the CSMHAC to determine whether an acceptable level of risk would be maintained if Recognised Standard 01 was amended to allow the use of the PDM3700 in an atmosphere of up to 1.25% methane.

While the risk assessment would need to be comprehensive, the QRC has identified the following initial grounds that suggest the assessment may be able to discern an acceptable level of risk:



- The unit has been certified as intrinsically safe for use in a potentially explosive atmosphere in both the United States and South Africa. The US tests in particular, requires testing under conditions simulating the most hazardous probable faults or malfunctions in the most easily ignitable methane concentration of 8.3%;
- The lower explosive limit of methane is 5% - the likelihood of exposure to unsafe methane levels would be extremely low as any PDM3700 monitor could if deemed necessary be accompanied by a hand-held methane monitor so that it could be withdrawn if methane levels reached 1.25%;
- While the longwall district has the greatest potential for an explosive atmosphere, it is also the most extensively monitored area for methane within an underground coal mine;
- Methane concentrations across the longwall face typically range from 0.1% at the maingate to 1.0% at the tailgate drive.

If the suggested risk assessment demonstrates that an acceptable level of risk would be achieved, then the QRC further suggests that CSMHAC should then recommend a temporary amendment to Recognised Standard 01. Such an amendment could be quickly made by the Minister for Natural Resources and Mines, meaning the PDM3700 could be introduced in a matter of weeks rather than the 2-3 years that was suggested by the DNRM submission. Once full IECEx certification is achieved the specific reference to the PDM3700 could be removed from Recognised Standard 01.

#### **AS2985 AND RECOGNISED STANDARD 14**

As mentioned previously, AS2985 is extremely prescriptive; currently it effectively prohibits the use of TEOM based monitoring devices. However, the QRC believes that for all intents and purposes the PDM3700 is compliant with the requirements that are set by the standard. The only definitive departure from the standard is in the frequency at which dust concentration is measured. AS2985 requires calculation of the total mass of dust by measuring the mass of filters before and after sampling; the average dust concentration is then determined by dividing that dust mass by the total volume of air sampled and the number of hours of exposure. By comparison TEOM technology reports instantaneous dust levels and calculates the average of those values over the length of the shift. Provided both mass measurements are accurate there should be no significant difference in the overall exposure level determined by the two techniques.

The QRC believes that AS2985 should be amended to accommodate mass measurement and the calculation of average dust concentrations using the proven TEOM technology.

In addition, the recently approved Recognised Standard 14: *Monitoring respirable dust in coal mines* specifically states that TEOM technology is not in accordance with AS2985. For the PDM3700 to be considered for use as a compliance tool this reference would therefore also need to be amended or risk confusion between the application of an amended RS01 and the new RS14.

The QRC suggests that the CWP Committee could help ensure that the best technology available for dust monitoring can be used into the future by also recommending that the relevant standards should not specifically prohibit the use of any particular type of technology. It would make greater sense if the standards were written in a way that encouraged the use of technological improvements by including a process whereby new technology could be reviewed for inclusion, should that technology appear to meet or exceed the requirements of the standard.



## SUMMARY OF ACTIONS TO SUPPORT THE USE OF REAL TIME MONITORS

CMSHAC to coordinate a risk assessment to be undertaken by a cross-section of industry representatives with the view to it considering recommending a temporary amendment to Recognised Standard 01 that would specifically allow the PDM3700 to be used in atmospheres containing up to 1.25% methane.

Amend the recognised standard *Monitoring respirable dust in coal mines* to ensure it does not specifically exclude the use of TEOM technology as a means of gravimetric sampling to determine respirable dust concentrations.

Amend AS2985 to include TEOM as an accepted means of gravimetric sampling and to require new technologies to be considered in the future.

CMSHAC to identify the remaining operational and technical issues around the use of real time dust monitors with a view to undertaking tripartite consultation on their potential use as a compliance tool.