

Submission to the Coal Workers Pneumoconiosis (CWP) Select Committee

25 November, 2016

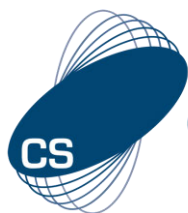


Table of contents

1. Preamble	3
2. The NSW Experience	3
2.1. A Collaborative Model	3
2.2. Dust management and control – A prevention focus	4
2.2.1. Summary of components	4
2.2.1.1. Airborne dust exposure limits	4
2.2.1.2. Order 40 – Longwall dust abatement approvals.....	5
2.2.1.3. Order 42 – Mandatory monitoring and prescribed exposure levels	5
2.2.1.4. Standing Dust Committee.....	5
2.2.2. The Results	6
2.3. Health Surveillance - A lag measure and a safety net	7
2.3.1. Summary of detection measures	7
2.3.1.1. Order 41 – Health surveillance requirements for New South Wales Coal Mine Workers'	8
2.3.1.2. Chest X-rays.....	8
2.4. Other preventative measures	9
2.4.1. Order 34 – Approval of training Schemes	9
2.4.2. Fit-testing of personal protective equipment (PPE)	9
2.4.3. Generic Underground Induction Course	9
2.5. Workers Compensation Scheme	10
3. Conclusion	10

1. Preamble

This paper is provided to the Coal Workers Pneumoconiosis (CWP) Select Committee to provide information on the current model, frameworks and experience in the NSW Coal Industry in relation to airborne contaminants (specifically coal dust) and health surveillance.

This paper reiterates Coal Services position as presented to the Senate Select Committee into Health in March of this year, specifically focussing on prevention and education.

NSW is fortunate to have the majority of its coal mining operations in and around communities, often where coal mining has been generational; father to grandfather to great grandfather. The industry generally understands that coal mining is a hazardous industry that has been made safer because of changing mining methods, education, training, mitigation practices and strong legislation and regulation.

2. The NSW Experience

2.1. A Collaborative Model

The New South Wales (NSW) system in relation to dust mitigation and health surveillance is based on a collaborative model which includes all key stakeholders in the industry and is underpinned by strong legislation, regulation and compliance. This model has been a key factor in delivering a robust system of worker protection to the NSW Coal Industry.

The key stakeholders in this model are:

- The NSW Department of Industry and their Inspectorate (Resources Regulator),
- The CFMEU Industry and Site Safety and Health Representatives,
- Coal Services,
- Employers and operators, and
- Workers

The model allows all stakeholders to work in a collaborative way to provide four key deliverables:

- Prevention,
- Detection,
- Enforcement, and
- Education.

Primary amongst these deliverables is prevention. Whilst the model is also geared towards early detection, and as a consequence risk mitigation and treatment; it is prevention that has the greatest emphasis.

2.2. Dust management and control – A prevention focus

2.2.1. Summary of components

Coal Services' comprehensive programme includes assisting the industry in development, approval and audit of dust control management plans, monitoring and compliance of statutory requirements, identification and dissemination of best practice solutions and maintaining education to help to ensure that complacency does not occur.

Occupational Hygiene Services, a business unit of Coal Services, is NATA accredited with almost 70 years' experience providing dust monitoring and other services to the NSW coal mining industry.

Established in the 1940's in response to escalating occupational health concerns within the industry, especially dust-related lung disease (coal workers pneumoconiosis, or 'black lung') the team now provides a range of hygiene services including testing noise, vibration, lighting, diesel particulate and dust monitoring, as well as providing training on leading workplace hygiene practices.

The Coal Services Occupational Hygiene team include a broad and multi-discipline skill set incorporating hygienists, specialist laboratory technicians and coal industry experienced inspectors. In Coal Service's view, being an effective licenced provider requires more than simply applying personal dust monitors and being a NATA accredited laboratory. The Coal Services inspectors are typically experienced underground mining practitioners (mine deputies or above), and are considered integral to the programme's success. Our inspectors travel underground with the mining crew (accompanied monitoring) to conduct the dust monitoring, observe operational practices, audit control measures and provide on the spot guidance and education to the underground miners literally "at the coal face". They work collaboratively with mine management to design, implement and monitor the effectiveness or improvement opportunities of any corrective actions that have been implemented to rectify exceedances.

The dust mitigation programme that is undertaken can be summarised as follows:

2.2.1.1. Airborne dust exposure limits

Airborne dust exposure limits are prescribed by the *NSW Work Health and Safety (Mines) Regulation 2014* as 'respirable dust... in the case of a coal mine, 2.5 milligrams per cubic metre of air and inhalable dust, 10 milligrams per cubic metre of air.'

For the purposes of this submission, we will refer mainly to respirable dust since it is the more pertinent size fraction leading to 'Black Lung'.

The legislative airborne dust monitoring requirements are pursuant to the Regulation which prescribes monitoring requirements for respirable coal dust including specific locations and frequencies.

The Regulation also directs that the provider of statutory monitoring must be *independent* of the mine and must be licensed by the NSW Department of Industry (Division of Resources and Energy).

If there are exposure limit exceedances there must be a re-sampling within a reasonable timeframe and under the same conditions.

2.2.1.2. Order 40 – Longwall dust abatement approvals

Regarding Orders made pursuant to the *Coal Industry Act 2001*, Order 40 dealing with 'Abatement of Dust on Longwalls' provides that the 'manager or owner of a coal mine must obtain the consent in writing of the Board prior to the installation of a longwall or a shortwall unit underground and prior to its installation on a new longwall block or shortwall pillar or panel, as the case may be.'

Order 40, as administered by Coal Services, includes a review and approval process; review of all results from each mines previous longwall block considered prior to approval and additional conditions placed on longwall approval in situations where exceedance rates indicate potential for unacceptable exposures.

Further, a pro-forma 'Order 40 Data' form is required to be submitted to Coal Services for approval, and prior to the commencement of mining (Appendix B). Conditions of approval require a self-audit of dust mitigation elements nominated in the Order 40 application upon recommencement of operations.

2.2.1.3. Order 42 – Mandatory monitoring and prescribed exposure levels

Order 42 has as its primary purpose compliance tracking, identification of high risk areas and activities and risk analysis regarding dust exposures. This Order is also administered by Coal Services.

With regard to dust monitoring, it should be further noted that:

- The approved sampling method adopted in the New South Wales coal industry is personal gravimetric sampling. Gravimetric dust sampling was introduced into the NSW coal industry in 1984 and continues to be the accepted methodology used today.
- As per the NSW Work Health and Safety (Mines) Regulation 2014, mine workers are sampled regularly. Order 42 requires monitoring of all crews in each separate work area of the mine to identify any systemic issues that may result from mining practices of a particular work team.
- Copies of all results are sent to the Mine Operator, Chief Inspector and the Industry Safety and Health Representative. Following a failed result, the Mine Manager informs the person who was sampled and there is an obligation under the NSW Work Health and Safety (Mines) Regulation 2014 to conduct a review and take action to correct the situation. The whole crew is resampled to look for systemic issues, after the implementation of corrective actions which have been collaboratively developed between Coal Services and the mines management team.

2.2.1.4. Standing Dust Committee

Coal Services, through the Airborne Contaminants and Diesel Particulate Sub Committee (also known as the Standing Dust Committee (SDC)) also maintains an overview of all the results of the dust sampling programme and reviews all dust exceedances including contributing factors, any reviews and actions undertaken by the mine as a result of the exceedance, and respiratory personal protective equipment compliance.

The SDC is an expert advisory body with members from all parts of the industry (representing the collaborative model) including the Resources Regulator, Industry Safety and Health

Coal Services Submission to the Coal Workers Pneumoconiosis (CWP) Select Committee

Representatives, Coal Services, employers/operators, independent industry experts and workers. The Committee meets bi-monthly and meetings include mine visits to observe work practices.

The Committee Charter is focussed on strong regulation and compliance and can be described in five main categories:

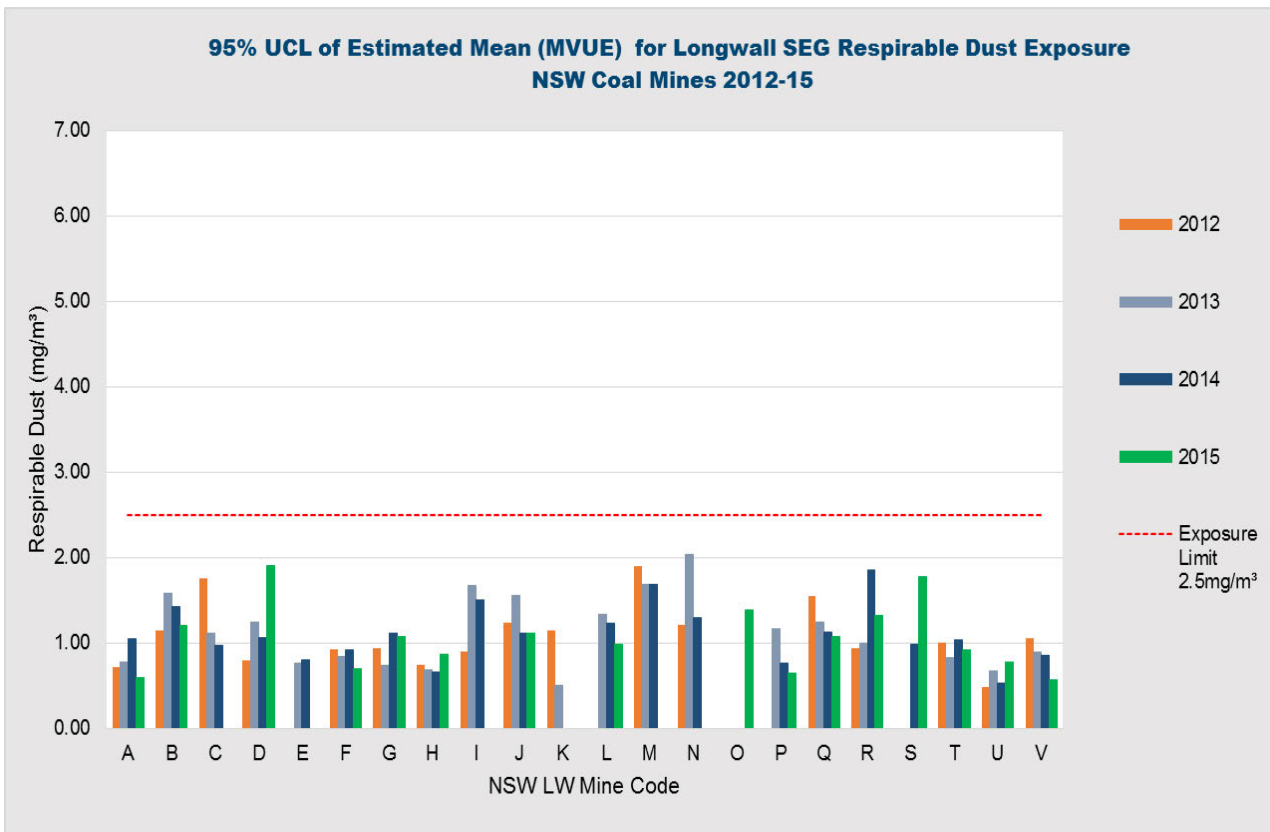
- Monitoring results of respirable dust,
- Evaluation of dust hazards,
- Research improved dust control methods,
- Disseminate information, and
- Educate mine personnel in matters related to dust control.

This Committee also facilitates the sharing of learnings and work practices all geared to improving dust mitigation and protecting the mine workers' health and safety.

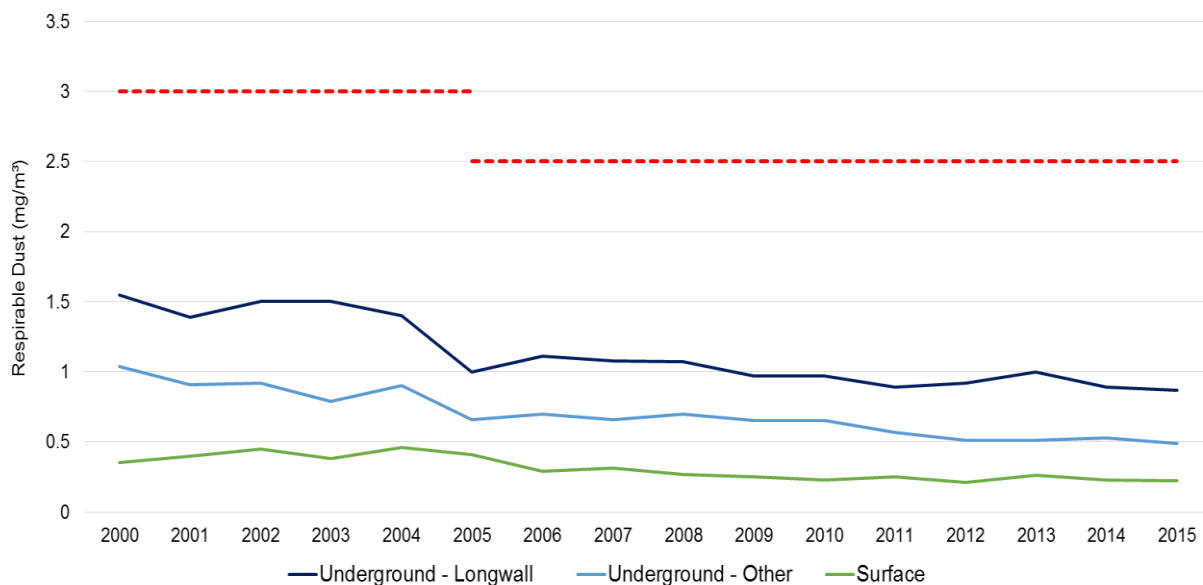
The SDC recommends also the display of all results on the mine notice boards and also produces alerts for dissemination if required.

2.2.2. The Results

The graphs below and over the page show the success of the NSW coal industry in mitigating respirable dust in underground longwall operations. This is a key indicator in terms of whether there may be a potential re-emergence of dust disease in NSW. The first graph depicts the estimated mean of dust exposure over the years 2012-14 for all NSW underground longwall operations. The second graph shows the estimate mean over the last fifteen years for all underground longwall operations in NSW.



Note that each year the exposure limits are well below the statutory limit of 2.5mg/m³ as prescribed by the *NSW Work Health and Safety (Mines) Regulation 2014*.



2.3. Health Surveillance - A lag measure and a safety net

2.3.1. Summary of detection measures

Whilst prevention is undoubtedly the best option, health surveillance is a critical safety net completing the mineworker health protection system.

CS Health, a business unit of Coal Services, has almost 70 years' experience providing occupational health services to the NSW coal mining industry.

CS Health provides specialised occupational health services from an experienced and multidisciplinary team of specialist doctors, nurses, radiographers, rehabilitation counsellors, occupational therapists, physiotherapists and remedial therapists.

With offices providing services throughout NSW, the health team administer occupational medicals, screening, treatment, injury prevention and rehabilitation services.

Coal Services has a strong health regime which is designed to detect any occupational disease, including pneumoconiosis, through Order 41 'Coal Services – Health Surveillance Requirements for New South Wales Coal Mine Workers'.

As part of our continuous improvement program, Coal Services regularly reviews its systems and processes. As part of our current health review, we are working closely with respiratory and health experts to ensure that our systems utilise the most up to date technology and research to ensure that workers remain protected.

2.3.1.1. Order 41 – Health surveillance requirements for New South Wales Coal Mine Workers'

The key points of the Order 41 health surveillance programme can be summarised as follows:

- A pre-employment medical is required for all workers before they commence work in the NSW coal industry. This includes a chest x-ray for new entrants to the industry. The medical and chest x-ray serve as a baseline for future health surveillance. For workers already in the industry undergoing a pre-employment medical, a chest x-ray would only be conducted if it was due as per the requirements of the Order, or if clinically indicated.
- The health surveillance medical (known as the Periodic Health Assessment) is required every three years. The Periodic Health Assessment focuses on a range of occupational health issues including dust, noise, fatigue and vibration. It also includes an assessment for general health issues that may impact on a worker in the workplace including an assessment of the cardiovascular system, general health issues, mental health, musculoskeletal issues and alcohol use. The periodic assessment also includes spirometry (lung function test) which assists in the early detection of any changes to lung function.
- The Order requires a chest x-ray each six (6) years for miners with a history of possible hazardous dust exposure. In addition, the assessing medical practitioner may recommend additional chest x-rays if clinically indicated. Underground miners undertake a chest x-ray each six years due to potential for dust exposure, opencut miners generally each 12 years due to their more limited exposure. (Opencut miners may undergo more frequent x-rays if their exposure history indicates the need or if clinically indicated).
- The pre-employment medical must be conducted by a Doctor registered to practice in Australia. The periodic health assessment can be conducted by a Doctor, or by a Registered Nurse under the supervision of a Doctor.

2.3.1.2. Chest X-rays

Chest x-rays are conducted by CS Health in its Singleton and Lithgow facilities. Other offices utilise local x-ray providers. All x-ray referrals notify the radiologist that the worker is a coal miner and to specifically look for any indication of dust disease. All x-rays and reports are reviewed by a Radiologist who identifies any abnormalities. X-rays identified as not normal are further investigated. CS Health has processes developed to ensure that all abnormal x-ray results are referred to an appropriate medical professional for further investigation and review.

The most common causes of abnormal results in the last few years were due to non-respiratory related health issues such as an enlarged heart or due to high blood pressure and bony abnormalities such as scoliosis.

Specific lung conditions also identified in that period included:

- Old scarring due to previous lung infections,
- Plaque due to previous asbestos exposure,
- Tuberculosis,
- Tumours,
- Sarcoidosis (autoimmune inflammatory disease), and
- Granuloma (a mass of tissue typically produced in response to infection, inflammation or the presence of a foreign substance).

2.4. Other preventative measures

Coal Services also provides other complimentary preventative services both as part of their statutory services and as commercial services.

2.4.1. Order 34 – Approval of training Schemes

One of the general functions of Coal Services in the *Coal Industry Act 2001* is 'approving training schemes required for a safety management system under the *Work Health and Safety (Mines) Act 2013*'.

Order 34 was issued to give operators of a coal operation direction on what is required in a training scheme for the health and safety management system. This is referred to as the coal operation's Training and Competence Management Scheme (TCMS). Order 34 provides scope for Coal Services to issue 'Guidelines' on the required provisions to be included in a TCMS in order for it to be approved. This is referred to as the 'Order 34 Guideline'.

The Order 34 Guideline is used as the basis for:

- the development of a TCMS by a coal operation,
- Coal Services approval of a coal operation's TCMS, and any revision to the TCMS – this approval is based on meeting the requirements of the 'Order 34 Guideline', and
- criteria for audits conducted by officers of Coal Services of the TCMS and associated training / competency systems and processes at coal operations.

2.4.2. Fit-testing of personal protective equipment (PPE)

Testing of PPE is an essential component to protect against exposure to workplace hazards such as noise, dust gas and fumes.

Respiratory fit testing is recommended under Australian Standard 1715:2009 and should be performed on all tight-fitting respirators every twelve months. Fit testing is used to assess whether the respirator forms an adequate seal around the face and verifies whether the user has an adequate level of protection. A face mask or other respiratory device is only one line of defence in terms of dust protection, and should not be used in isolation.

2.4.3. Generic Underground Induction Course

Mines Rescue, a part of Coal Services, has 90 years' experience, assisting the mining industry to manage risk and operate safely. Mines Rescue's primary and statutory role is to provide underground incident response, however, Mines Rescue also play a pivotal role in training to ensure the highest quality safety standards are maintained in the NSW coal industry.

One example of this is the Generic Underground Induction course which provides participants with the required skills and knowledge to be able to enter the underground coal mining industry and pursue a safe and healthy career as an underground coal miner. This course provides various skills including WHS requirements, correct use of PPE, hazard identification/risk control, communication, work environment awareness, self-escape and equipment and machinery awareness.

2.5. Workers Compensation Scheme

The workers compensation scheme that looks after coal miners in NSW is known as Coal Mines Insurance and has been in operation since 1922. The scheme provides specialised assistance and protection to all workers who work in or about a coal mine in NSW. This scheme writes all risk for the NSW coal industry.

3. Conclusion

The collaborative model adopted in the NSW coal industry has delivered outstanding results not just in the form of compliant dust levels but in the reduction of injuries across all of the industry including open cut as well as underground. The reduction in claims received as a result of occupational disease or injury over the last 15 years is **over 75%**.

It cannot be emphasised enough that prevention of exposure is key when it comes to protection against any form of occupational disease or injury. Mandated exposure standards and legislated monitoring regimes are considered cornerstones of a robust system. The value of having highly experienced coal mine practitioners trained to conduct the monitoring and in the surveillance of mining practices and controls should not be underestimated. Accompanied and independent monitoring should be mandated; without this the system could be easily open to manipulation. Complacency is a significant risk. Ongoing independent mandatory testing in relation to all hazards is essential to ensure that those controls that have been put in place continue to work and keep the industry healthy, safe and productive. If you do not measure – you do not know!



Coal Services