

# EnviroContaminate Mitigation

ABN -59 114 930 040

14 March 2017

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

Dear Chair

Pump Investments Pty Ltd thanks you for the opportunity to make this submission to the Queensland Parliamentary Committee Inquiry into the re-emergence in Queensland of Coal Workers' Pneumoconiosis or Black Lung as it is more known.

My submission is to make you aware of a new technology solution that reduces operators' dust exposure levels on the longwall. **Developed over two years** by a team, including CSIRO, with access provided to its **longwall by a Queensland mine** it was further refined and its efficiency improved during a **trial conducted over 6 months at a NSW mine**.

## Capability

The technology, more easily described as a shearer scrubber technology:

- (i) **removes in excess of seventy percent (70%) of the respirable dust** generated by the shearer and roof/chock movements forward of the shearer,
- (ii) modifies the face flow patterns to **reduce dust particles roll-up into the operator's position in the walkway area**, and
- (iii) for a mine achieving the regulator's Permissible Exposure Level integration of the technology may enable a Board of **Directors** to **comply with Coal Mining Safety and Health Act 1999 (Act)** and **provide a workplace with risk profile as low as reasonably achievable**.

## Key deliverables

It is a compact modular unit that fits between the ranging arm and the shearer body to:

- **combat dust exposure of operators on the longwall** which has historically been challenging for mine management,

- overcome the shortcomings of dust control techniques historically developed in the USA & UK and sometimes more applicable to low to medium coal seam heights up to 3.0m and provide mines with a specific **technology suited to Australia’s high seam mines**,
- solve issues specific to thick seams where dust control may be more problematic, particularly due to the differences on face airflow patterns, potentially higher dust generation and pick-up in thick seams, and
- be started and stopped remotely by the shearer operator.

### **Key principles**

The technology, which retrofits in a single maintenance shift, is designed to deliver significant advantage whilst having:

- low capital intensity,
- no complexity, and
- no associated technology risk.

### **Coal Mining Safety and Health Act 1999**

The underground mining industry in Queensland has put Directors and their Senior Management on notice to expect a reduction in the regulatory Permissible Exposure Level.

Their obligation to the Act and responsibility to shareholders is to balance their mines functioning at peak production AND their OH&S obligation relevant to a workplace known to cause loss of lung function and potential for some miners to suffer disablement or death due to Coal Workers’ Pneumoconiosis (“CWP”). Achieving this balance will ensure quality of life for miners and prevent or minimise the distraction of class actions that arise or in a worst case exposure to personal liability.

### **Can we learn from US Data?**

Is there relevance for Australia, in the absence of its own exposure studies, in literature published by the U.S. Department of Labor, Mine Safety and Health Administration (“MSHA”)?

In March 2014<sup>1</sup> MSHA (pages 176-177) estimated among every 1,000 miners who work 45 years in coal mines at 2.0 mg/m<sup>3</sup> levels, by age 73 there will be 2 to 652 excess cases of CWP 1+,

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<sup>1</sup> Regulatory Economic Analysis For Lowering Miners’ Exposure to Respirable Coal Mine Dust Including Continuous Personal Dust Monitors Final Rule (RIN 1219-AB64) U.S. Department of Labor Mine Safety and Health Administration Office of Standards, Regulations, and Variances March 2014

between 1 and 715 excess cases of CWP 2+, and between 1 and 643 excess cases of PMF, depending on occupation, coal rank, and recurrency class. It also estimates a significant reduction in the upper range for each category at 1.5 mg/m<sup>3</sup> exposure levels.

A US study<sup>2</sup> published in December 2016 identified clusters of retired miners presenting with PMF at black lung clinics who are not in official statistics. Anecdotal evidence gathered by a media organisation from clinics suggests a significant understatement of cases by NIOSH.

There is probably value in conducting an immediate survey of radiology clinics / Radiologists to determine the number of retired mine workers being diagnosed with CWP, PMF, Emphysema or Non Malignant Respiratory Disease<sup>3</sup>.

Results will contribute to evidence of the adequacy of the current regime.

MSHA uses the estimate of future cases of CWP to develop its regulatory PEL.

The challenge for a Mine Company Board of Directors is can it rely on the status quo including rotation of miners through work locations with low dust concentration to comply with a future PEL and obligation under the Act knowing MSHA still recognises reduced lung function and CWP will continue to occur in some miners over their working life at 1.5 mg/m<sup>3</sup>.

Thank you.

Yours faithfully

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***Pump Investments Pty Ltd***

**Technology to boost performance**

<https://www.australianmining.com.au/features/can-coal-dust-quashed/>

## **Appendix One – photos in a mine environment**

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<sup>2</sup> *Morbidity and Mortality Weekly Report*, Centers for Disease Control and Prevention December 16, 2016, David J. Blackley, James B. Crum, Cara N. Halldin, Eileen Storey, A. Scott Laney

<sup>3</sup> Cohen et al., 2008, “Lung Disease Caused by Exposure to Coal Mine and Silica Dust”; *Seminars in Respiratory and Critical Care Medicine* 29:651-661. “Bates [Bates et al., 1985] noted that x-rays taken at retirement and then again 10 years later showed fewer normal readings and an increase over time of simple and complicated pneumoconiosis. These data show that, unlike the inflammatory process caused by tobacco smoke, the effects of mineral dust retained in the lungs may continue even after the worker is removed from exposure”

Appendix One 1/2  
Shearer Scrubber technology



Appendix One (2/2)

