

# PUBLIC SUBMISSION

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Exposure of Underground Miners to Diesel Exhaust

**Comment On:** MSHA-2014-0031-0034  
Exposure of Underground Miners to Diesel Exhaust

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Comment from Thomas Bayne, NA

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## Submitter Information

**Name:** Thomas Bayne  
**Address:**  
55 Wildwood Way  
Somerville, 35670  
**Email:** tbayne@spj1.com  
**Phone:** 256-214-6404 ☎  
**Organization:** NA

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## General Comment

The importance of having clean air to breathe is not only a right for an employee but an essential part of health and safety. There are many environments that are hazardous elements simply because of the contaminants in the air that an employee may breathe in. Some of these hazards are not acute and over a length of time can accumulate in the workers system causing illness or a catalyst for other health issues.

The United States Department of Labor states that diesel exhaust is a mixture of gases and particulates produced during the combustion of diesel fuel. Workers exposed to diesel exhaust face the risk of multiple health effects ranging from irritation of the eyes and nose, headaches and nausea, to respiratory disease and lung cancer. Breathing diesel particulate matter can be absorbed in the lungs and enter the bloodstream. The International Agency for Research on Cancer has classified diesel exhaust as a known human carcinogen. Both NIOSH and the Cancer Institute have stated that diesel exhaust exposure has links to increasing the risk of death from lung cancer. The importance of utilizing updated engineering controls to combat this issue is needed for the workers safety and health longevity.

There are several control procedures that can be taken to reduce the DPM molecules that are released into the miners' air space. A control item that will assist in bringing the exposure level

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of DPM down from current levels would be the use of low sulfur fuels. While this method is already in place, the use of low sulfur fuels coupled with fuel additives will make an impact on the exhaust quality. In addition to purchasing the low sulfur fuel the guarantee of the sulfur amount should be tested periodically for consistency and accuracy of content. Distributors of diesel fuel receive their fuel from other sources and the quality or composition of the fuels may fluctuate. For this reason alone the importance of regulated testing of diesel fuel is important. The increase of ventilation is also a control that will help advance the atmosphere in mining. Without engineering controls to remove the DPM from the work area, a buildup of particles will eventually create a health hazard. The increase of air monitoring devices calibrated at regular intervals will assist in creating ventilation patterns that move the largest concentrations of air pollutants. Air will travel the path of least resistance and using engineering techniques to develop flow patterns that maximize the employees' air quality are essential to safety. Underground mines that have sufficient ventilation will benefit employees in multiple areas such as productivity and morale.

A major step in controlling the DPM levels comes directly from the equipment itself. New technologies and government regulations aimed at reducing harmful gasses will have a direct impact on air quality. The Tier 4 diesel motors have proven to improve performance of the motor with lowering the emission concentrations. Empire Caterpillar states that along with improved performance the Tier 4 diesel motors will only use Ultra Low Sulfur Fuel and will require CJ-4 Low Ash Oil. While these products may increase costs, the tradeoff on monies spent will be offset by the improved performance of the motor.

The objective of this document is to protect the employees' health and improve the air quality for workers in the mining industry. Anyone who has had the privilege of watching a relative or loved one endure the hardships of not being able to breathe can understand the importance of regulating DPM. The International Agency for Research on Cancer has classified diesel engine exhaust a carcinogenic to humans (Group 1) with sufficient evidence that exposure is associated with an increased risk for lung cancer. The importance of the mining industry is essential to our economy and our energy resources. New technologies and engineering control practices have led to improvements of work practices that assist in carrying out the agenda of having a suitable, breathable, and healthy working environment. The importance of including wording in the regulation that allows for improvements to be made without having to endure the entire process for a formal rule change is important. This could be accomplished thru a general duty clause and enforced thru worksite inspections. The desired outcome would be the emphasis placed on employee health and air quality with the employers having a total understanding of their responsibilities.