

# MSHA's On-Going Diesel Equipment Work

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## Diesel Regulations under Title 30, CFR

- Part 7, subpart E, Diesel Engine Approvals, Category A & B
- Part 7, subpart F, Power Package Approvals for Permissible Machines
- Part 36, Permissible Diesel Powered Machine Approvals
- Part 70, subpart T, Diesel Exhaust Gas Monitoring

## Diesel Regulations under Title 30, CFR

- Part 75, Diesel Powered Machine Safety Features and Best Practices
- Part 72, subpart D, Diesel Particulate Matter - Underground Coal Mines
- Part 57, Diesel Particulate Matter, Underground Metal and Nonmetal Mines

## Part 7 Diesel Engine Audits

- Conducted on Diesel Engines and Power Packages
- Conducted once (1) per year on each product, except for cause
- Audit can range from paper evaluation to full laboratory or field testing of the engine or power package.
- MSHA's laboratory has been upgraded to conduct audits.

## Technical Assistance Work

- Field Modifications to existing approved products
- Assistance to MSHA inspector's for evaluation of Petitions for Modifications.
- Field Complaints
- Assistance to mine operators
- Training

## Diesel Laboratory Capabilities

- Upgrade of Dynamometer controls to allow for both steady state and transient (non-motoring) test cycles.
- Upgrade of Data Logger for better data gathering and report preparation.
- Exhaust Gas Measurement for Carbon Monoxide, Carbon Dioxide, Nitric Oxide, and Nitrogen Dioxide.
- Diesel Particulate Measurement / Clean Room
- Altitude Simulation

## Field Testing Capabilities

- Ecom-plus portable gas measurement for Carbon Monoxide, Carbon Dioxide, Nitric Oxide, and Nitrogen Dioxide.
- Portable fuel measurement device for measuring fuel flow.
- Water-brake dynamometer

## Laboratory Projects

- Altitude compensation using a Deutz altitude compensator on a F6L912W engine
- Supercharger for Caterpillar 3306 PCNA engine
- Diesel particulate filter evaluation
- Part 7 Engine audit work
- Surface Temperature Control Devices

## Field Projects

- Verification of laboratory altitude simulation at high altitude test labs
- Filter evaluation of ceramic diesel particulate filter installed on a shield haul mover
- Assistance to the State of Virginia on evaluation of light duty diesel engines using the repeatable engine load test with Carbon Monoxide measurement
- Altitude compensator evaluation on a working machine
- Hydrogen Fuel Cell Technology

## Conclusion

- MSHA is staying abreast of the latest control technologies to reduce miners' exposure to DPM.
- MSHA has the capability to evaluate the effectiveness of control technologies.
- MSHA will work with the industry or manufacturers of control devices.