

2016 Airborne Dust Results

The 2016 Airborne Dust Results bulletin outlines results and observations from 2016 statutory dust monitoring undertaken by Coal Services. The Standing Dust Committee recommends that mine management review reported data and findings and consider if improvements are required in their airborne dust management system. A single page 2016 Airborne Dust Results Summary has been included to assist mines to communicate results to mine workers and should be placed on the mine noticeboard.

General Findings

- In 2016 Coal Services collected 2310 respirable dust, 572 respirable crystalline silica and 1406 inhalable dust exposure results from NSW coal mine workers in accordance with statutory monitoring requirements.
- Recorded exposure limit exceedance rates decreased for all three dust contaminants in 2016 compared to 2015. Airborne dust control efforts in 2017 should continue to focus on high-order controls (elimination, substitution, isolation and engineering) to ideally control dust at the source of generation.
- Worker Respiratory Protective Equipment (RPE) use requires improvement, particularly in continuous miner areas and at surface operations. An outline of 2016 RPE use can be reviewed in the Standing Dust Committee Information Bulletin – 2016 RPE Review

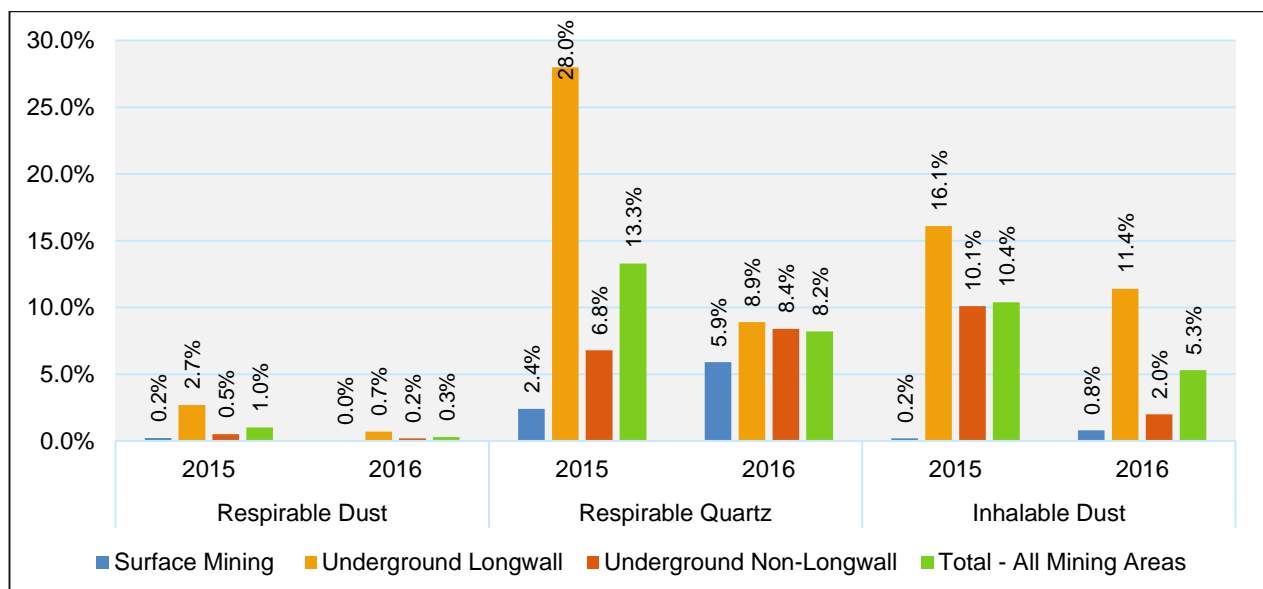


Figure 1. Rate of NSW Coal airborne dust exposure limit exceedances 2015-2016

Underground Operation Findings and Recommended Controls

- Longwall dust exceedance rates improved significantly from 2015 to 2016. Much of this improvement can be attributed to increased longwall automation utilisation which has allowed workers to operate from lower risk operator positions.
- Longwall mines should continue to review their procedures and control effectiveness in relation to tasks that have the potential to place any operator on the return side of shearer and/or advancing supports.
- Mines should review continuous miner area procedures to identify if additional controls are required during high risk tasks i.e.
 - Review RPE requirements and operator positioning whilst cutting stone, which significantly increases respirable quartz exposure risk
 - Review operator positioning for ventilation side continuous miner operators
 - Review RPE requirements, process for advancing ventilation, and positioning of operators when cutting breakaways
- Respiratory Protection Equipment (RPE) was utilised well by longwall workers and workers spraying & grouting. RPE use by continuous miner, outbye and maintenance workers requires improvement.
- RPE use by statutory officials improved from 2015 to 2016. It is important that face management continue to provide leadership and drive high standards in the area of dust mitigation and management.

Surface Operation Findings and Recommended Controls

- Surface mines should review procedures and dust control effectiveness for the following high risk tasks - Shot Firers, Drillers, Crusher attendants, Light Vehicle operators and field maintenance workers.
- The use of respirators by Open Cut and CHPP workers requires significant improvement. Of the eight surface workers found to have exceeded an airborne dust OEL in 2016, only one worker reported wearing respiratory protection.

More information

[Prevention of pneumoconiosis in NSW - information for workers in the NSW coal mining industry](#)

[Dust disease and you](#)



What factors contribute to underground mine airborne dust exposure limit exceedances?

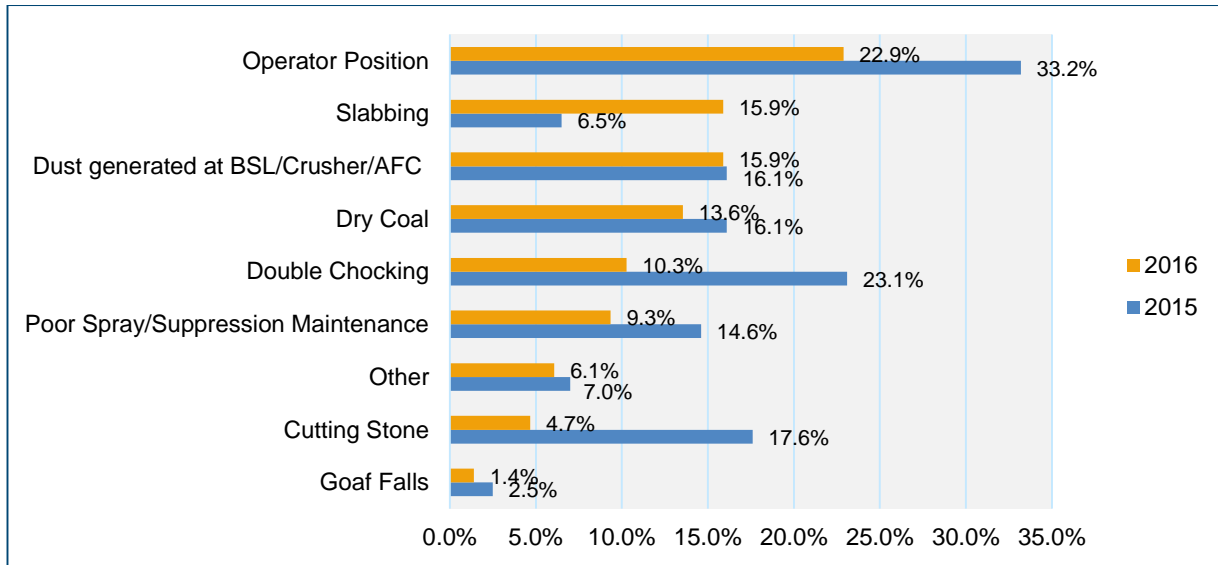


Figure 4. Contributing factors identified in longwall airborne dust exposure limit exceedances 2016

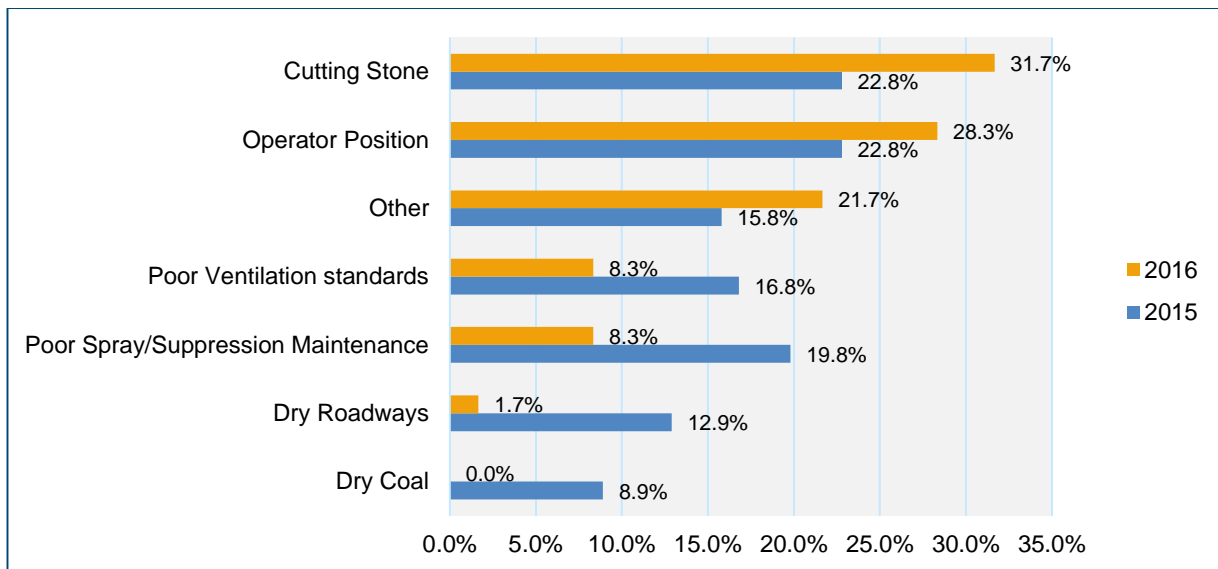


Figure 5. Contributing factors identified in non-longwall airborne dust exposure limit exceedances 2016

Figures 4 and 5 have been generated to display the factors which have been identified as contributing to individual exceedances. For example, of the 83 individual airborne dust exceedances in longwall areas in 2016, 22.9% (26 exceedances) of these exceedances had poor operator positioning identified as a contributing factor. An individual exceedance may have multiple contributing factors assigned to it.

2016 Airborne Dust Results Summary

- To ensure that NSW Coal workers airborne dust exposure levels continue to improve in 2017 mines should focus on high-order controls (elimination, substitution, isolation and engineering) for known high risk activities to ideally control dust at the source of generation
- In 2016 Coal Services collected 2310 respirable dust, 572 respirable crystalline silica (Quartz) and 1406 inhalable dust statutory exposure results from NSW coal mine workers.
- The number and percentage of collected results that exceeded occupational exposure limits improved in 2016 compared to 2015
 - Respirable Dust exceedances reduced from **1%** of all results in 2015 to **0.3%** in 2016
 - Crystalline Silica exceedances reduced from **13.3%** of all results in 2015 to **8.2%** in 2016
 - Inhalable Dust exceedances reduced from **10.4%** of all results in 2015 to **5.3%** in 2016
- The use of dust masks by surface and continuous miner workers exposed to elevated dust levels was poor and requires improvement
- Operator positioning continues to be one the most frequent factors identified as contributing to airborne dust exposure limit exceedances.
- Exposure monitoring results indicate that workers are at increased risk of dust exposure when undertaking the following tasks
 - Operators working on **Bi-Di Longwall's**
 - Operators working on longwalls with **poor roof conditions**
 - Longwall and Continuous Miner workers when **cutting stone**
 - Continuous Miner workers standing on the **ventilation side** of Continuous Miners
 - Continuous Miner workers **cutting a breakaway**
 - Shot Firers and Drillers working **outside cabs**
 - Mobile Equipment and light vehicle operators working with **windows down**

The NSW Standing Dust Committee released an updated version of the blue dust booklet in 2016. The booklet provides additional information around the health effects and control of airborne dust. The booklet can be accessed at:

- Coal Services / Mines Rescue offices
- Coal Service Dust Monitoring Technicians
- Coal Services Website
www.coalservices.com.au

