NSW GOVERNMENT

NSW Resources Regulator

# COMPLIANCE PRIORITIES OUTCOMES

## Changes to exposure standard for respirable crystalline silica

## Small Mines

# Legislative amendments to exposure standard for respirable crystalline silica

**Issue:** On 1 July 2020, the workplace exposure standard for respirable crystalline silica was reduced from 0.1mg/m$^3$ to 0.05mg/m$^3$. As a result, mines and petroleum sites are now required to comply with the standard and notify of exceedances of the revised exposure standard to the NSW Resources Regulator (the Regulator) in accordance with clause 128(5)(r) of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014. The Regulator published a position paper in March 2020 which outlined transitional arrangements following the revision of the exposure standard.

## What we did

Assessments were undertaken at 44 quarries between July and November 2020. Each of the sites were assessed on the following criteria:

- Knowledge of the principal hazard
- Awareness of the revised limit and exposure groups potentially placed at risk
- Relevance and accuracy of associated management plans
- Appropriate controls were identified and subsequently implemented in order to comply with the revised limit
- Information, training, and instructions given with regards to the revised limit
- Health monitoring arrangements

# What we found

- Most, but not all mines had a petrographic analysis report that detailed the crystalline silica content in their material.
- The majority of mines were aware of the lowering of the Workplace Exposure Standard (WES) for crystalline silica. Most became aware of the reduction via the Resources Regulator's 'Mine Safety News', industry publications (e.g. Institute of Quarrying Australia) or from their internal business correspondence.
- Systems used to provide information, training and instruction regarding the new dust limits and changes to controls varied greatly. Some were well documented, while others relied on informal discussions, at best, and confirmation of the transfer of information was not recorded. It was unusual to encounter a mine where no communication had taken place at all.
- Many mines had failed to formally review their Principal Hazard Management Plans (PHMP) and Health Control Plans (HCP) to confirm that the controls remained appropriate to protect workers given the reduction in the new dust limit.
- The provision of regular health monitoring to workers who are at significant risk from exposure to a hazardous chemical (such as crystalline silica), is not well understood or implemented.
- In many cases personal workplace exposure monitoring has not been adopted as a routine practice. This is to ensure that no person is exposed to an eight-hour time weighted average for atmospheric concentrations of airborne dust that exceed 0.05 mg/m3 for crystalline silica, 3 mg/m3 for respirable dust or 10 mg/m3 for inhalable dust. It is often implemented as a one off, or in an ad hoc manner.
- Despite an increase in the sector's knowledge surrounding airborne contaminants, there continues to be poor awareness of where the hazard exists or is present at an operation (particularly when it is not easily visible).

# Outcome

The assessments resulted in the issuing of:

- 17 section 191 notices
- 19 section 23 notices.

## Next steps

The Regulator is currently conducting assessments which are focussing on the principal hazard, air quality or dust or other airborne contaminants. These assessments also discuss the relevant exposure standards however they are directly attributed to the critical controls that should be implemented in order to eliminate the risk or reduce as low as reasonably practicable.

The Regulator will continue to prioritise the assessment of controls for silica and respirable dust into 2021. This will be integrated into every planned inspection and targeted assessment undertaken at mine sites.

In addition, the monitoring and analysis of assessment and/or incident data is constantly completed by the Regulator. This information is then utilised to determine industry performance and identify high risk practices which require further assessment or intervention.

# Recommendations

Mine operators should:

- Confirm inherent quartz silica content within the materials being mined and understand which products present the greatest risk to workers
- Ensure a health control plan and airborne dust PHMP are not only implemented, but are current and relevant to the work methods and sampling regimes employed at the mine
- Engage effective and formalised communication processes to ensure all workers are made aware of any revisions to nominated controls or site standards
- Continue to find opportunities to eliminate dust generation through the application of the hierarchy of controls
- Implement a program of regular health monitoring for workers who are at significant risk from the exposure to crystalline silica, then additionally ensure those workers receive results
- Consider the introduction of an action exposure limit (e.g. 50% of operational exposure limit) to understand trends and high-risk tasks which occur on site
- Ensure all workers are trained regarding the upcoming change for the respirable dust limit
- Use available education opportunities and materials to engage with workers. These include:
    - Resources Regulator small mines and quarries health and safety roadshows

- The Mine Safety Advisory Council 'Dust toolkit', available online at https://www.resourcesregulator.nsw.gov.au/safety-and-health/about-us/advisory-council/msac-dust-toolkit.

| DATE PUBLISHED | REFERENCE | TITLE |
|---|---|---|
| Jun 2020 | Guidance Poster | Changes to airborne contaminants and dust exposure standards guidance poster |
| Mar 2020 | Position Paper | Revision to silica exposure standard |
| Nov 2019 | Consolidated Report | Respirable dust in quarry operations |
| Jul 2018 | Guide | Airborne contaminants principal hazard management plan |
| Jul 2018 | Guide | Dust safety in the metals and extractives industries |



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