

Road Dust Control Program Delivers Savings and a Responsible Image

Background

A limestone quarry and processing operation near a resort area was under intense pressure from the local community to control the fugitive dust at their facility. A competitor's product yielded less than desirable results, and the quarry had resorted to using only water several times daily to reduce the amount of road dust generated at the site. Even with the significant amount of water (500 m³) sprayed on the roads daily, significant dust was generated. Consequently, the mine looked for technologies and programs that would optimize dust control and improve their image with the community.



Problem

Controlling fugitive dust in a mining operation is often an important factor to making the workplace a safe environment and reducing the dust's negative impact on equipment, mineral recovery, and operational costs. If the mining operation is near a community, the dust's impact is heightened because it can present both a potential health concern to the local population, as well as cosmetic issues associated with dust accumulation on homes, buildings, vehicles and other personal/private property. These dust/product loss issues can result in significant fines and/or lost revenue that could be very costly to the mine.

Consequently, treating or reducing fugitive dust has become a critical aspect of mining and mineral processing operations throughout the world. As a result, a chemical dust suppression system is often needed.

Dust created on the mine's roadways resulting from heavy truck traffic was the primary dust issue facing the limestone operation. Neither water alone nor the addition of a competitor's product to the water was effective in addressing the site's fugitive dust problem. The mine turned to ChemTreat to provide a dust suppression program that would reduce the harmful dust in the environment.

Solution

ChemTreat's laboratory and technical personnel worked with the mine's environmental and operational groups to discuss and prescreen potential dust control chemistries. ChemTreat DT9056 testing showed it to be a cost-effective technology to address the mine's needs. This led to a trial on 85,000 m² of roadway at the site.

DT9056 was added as a 5 percent solution to the water in the spray trucks and applied to the section of road in two applications. A dust monitor was used to sample the ambient air before and after chemical application.

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Case History
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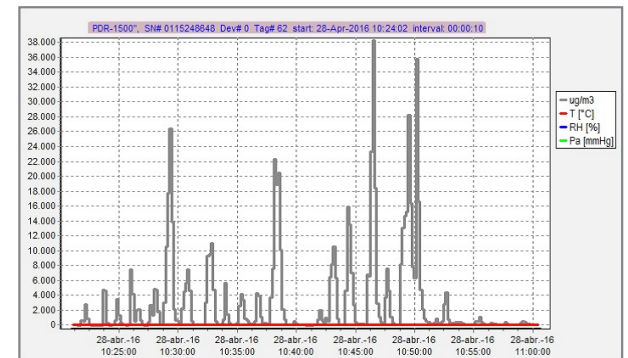


The program results were impressive.

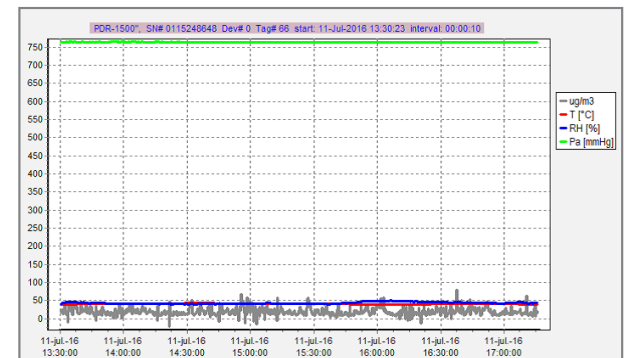
As shown in the pictures and dust particulate data below, DT9056 reduced dust levels from a high reading of 38,000 ug/m³, with levels typically above 4,000 ug/m³, to levels consistently under 50 ug/m³. Water usage was reduced by 70 percent. This reduction in water consumption also allowed for a reduction in the vehicle traffic required to control the dust because the DT9056 treatment is applied periodically, not daily. The mine and the community have been satisfied with the reduction in dust achieved through the application of DT9056.



DUST PARTICULATE LEVELS WITHOUT CHEMICAL TREATMENT



DUST PARTICULATE LEVELS WITH DT9056 TREATMENT



Results are examples only. They are not guaranteed. Actual results may vary.

Summary

ChemTreat DT9056 was extremely effective in controlling fugitive dust on roads at a limestone mining operation. Mine personnel and the local resort community validated its performance in reducing dust and improving the site's environmental impact. The operation was clearly satisfied with ChemTreat's approach, technology, and program support.

