



Focus

Controlling Air Pollution Aggregate Industry

Impact on Air pollution

The processes associated with the aggregate industry produce air pollution, primarily particulate matter. Sources of particulate air pollution are:

- **Sand and gravel operations:** Excavation, spoil disposal, rock cleaning, crushing operations and pile storage of sand and gravel. Additional pollution comes from vehicles moving the materials around the pit.
- **Concrete plants:** Filling of the cement silo and any drying mixing operations prior to adding water.

Health effects

Particulate matter less than 10 microns in diameter (PM₁₀) is a public health concern. Thousands of these tiny particles would fit on the period at the end of this sentence. Larger particulate matter is a nuisance and can settle on trees and houses.

Small particulate matter collects in the lungs. Tiny particles collect in the most remote portions of the lungs called alveoli -- the tiny air sacs where oxygen enters the blood stream. Once in your body, the tiny particulate matter can cause structural and chemical changes deep in the lungs. The small particles also act as carriers for other toxic and carcinogenic materials. Chronic diseases, such as emphysema, chronic bronchitis, cancer and cardiovascular complications of lung damage have been associated with exposure to fine particles.

Regulation of particulate matter

The federal government regulates particulate matter less than 10 microns in diameter as one of six major air pollutants for which health-based air quality standards have been set. State Law requires existing sources of air pollution to use reasonable available control technology (RACT) to control their emissions. Industries that produce "fugitive dust emissions" – dust that is incidental to operations and not controlled – must use reasonable precautions to prevent these emissions.

Though the Department of Ecology has not done a formal RACT analysis for the sand and gravel mining, or concrete industries, the following recommendations may help you reduce particulate pollution from your operations.

How to reduce pollution from aggregate industry operations

- **Gravel roads:** The travel of vehicles on gravel roads produces particulate pollution. Smaller and temporary operations can regularly spray the roads with water to reduce the dust level. The frequency of watering should be such that the roads are kept moist when traveled upon. Larger and more permanent operations may need to pave the onsite roads used for hauling and the storage areas for aggregate. The paved roads should be washed regularly.
- **Screening:** The sorting process for aggregate material also produces dust and other particulate matter. Applying pressurized spray washers or charged foggers to the screens and transfer points during operation decreases the release of dust.
- **Other sources of dust:** All areas that produce dust should also be sprayed with water regularly. Storage piles should be consolidated to minimize vehicle travel. During the handling of material, water should be applied to the storage piles. [Use landscaping, barriers, and fencing to reduce windblown dust.]
- **Additional measures:** Where maximum control from screening and crushing operations is needed, they can be enclosed in a building. The building should be kept under negative pressure and the air conveyed to a fabric filter to remove the dust.

If you have further questions about air quality, contact:

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