Minnesota Pollution Control Agency

Fugitive Dust-Control Surface Treatments at Industrial Facilities: Water Quality Considerations

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Dust from open areas, often called "fugitive" dust, is a form of air pollution. Industries sometimes use water or various types of chemicals as surface treatments to help control fugitive dust. This fact sheet outlines some of the water-quality issues you should consider when using surface treatments, so your air-pollution solution doesn't turn into water pollution instead.

General Concerns

- Consider non-chemical dust control alternatives, such as wind fences/barriers, fiber mulches, vegetation/shading, paving, reducing vehicle speed and covering open areas with less erodible materials.
- Avoid applying so much liquid that it ponds or runs off the application area.
- Avoid applications close to bridges, culvert crossings, ditches, streams, wetlands and other surface waters.
- Avoid applications near wells or where chemicals can easily contaminate ground water.
- Avoid applications when it is raining, if it may rain soon, or if the surface is frozen.
- Consider how frequently different stabilizer options need to be reapplied.
- Know the complete chemical content, aquatic toxicity and human health effects of any dust-control material. Request such information from potential vendors before any purchase.

Product-specific Concerns

Water

- Don't overapply; control runoff.

Used Oil

- Application for dust control is prohibited, in part due to the risk of water pollution (such as solvents, metals).

Petroleum-based Oils and Bitumens

- Can significantly increase runoff rates from areas where applied.
- Potential water pollution impacts due to oxygen depletion, ammonia, dissolved salts (including sulfate), heavy metals.

Acrylic Polymers

- Potential water pollution impacts due to oxygen depletion.

Starches, Soybean Oils

- Contains vegetable starches and/or oil; generally less water pollution concerns than other stabilizer chemicals.

Lignosulfonates/ Wood Pulping Liquors

- Dust control effectiveness reduced after heavy rains.
- Can harm vegetation, seedling growth.
- Potential water pollution impacts due to oxygen depletion, acidity/corrosivity, ammonia, phenols, chloride, sodium, sulfate, zinc and other heavy metals.
- Can cause discoloration and foaming downstream.

Salts and Brines

- Less likely to increase runoff rates than other stabilizer products.
- Dust control effectiveness diminishes with time.
- Can harm vegetation, wildlife and aquatic life by release of significant amounts of dissolved salts.
- Can have significant levels of heavy metals and anti-caking substances like cyanides.
- Oil-field brines can contain petroleum hydrocarbons that harm aquatic life and drinking water.

For more information, call (651) 296-7238 or visit MPCA's Web site at http://www.pca.state.mn.us .
For general guidance on pollution prevention and road maintenance, consult the U.S. Environmental Protection Agency Rural Roads Web site at http://www.epa.gov/agriculture/trur.html .

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