



**Take Control of Your Dust**

**FUGITIVE DUST  
BEST MANAGEMENT  
PRACTICES**

**Boulder County Public Health (BCPH) is pursuing an intensive pollution prevention effort by working with local construction and land development companies to proactively reduce fugitive dust emissions and prevent further degradation of public health and the environment.**

Outlined below are best management practices recommended to prevent fugitive particulate emissions from leaving your property. Our goal is to help you to achieve and maintain full compliance with the state air quality regulations by controlling fugitive dust emissions.

Colorado Air Quality Control Commission's Regulation No.1 "Particulate Matter, Smoke, Carbon Monoxide, and Sulfur Oxides," Section III.D, Fugitive Particulate Emissions, requires every owner or operator of a source or activity that creates fugitive dust to use all practical measures or operating procedures necessary to minimize fugitive dust. All sources must prevent dust from leaving their property, and dust must be less than 20% opacity.

(Opacity represents the density of smoke or dust emissions. The thicker the plume or more light that is blocked by dust or smoke emissions the greater the opacity.)

While several local governments have developed and implemented local ordinances to enhance compliance with the state requirements, Boulder County's pollution prevention effort is aimed at achieving those ends through voluntary cooperation rather than pursuing local regulations to control fugitive dust issues in the County.

**GETTING STARTED:** **Creating a system to communicate with state and local health officials and the public and creating a workable and detailed dust control plan is key to a successful project. You will need to contact the Colorado Department of Public Health and Environment to submit a dust control plan <http://www.cdphe.state.co.us/ap/downloadforms.asp>. A copy of the submitted plan should be sent to BCPH with your contact information and the site manager's contact information in case of a resident complaint. This guide can help you develop a successful plan.**

## RECOMMENDED PRACTICES:

- **Clearly post visible signs** on the construction site listing both the contact information for the responsible party who will field complaints and the CDPHE air permit number for reference.
- **Develop and keep a daily dust control log** documenting watering, application of chemical suppressants or other efforts of fugitive dust suppression implemented. (See Appendix 1 for an example)
- **Obtain and complete the Colorado Department of Public Health and Environment permit application** and dust control plan.  
<http://www.cdphe.state.co.us/ap/downloadforms.asp>
- **Fax or email a copy of your dust control plan**, including contact information, to Boulder County Public Health at 303-441-1468 or [hwebmaster@co.boulder.co.us](mailto:hwebmaster@co.boulder.co.us)
- **Identify all potential sources of fugitive dust** and means of reducing them, as well as alternative methods to ensure dust control efforts are effective.
- **Educate employees/workers** on the Best Management Practices.
- **Complete a project activities checklist** with corresponding fugitive dust BMP's and fax or mail a copy to Boulder County Public Health at 303-441-1468 or 3450 Broadway, Boulder, Co 80304. (See recommended BMP's below)

### BEST MANAGEMENT PRACTICES FOR CONTROLLING FUGITIVE DUST

Large quantities of silica sand are used during hydraulic fracturing. Transporting, moving, and refilling silica sand into and through sand movers, along transfer belts, and into blender hoppers can release fugitive dust into the air.

- Designate a company representative responsible for ensuring dust is controlled on-site.
- Establish a water truck or secure a clean water source available to the site at all times.
- Apply fresh water to roads and around the well site to reduce the dust.
- Apply gravel to haul roads when water is not sufficient or becomes too muddy to minimize dirt drag out onto paved roads.
- Mandate the capping of unused fill ports (e.g., cam lock caps) on sand movers. Securing unused fill ports can help reduce the dust released, especially during filling.
- Reduce the drop height between the sand transfer belt and T-belts and blender hoppers. Limiting the distance that sand falls through the air can help reduce dust.

## BEST MANAGEMENT PRACTICES FOR CONTROLLING FUGITIVE DUST

### OIL & GAS: EQUIPMENT CHANGES

Equipment controls are also important practices for reducing dust emissions and releases.

- Enclose points where dust is released. Install thick plastic stalling or staging curtains around the bottom sides of the sand movers to limit dusts released from belt operation. Enclosures can also be added along and at the ends of the sand transfer belt.
- Where possible, use enclosed cabs or booths. Consider configuring operator cabs and booths with HEPA filtration and climate controls to further protect workers.
- Use local exhaust ventilation to collect silica-containing dusts and prevent dust escape. Install dust collection systems onto machines or equipment that can release dust.
- Replace transfer belts with screw augers on sand movers in new designs or retrofits. Dust can be released from the sand moving belt under the sand movers from the actions of belt movement or vibration. Moving sand through an auger system rather than a belt will help contain the sand and reduce dust release.

### LANDCLEARING ACTIVITIES

**Clearing a large amount of land at one time can leave an area vulnerable to wind generated dust storms. Consider clearing land in stages and re-vegetating as you progress through the project. Make sure have plenty of water available and consider using chemical stabilizers continuously throughout the construction process or as needed.**

- Apply water/chemical stabilizer to the ground or area of activities (ex. haul roads, grading areas). Chemical suppressants or water should be applied during and, when possible, prior to high winds (20-30 mph) to create a less erodable surface. Application details provided by the manufacturer should be followed for chemical suppressants.
- Water at a sufficient frequency, quantity, and depth, including pre-soaking. Hot, dry days may require several additional water applications throughout the day.
- Minimize disturbance areas. Clear vegetation only from those areas where you will work right away.
- Temporarily halt work activities during high wind events (> 30 mph).
- Use wind fences in the area of construction to reduce soil disturbance.

## BEST MANAGEMENT PRACTICES FOR CONTROLLING FUGITIVE DUST

### EARTHMOVING ACTIVITIES

**Earthmoving activities are one of the largest sources of fugitive dust. Keeping material moist prior to transport and minimizing spillage can greatly reduce dust generated.**

- Apply water to ground prior to, during, and after earthmoving operations to reduce dust. Water should penetrate the first few inches of soil.
- Apply chemical stabilizers applied to areas not scheduled for use for more than 60 days. Grading can occur in phases that coincide with construction activities or all at one time.
- Apply chemical stabilizers to reduce fugitive emissions up to 30-80%. Chemical stabilizers are most effective on areas not subject to daily disturbances. Follow manufacturer's specifications for use and application to create a less erodable surface.
- Apply or mix water with materials that are to be transported by a haul vehicle and cover before transportation.
- Avoid overloading haul vehicles; the freeboard should not be less than 3 inches high. This ensures that only a limited amount of dust or debris escapes during transport.
- Cover the load.
- Empty loader slowly and while dumping keep the bucket close to the ground.
- Use water to keep material moist.

#### **Check your speeds!**

**Reducing vehicle speed from 30 miles to 20 miles per hour can reduce dust emissions by up to 22%!**

### HAUL ROADS

**Handled correctly, haul roads are no problem when it comes to controlling fugitive dust. Locate established routes as far from existing homes as possible, control track – out, install gravel entrances, and keep routes moist.**

- Ensure vehicles stay on established routes, and keep these routes moist.
- Post and enforce lower speed limits on haul roads (10 to 15 mph)
- Locate haul roads as far from existing housing as possible to reduce home damage from dust and debris.
- Designate a single site entrance and exit to help isolate heavy traffic in one area.
- Place wheel washers at exits that lead from unpaved to paved areas.
- Use grizzlies, gravel, or paving to prevent track out. These rough surfaced areas help remove soil and mud from vehicle tires.

# BEST MANAGEMENT PRACTICES FOR CONTROLLING FUGITIVE DUST

## HAUL ROADS

### UNPAVED ROADS

- Use alternate paved routes. Unpaved routes create up to 90% greater dust emissions compared to paved routes.
- Add surface gravel to the road to reduce the amount of fine particles by 10-20 percent.
- Apply water at sufficient frequency, quantity and depth to bind soil particles and reduce fugitive dust emissions.

### PAVED ROADS

- Sweep or vacuum all mud tracked out onto roadways.
- Use geotextile fabric to increase the strength of new roads or roads under construction.
- Provide for stormwater drainage and construct curbing to prevent water erosion onto paved roads and/or into storm drains.

## STORAGE PILES & INACTIVE CONSTRUCTION SITES

**Inactive sites may be “out of sight out of mind” for you, but not your neighbors. Properly cover and stabilize all materials and check back periodically to ensure they are still secure.**

- Apply water or chemical dust suppressant to storage piles and inactive construction site area to form a surface crust that binds particles and traps soil below the surface of the crust reducing fugitive dust.
- Apply chemical stabilizers as specified by manufacturer to minimally disturbed piles.
- Cover storage piles with anchored tarps, plastic or other material to shield piles from wind or potential disturbance.
- Install three-sided barriers, either natural or manmade, around piles to provide a windshield.
- Re-vegetate or mulch inactive sites as soon as construction is done, the vegetation helps to reduce disturbance of soil and fugitive dust.

## Help Keep the Air Clear!

**Be a responsible neighbor. By controlling the dust from your operation, you will avoid conflicts with the neighbors, avoid visits from regulatory agencies, and help keep the air we all breathe a little cleaner.**

**For Questions contact Boulder County Public Health at 303-441-1564 or visit our website at [www.BoulderCountyAir.org](http://www.BoulderCountyAir.org).**

# Dust Control Log

Project: \_\_\_\_\_

Contractor: \_\_\_\_\_

Week Beginning Date: \_\_\_\_\_

<b>RATING</b>	
AA	Above Average
A	Average
O	Out of Compliance
N/A	Not Applicable

	MON	TUE	WED	THURS	FRI
ELIMINATION OF TRACK OUT ON TO EXISTING ROADS- SWEEPING PAVED AREAS					
CONDITION OF GRAVEL PAD					
APPLICATION OF CHEMICAL STABALIZER					
WATERING HAUL ROADS					
VEHICLE SPEED CONTROLS: 20 MPH OR LESS					
COMPACTION OF DISTURBED SOIL-TO 90% OF MAXIMUM COMPACTION					
FORMATION OF CRUST ON DISTURBED AREAS					
FORMATION OF CRUST ON TRENCH SPOILS					
FORMATION OF CRUST ON STOCKPILE					
ELIMINATION OF DUST FROM TRENCHING					
ELIMINATION OF DUST WHILE SCREENING MATERIALS					
ELIMINATION OF DUST WHILE BACKFILLING					
WATER TRUCKS OPERATING ON SITE- DISTURBED AREAS MOIST					
FURROWS AT RIGHT ANGLE TO PREVAILING WIND					
WIND BREAKS- SNOW FENCING, SILT FENCING					
SYNTHETIC OR NATURAL COVER FOR STEEP SLOPE- LETTING, MULCHING					
REVEGETATION-MULCHING OR SEEDING					
OTHER MEANS OF DUST SUPPRESSION					