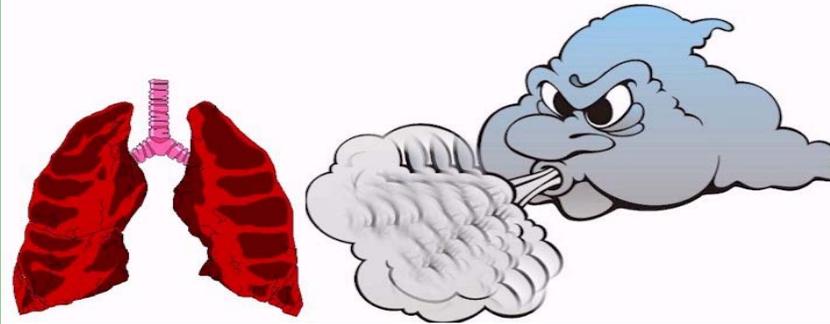


## **APPENDIX E**

*Public Outreach and Educational Material*

# Dust Storms and Health



## *What Everyone Should Know*

Health Information for  
Doña Ana County

The New Mexico Environment Department



The New Mexico Department of Health



November 2003

### **Why should I be concerned about dust storms?**

Dust storms can cause a number of serious health problems and they can make some health problems worse. Dust is made up of tiny solid particles ("particulate matter") floating in the air. These tiny particles can get past the lungs' natural defenses and build up. This can harm sensitive lung tissue. Of course, during severe dust storms, more dust can get into the lungs.

Dust irritates the lungs and can trigger allergic reactions, as well as asthma attacks. In people who already have these problems these attacks can be serious and cause breathing problems. Dust can cause coughing, wheezing and runny noses. Some groups of people are more sensitive to dust than others. Finally, breathing a lot of dust over a long period of time can cause chronic breathing and lung problems.

### **Who should take special precautions?**

Anyone can potentially be harmed by breathing too much dust. However, the following groups are at the highest risk:

- infants, children, teens, and elderly,
- people with asthma, bronchitis, emphysema, or other respiratory conditions,
- people with heart disease,
- pregnant women, and
- healthy adults working or exercising vigorously outdoors (for example, agricultural workers, construction workers, and runners).

### **What can I do to protect myself and others?**

The best precaution is simply to avoid going outside during severe dust storms. If you must go out, spend as little time outside as possible, and avoid hard exercise. Wearing some type of covering over your nose and mouth can provide some protection from large particles.

However, since the small dust particles are the most harmful, staying out of the dust is the best solution.

### **How will I know if there is a problem?**

For you, the easiest way to tell if there may be a problem is if you see a lot of dust. For instance, if the blowing dust is so thick that it's hard to see the mountains, then that could mean that dust levels might be harmful right now. More detail on federal standards plus the previous days particulate matter levels can be found by visiting the New Mexico Environment Department web site. Doña Ana County has between 6 to 18 days per year when dust levels are too high according to federal health standards. This number varies from place to place and from year to year depending on weather conditions.

### **What causes dust storms?**

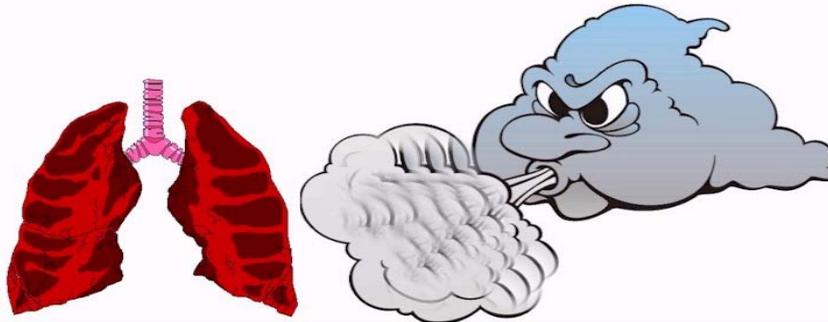
Dust storms are caused by a combination of weather conditions, features of the natural environment, and human activity. High winds can raise large amounts of dust from areas of dry, loose, exposed soil. In this area, high winds are most common during the months of January through April. Most dust storms last about 4 hours.

### **For more information:**

**New Mexico  
Environment Department**  
George Llewellyn: (505) 647-7959  
Fax (505) 526-3891  
Santa Fe Office: 1-800-224-7009  
[www.nmenv.state.nm.us/aqb/index.html](http://www.nmenv.state.nm.us/aqb/index.html)

**New Mexico Department of Health**  
Border Health Office  
Tom Ruiz: (505) 528-5152  
1-800-784-0394  
Fax (505) 528-6045

# La Polvareda (Tormentas de Polvo) y su Salud



## Lo Que Todos

Un Consejo de Salud para el  
Condado de Doña Ana

Departamento del Medio Ambiente de Nuevo Mexico



Departamento de Salud de Nuevo Mexico



Noviembre 2003

### ¿Por qué debo interesarme en la polvareda?

La polvareda (tormentas de polvo) puede causar serios problemas de salud y puede empeorar otros problemas de salud. El polvo consiste de pequeñas partículas sólidas ("materia partícula") que flotan en el aire. Estas partículas pueden invadir las defensas naturales de los pulmones y pueden acumularse. Esto puede dañar el tejido pulmonar que es muy sensitivo. Por supuesto, más polvo puede entrar a los pulmones durante polvaredas más serias.

El polvo causa irritación a los pulmones, puede provocar alergias, y también puede causar ataques de asma. En gente que ya tienen estos problemas, estos ataques pueden ser serios y pueden causar problemas con respiración. El polvo también puede causar tos, resuello asmático, y catarro. Algunas personas son más sensitivas que otras al polvo. Finalmente, respirando mucho polvo por mucho tiempo puede causar problemas crónicos con respiración y los pulmones.

### ¿Quién debe tomar precauciones especiales?

Todos corremos riesgo por respirar mucho polvo. Sin embargo, los siguientes grupos de personas tienen el mayor riesgo:

- bebés, niños, adolescentes, y personas ancianos,
- personas con asma, bronquitis, enfisema, u otros problemas respiratorios personas con problemas cardíacos
- mujeres embarazadas
- adultos sanos que trabajan o ejercitan vigorosamente afuera (por ejemplo, trabajadores de agricultura y construcción, o corredores)

### ¿Que puedo hacer para protegerme y proteger a otros?

La mejor precaución es simplemente no salir para afuera durante una polvareda. Si tiene que salir, limite su tiempo afuera y evite ejercicio riguroso. Cubriendo su nariz y boca en algún modo puede proveer protección de las partículas de polvo grandes. Sin embargo, quedándose dentro de su

casa es la mejor solución porque las partículas de polvo más pequeñas son las más peligrosas.

### ¿Como voy a saber si hay un problema?

El modo más fácil de identificar un problema es si se ve mucho polvo. Por ejemplo, si el polvo está tan denso que no se ven las montañas, entonces puede indicar que los niveles de polvo son peligrosos. Más información sobre las reglas federales y los niveles de la materia partícula ("particulate matter") del día antepasado pueden ser obtenidos en por el Departamento del Medio Ambiente de Nuevo México. El condado de Doña Ana tiene entre 6 y 18 días por año cuando los niveles de polvo están muy altos, según reglas federales de salud. Este número es variable de lugar a lugar y de año a año dependiendo en las condiciones climáticas.

### ¿Qué causa la polvareda?

La polvareda es causada por una combinación de condiciones climáticas, características ambientales, y actividad humana. Vientos fuertes pueden levantar mucho polvo de lugares con tierra que está seca, suelta, y expuesta. Aquí, vientos fuertes son más comunes de enero hasta abril. Muchas tormentas de polvo duran como cuatro horas.

### Para mas información:

#### Departamento del Medio Ambiente de Nuevo México

George Llewellyn: (505) 647-7959

Fax: (505) 526-3891

Oficina en Santa Fe: 1-800-224-7009

[www.nmenv.state.nm.us/aqb/index.html](http://www.nmenv.state.nm.us/aqb/index.html)

#### Departamento de Salud de Nuevo México

Oficina de Salud Fronteriza

Tom Ruiz: (505) 528-5152

1-800-784-0394

Fax: (505) 528-6045



New Mexico  
Environment  
Department

# Particulate Air Pollution

## Air Pollution From Natural Events

### BACKGROUND

We usually associate air pollution with human activities – cars, industry, and wood burning are three of the largest air pollution sources. But natural events such as volcanic eruptions, earthquakes, wildfires, and dust storms can affect air quality, too. These natural events produce particulate matter (PM<sub>10</sub>), or airborne particles of dust and soot, which can cause health problems when we breathe them. The federal Environmental Protection Agency (EPA) regulates particulate matter through a health-based air quality standard.

### HEALTH CONCERN ASSOCIATED WITH PARTICULATE AIR POLLUTION

PM<sub>10</sub> refers to suspended particles less than or equal to 10 microns in diameter. A micron is a unit of length equal to one-millionth of a meter, or about one-seventh the diameter of a human hair. PM<sub>10</sub> may include a variety of substances, such as dust, smoke, and soot. These tiny particles are small enough to be inhaled deep into the lungs, past the respiratory tract's natural defenses. High levels of PM<sub>10</sub> can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. People most vulnerable to these effects include infants and children, the elderly, anyone who is exercising (because they breathe in more air, and therefore more particles), and those suffering from chronic lung diseases.

In addition to health concerns, dust generated from various activities including high winds can reduce visibility, resulting in accidents. Furthermore, particulate matter pollution can impair the health of animals and vegetation, corrode building material, reduce crop production, and in general reduce the quality of life.

### THE PROBLEM

Dust storms generated by high winds have caused unhealthy levels of airborne particulate matter within Doña Ana County. In recent years, Doña Ana County has not met the federal ambient air quality standards for particulate matter (PM<sub>10</sub>). The frequency and severity of exceedances have been well above the national standards. While much of the dust in the Dona Ana County area is caused by natural events such as high wind speeds and ambient dry conditions throughout the area, man-made dust sources are on the increase as the County becomes more populated and development increases.

To protect public health, EPA designates areas where particulate matter levels exceed the standard as "non-attainment areas." State and local governments must then adopt plans to reduce air pollution in these areas in order to protect public health. Federal requirements for these areas are focused on reducing air pollution from industries and motor vehicles. However, we know that the traditional approach of controlling factories and tailpipe emissions won't fix a PM<sub>10</sub> problem due to natural events such as blowing dust raised by high winds. Besides the fact that this traditional approach has been an ineffective means of dealing with this type of PM<sub>10</sub> exceedance problem, it may possibly be detrimental to economic growth. Because of this, the western states requested a new EPA policy for air pollution from natural events in 1996.

## **EPA'S POLICY ON NATURAL EVENTS**

At the urging of western states, EPA agreed to try a more common sense approach to the problem. In June 1996, EPA adopted a new policy for natural events. The Natural Events Policy (NEP) offers states flexibility in meeting the PM10 standard, while still providing for public health protection. The NEP applies to three categories of natural events that can cause high PM10 levels: (1) volcanic and seismic activities; (2) wildfires; and, (3) high wind events.

Under this policy, particulate matter (or dust) exceedances generated by high winds are considered natural events if they occur over natural undisturbed areas or areas that have been disturbed by human activities with appropriate controls in place. These "natural events" exceedances may be excused from the determination of whether air quality is in attainment of the standard. However, if controls are not in place for human caused sources of windblown dust, the exceedances due to high winds cannot be excused.

This policy outlines requirements in general terms and urges local stakeholder involvement in developing the actual plan. These general requirements include public health education, public notification, and control of human-caused sources of windblown dust where feasible and effective. If a state, with stakeholder involvement, develops and implements a plan that responds to public health effects impacted by natural events, EPA will not designate the area as non-attainment.

The New Mexico Air Quality Bureau and local governmental agencies are required to develop a plan to protect public health during natural events. This plan will need to include:

- public education about the harmful effects of particulate matter;
- public notification when air quality is or will be affected by natural events;
- programs to enable the general public and high risk individuals to minimize their exposure to air laden with particulate matter; and
- actions to reduce particulate matter (when possible) during natural events. Since our exceedances are due to blowing dust, these actions could include reducing the amount of loose, uncovered soil at construction sites, agricultural fields, and unpaved parking lots.

## **HOW DOES THIS POLICY AFFECT DOÑA ANA COUNTY?**

Dust storms are the most common natural events causing particulate matter air pollution in Doña Ana County. EPA could propose to designate Doña Ana County as a non-attainment area because of the high levels of particulate matter caused by dust storms. However, under the Natural Events Policy, Doña Ana County will not be designated as a non-attainment area if a plan is developed and implemented to limit dust generated from man-made sources in a reasonable effort to protect public health during natural events.

## **FUTURE ACTIONS**

Once a plan has been developed and implemented for Doña Ana County it will be reviewed and evaluated for effectiveness at least every four years. The reevaluation process should show what is and is not effective or feasible so that any necessary changes can be made. Education will continue for both health concerns and control measures available.

## **FOR MORE INFORMATION**

Call the Air Quality Bureau in Santa Fe at 1-800-810-7227; or,  
Check out our website at [www.nmenv.state.nm.us](http://www.nmenv.state.nm.us), Click on "Air Quality Bureau"

**Suggested Best Available Control Measures (BACM)  
for Reducing Windblown Dust from Manmade Sources  
in Doña Ana County**

**Why is there a need to control dust in Doña Ana County?**

Over the last several years, federal health-based standards for air quality have been exceeded in Doña Ana County as a result of high concentrations of windblown dust in the air. One of the actions required to protect health is the application of what are called Best Available Control Measures or BACM. These measures are designed to reduce blowing dust from sources created by human activities. This fact sheet will describe the most common sources of manmade dust within communities and the BACMs that can be used to prevent or reduce manmade dust during windy conditions.

**What types of activities produce windblown dust in Doña Ana County?**

Windblown dust in Doña Ana County occurs both from natural and manmade sources. While dust is common in undisturbed areas throughout the west, it becomes much more common where the natural soils have been disturbed by human activities. This is because natural soils have a tendency to form a mineral and organic crust that is resistant to erosion by wind. Human activities can remove or break this crust, allowing dust to escape much more easily. Also, even sparse desert vegetation acts somewhat like a windbreak providing some protection to the soil surface. When human activities remove vegetation, the soil is more susceptible to wind, and as a result, airborne dust is produced.

While we can do little to decrease windblown dust from the open desert during periods of high wind, there are a variety of things that community members can do to decrease dust caused by human activities. The dust from human activity tends to be concentrated close to populated areas, since that is most often where native soils are disturbed. The majority of the dust inhaled by community members is generated locally rather than from the surrounding desert.

**Sources of Windblown Dust in Doña Ana County**

When Doña Ana County experiences high dust levels during high winds, most of the dust in the air is wind-generated from exposed areas of loose soil. The sources of wind-generated dust in Doña Ana County are similar to those in other communities that are developing, or have developed, plans to control airborne dust. These communities are found throughout the western U.S. including locations as diverse as Phoenix, Arizona and Spokane, Washington.

There are several sources that are commonly encountered in urban and rural areas in the western U.S. The following list shows the major sources but not necessarily in the order of their significance:

- Soil disturbance during construction projects is primarily a problem during windy conditions.

- Disturbed land areas that are vacant, where construction is pending or due to recreational activities
- Unpaved rural roads and unpaved high-traffic industrial areas
- Unpaved playgrounds and unpaved parking lots
- Wind blown emissions from tilled fields
- Undisturbed desert areas during the highest winds
- Military training exercises
- Unpaved equipment lots (laydown yards)

### **What is BACM?**

BACMs are methods that can be used to reduce or eliminate windblown dust in areas where natural soils have been disturbed and are thus more prone to erosion by the wind. BACM is defined as the maximum degree of emission reduction feasible for a significant source category. BACM is determined on a case-by-case basis, taking into account technical feasibility and energy, environmental, and economic impacts as well as other costs. The process of determining BACM takes into account what the most common sources of manmade dust within a community are, when they occur, what measures can be used to reduce dust, and the relative cost of such measures to their effectiveness in controlling dust.

Most BACMs are physical methods of controlling dust from developed or undeveloped areas within communities. Many methods attempt to return native soils to a more protected state by re-vegetation or by replacing natural crusts with artificial covers. However, they also include controlling and/or reducing airborne dust by practices that minimize the area of disturbed soil. In addition, the length of time the soil remains exposed to hazards of wind and the timing of the disturbance have a bearing on the need for a particular BACM. Considering all these factors, it is possible to develop best management practices for specific land uses.

### **Selecting, developing and using BACMs**

The list of BACMs presented below includes methods that vary greatly in effectiveness and cost. These variations may be due to the size of the area requiring dust control, the ground slope of the area, the soil type involved and the amount of manmade activity in an area. Larger areas may require several methods of dust control to adequately address problems of blowing dust.

The following list does not represent all types of dust control methods, and new methods are being developed all the time. Community members can utilize existing or new types of dust control, although they should be thoroughly investigated for benefits and drawbacks. However, these measures have been successfully implemented in similar arid regions.

#### *Re-vegetation and Organic Mulches*

Restoring a vegetative cover or using organic mulch can be an excellent method of reducing windblown dust. However, care must be taken to avoid introducing or

promoting the spread of noxious weeds and plants. Please contact State or University representatives who are knowledgeable about revegetation prior to performing these options.

### *Using Chemical Dust Suppressants and Soil Stabilizers*

Chemical dust suppressants and soil stabilizers can be useful in reducing the tendency of fine-grained and loose soils to produce large amounts of windblown dust. They bind fine soil particles into larger particles that are less easily blown into the air; they retain moisture so that soils become more coherent; and they can form crusts that mimic the wind resistance of natural soil crusts.

Water has long been used for the control of dust in arid regions. However, water use has increased greatly over the last decade in Doña Ana County and is being used primarily for domestic and agricultural use; the cost of water has also increased greatly within the County. Water can be ineffective for dust control since dry soils are initially resistant to the influx of water; large amounts of water applied during short intervals are often necessary for effective dust control.

Water-soluble surfactants are often added to water to increase the wetting power by breaking down the initial resistance of dry soils to water. Surfactants are relatively inexpensive and greatly decrease the amount of water necessary during dust control operations.

Chemical dust suppressants are often added to water, which acts to disperse the chemicals, and then evaporates after application. The chemicals that are left behind coat the particle surfaces and bind the soil particles together. Most products are designed for moderately traveled, low cost roads, and are used to stabilize shoulders of paved roads and to temporarily stabilize construction sites.

When used to stabilize heavily trafficked areas, these products typically require ground preparation prior to application, as well as reapplication one to four times a year to remain effective. The crusting or binding of soil particles does not need to be nearly as strong for areas that will not be trafficked by vehicles, because the binding needs only to withstand the force of the wind. Therefore, stabilization of untrafficked areas requires much less of the chemical, less ground preparation, and less frequent reapplication.

For greatest effectiveness and lowest cost, it's important to follow the manufacturer's instructions for mixing and applying these chemicals, which will likely depend on the intended use of the area. Some of these chemicals tend to suppress plant establishment and growth (which may be an added benefit where weed control is desired), and some may affect water quality if treated soils are allowed to wash into drainages.

Soil stabilizers such as straw mulches increase the organic content of sandy, dry soils. They provide soil structure and the organic materials bind with clay and sand to reduce erosion; they also increase the ability of soils to retain moisture. Some types of mulch require tilling to integrate them into the upper layer of soil, if they are to be effective in dust control.

### **Smart Timing: A Cost-Effective Approach to Dust Control**

In many cases, proper timing of the land disturbance and/or the application of the control measure may make dust control affordable, with little reduction in effectiveness. Based on data from this county for 1996 through 1999, over 60% of the days with unhealthful levels of windblown dust occurred during the months of February through April, and over 80% were during January through June. For an activity that temporarily creates a potential source of windblown dust, this means that by planning a dust causing activity so that the erosion susceptibility is within the July to December period would, on average, be 80% effective in controlling dust. No direct costs (such as for chemical dust suppressants, water, water trucks, labor, etc.) would be incurred. If indirect costs (relating to financing, lost business opportunities, and so forth) are not prohibitive, this can be a highly cost-effective method of dust control. An added benefit is that environmental impacts from water use or introduction of chemicals into the environment are minimized.

If the potential dust source is expected to continue for many months or years, timing the application for optimal effectiveness can reduce the costs of short-term control measures such as watering or using chemical dust suppressants. Applying these methods to provide control only during the months of January through June could cut the cost of control by as much as half, while decreasing overall effectiveness by only 20% on average. For certain sources and control methods, the "smart timing" approach might even be feasible over shorter time periods. For example, decisions on water application could be determined by daily wind forecasts.

For areas that have the potential to be dust sources indefinitely or for many years, repeated application of short-term control measures might be more costly in the long run. Therefore, permanent controls such as paving or re-vegetation may be more cost effective, even though the permanent controls have a higher initial cost. Costs, effectiveness and environmental impacts all may vary from case to case.

### **Examples of BACM for specific land uses**

Airborne dust is generated through a variety of activities that constitute the daily operations of businesses. The following list shows alternative measures for dust control for specific land uses. This list of BACMs is by no means all-inclusive, and represents only some of the options available to the community.

#### ***BACMs for Paved and Unpaved Roads***

BACMs for paved roads:

While paving roads is an excellent way to reduce dust, road shoulders and dirt that is tracked, washed, or blown onto paved surfaces can continue to emit dust. Methods to control this dust source include:

- Road shoulder stabilizing by paving, covering with gravel, or using chemical dust suppressants applied in amounts and rates recommended by the manufacturer and maintained as recommended by the manufacturer
- Road cleaning with vacuum street cleaning equipment at regular intervals
- Reducing dirt tracked from unpaved side roads and construction sites, using paved or gravel entry aprons and/or devices such as steel grates that are capable of knocking mud and bulk dirt off vehicle tires

BACMs for unpaved roads:

Depending on the soil properties, heavily used unpaved roads can develop a loose, powdery surface that generates significant amounts of windblown dust even during periods of moderate wind speed. Methods to control dust from unpaved roads include:

- Road stabilization using chemical dust suppressants applied and maintained in amounts and rates recommended by the manufacturer
- Prioritization of the paving of unpaved roads based on the criteria that includes the amount of traffic, production of dust, and vicinity of people, schools, etc.
- Graveling unpaved roads on a regular basis
- Reducing speed limits on unpaved roads with appropriate enforcement or speed bumps/humps
- Limiting use of unestablished roads through the use of road closures and barricades
- Providing adequate stormwater drainage to reduce soil from being washed or tracked onto paved roads

### ***BACMs for Construction Activities***

Construction sites, both active and inactive, can be sources for significant amounts of windblown dust. This is due to the presence of large areas of bladed ground, stockpiles, trucks hauling bulk materials, and heavy equipment traffic. Some of the suggestions for reduction of dust from these sites are similar to those for paved roads, due to soil tracked onto paved roads from heavy equipment.

- Prevent tracking of dirt from construction sites by installing curbs, or stabilizing road shoulders
- Use devices designed to clean mud and bulk dirt from tires such as steel grates or on-site wheel washes
- Schedule regular vacuum street cleaning to remove accumulated dirt on roadways
- For trucks hauling bulk materials to or from the site, fully cover and secure cargo loads and prevent leakage from truck beds, sideboards, tailgate, or bottom dump gate

For active on-site construction activities:

- Dust suppression using water, particularly when high winds are forecast or are occurring

- Dust suppression using chemical dust suppressants applied and maintained in amounts and rates recommended by the manufacturer
- Install temporary windbreaks around the site. For example, fabric fences could be installed if they are sufficiently anchored at the bottom to prevent dust from blowing underneath the fence. Windbreaks are only effective for small sites since they only provide protection for a limited distance downwind, depending on the height and porosity of the windbreak.
- Install permanent perimeter or interior fencing prior to other construction activities; as with temporary windbreaks, effectiveness is limited unless the site is very small.
- Slow or stop active construction and bulk material handling during high wind events; this might include the installation of an on-site anemometer to measure wind speed and trigger a strobe or audible alarm to notify site personnel of high wind conditions.
- Slow or stop active construction and bulk material handling when dust is observed to leave the property boundaries.
- Contain all stockpiled bulk materials in three sided bunkers that are at least two feet higher than the stockpiled materials, or cover stockpiled materials.
- Water stockpiled materials that are susceptible to blowing, particularly when high winds are forecast or are occurring.
- Store stockpiled materials, if susceptible to blowing, away from downwind site boundaries.
- Reduce on-site traffic speeds.
- Phase clearing, construction and stabilization to minimize the length of time and the amount of exposure of unstable soil. For example, start construction upwind and stabilize areas such as parking lots or planted areas before disturbing additional areas. Pave permanent roads and parking lots early in the projects.
- Prevent storm water drainage from leaving the site.
- Use geotextiles on graded sloped surfaces to prevent wind and water erosion.

***BACMs for Vacant Land, Disturbed Areas, and Parking Areas around Business, School, Residential, and Other Sites***

Land that has been bladed for construction but left vacant is often highly susceptible to the generation of windblown dust. Additionally, business parks and residential areas that are newly constructed often have tracts of land that have been disturbed, removing native soils and vegetation. Methods for dust control at these sites include:

- Re-vegetate areas no longer used by planting or seeding. Xeriscaping (using plants that require little or no additional water) should be considered, given the importance of water conservation in this region. Reseeding with native plants carries specific requirements to ensure that noxious plant species are not included in the seed, that the soil contains certain amendments to ensure growth, and adequate initial watering is done to ensure germination.
- Cover areas with rock, geotextiles, bark, hay (crimped into the surface), or other organic mulch and maintain these covers.
- Restrict or limit off-road traffic on vacant areas.

- Pave parking areas or treat with a dust suppression chemical applied and maintained in amounts and rates recommended by the manufacturer. Otherwise, restrict parking in unpaved areas.
- Use grasses that require infrequent watering for school playgrounds.
- Install temporary windbreaks around the site. For example, fabric fences could be installed if they are sufficiently anchored at the bottom to prevent dust from blowing underneath the fence. Windbreaks are only effective for small sites since they only provide protection for a limited distance downwind, depending on the height and porosity of the windbreak.
- Treat laydown and storage yards with a dust suppression chemical applied and maintained in amounts and rates recommended by the manufacturer, or with gravel or organic mulch covers.
- For weed control on vacant lots, use mowing, planting competitive native plants, or some other method rather than scraping, blading or herbicide application.

***BACMs for agricultural and range management areas***

Soil erosion by wind or water has always been a major concern for those managing agricultural or rangeland areas, since this reduces land productivity. Farmers work with local U.S. Department of Agriculture representatives to develop and implement soil conservation plans specifically designed for the soil types and crops of each individual farm. Most of the cropland in Doña Ana County is on soils that form stable, nonerodible aggregates (clods) when tilled, thus protecting the surface from wind erosion even when the soil is dry and not covered with plants.

**NEW MEXICO  
AIR QUALITY BUREAU**

**DUST STORMS IN  
DOÑA ANA COUNTY**

***What You Don't Know  
Could Hurt You***

Did you know that dust storms could damage you and your children's health?

Dust particles inhaled into the lungs can increase the risk of allergies and asthma attacks, especially in infants and the elderly.

For more information on the effects of dust storms, please contact Gail Cooke of the New Mexico Air Quality Bureau at 1-800-224-7009.

By playing it safe you and your family can breathe a little easier.



*Our Mission: Protect the inhabitants and natural beauty of New Mexico by preventing the deterioration of air quality.*

New Mexico  
Environment  
Department

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Department

**NEW MEXICO  
AIR QUALITY BUREAU**

**TORMENTAS DEL POLVO EN  
EL CONDADO DE  
DOÑA ANA COUNTY**

***Lo Que Usted No Sabe  
Podría Lastimarle***

¿Usted sabía que las tormentas del polvo podrían dañarle y la salud de los niños?

Las partículas de polvo inhaladas en los pulmones pueden aumentar el riesgo de alergias y de ataques del asma, especialmente en los infantes y los ancianos.

Para más información sobre los efectos de las tormentas del polvo, sírvase llamar a Gail Cooke en la Oficina de la Calidad del Aire de Nuevo México al 1-800-224-7009.

Infórmese para que Usted y su familia pueden respirar con seguridad.



Nuestra Misión: Proteger a los habitantes y la belleza natural de Nuevo México por medio de prevenir la declinación de la calidad del aire.

New Mexico  
Environment  
Department

**NEW MEXICO  
AIR QUALITY BUREAU**

**TORMENTAS DEL POLVO EN  
EL CONDADO DE  
DOÑA ANA COUNTY**

***Lo Que Usted No Sabe  
Podría Lastimarle***

¿Usted sabía que las tormentas del polvo podrían dañarle y la salud de los niños?

Las partículas de polvo inhaladas en los pulmones pueden aumentar el riesgo de alergias y de ataques del asma, especialmente en los infantes y los ancianos.

Para más información sobre los efectos de las tormentas del polvo, sírvase llamar a Gail Cooke en la Oficina de la Calidad del Aire de Nuevo México al 1-800-224-7009.

Infórmese para que Usted y su familia pueden respirar con seguridad.



Nuestra Misión: Proteger a los habitantes y la belleza natural de Nuevo México por medio de prevenir la declinación de la calidad del aire.

New Mexico  
Environment  
Department

**NEW MEXICO  
AIR QUALITY BUREAU**

**TORMENTAS DEL POLVO EN  
EL CONDADO DE  
DOÑA ANA COUNTY**

***Lo Que Usted No Sabe  
Podría Lastimarle***

¿Usted sabía que las tormentas del polvo podrían dañarle y la salud de los niños?

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Nuestra Misión: Proteger a los habitantes y la belleza natural de Nuevo México por medio de prevenir la declinación de la calidad del aire.

New Mexico  
Environment  
Department



**GARY E. JOHNSON**  
GOVERNOR

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**PETER MAGGIORE**  
SECRETARY

**PAUL R. RITZMA**  
DEPUTY SECRETARY

Contact: Kim Kirby, Env. Sci., Air Quality Bureau  
Phone: (505) 827-0048  
Contact: Cathy Tyson, PIO, NMED  
Phone: (505) 827-2855

**STATE ENVIRONMENT DEPARTMENT HEALTH ADVISORY**  
**DOÑA ANA COUNTY DUST AND AIR QUALITY**

(Santa Fe, NM) – The New Mexico Environment Department’s (NMED) Air Quality Bureau along with the City of Las Cruces and Doña Ana County would like to alert all citizens of Doña Ana County of the risks associated with dust storms.

A combination of weather conditions, features of the natural environment, and human activity can cause dust storms. High winds can raise large amounts of dust from areas of dry, loose, exposed soil. In the Doña Ana County area, high winds are most common during January through April.

Dust storms can cause a number of serious health problems and can make some health problems worse. It can irritate the lungs and trigger allergic reactions, as well as asthma attacks. For people who already suffer from these conditions dust can cause serious breathing problems. Dust can also cause coughing, wheezing and runny noses. Breathing large amounts of dust for prolonged periods can result in chronic breathing and lung problems.

Breathing too much dust can potentially harm anyone. However, the following groups run the highest risk of potentially being adversely affected by a dust storm.

- Infants, children, and teens
- Elderly

- Peoples with asthma, bronchitis, emphysema, or other respiratory conditions
- People with heart disease
- Pregnant women
- Healthy adults working or exercising vigorously outdoors

There are several different ways to protect yourself from a dust storm. The best precaution is simply to avoid going outside during severe dust storms. If you must go outside, spend as little time outside as possible and avoid hard exercise. Wearing some type of covering over your nose and mouth can provide some protection from large particles.

For more information on the risks associated with dust storms please see the NMED's website at [www.nmenv.state.nm.us](http://www.nmenv.state.nm.us), click on " Air Quality Bureau" or contact Helly Diaz-Marcano at (505)524-6300.



**GARY E. JOHNSON**  
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**PETER MAGGIORE**  
SECRETARY

For Immediate Release  
February 12, 2002

Contact: Gail Cooke, Env. Analyst, Air Quality Bureau  
Phone: (505) 955-8022  
Contact: Cathy Tyson, PIO, NMED  
Phone: (505) 827-2855

**STATE ENVIRONMENT DEPARTMENT ALERTS DOÑA ANA COUNTY  
RESIDENTS OF HEALTH RISKS ASSOCIATED WITH DUST STORMS**

(Santa Fe, NM) – The New Mexico Environment Department's (NMED) Air Quality Bureau along with the City of Las Cruces and Doña Ana County is warning the citizens of Doña Ana County of the health risks associated with dust storms.

Doña Ana County typically experiences one to ten days a year when dust storms cause exceedances of the National Ambient Air Quality Standard (NAAQS) for airborne particulate matter 10 microns or less in size, which is about 1/7 the diameter of a human hair.

A combination of weather conditions, features of the natural environment, and human activity can cause high levels of wind blown dust, or dust storms, to occur. High winds can raise large amounts of dust from areas of dry, loose, exposed soil. In the Doña Ana County area, high winds are most common during the spring.

Dust storms can cause a number of serious health problems and can make some health problems worse. It can irritate the lungs and trigger allergic reactions, as well as asthma attacks. For people who already suffer from these conditions, dust can cause serious breathing problems. Dust can also cause coughing, wheezing and runny noses. Breathing large amounts of dust for prolonged periods can result in chronic breathing and lung problems.

Breathing too much dust can potentially harm anyone. However, the following groups run the highest risk of potentially being adversely affected by a dust storm.

- Infants, children, and teens,
- The elderly,
- People with respiratory conditions like asthma, bronchitis and emphysema,
- People with heart disease, and
- Pregnant women.

The best precaution to take during a dust storm is simply to avoid going outside. If you must go outside, spend as little time outside as possible, avoid hard exercise and wear some type of covering over the nose and mouth to provide protection from larger dust particles.

For more information on the risks associated with dust storms please see the NMED's website at [www.nmenv.state.nm.us](http://www.nmenv.state.nm.us), click on "Environment Department Organization" and then on "Air Quality Bureau".

For more information, please contact Gail Cooke, Environmental Analyst, NMED Air Quality Bureau at (505) 955-8022, or Cathy Tyson, Communications Dir., NMED at (505) 827-2855.

###



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**RON CURRY**  
Secretary

For Immediate Release  
March 10, 2003

Contact: Gail Cooke, Env. Analyst, Air Quality Bureau  
Phone: (505) 955-8022  
Contact: John Goldstein, PIO, NMED  
Phone: (505) 827-2855

**STATE ENVIRONMENT DEPARTMENT ALERTS DOÑA ANA COUNTY  
RESIDENTS OF HEALTH RISKS ASSOCIATED WITH DUST STORMS**

(Santa Fe, NM) – The New Mexico Environment Department's (NMED) Air Quality Bureau, along with the City of Las Cruces and Doña Ana County, is warning the citizens of Doña Ana County of the potential health risks associated with dust storms.

Every year, Doña Ana County typically has one to ten days during the spring when dust storms cause exceedances of the National Ambient Air Quality Standard (NAAQS) for airborne particulate matter 10 microns or less in size, which is about 1/7 the diameter of a human hair.

Dust storms are a common occurrence across the southwest and thus are not typically regarded as a health risk, but dust storms can cause a number of serious health problems and can make some health problems worse. Dust can irritate the lungs and trigger allergic reactions, as well as asthma attacks. For people who already suffer from these conditions, dust can cause serious breathing problems. Dust can also cause coughing, wheezing and runny noses. Breathing large amounts of dust for prolonged periods can result in chronic breathing and lung problems.

Breathing too much dust can potentially harm anyone. However, the following groups run the highest risk of being adversely affected by a dust storm.

- Infants, children, and teens,

- The elderly,
- People with respiratory conditions like asthma, bronchitis and emphysema,
- People with heart disease, and
- Pregnant women.

The best precaution to take during a dust storm is simply to avoid going outside. If you must go outside, spend as little time outside as possible, avoid hard exercise and wear some type of covering over the nose and mouth to provide protection from larger dust particles.

For more information on the risks associated with dust storms please call 1-800-224-7009 or visit the NMED's website at [www.nmenv.state.nm.us](http://www.nmenv.state.nm.us), click on "Environment Department Organization" and then on "Air Quality Bureau".

For more information, please contact Gail Cooke, Environmental Analyst, NMED Air Quality Bureau at (505) 955-8022, or John Goldstein, Public Information Officer, NMED at (505) 827-2855.

###



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**RON CURRY**  
Secretary

For Immediate Release  
March 10, 2003

Contact: Gail Cooke, Env. Analyst, Air Quality Bureau  
Phone: (505) 955-8022  
Contact: John Goldstein, PIO, NMED  
Phone: (505) 827-2855

**Radio Public Service Announcement**

*Advisory on Dust Storms in Doña Ana County*

(Santa Fe, NM) Dust storms are a common occurrence in Doña Ana County, but breathing too much dust can potentially harm anyone. Those especially susceptible include:

- Infants, children, and teens
- Elderly
- Peoples with asthma, bronchitis, emphysema, or other respiratory conditions
- People with heart disease
- Pregnant women

The best precaution to take during a dust storm is simply to avoid going outside. For more information on the risks associated with dust storms, please contact the New Mexico Environment Department Air Quality Bureau at 1-800-224-7009.

###



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**PETER MAGGIORE**  
SECRETARY

For Immediate Release  
March 8, 2004

Contact: Gail Cooke, Env. Analyst, Air Quality Bureau  
Phone: (505) 955-8022  
Contact: John Goldstein, PIO, NMED  
Phone: (505) 827-2855

**STATE ENVIRONMENT DEPARTMENT ALERTS DOÑA ANA COUNTY  
RESIDENTS OF RISKS ASSOCIATED WITH DUST STORMS**

(Santa Fe, NM) – The New Mexico Environment Department's (NMED) Air Quality Bureau along with the City of Las Cruces and Doña Ana County is warning the citizens of Doña Ana County of the potential risks associated with dust storms.

Doña Ana County typically experiences one to ten days a year when dust storms cause exceedances of the National Ambient Air Quality Standard (NAAQS) for airborne particulate matter 10 microns or less in size, which is about 1/7 the diameter of a human hair.

A combination of weather conditions, features of the natural environment, and human activity can cause high levels of wind blown dust, or dust storms, to occur. High winds can raise large amounts of dust from areas of dry, loose, exposed soil. In the Doña Ana County area, high winds are most common during the spring.

Dust storms can cause a number of serious health problems and can make some health problems worse. It can irritate the lungs and trigger allergic reactions, as well as asthma attacks. For people who already suffer from these conditions, dust can cause serious breathing problems. Dust can also cause coughing, wheezing and runny noses. Breathing large amounts of dust for prolonged periods can result in chronic breathing and lung problems.

Breathing too much dust can potentially harm anyone. However, the following groups run the highest risk of potentially being adversely affected by a dust storm.

- Infants, children, and teens,
- The elderly,
- People with respiratory conditions like asthma, bronchitis and emphysema,
- People with heart disease, and
- Pregnant women.

The best precaution to take during a dust storm is simply to avoid going outside. If you must go outside, spend as little time outside as possible, avoid hard exercise and wear some type of covering over the nose and mouth to provide protection from larger dust particles.

For more information on the risks associated with dust storms please see the NMED's website at [www.nmenv.state.nm.us](http://www.nmenv.state.nm.us), click on "Environment Department Organization" and then on "Air Quality Bureau".

For more information, please contact Gail Cooke, Environmental Analyst, NMED Air Quality Bureau at (505) 955-8022, or John Goldstein, Public Information Officer, NMED at (505) 827-2855.

###



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**RON CURRY**  
Secretary

For Immediate Release  
March 8, 2004

Contact: Gail Cooke, Env. Analyst, Air Quality Bureau  
Phone: (505) 955-8022  
Contact: John Goldstein, PIO, NMED  
Phone: (505) 827-2855

**Radio Public Service Announcement**

*Advisory on Dust Storms in Doña Ana County*

(Santa Fe, NM) Dust storms are a common occurrence in Doña Ana County, but breathing too much dust can potentially harm anyone. Those especially susceptible include:

- Infants, children, and teens
- Elderly
- Peoples with asthma, bronchitis, emphysema, or other respiratory conditions
- People with heart disease
- Pregnant women

The best precaution to take during a dust storm is simply to avoid going outside. For more information on the risks associated with dust storms, please contact the New Mexico Environment Department Air Quality Bureau at 1-800-224-7009.

###



**BILL RICHARDSON**  
Governor

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**RON CURRY**  
Secretary

For Immediate Release  
March 18, 2005

Contact: Gail Cooke, Env. Analyst, Air Quality Bureau

Phone: (505) 955-8022

Contact: Jon Goldstein, PIO, NMED

Phone: (505) 827-2855

**STATE ENVIRONMENT DEPARTMENT ALERTS DOÑA ANA COUNTY  
RESIDENTS OF RISKS ASSOCIATED WITH DUST STORMS**

(Santa Fe, NM) – The New Mexico Environment Department, along with the City of Las Cruces and Doña Ana County, is advising the citizens of Doña Ana County of the potential risks associated with dust storms.

The Environment Department realizes that although dust storms are common in this part of New Mexico and are inherent to arid climates, inhaling dust can cause a number of serious health problems and can make some health problems worse. It can irritate the lungs and trigger allergic reactions, as well as asthma attacks. For people who already suffer from these conditions, dust can cause serious breathing problems. Dust can also cause coughing, wheezing and runny noses. Breathing large amounts of dust for prolonged periods can result in chronic breathing and lung problems.

The best precaution to take during a dust storm is simply to avoid going outside. If you must go outside, spend as little time outside as possible, avoid hard exercise and wear some type of covering over the nose and mouth to provide protection from larger dust particles.

Doña Ana County typically experiences one to ten days a year when dust storms cause exceedances of the National Ambient Air Quality Standard for airborne particulate matter 10 microns or less in size, which is about 1/7 the diameter of a human hair. This standard was developed to protect the public's health and well being.

A combination of weather conditions, features of the natural environment, and human activity can contribute to high levels of wind blown dust, or dust storms. High winds can raise large amounts of dust from areas of dry, loose, exposed soil. In the Doña Ana County area, high winds are most common during the spring.

Breathing too much dust can potentially harm anyone. However, the following groups run the highest risk of being adversely affected by a dust storm.

- Infants, children, and teens,
- The elderly,
- People with respiratory conditions like asthma, bronchitis and emphysema,
- People with heart disease, and
- Pregnant women.

For more information on the risks associated with dust storms please see the NMED's website at [www.nmenv.state.nm.us](http://www.nmenv.state.nm.us) or contact the NMED at 1-800-224-7009.

For more information, please contact Gail Cooke, Environmental Analyst, NMED Air Quality Bureau at (505) 955-8022, or Jon Goldstein, Public Information Officer, NMED at (505) 827-2855.

###



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**RON CURRY**  
Secretary

For Immediate Release  
March 10, 2005

Contact: Andy Berger, Env. Analyst, Air Quality Bureau  
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Contact: Jon Goldstein, Communications Dir, NMED  
Phone: (505) 827-0314

**Radio Public Service Announcement**

*Advisory on Dust Storms in Chaves, Lea and Luna Counties*

(Santa Fe, NM) Dust storms are a common occurrence in Chaves, Lea and Luna Counties, but breathing too much dust has potential to harm anyone. Those especially susceptible include:

- Infants, children, and teens
- Elderly
- Peoples with asthma, bronchitis, emphysema, or other respiratory conditions
- People with heart disease
- Pregnant women

The best precaution to take during a dust storm is simply to avoid going outside. For more information about the risks associated with dust storms, please contact the New Mexico Environment Department's Air Quality Bureau at 1-800-224-7009.

###

### **30 Second PSA- Health Risks of Dust Storms In Doña Ana County**

Did you know that dust storms could damage you and your children's health?

Dust particles inhaled into the lungs can increase the risk of allergies and asthma attacks, especially in infants and the elderly.

This is Pete Maggiore, Secretary for the New Mexico Environment Department. I would like to alert you of the risks associated with dust storms. For more information on the health effects of breathing dust please call 1-800-224-7009.

By playing it safe, you and your family can breathe a little easier.