CONTROL MEASURES APPLICABLE TO
PARTICULAR FUGITIVE DUST SOURCES

A. CONSTRUCTION/DEMOLITION SITES

Control Measures/Objective

1. Watering to stabilize soil using water as a binder either by maintaining soil moisture or establishing a crust which prevents soil movement under windy conditions.

   Comments/Recommendations on watering

   a. Pre-water areas being disturbed and continue to water during activity that produces fugitive dust.
   b. Appropriately match water application equipment size and rates to soil and site characteristics including area.
   c. Water can be applied by any suitable means such as trucks, hoses, and/or sprinklers appropriate for site characteristics.
   d. Decreased need when natural crust present

2. Chemical Stabilizers (Temporary) that are commercially available and approved chemical soil binding agents to artificially crust soil and prevent soil movement during windy conditions for a temporary period. Chemical Stabilizers (Extended action) are similar to temporary but different application rates and/or materials may be used that extend the durability and longevity of the artificial soil crust.

   Comments/Recommendations on chemical stabilization

   a. Best suited to areas not subject to daily disturbance.
   b. Apply according to manufacturers/vendor recommendations
   c. Manage to protect stabilized area.
   d. Extended action applications may stand up to moderate traffic.

3. Physical Barriers use objects or barriers perpendicular to prevailing wind across a fugitive dust source or to cover source to prevent generation of fugitive dust from winds or activities.

   Comment/Recommendations on physical barriers

   a. Vertical barriers are effective downwind for only approximately 10 times their height.
      Wind fencing of 50% or less porosity at or near property line serve as a down wind catchment mostly for trapping larger (50-100 micrometer) wind blown particles. Smaller particle will tend to be deposited more heavily immediately downwind from the fence.
   b. Other downwind barriers such as hay or straw bales can serve as downwind catchment for larger windblown particles.
   c. Windbreaks should be placed upwind of the target control area according to the "10 times height rule for maximum effectiveness.
   d. Set-back from downwind property lines of barriers intended primarily as downwind catchments will allow these barriers to function also as wind breaks.
   e. See also "Physical Stabilization" in this section.

4. Vegetative Stabilization uses established cover to temporarily or permanently stabilize soil against wind erosion and emission of fugitive dust.

   Comment/Recommendations on vegetative stabilization

   a. Either temporary or permanent cover can be established using standard agricultural methods, hydroseeding, or hand seeding.
   b. Maintenance of original vegetative cover is an option
   c. Permanent restoration that approximates native cover can be achieved using locally recommended varieties and seeding rates as appropriate for the site.
   d. Temporary cover is for areas that will be disturbed again after a short period and is best established by using rapidly emerging varieties with rapid initial growth. Various varieties of wheat, barley, and

triticale are preferred.

e. Opportunistic vegetation such as weeds can also be an option but may require at some watering to establish.

5. Limit Cleared Area to limit fugitive dust generation by exposing only areas where immediate activity will take place, leaving the remaining area(s) in original condition, if stable.

Comment/Recommendation on limiting cleared area

a. Sequence operations
b. Maintain original vegetative ground cover as long as practical.
c. For balanced cut and fill operations seek other methods.

6. Site Traffic Control to decrease disturbance of soil and fugitive dust generated from unnecessary vehicle traffic.

Comment/Recommendation on site traffic control

a. Post signs, erect fencing, and/or place barriers to direct traffic.
b. Designate specific haul and/or access roads.
c. Designate off-site or limited access special on-site parking for workers.
d. Limit public vehicle access.
e. Limit necessary vehicle speeds to less than 10 mph.

7. Earth Moving Management to limit fugitive dust emissions from earth moving activities.

Comments/Recommendations on earth moving management

a. Reduce off-site hauling via balanced cut and fill
b. Pre water, to extent practical, disturbed areas and material to be moved.

8. Physical Stabilization to provide physical mulches or covers for soil surface to prevent fugitive dust emission during windy conditions.

Comments/Recommendations on physical stabilization

a. Includes Hydromulch (without seed), tarps, mulch blankets.
b. Also includes surface application and/or mechanical incorporation of vegetative material.

9. Compaction of Cover Material with heavy equipment to stabilize the surface and decrease soil particle detachment by wind or mechanical disturbance.

Comments/Recommendations on compaction of cover material

a. Requires proper particle size distribution and moisture content to achieve optimum soil density.
b. Best suited for areas requiring compaction to meet construction engineering specifications.

B. PAVED ROAD TRACKOUT

Control Measures /Objectives

1. Wheel Washing (preventative) to remove track-out material before exiting a site to prevent paved road deposition of a potential source of fugitive dust.
   Comments/Recommendation on wheel washing
   a. Manual or automated sprayers are an option.
   b. Drive-through wheel washing basins are an option.

2. Limit Site Access (preventative) to reduce track-out from a decreased number of exits from the site.
   Comments/Recommendation on limit site access
   a. Designate separate ingress and egress points on the site.
   b. Limit traffic flow to and from property to those vehicles that are necessary.

3. Site Access Approach Improvements (preventative) to remove track-out material before exiting a site to prevent paved road deposition of a potential source of fugitive dust.
   Comments/Recommendations on site access approach improvements.
   Pave or permanently gravel at least 50 feet from connection with paved area or in accordance with Department of Transportation and County guidelines and regulations.

4. Compactions of Cover Material (preventative) with heavy equipment to stabilize surfaces and decrease soil attachment and pick-up on wheels.
   Comments/Recommendations on cover material
   a. Requires proper particle size distribution and moisture content to achieve optimum soil density.
   b. Will require periodic surface watering to protect surface from mechanical grinding of heavy traffic.

The following control measures are mitigative actions that can be used after track-out material has been deposited on paved road surfaces. These measures should only be used when preventatives have been exhausted.

5. Sweeping and Cleaning (mitigative) to remove material with potential to become fugitive dust that is deposited on paved roads as a result of track-out.
   Comment/Recommendation on sweeping and cleaning.
   a. Use equipment, methods, and management that minimize generation of fugitive dust from sweeping and/or cleaning operation itself.
   b. Water flushing must reduce or eliminate potential of sediment from becoming a fugitive dust source upon drying.

6. Off Site Traffic Control (mitigative) to minimize fugitive dust emissions from traffic over material deposited on paved roads as a result of track-out.
   Comments/Recommendation on off-site traffic control
   a. Post reduced speed limits.
   b. Designate detours.

C. PAVED ROAD TRACTION CONTROL

Control Measure/Objective

1. Material Specifications are utilized to minimize break down of the traction material under heavy traffic, which is a source of fugitive dust.

2. Chemical Deicers are used to replace conventional mineral materials, which eliminates fugitive dust from mechanical breakdown.

   Comment/Recommendations on chemical deicers

   a. Apply according to manufacturer's recommendations
   b. Consider secondary effects on environment such as soil, vegetation, water, and generation of chemical particulates.

3. Timely Clean up of excess traction material from roadway and roadside as soon as it is no longer necessary for traction control to prevent generation of fugitive dust from traffic-caused mechanical breakdown.

   Comment/Recommendations on timely clean-up

   See control measures outlined in the section **"PAVED ROAD TRACKOUT"** under the mitigative measures of "sweeping and cleaning" and "Off-site traffic control".

4. Limit Application to Critical Areas such as Intersections, High Traffic Areas, and Curves to reduce amounts and area of exposure of traction material thereby reducing attendant fugitive dust generation.

   Comment/Recommendations on critical-area applications

   a. Prepare and follow a "critical" area plan
   b. Apply "timely clean-up" to critical areas

5. Traffic Control to limit the amount and speed of traffic on treated areas, until other control measures can be taken, to decrease the release of fugitive dust emissions.

   Comment/Recommendations on traffic control

   a. Provide detours or close affected lanes to through traffic
   b. Reduce speeds in affected areas

D. OTHER OFF-SITE PAVED ROAD DEPOSITION

Other than track-out and haul-vehicle spillage there are other causes for deposition of materials, principally soil, on the surface of paved roads. The causes are deposition from water erosion, wind erosion, and direct spillage across property lines from activities on a site. When dry, these deposited materials become direct sources of fugitive dust.

Water Erosion Sedimentation

Control Measure/Objective

1. Vegetative Stabilization (preventative) uses established cover to temporarily or permanently stabilize soil against water erosion that deposits sediment off-site which can then become a source of fugitive dust.
   Comment/Recommendations on vegetative stabilization
   See "Vegetative stabilization" under CONSTRUCTION/DEMOLITION SITES

2. Physical Barriers (preventative) slow water velocity and serve as catchments for sediment.
   Comment/Recommendations on physical barriers
   Curbing, hay bales, silt fences, sandbags, and other similar barriers can be used.

3. Water-use management (preventative) prevents water erosion and attendant sediment deposition.
   Comment/Recommendations on water use management
   a. Water at proper application rates to prevent water run-off via scheduling and proper rotation of fixed application devices.
   b. Route and otherwise operate water trucks to prevent water run-off from excess applications.

4. Run-off and drainage structures (preventative) designed to catch and contain sediment to prevent off-site deposition.
   Comment/Recommendations on run-off and drainage structures
   a. Temporarily route water runoff to collection structures or catchment basins.
   b. Permanent design structures for storm water or other runoff.

If run-off deposition has already occurred then the control measures required are mitigative rather than preventative. Large amounts of spillage would require removal by appropriate equipment. For smaller spillage amounts control measures are outlined in the section **"PAVED ROAD TRACKOUT"** under the mitigative measures of "sweeping and cleaning" and "Off-site traffic control".

Wind Erosion Deposition

Deposition may occur from wind erosion and fugitive dust emissions from uncontrolled areas or as a result of failed preventative control measures. This deposition becomes a source of fugitive dust by action of paved road traffic. Preventative control measures are embodied in the other sections that describe measures for various fugitive dust sources. Once off-site deposition has occurred then the control measures required are mitigative rather than preventative. Large amounts of spillage would require removal by appropriate equipment. For smaller spillage amounts control measures are outlined in the section **"PAVED ROAD TRACKOUT"** under the mitigative measures of "sweeping and cleaning" and "Off-site traffic control".

Direct Off-site Spillage

This deposition occurs when activities such as earth moving, trenching, or placement of storage piles directly spills material across property lines onto paved surfaces. Another cause is when soil material is deliberately placed over a

curb to serve as an access ramp. These depositions become sources of fugitive dust by action of paved road traffic. The single control measure is to eliminate the off-site spillage. Once off-site deposition has occurred then the control measures required are mitigative rather than preventative. Large amounts of spillage would require removal by appropriate equipment. For smaller spillage amounts control measures are outlined in the section **"PAVED ROAD TRACKOUT"** under the mitigative measures of "sweeping and cleaning" and "Off-site traffic control".

E. UNPAVED ROADS

Control Measure/Objective

1. Watering to suppress fugitive dust emissions from unpaved roads due to wind and/or traffic.
   Comment/Recommendations on watering
   a. Apply with sprinklers, water truck, and/or any other suitable means.
   b. Most suitable for short distances or on a temporary basis

2. Chemical Stabilizer/Suppressant to bind and/or suppress fugitive dust emissions from unpaved roads due to wind conditions and/or traffic.
   Comment/Recommendations on chemical stabilizers/suppressants
   a. Includes materials such as oil, sugarbeet process by-product, lignosulfate or any similar product.
   b. Apply according to manufacturer's recommendations.

3. Pave or Gravel to stabilize surface to reduce potential for fugitive dust emissions.
   Comment/Recommendations on paving or gravel
   a. Paving is permanent solution that can be limited to trouble spots.
   b. Apply gravel according to DOT guidelines or county regulations
   c. Gravel will require some maintenance and gravel dust suppression
   d. Reduce speeds on gravel road for less wear and fugitive dust generation

4. Traffic Control to control release of fugitive dust emissions from unpaved roads by reducing the speed and flow of traffic.
   Comment/Recommendations on traffic control
   a. Limit speed to maximum of 20 mph
   b. Re-routing and/or temporary detours
   c. Allow local traffic only

5. Adjacent Land Controls to prevent deposition from water erosion, wind erosion, and direct carryout. When dry, these deposited materials become additional sources of fugitive dust from an unpaved road.
   Comment/Recommendations on adjacent land controls
   See **"OTHER OFF-SITE PAVED ROAD DEPOSITION"** control measures

F. OPEN STORAGE PILES-GENERAL MATERIAL STORAGE

Control Measure/Objective

1. Watering to keep piles of material wet and stable during pile use, storage activity, and windy conditions.

   Comment/Recommendations on watering

   a. Apply, if compatible with stored material, using any suitable means including sprinklers, hoses, and/or water truck
   b. Do in accordance with site conditions.
   c. Decreased need when natural crust present

2. Chemical Stabilizers (Temporary) that are commercially available and approved chemical binding agents to artificially crust the material and prevent particle movement during windy conditions for a temporary period. Chemical Stabilizers (Extended action) are similar to temporary but different application rates and/or materials may be used that extend the durability and longevity of the artificial crust.

   Comment/Recommendations on chemical stabilizers

   a. Stabilizing material must be compatible with stored material.
   b. Apply chemical according to manufacturer's recommendations.
   c. Preferable for use when disturbances are infrequent.

3. Physical Barrier to surround, cover, or strategically place a physical barrier to prevent emission of fugitive dust from material piles.

   Comment/Recommendations on physical barriers

   a. A variety of methods include tarps, hay/straw bales, wind fencing, specialty barriers.
   b. Enclose pile within a structure.
   c. Utilize natural topographical or tree wind breaks on upwind side (see subsection "Pile Configuration" in this section).

4. Vegetative Stabilization uses established cover to temporarily or permanently stabilize material against wind erosion and emission of fugitive dust from piles.

   Comment/Recommendations on vegetative stabilization

   a. Useful only for compatible materials and piles that will support vegetative growth.
   b. Best for long term storage and dust control.
   c. See "Construction/Demolition Sites, Vegetative Stabilization".

5. Mulching to cover pile with mulching product to prevent emission of fugitive dust from material piles.

   Comment/Recommendations on mulching

   a. Must be compatible with stored material.
   b. Mulching materials include vegetative residue or commercially manufactured mulch product.

6. Pile Configuration to shape, size, locate, and orient with respect to prevailing wind direction and adjacent structures to prevent emission of fugitive dust from material piles.

   Comment/Recommendations on pile configuration

   a. Methods include limiting pile size, locating piles in sheltered areas, minimizing slope of upwind face, and/or orienting the long axis to prevailing wind direction.
   b. In locating consider other control measure access such as water trucks and adjacent structures.

7. Minimize Disturbance to limit the number and magnitude of disturbances of the pile to reduce emission of fugitive dust from the material.

   Comment/Recommendations on minimizing disturbance

   a. Confine activity to downwind side of the pile.
   b. Minimize upwind face of pile.
   c. Use LIFO (last in - first out) system for pile usage.

d. Maintain other control measures on majority of pile.

8. Trench Management to coordinate timely and efficient trenching activity to minimize the potential for fugitive dust emissions from trenches and trench fill piles.

Comment/Recommendations on trench management

a. Pre-water soil, if practical, to depth of trench.

b. Be timely in back filling and stabilizing disturbed back-filled area over trenches.

c. Coordinate and plan trench activity to minimize disturbance of surrounding stabilized surfaces

G. HAULED MATERIAL

Control Measure/Objective

1. Cover Hauled Material to physically prevent hauled material from spilling or blowing from haul vehicle.
   Comment/Recommendations on covering hauled material
   a. Methods include tarps, plastic, or other suitable covers
   b. Cover entire surface of material

2. Limit Load Size to keep material within the protective confines of the haul vehicle to prevent fine material from becoming fugitive.
   Comment/Recommendations on limiting load size
   a. Keep material sufficiently below freeboard of sidewalls
   b. Avoid "peaks" of material above top of vehicle box that intersect air stream

3. Bedliners - to prevent settling and spillage from bottom dumping vehicles onto paved roads.
   Comment/Recommendations on bedliners
   Use when feasible.

4. Driving Practices to minimize fugitive dust emissions during actual transport of material.
   Comment/Recommendations on traffic control
   a. If possible, use lesser-traveled and consistent routes
   b. Reduce speed especially on extremely rough areas that may cause spillage and load shifting

5. Watering to stabilize hauled material during loading operations to limit fugitive dust emissions.
   Comment/Recommendations on watering
   a. Water must be compatible with hauled material
   b. Water before loading activity to allow distribution of moisture within material.
   c. Suppress fugitive dust during loading

7. Clean or Cover haul trucks to remove any residual material that may become a source of fugitive dust when running empty.
8.

H. OPEN AREAS-UNSEALED OR UNPAVED PARKING

Control Measure/Objectives and Comment/Recommendations

For control measures and recommendations see "UNPAVED ROADS"

I. OPEN AREAS-TRUCK STOPS AND PARKING AREAS

Control Measure/Objectives and Comment/Recommendations

For control measures and recommendations see "PAVED ROADS TRACK-OUT", "OTHER OFF-SITE PAVED ROAD DEPOSITIONS", "PAVED ROAD TRACTION CONTROL" and "UNPAVED ROADS"

J. OPEN AREAS-VACANT LOTS

Control Measure/Objective

1. Vegetative Stabilization uses established cover to temporarily or permanently stabilize soil against wind erosion and emission of fugitive dust.

   Comment/Recommendations on vegetative stabilization

   See " Vegetative Stabilization" under "CONSTRUCTION/DEMOLITION SITES"

2. Fire Prevention Measures are taken to protect vegetative cover from fire.

   Comment/Recommendations on fire prevention

   a. Follow recommendations of local fire protection agencies

   b. Generally establish fire breaks, cut vegetation when overgrown, keep other debris off of lot, and limit access to public.

3. Watering stabilizes soil by using water as a binder either by maintaining soil moisture or establishing a crust that prevents soil movement under windy conditions.

   Comment/Recommendations on watering

   a. Not recommended for extended periods.

   b. See "Watering" under "CONSTRUCTION/DEMOLITION SITES"

   c. Decreased need when natural crust present

4. Restrict Access to prevent otherwise undisturbed areas from becoming disturbed by "dune buggies," dirt bikes, four-wheel drive vehicles and other off-road motorized vehicles.

   Comment/Recommendations on restricting access

   a. Install curb but no driveway ramp.

   b. Other methods include posting signs, physical barriers such as fences, tape and hay bales.

5. Gravel or pave. See "UNPAVED ROADS"

K. OPEN AREAS--OFF-ROAD TRAFFIC

Control Measure/Objective

1. Control Off-site Soil Depositions from track-out and other on-site processes to minimize off-site fugitive dust generation

   Comment/Recommendations on control of off-site soil deposition

   a. See "PAVED ROAD TRACK-OUT"

   b. See "OTHER OFF-SITE PAVED ROAD DEPOSITIONS"

2. Restrict Access to prevent otherwise undisturbed areas from becoming disturbed by "dune buggies," dirt bikes, four-wheel drive vehicles and other off-road motorized vehicles.

   Comment/Recommendations on restricting access

   See "OPEN AREAS-VACANT LOTS"

L. OPEN AREAS-BURNED AREAS

Control Measure/Objective

1. Watering stabilizes soil by using water as a binder either by maintaining soil moisture or establishing a crust that prevents soil movement under windy conditions.

   Comment/Recommendations on watering

   This method is highly dependent on water availability and the size of the burned area and is feasible only for relatively small burned areas. There is a decreased need when natural crust is present.

2. Vegetative Stabilization to reestablish ground cover, which will temporarily or permanently stabilize soil against wind erosion and emission of fugitive dust.

   Comment/Recommendations on vegetative stabilization

   a. See "Vegetative Stabilization" under "CONSTRUCTION/DEMOLITION SITES".

   b. Allow vegetation to naturally re-establish.

   c. When planting make allowances for fire protection measures (See "OPEN AREAS-VACANT LOTS".

   d. Time seeding for time of year with optimum soil temperature and precipitation to promote rapid emergence and stand establishment.

   e. Use temporary ground cover while natural vegetation is establishing (See "Physical Stabilization" under "CONSTRUCTION/DEMOLITION SITES").

3. Restrict Access to prevent further disturbance of burned areas by off-road vehicles and other human activity.

   Comment/Recommendations on restricting access

   See "OPEN AREAS--OFF-ROAD TRAFFIC"

M. AGRICULTURAL FIELDS-SURFACE RESIDUE MANAGEMENT

Control Measure/Objective

1. Reduce Tillage to maintain a maximum amount of residue or vegetative cover on agricultural fields to control wind erosion and potential for fugitive dust emissions.

   Comment/Recommendations on reduced tillage

   a. Methods include such systems as no-till and reduced-till.
   b. May work on any size field
   c. Need to consider cropping system/rotation, insect, disease and weed control, irrigation or water management.

2. Vegetative Stabilization with a cover crop that may or may not produce an economic product previous to, during, or after a main cash crop which controls wind erosion and limits potential for fugitive dust emissions.

   Comment/Recommendations on cover cropping

   a. Sequential cover cropping within normal crop rotation.
   b. Simultaneous interplanting of main/cash crop with cover crop in same season
   c. Weeds could act as cover crop with proper weed control
   d. Disease, weeds, and insects in cover crop could damage main cash crop

3. Crop Rotation adopted to maximize residue on agricultural fields to control wind erosion and to limit potential for fugitive dust emissions.

   Comment/Recommendations on crop rotation adaptations

   a. Minimize or eliminate low residue crops from rotation
   b. Change rotation to allow use of residue-producing cover crop

4. Limiting or Eliminating Agricultural Burning in urban growth areas to eliminate or reduce the amount of particulate matter from ash that may become fugitive dust and to maintain greater crop residue levels on agricultural fields to control wind erosion.

   Comment/Recommendations on limiting agricultural burning

   a. Maintains soil vegetative cover and longer term organic matter content
   b. Use alternative methods of crop residue removal and/or pest control.

5. Mulching to apply additional vegetative residue, manufactured mulching product, or organic residues to agricultural fields to control wind erosion to limit the potential for fugitive dust emissions.

   Comment/Recommendations on mulching

   a. Mulching is most feasible in smaller areas.
   b. Could require special equipment and additional costs.
   c. Transportation costs and value of crop should be considered.

N. AGRICULTURAL FIELDS-SURFACE CONFIGURATION/PHYSICAL BARRIERS

Control Measure/Objective

1. Strip-Cropping to establish alternate strips of different crops with different vulnerability periods to limit the distance across an area which decreases the susceptibility to wind erosion and the potential for fugitive dust emissions.

   Comment/Recommendations on strip cropping

   a. Consists of alternate strips of different crops across slopes and generally across prevailing wind direction.
   b. Width of strip is related to wind erosion susceptibility.
   c. Could be limited by different irrigation and other management requirements for different crops

2. Surface Roughness to dissipate wind energy at the soil surface thereby decreasing the entrainment and movement of the soil and limiting the potential for fugitive dust emissions.

   Comment/Recommendations on surface roughness

   a. Most suited to soils with higher aggregate stability
   b. Limiting tillage may maintain greater roughness
   c. Surface residue or vegetative cover also serve this purpose

3. Windbreaks to establish upwind vegetative or other barriers perpendicular to prevailing wind speeds to limit the potential for fugitive dust emissions.

   Comment/Recommendations on wind breaks

   a. Principle is to shelter downwind areas from high wind energy with the effective downwind distance of approximately ten times the height of barriers
   b. May create special management problems in such areas as pest control, irrigation, tillage, and others.
   c. Possible types of windbreaks include trees or artificial barriers.

4. Plant Crops Perpendicular to Prevailing Wind Direction to increase the effective soil roughness and other effects similar to interplanted cover crops in order to control wind erosion and to limit the potential for fugitive dust emissions.

   Comment/Recommendations on planting across wind direction

   Effects similar in principle to strip cropping and surface roughness control measures.

5. Cover Crop - See "Vegetative Stabilization" under "AGRICULTURAL FIELDS-SURFACE RESIDUE MANAGEMENT"

O. AGRICULTURAL FIELDS-OTHER

Control Measure/Objective

1. Chemical Stabilizers (Temporary) that are commercially available and approved chemical soil binding agents to artificially crust soil and prevent soil movement during windy conditions for a temporary period. Chemical Stabilizers (Extended action) are similar to temporary but different application rates and/or materials may be used that extend the durability and longevity of the artificial soil crust.

   Comments/Recommendations on chemical stabilization

   a. Best suited to areas not subject to subsequent disturbance.
   b. Apply according to manufacturers/vendor recommendations
   c. Manage to protect stabilized area.
   d. May include materials such as oil, sugarbeet process by-product, lignosulfate or any similar product.

2. Physical Stabilization to provide physical mulch or cover for soil surface to prevent fugitive dust emission during windy conditions.

   Comments/Recommendations on physical stabilization

   a. Includes surface application and/or mechanical incorporation of vegetative material.
   b. May also include hydromulch (without seed), tarps, mulch blankets, which are suitable only for acute problems on small areas.

3. Watering to apply water to help maintain soil surface residue and moisture and serve as a soil binder for wind erosion control and limit the potential for fugitive dust emissions.

   Comment/Recommendations on watering

   a. This is a special case for vulnerable periods in which bare disturbed soil surfaces are exposed following operations such as seeding or harvesting
   b. Irrigation is required because of need for repeated application and even then larger areas are difficult to adequately cover in a timely fashion
   c. Unless extremely well managed, watering can be largely ineffective especially under high wind situations.

4. Operations Timing to schedule agricultural operations so that vulnerable periods are limited in order to control wind erosion and to limit the potential for fugitive dust emissions.

   Comment/Recommendations on operations timing

   a. Sequence operations to limit open soil
   b. Size of field will dictate necessary lead times
   c. Highly dependent on crop and crop rotation in which other management considerations may override.