RULE 403 SUMMARY

General Requirements (applicable to all sources)

Rule Reference	Existing Requirements	April 2004 Amendments
(d)(1)	Visible emissions prohibited from crossing any property line.	Basic requirement maintained. Emissions from vehicular-related traffic prohibited from exceeding 20 percent opacity. Rule 403 Implementation Handbook establishes procedures for measuring opacity.
(d)(2)	Requires all sources to implement best available control measures (BACM). List of BACM included in Rule 403 Implementation Handbook.	All sources continue to require implementation of BACM. BACM now included in Rule 403 as Table 1.
(d)(3)	Upwind/downwind PM10 differential prohibited from exceeding 50 $\mu g/m^3$ for any five hour period. AQMD responsible for sampling.	No change
(d)(4)	Remove track-out within one hour or install a track-out control device and remove track-out at anytime it extends more than 50 feet from site entrance and at the conclusion of the workday	Track-out prohibited from extending more than 25 cumulative feet from a site
(d)(5)		**Beginning January 1, 2005**, sites greater than five acres or with a daily import or export in excess 100 cubic yards of bulk material must install at least one of the track-out control devices listed in subparagraphs (d)(5)(A) through (d)(5)(A).

Special Requirements for Large Operations (greater than 50 acres/5,000 C.Y. of daily earth-movement)

(e)(1)	Submit a large operation notification (LON) within seven days of qualifying as a large operation and implement Table 1 and 2 measures and maintain records or submit a dust control plan and pay fees.	LON still required within seven days of qualifying as a large operation and sources must implement **Table 2** measures during routine activities and **Table 3** measures when **Table 2** measures are not sufficient to meet property line performance standard. Dust control plan submittal option removed.
(e)(1)(D)		**Beginning January 1, 2005**, install and maintain project contact signage that meets minimum standards as identified in Rule 403 Implementation Handbook.
(e)(1)(E)		**Beginning January 1, 2005**, identify a dust control supervisor that meets the standards of clause (e)(1)(E)(i) through (e)(1)(E)(iv).

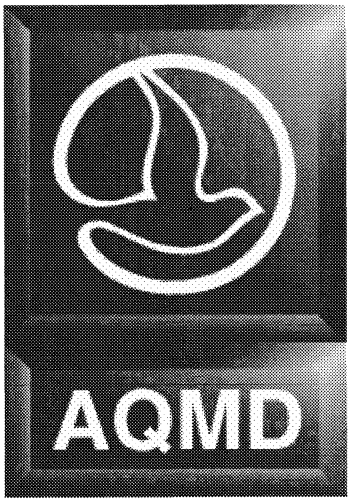
RULE 403.1 SUMMARY

General Requirements:

Rule Reference	Existing Requirements	Proposed Amendments
N/A	Formerly titled, "Wind Entrainment of Fugitive Dust"	Proposed title, "Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources"
(b)	Applicable to Coachella Valley sources	None
(d)(1)	Requires wind monitoring for sources seeking a Rule 403 exemption.	None
(d)(2) / (d)(3)	Establishes stabilization requirements in the Coachella Valley Blowsand Zone (CVBZ).	Clarifies that stabilization is also required in CVBZ when material is blown onto a site from natural desert areas in response to questions about existing compliance actions.
(d)(4)	Requires stabilization of construction sites that remain inactive for 30 days.	Inactive construction site stabilization threshold reduced to 20 days in response to questions about existing compliance actions and to be consistent with Rule 403 and NPDES provisions.
(d)(5)	Requires agricultural tilling to cease when winds are greater than 25 mph.	None
(e)		Requires fugitive dust control plan submittal to AQMD for sources not subject to a local jurisdiction dust control ordinance.

R403 HANDBOOK

RULE 403 IMPLEMENTATION HANDBOOK



South Coast Air Quality Management District

Office of Planning, Rule Development and Area Sources

21865 Copley Drive

Diamond Bar, California 91765

April 2004

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
GOVERNING BOARD

Chairman: WILLIAM A. BURKE, Ed.D.
Speaker of the Assembly Appointee

Vice Chairman: S. ROY WILSON, Ed.D.
Supervisor, Fourth District
Riverside County Representative

MEMBERS:

MICHAEL D. ANTONOVICH
Supervisor, Fifth District
Los Angeles County Representative

JANE W. CARNEY
Senate Rules Committee Appointee

WILLIAM S. CRAYCRAFT
Council Member, City of Mission Viejo
Cities Representative, Orange County

BEATRICE J. S. LAPISTO-KIRTLEY
Mayor Pro Tem, City of Bradbury
Cities Representative, Los Angeles County/Eastern Region

RONALD O. LOVERIDGE
Mayor, City of Riverside
Cities Representative, Riverside County

JAN PERRY
Councilmember, City of Los Angeles
Cities Representative, Los Angeles County, Western Region

BILL POSTMUS
Supervisor, Fourth District
San Bernardino County Representative

JAMES W. SILVA
Supervisor, Second District
Orange County Representative

CYNTHIA VERDUGO-PERALTA
Governor's Appointee

DENNIS YATES
Council Member, City of Chino
Cities Representative, San Bernardino County

EXECUTIVE OFFICER:
BARRY R. WALLERSTEIN, D.Env.

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF FIGURES

TABLE OF CONTENTS

Preface

South Coast Air Quality Management District (AQMD) staff has amended the Rule 403 Implementation Handbook to provide guidance consistent with the most recent amendments to the Rule language. Any reference to a specific product name is for informational purposes only and does not represent an AQMD endorsement for the product.

STATEMENT OF PURPOSE

STATEMENT OF PURPOSE

The purpose of Rule 403 is to reduce the amount of fugitive dust entrained as a result of human activities. Rule 403 applies to any activity capable of generating fugitive dust.

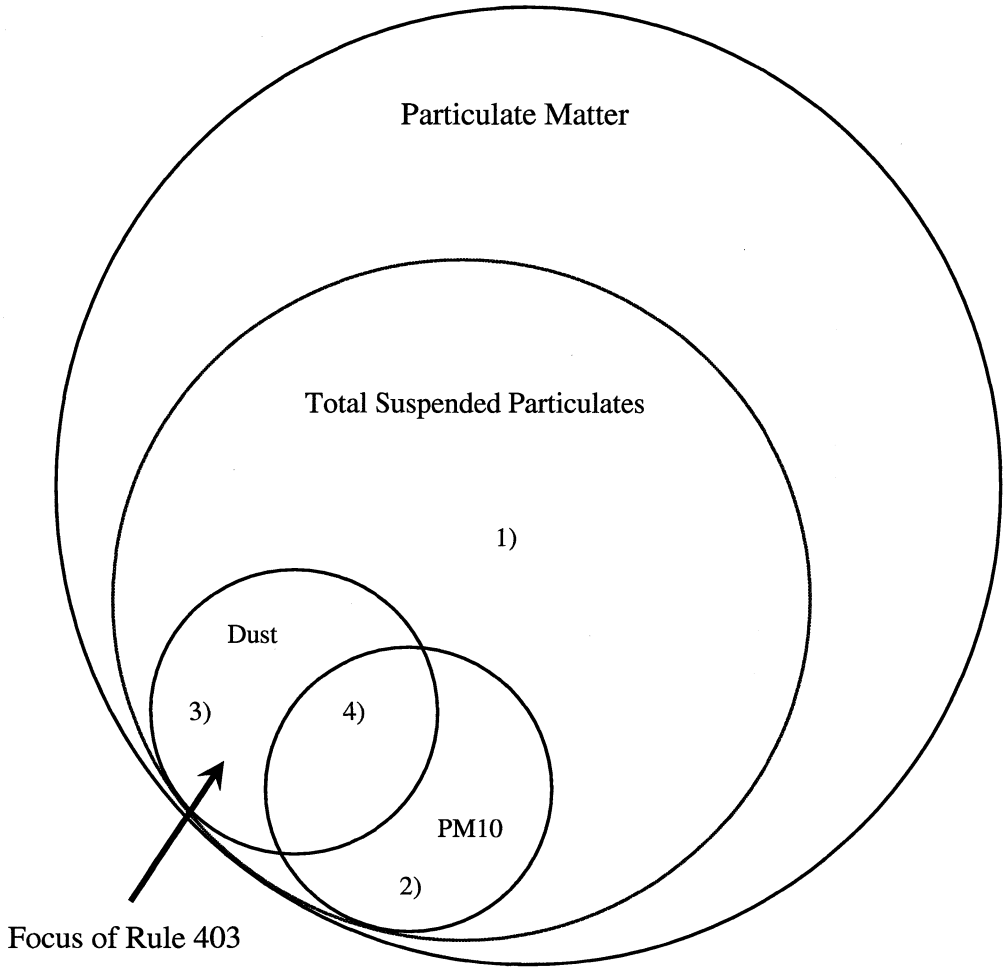
This Handbook has been developed by District staff to assist affected persons and activities in complying with Rule 403. Throughout this Handbook, several terms are used to describe various categories of dust or fine particulate matter. While all of the terms represent a form of particulate matter, each has a specific meaning. The following definitions should help the reader understand the differences between these terms. Figure 1-1 illustrates the relationship of these terms based on size.

PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions (defined in Rule 102).

TOTAL SUSPENDED PARTICULATE MATTER (TSP) is any airborne particulate matter as measured by applicable State and federal reference test methods. (A subset of PARTICULATE MATTER).

FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of human activities. (A subset of TOTAL SUSPENDED PARTICULATES).

PM10 is particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and federal reference test methods. Studies have indicated that appropriately 50 percent of total suspended particulate matter, by weight, is of PM10 size or less. (A subset of TOTAL SUSPENDED PARTICULATES).



1) TSP larger than 10 microns originating from exhaust stacks

2) PM10 not related to fugitive dust sources, such as sulfates, nitrates, and organic particles

3) Dust particles larger than 10 microns

4) Portion of ambient PM10 which can be reduced through fugitive dust emission controls

FIGURE 1-1

PICTORIAL RELATIONSHIP OF TERMINOLOGY

APPLICABLE DISTRICT RULES

Fugitive Dust (Rule 403)

APPLICABLE DISTRICT RULES

Fugitive Dust (Rule 403)

Rule 403 requires the implementation of best available fugitive dust control measures during active operations capable of generating fugitive dust. Table 1 of Rule 403 lists best available control measures (BACM) by source. Figure 2-1 identifies the jurisdictional boundaries of the South Coast Air Quality Management District.

Rule 403 also requires activities defined as "large operations" to notify the AQMD by submitting Form 403N, implement the Rule 403 Table 2 and 3 control actions, and maintain records of control measure implementation. Rule 403 defines large operations as:

> "any active operations on property which contains in excess of 50 acres of disturbed surface area; or any earth-moving operation which exceeds a daily earth-moving or throughput volume of 3,850 cubic meters (5,000 cubic yards) three times during the most recent 365-day period."

Additional guidance for large operations is included in Section 5 of the Handbook.

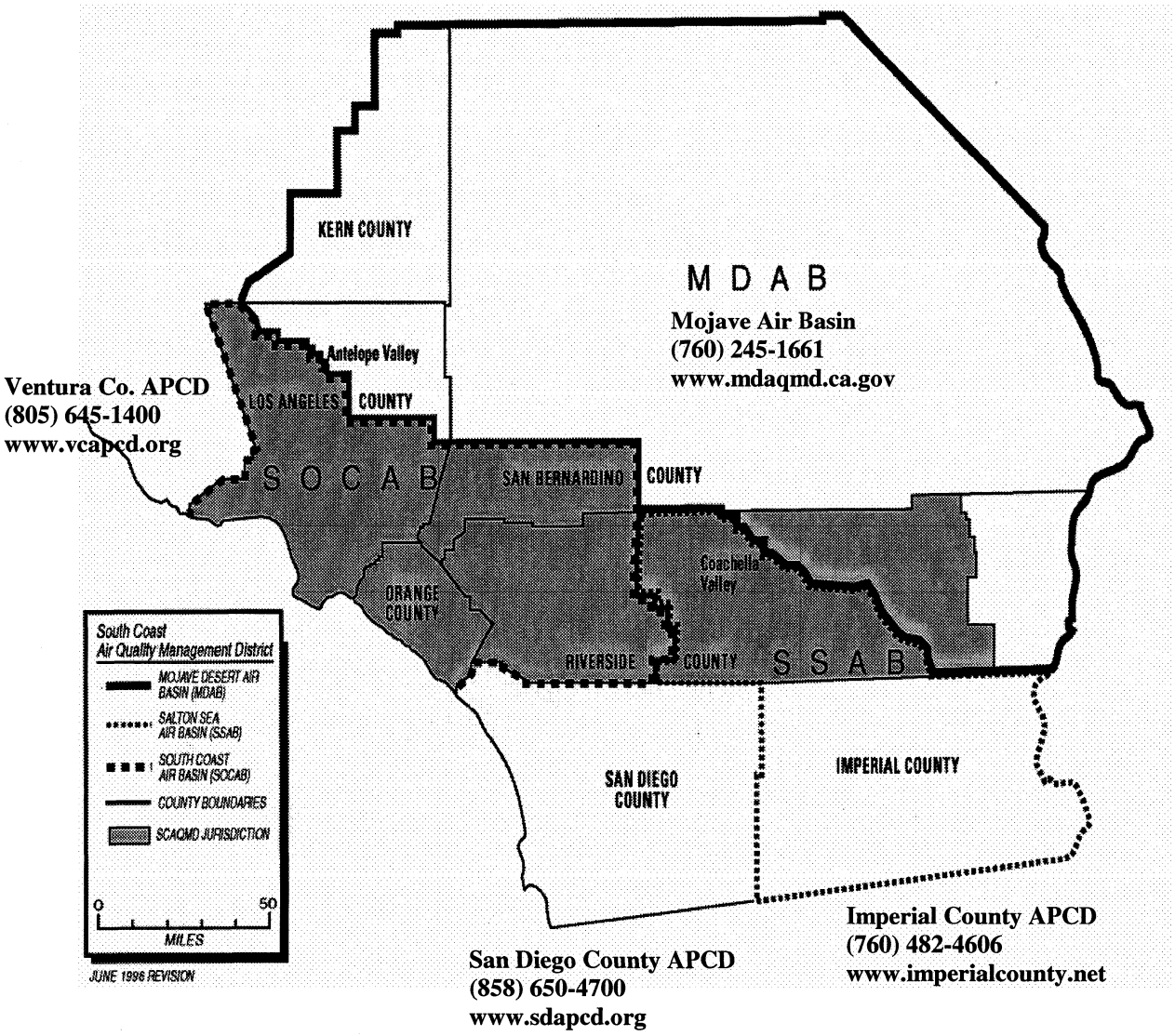


FIGURE 2 - 1

BOUNDARIES OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AND THE SOUTH COAST AIR BASIN

(Adopted May 7, 1976) (Amended November 6, 1992)
(Amended July 9, 1993) (Amended February 14, 1997)
(Amended December 11, 1998)(Amended April 2, 2004)
(Amended June 3, 2005)

RULE 403. FUGITIVE DUST

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

(1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.

(2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.

(3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.

(4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.

(5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

(6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.

(8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.

(10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

(11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.

(12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.

(13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

(14) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) been paved or otherwise covered by a permanent structure; or

(C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(15) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(16) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.

(17) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.

(18) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(19) HIGH WIND CONDITIONS means that instantaneous wind speeds exceed 25 miles per hour.

(20) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.

(21) LARGE OPERATIONS means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

meters (5,000 cubic yards) or more three times during the most recent 365-day period.

(22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

(24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(25) PM_{10} means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.

(28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.

(29) SIMULTANEOUS SAMPLING means the operation of two PM_{10} samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.

(30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

(31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.

(32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.

(34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

(35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.

(d) Requirements

(1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

(A) the dust remains visible in the atmosphere beyond the property line of the emission source; or

(B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.

(2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.

(3) No person shall cause or allow PM_{10} levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM_{10} monitoring. If sampling is conducted, samplers shall be:

(A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for PM_{10}.

(B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

(4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

(5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.

(A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

(B) Pave the surface extending at least 100 feet and at least 20 feet wide.

(C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).

(6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.

(e) Additional Requirements for Large Operations

(1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:

(A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;

(B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;

(C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;

(D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;

(E) identify a dust control supervisor that:

(i) is employed by or contracted with the property owner or developer;

(ii) is on the site or available on-site within 30 minutes during working hours;

(iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;

(iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).

(2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).

(f) Compliance Schedule

The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

(1) The provisions of this Rule shall not apply to:

(A) Dairy farms.

(B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.

(C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.

(D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.

(G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.

(H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.

(I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.

(J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:

(i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and

(ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.

(K) sandblasting operations.

(2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:

(A) When wind gusts exceed 25 miles per hour, provided that:

(i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;

(ii) records are maintained in accordance with subparagraph (e)(1)(C).

(B) To unpaved roads, provided such roads:

(i) are used solely for the maintenance of wind-generating equipment; or

(ii) are unpaved public alleys as defined in Rule 1186; or

(iii) are service roads that meet all of the following criteria:

(a) are less than 50 feet in width at all points along the road;

(b) are within 25 feet of the property line; and

(c) have a traffic volume less than 20 vehicle-trips per day.

(C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.

(3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.

(4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:

(A) Blasting operations which have been permitted by the California Division of Industrial Safety; and

(B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.

(5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

(6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.

(7) The provisions of subdivision (e) shall not apply to:

(A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.

(B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.

(C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.

(8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for PM_{10} pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	Mix backfill soil with water prior to moving Dedicate water truck or high capacity hose to backfilling equipment Empty loader bucket slowly so that no dust plumes are generated Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	Maintain live perennial vegetation where possible Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	Follow permit conditions for crushing equipment Pre-water material prior to loading into crusher Monitor crusher emissions opacity Apply water to crushed material to prevent dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	For large sites, pre-water with sprinklers or water trucks and allow time for penetration Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	Limit vehicular traffic and disturbances on soils where possible If interior block walls are planned, install as early as possible Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	Grade each project phase separately, timed to coincide with construction phase Upwind fencing can prevent material movement on site Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	Use tarps or other suitable enclosures on haul trucks Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage Comply with track-out prevention/mitigation requirements Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	Apply water to materials to stabilize Maintain materials in a crusted condition Maintain effective cover over materials Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes Hydroseed prior to rain season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	Dedicate water truck or high capacity hose to screening operation Drop material through the screen slowly and minimize drop height Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	Limit size of staging area Limit vehicle speeds to 15 miles per hour Limit number and size of staging area entrances/exists
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	Add or remove material from the downwind portion of the storage pile Maintain storage piles to avoid steep sides or faces

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	Apply gravel/paving to all haul routes as soon as possible to all future roadway areas Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114)	Empty loader bucket such that no visible dust plumes are created Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	Haul waste material immediately off-site

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure		Guidance
Unpaved roads/parking lots	19-1	Stabilize soils to meet the applicable performance standards; and	Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
	19-2	Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	
Vacant land	20-1	In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Table 2
DUST CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a)	Apply chemical stabilizers; OR
	(5b)	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	(5c)	Install temporary coverings; OR
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Table 4
(Conservation Management Practices for Confined Animal Facilities)

SOURCE CATEGORY	CONSERVATION MANAGEMENT PRACTICES
Manure Handling **(Only applicable to Commercial Poultry Ranches)**	(1a) Cover manure prior to removing material off-site; AND (1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND (1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d). (1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material.
Feedstock Handling	(2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins.
Disturbed Surfaces	(3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR (3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR (3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface.
Unpaved Roads	(4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR (4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR (4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface.
Equipment Parking Areas	(5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches).

SOIL MOISTURE TESTING METHODS

ASTM Standard Test Method D 2216
ASTM Standard Test Method D 1557

SOIL MOISTURE TESTING METHODS

American Society for Testing and Materials (ASTM) Standard Test Method D-2216 and ASTM D-1557

Tables 2 and 3 of Rule 403 contain a listing of dust control actions for a variety of fugitive dust sources for activities defined as large operations [see Rule 403 definition (c)(18)]. Specifically, Table 2 control action (1a) requires that certain earth-moving activities conducted at large operations maintain a soil moisture content level of at least 12 percent as determined by ASTM Standard Test Method D 2216. Additionally, Table 2 control action (1b) states that portions of construction sites that have an optimum soil moisture content for compaction of less than 12 percent, as determined by ASTM Standard Test Method D-1557, are to complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content.

A copy of Test Method D-2216 and D-1557 can be obtained from the ASTM web site http://www.astm.org

It should be noted that ASTM documents are periodically updated.

CHEMICAL DUST SUPPRESSANTS

Resource List of Vendors

CHEMICAL DUST SUPPRESANTS

Introduction

The following is a list of chemical dust suppressants and vendors. This resource list has been compiled from information provided to the AQMD by various vendors, but there are likely to be additional products that are commercially available. **This resource listing is not an endorsement by the AQMD to use any particular product.** It is the responsibility of each person who wishes to use a chemical dust suppressant to assure that such product is not prohibited for use in fugitive dust control by the California Regional Water Quality Control Board, the California Air Resources Board (ARB), the Environmental Protection Agency, or any applicable laws. Also, such products should meet any specifications, criteria, or tests required by any federal, state, or local water agency.

The California Air Resources Board (ARB) has a precertification program whereby manufacturers of air pollution control products request the ARB to conduct a third-party verification of performance claims. This analysis focuses on the air quality benefits of individual equipment or processes. A list of chemical dust suppressant vendors that have participated in the ARB's precertification program is listed on the Internet at http://www.arb.ca.gov/eqpr/mainlist.htm. This site also contains the documented PM10 control efficiency for these products when applied in accordance with the manufacturer's specifications.

For further information about ARB's precertification program, please e-mail or call Mr. Mike Waugh at (916) 445-6018 / mwaugh@arb.ca.gov or Ms. Marcelle Surovik at (916) 327-2951 / msurovik@arb.ca.gov.

Resource List of Vendors

Product Name	Vendor Contact
Acrylic polymers (Various other products including, lignosulfonates, surfactants, resins, enzymes, hydroseeding, and chlorides)	Dust Pro, Inc. Phoenix, AZ (602) 251-3878 www.dustpro.com
AGRI-LOCK and DUST-LOCK (synthetic resin and organic compound)	Swift Adhesives Research Triangle Park, NC (800) 213-4804
Agri-Fiber (organic compound)	Precision Hydroseeding Company Palm Desert (760) 778-3810 (888) 645-4800
AIRTROL Geobinder (gypsum based bonded fiber matrix)	United States Gypsum Co. San Diego, CA (619) 546-4733
Asphotac (asphaltic emulsions)	Pragma, Inc. Lodi, CA (209) 367-0579 (909) 598-1734
Blend R40 Series (water-based polymer emulsions)	Rohm and Haas Company Spring House, PA (215) 641-7000
Calcium Chloride (hygroscopic salt)	Lee Chemical, Inc. Moreno Valley (909) 369-5292
Calcium Chloride (hygroscopic salt)	Hill Brothers Chemical Company Orange, CA (714) 998-8800
DC-360 (polymer emulsion)	Global Eco Technologies, Inc Pittsburgh, CA (925) 473-9250

Product Name	Vendor Contact
DC-30 (co-polymer)	Southwest Boulder and Stone Escondido, CA (760) 751-3333
Durasoil (Synthetic organic fluid)	Soilworks, Inc Gilbert, Arizona (760) 345-0771 (888)545-5420
Dust Oil Emulsion (asphalt emulsion)	Morgan Emultech, Inc. Redding, CA (530) 241-1364
Dust Sorb 1118 (acrylic resin)	Aqua Chem Ltd. Bakersfield, CA (805) 323-8308
Dust Off (brine solution)	Cargill Salt Newark, CA (510) 790-8169
Dusty Roads (soil conglomerate/ wood byproduct)	Ecolink San Diego, CA (619) 483-3111
Dustex (lignosulfonate)	LignoTech USA Rothschild, WI (715) 359-6544*
DSS-40 (acrylic co-polymer)	S & S Seeds Carpentaria, CA (805) 684-0436
Eco-Polymer (polymer)	Eco-polymer Los Angeles, CA (323) 954-2240
Earthbond (organic emulsion)	Spectrum Pacific Santa Fe Springs, CA (562) 404-6131

* Local suppliers available.

Product Name	Vendor Contact
ECO-110 and C-50 (polymer)	Dynaguard, Inc. Orange, CA (714) 771-7411
Envirotac II (acrylic co-polymer)	Environmental Products and Applications Lake Elsinore, CA (909) 674-9174 (877) 371-1147
Ecotak-OP and Ecotak-SAT (hydroseeding)	Elliott Landscaping Cathedral City, CA (760) 343-2002
Ecology Control M Binder (co-polymer)	S & S Seeds Carpentaria, CA (805) 684-0436
Enduraseal 100/200 (organic emulsion)	Cascadia Technologies, Inc Vancouver, BC (604) 685-0877
EnviroKleen (polymer)	Midwest Industrial Supply Santa Maria, CA (805) 937-7157 (800) 321-0697 www.midwestind.com
FIBER-SORB™ Dewatered Residual Wood Fiber (organic pulp product)	Coast Resource Management, Inc. Cerritos, CA (562) 860-4665
Fiberwood (hydroseeding mulch)	Green Stone Industries Sacramento, CA (800) 655-9754
Fibercraft (hydromulch cellulose fiber)	Dynamis, Inc. Sanger, CA (209) 875-0800

Product Name	Vendor Contact
Hydro=Plant (hydroseeding)	Hydro=Plant, Inc. San Marcos, CA (760) 744-7360
Hydroseeder (seed mixes and applications)	Sanders Hydroseeding, Inc. Santa Ana, CA (714) 973-8873
Lignin (lignosulfonate)	Southwestern Sealcoating, Inc. Murrieta, CA (888) 663-8718 (951) 677-6228
Lignosulfonate (wood pulp by-product)	Jim Good Marketing Shafter, CA (805) 746-3783
Magnesium Chloride (hygroscopic salt)	SouthWestern Sealcoating, Inc. Murrieta, CA (909) 677-6228
Magnesium Chloride (hygroscopic salt)	Dustpro, Inc. Phoenix, AZ (602) 251-3878
Magnesium Chloride (hygroscopic salt)	Jim Good Marketing Shafter, CA (805) 746-3783
Magnesium Chloride (brine solution)	Southwestern Sealcoating, Inc. Murrieta, CA (888) 663-8718 (951) 677-6228
Marloc (co-polymer)	Reclamare Company Seattle, WA (206) 824-2385
Marloc - SF (co-polymer)	Southwest Boulder and Stone Escondido, CA (760) 751-3333

Product Name	Vendor Contact
Native Seed Mix (hydromulch)	Pacific Coast Seed, Inc. Livermoore, CA (925) 373-4417
Organic Soil Stabilizer (soil additive)	Desert Rock Supply La Quinta, CA (760) 360-1354
Perma-Zyme IIX (enzyme formulation)	Charbon Consultants Tustin, CA (714) 832-6366
Pennzsuppress D (emulsified resin)	Pennzoil Products Company Santa Fe Springs, CA (562) 906-0633
Road Oyl (pine tar)	Soil Stabilization Products Merced, CA (209) 383-3296
Roadkill (soybean product)	Central Soya Company, Inc. Fort Wayne, IN (219) 425-5942
Sandcastles Dust Control Mix	Sandcastle Hydroseeding Lancaster, CA (805) 723-0515
SC Dust Oil Emulsion 715 (emulsified dust oil)	SC Dust Control Bakersfield, CA (805) 391-8357
Sentinel (organic binder-hydroseeding)	Albright Seed Company Camarillo, CA (805) 484-0551 Precision Hydro-seeding Company Palm Desert, CA (760) 772-0237 (888) 645-4800

Product Name	Vendor Contact
Soil Guard	S & S Seeds Carpentaria, CA (805) 684-0436
Soilmaster (polymer)	Environmental Soil Systems, Inc. Granada Hills (818) 368-4115
Soil Master WR (Liquid copolymer)	Environmental Soil Systems, Inc. Encino, CA (888) 368-9664
Soil Seal (polymer)	Soil Seal Corporation Los Angeles (213) 727-0654
Soil Seal (polymer)	Soil Stabilization Products Merced, CA (209) 383-3296
Soil Sement (polymer)	Midwest Industrial Supply Santa Maria, CA (805) 937-7157 (800) 321-0697
Soiltac (Copolymer)	Soilworks, Inc Gilbert, Arizona (760) 345-0771 (888)545-5420 www.midwestind.com
TOPEIN™ Emulsions (organic dispersions)	Doyle Ellis Bakersfield, CA (877) TOPEINS
Terrazyme (organic enzyme)	Environmental Services & Products Walnut, CA (909) 595-0470

GUIDANCE FOR
LARGE OPERATIONS

Large Operation Notification Procedures
Contact Signage
Statement of No Change
Notice of Completion

GUIDANCE FOR LARGE OPERATIONS

Notification Procedures

Rule 403 requires large operations that meet or exceed the threshold for large operations to:

- ✓ notify the District in writing by submitting a Large Operation Notification (Form 403N) with the appropriate site mapping within seven days of qualifying as a large operation to the address provided below:

  Elio Torrealba
  South Coast Air Quality
  Management District
  Rule 403 Compliance
  21865 E. Copley Drive
  Diamond Bar, CA 91765

- ✓ identify a dust control supervisor
- ✓ install contact signage that meets the minimum standards outlined by this Chapter within 50 feet of each public site entrance or other frequently-used work entrances. No more than four signs are required per site/facility. One sign is sufficient for multiple site entrances located within 300 yards of each other.
- ✓ implement the Rule 403 Table 2 and Table 3 control actions for each on-site source, and
- ✓ prepare daily records of control action implementation and maintain such recordkeeping information for three years.

Rule 403 also requires large operations to notify the AQMD 30 days after no longer qualifying as a large operation [subparagraph (e)(1)(F)] by submitting a Project Completion Form (Form 403 C) or submit a Statement of No Change (Form 403 NC) for projects that will last more than one year [paragraph (e)(2)]. The requirement to submit a Statement of No Change is not required for stationary sources (i.e., aggregate facilities, etc.) that operate for multiple years at one site.

A blank Large Operation Notification Form (Form 403N), minimum contact signage standards, a Notice of Completion Form (Form 403C), a Statement of No-Change (Form 403NC) is presented in this chapter. A sample recordkeeping form is included in Chapter 6.

FORM 403N

RULE 403 - LARGE OPERATION NOTIFICATION
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

21865 Copley Drive, Diamond Bar, CA 91765

Large operations are required to implement the Rule 403 Table 2 and Table 3 control measures and must notify the AQMD no later than 7 days after qualifying as a large operation. Completing this Form and returning it, along with a site location map, to the AQMD will represent compliance with the notification procedures. Note: activities that implement the Table 2 and the Table 3 control measures are required to maintain records of control measure application (see Chapter 6 of the Rule 403 Implementation Handbook).

Is this notification being submitted to comply with the requirements of a Notice to Comply or Notice of Violation? **YES/NO**
Notice Number_____ Please attach copy

Qualifying Criteria:

1. Does this operation contain more than 50 acres of disturbed surface area as of the date of submittal? **YES/NO**
   Please indicate the size of the project _____.

2. Will the earth moving operation exceed a daily earth moving or throughput volume of 5,000 cubic yards three times during the most recent 365-day period from the date grading begins? **YES/NO**

If you answered yes to either 1 or 2 above please continue with the application. If you answered no to both 1 & 2 you may stop here. If you still have questions regarding your qualifying status please call Phill Hubbard III at (909) 396-2966.

FORM 403N

RULE 403 - LARGE OPERATION NOTIFICATION
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

21865 Copley Drive, Diamond Bar, CA 91765

Please Print or Type

Contractor/ Consultant/ Owner: (Circle one of the above)		**Phone Number:**	
Address:	**City:**	**State:**	**Zip:**
Project Name:			
Name of Responsible Person of Organization:			
Title:		**Phone Number:**	
Dust Control Supervisor:		**Phone Number:**	
Date Attended Dust Class:		**ID Number:**	
Project Address: (Attach location map)	**City:**	**State:**	**Zip:**
Name of Property Owner: (If different than above)			
Type of Activity:			
Anticipated Start Date:		**Anticipated Completion Date:**	
Check here if permanent facility: (Statement of No Change is not required for stationary sources (aggregate facilities, etc.) that operate at one site for multiple years)			
Telephone Number:			
Emergency Phone Number:			
In accordance with paragraph (e)(1) of Rule 403, I will ensure that the actions specified in Tables 2 and 3 will be implemented on-site for each applicable fugitive dust source type within the property lines and I will ensure that records are maintained per Rule 403, Subparagraph (e)(1)(C). Further, I hereby certify that all information contained herein is true and correct.			
SIGNATURE OF RESPONSIBLE MEMBER OF ORGANIZATION	**TITLE**	**DATE**	

GUIDANCE FOR LARGE OPERATIONS

Minimum Contact Signage Standards

Rule 403 subparagraph (e)(1)(D) requires large operations to install and maintain signage that identifies phone numbers for dust complaints. Signs must be installed within 50 feet of each public site entrance and other frequently-used work entrances. No more than four signs are required per site/facility. One sign is sufficient for multiple site entrances located within 300 yards of each other. The following guidance has been prepared to assist project operators in complying in this requirement.

CONSTRUCTION SITE SIGNAGE GUIDELINES (Minimum Requirements)

✓ The purpose of this signage is to allow the public to contact the responsible party if visible dust emissions or track-out of material is observed from a construction site.

Project size	**Over 50 Acres**
Sign size	48" x 96"

Permit # *(if applicable)*	4"
Site Name	4"
Project Name / Tract ####	4"
IF YOU SEE DUST COMING FROM	4"
THIS PROJECT CALL:	4"
Name, Phone Number XXX-XXXX	6"
If you do not receive a response, Please call	3"
the AQMD at 1-800-CUT-SMOG	3"
	3"

Notes:

Signage must be located within 50 feet of each project site entrance.
No more than four signs are required per site/facility.
One sign is sufficient for multiple site entrances located within 300 yards of each other.
Text height shall be at a minimum as shown on right side of sign template above.
Sign background must contrast with lettering, typically black text with white background.
Sign should be 1 inch A/C laminated plywood board.
The lower edge of the sign board must be a minimum of 6 feet and a maximum of 7 feet above grade.
The telephone number listed for the contact must be a local or a toll-free number and shall be accessible 24 hours per day.

STATEMENT OF NO CHANGE FOR PROJECTS THAT EXTEND MORE THAN ONE YEAR

Approved large operation notifications are valid for one year from the date of AQMD acceptance. If a project will extend beyond one-year and if all sources of fugitive dust and control measures are the same as the originally accepted submittal, the operator can extend the applicability of the large operation notification for an additional year by submitting a Statement of No-Change (Form 403NC). A Statement of No-Change is not required for stationary sources (e.g., aggregate facilities, etc.) that operate for multiple years at one facility. A sample Form 403NC is provided on the following page.

FORM 403NC

STATEMENT OF NO CHANGE
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

21865 Copley Drive, Diamond Bar, CA 91765

Large operation notifications are valid for one year from SCAQMD acceptance. Rule 403 requires resubmittal of a large operation notification at least 30 days prior to the expiration date or the submittal will no longer be valid. Submittal of form 403NC will represent resubmittal of a large operation notification if conditions will not change in the upcoming year. SCAQMD acceptance of Form 403NC will make the previously approved submittal valid for <u>one</u> additional year from its original approval date. A Statement of No Change is not required for stationary sources (aggregate facilities, etc.) that operate at one site for multiple years.

Please Print or Type

Contractor/ Consultant/ Owner: (Circle one of the above)			**Phone Number**
Address:	**City:**	**State:**	**Zip:**
Project Name:			
Name of Responsible Person of Organization:			
Title:			
Dust Control Supervisor:			**Phone Number:**
Date Attended Dust Class:			**ID Number:**
Project Address: (Attach location map)	**City:**	**State:**	**Zip:**
Name of Property Owner: (If different than above)			
Type of Activity:			
Anticipated Completion Date:			
Telephone Number:			
Emergency Phone Number:			

Agreement

All conditions at the site are the same as identified in the large operation notification approved by the SCAQMD on _____. *(Please provide date)* Moreover, all control measures will be implemented at the site in the manner set forth in the previously approved large operation notification.

_____

Signature of Owner (Date)

_____

Signature of Operator or Contractor (Date)
(If not the same as owner)

SCAQMD Use Only

Date Received _____	Staff Initial _____

PROJECT COMPLETION FORM

Subparagraph (e)(1)(F) requires large operations to notify the AQMD within 30 days of no longer qualifying as a large operation. A sample Form 403C is provided on the following page.

FORM 403C

NOTICE OF COMPLETION
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

21865 Copley Drive, Diamond Bar, CA 91765

Rule 403 requires large operations to notify the AQMD within 30 days of no longer qualifying as a large operation. This form has been prepared to assist activities in complying with this requirement.

PROJECT INFORMATION	PLEASE ENTER INFORMATION BELOW
CONSTRUCTION PROJECT NAME / REFERENCE NUMBER	
PROJECT ADDRESS/LOCATION	
OWNER/DESIGNEE NAME	
PHONE NUMBER	
SUPPLEMENTAL PHONE NUMBER	

OWNER (DESIGNEE) STATEMENT

I certify that the referenced site no longer qualifies as a large operation.

Owner Signature _____ Date _____

Inspection Results

An inspection by a SCAQMD representative has been performed with the following results noted:

_____ Construction has ceased and the entire site has been adequately treated for long-term stabilization

_____ Construction has ceased, but portions of the site have not been adequately treated for long-term stabilization *(Attach additional stabilization requirements)*

Enforcement Officer _____ Date _____

SAMPLE RECORDKEEPING

SAMPLE RECORDKEEPING

Recordkeeping is required of large operations implementing Tables 2 and 3, pursuant to subparagraph (e)(1)(C). SCAQMD staff has included the attached example to serve as guidance for activities that compile records under Rule 403. Activities that are required to conduct record keeping can use the attached form or they can prepare a site-specific form. Under subparagraph (e)(1)(C) of Rule 403, records are to be retained for three years and must be submitted to the AQMD Executive Officer upon request.

FUGITIVE DUST CONTROL
(SCAQMD Rule 403 Table 2 and 3 Control Measures)
Month:_____

Instructions:
1. (X) Check off daily all control measures impl
2. Operator should initial daily.

	Fugitive Dust Source Category/Control Measures	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	3
	Control Actions																														
	(1a) Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR																														
	(1a-1) For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.																														
Earth-moving	(1b) Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer and the California Air Resources Board. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board, complete the compaction process as expeditiously as possible after achieving at least 70 percent of optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.																														
	(1c) Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.																														
	Contingency Control Measures																														
	(1A) Cease all active operations, OR																														
	(2A) Apply water to soil not more than 15 minutes prior to moving such soil																														

OPERATORS INITIALS:

FUGITIVE DUST CONTROL
(SCAQMD Rule 403 Table 2 and 3 Control Measures)
Month:_____

Instructions:
1. (X) Check off daily all control measures imp
2. Operator should initial daily.

Fugitive Dust Source Category/Control Measures			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Disturbed Surface Area		*Control Measure*																												
	(2 a/b)	Apply dust suppression in sufficient quantity and frequency to maintain stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.																												
	(2c)	Apply chemical stabilizers within five working days of grading completion; OR																												
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.																												
		Contingency Control Measures																												
	(0B)	On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days; apply Water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR																												
	(1B)	Apply chemical stabilizers prior to wind event, OR																												
	(2B)	Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR																												
	(3B)	Take actions specified in Table 2, Item (3c); OR																												
	(4B)	Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.																												
Inactive Disturbed Surface		*Control Measure*																												
	(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR																												
	(3b)	Apply suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR																												
	(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR																												
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.																												

OPERATORS INITIALS:

FUGITIVE DUST CONTROL
(SCAQMD Rule 403 Table 2 and 3 Control Measures)
Month:_____

Instructions:
1. (X) Check off daily all control measures impl
2. Operator should initial daily.

		Fugitive Dust Source Category/Control Measures	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Unpaved Roads		*Control Measure*																												
	(4a)	Water all roads used for any vehicular traffic at least Once per every two hours of active operations normal [3 times per 8 hour work day]; OR																												
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR																												
	(4c)	Apply a chemical stabilizers to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.																												
		Contingency Control Measures																												
	(1C)	Apply chemical stabilizers prior to wind event, OR																												
	(2C)	Apply water twice per hour during active operation, OR																												
	(3C)	Stop all vehicular traffic																												
Open Storage Piles		*Control Measure*																												
	(5a)	Apply chemical stabilizers; OR																												
	(5b)	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR																												
	(5c)	Install temporary coverings; OR																												
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile.																												
		Contingency Control Measures																												
	(1D)	Apply water twice per hour, OR																												
	(2D)	Install temporary coverings.																												
Paved Road Track-Out		*Control Measure* Compliance with Rule 403, Paragraph (d)(4) and (5)																												
		Contingency Control Measures																												
	(1E)	Cover all haul vehicles; OR																												
	(2E)	Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.																												

OPERATORS INITIALS:

TEST METHODS

- **Opacity Test Methods**
- **Stabilized Surface**
- **Threshold Friction Velocity**
- **Silt Loading/Content**

OPACITY TEST METHODS

Time Averaged Method:

Note: This method can only be conducted by an individual who is a California Air Resources Board (CARB) certified Visible Emission Evaluation (VEE) observer. Qualification and testing requirements for a CARB-certified VEE observer can be obtained from the AQMD.

These procedures are for evaluating continuous fugitive dust emissions and are for the determination of the opacity of continuous fugitive dust emissions by a qualified observer. Continuous fugitive dust emissions sources include activities that produce emissions continuously during operations such as earthmoving, grading, and trenching. Emissions from these types of continuous activities are considered continuous even though speed of the activity may vary and emissions may be controlled to 100%, producing no visible emissions, during parts of the operation. The qualified observer should do the following:

Position: Stand at a position at least twenty (20) feet from the fugitive dust source in order to provide a clear view of the emissions with the sun oriented in the 140° sector to the back. Consistent as much as possible with maintaining the above requirements, make opacity observations from a position such that the line of sight is approximately perpendicular to the plume and wind direction. The observer may follow the fugitive dust plume generated by mobile earth moving equipment, as long as the sun remains oriented in the 140° sector to the back. As much as possible, do not include more than one plume in the line of sight at one time.

Field Records: Record the name of the site, fugitive dust source type (e.g., earthmoving, grading, trenching), method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the fugitive dust source. Also, record the time, estimated distance to the fugitive dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position relative to the fugitive dust source, and color of the plume and type of background on the visible emission observation when opacity readings are initiated and completed.

Observations: Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of sight. Make opacity observations at a point just beyond where material is no longer being deposited out of the plume (normally three (3) feet above the surface from which the plume is generated). The initial observation should begin immediately after a plume has been created above the surface involved. Do not look continuously at the plume, but instead observe the plume momentarily at 15-second intervals. For fugitive dust from earthmoving equipment, make opacity observations at a point just beyond where material is not being deposited out of the plume (normally three (3) feet above the mechanical equipment generating the plume).

Recording Observations: Record the opacity observations to the nearest 5% every fifteen (15) seconds on an observational record sheet. Each momentary observation recorded represents the

average opacity of emissions for a fifteen (15) second period. If a multiple plume exists at the time of an observation, do not record an opacity reading. Mark an "x" for that reading. If the equipment generating the plume travels outside of the field of observation, resulting in the inability to maintain the orientation of the sun within the 140° sector or if the equipment ceases operating, mark an "x" for the fifteen (15) second interval reading. Readings identified as "x" shall be considered interrupted readings.

Data Reduction For Time-Averaged Method: For each set of twelve (12) or twenty four (24) consecutive readings, calculate the appropriate average opacity. Sets shall consist of consecutive observations, however, readings immediately preceding and following interrupted readings shall be deemed consecutive and in no case shall two sets overlap, resulting in multiple violations.

Intermittent Emissions Method

Note: This method can only be conducted by an individual who is a California Air Resources Board (CARB) certified Visible Emission Evaluation (VEE) observer. Qualification and testing requirements for a CARB-certified VEE observer can be obtained from the AQMD.

This procedure is for evaluating intermittent fugitive dust emissions: This procedure is for the determination of the opacity of intermittent fugitive dust emissions by a qualified observer. Intermittent fugitive dust emissions sources include activities that produce emissions intermittently such as unpaved road travel, screening, dumping, and stockpiling where predominant emissions are produced intermittently. The qualified observer should do the following:

Position: Stand at a position at least twenty (20) feet from the fugitive dust source in order to provide a clear view of the emissions with the sun oriented in the 140° sector to the back. Consistent as much as possible with maintaining the above requirements, make opacity observations from a position such that the line of sight is approximately perpendicular to the plume and wind direction. As much as possible, do not include more than one plume in the line of sight at one time.

Field Records: Record the name of the site, fugitive dust source type (e.g., pile, material handling, transfer, loading, sorting), method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the fugitive dust source. Also, record the time, estimated distance to the fugitive dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position relative to the fugitive dust source, and color of the plume and type of background on the visible emission observation when opacity readings are initiated and completed.

Observations: Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of sight. Make opacity observations at a point just beyond where material is no longer being deposited out of the plume (normally three (3) feet above the surface from which the plume is generated). Make two observations per plume at the same point, beginning with the first reading at zero (0) seconds and the second reading at five (5) seconds. The zero (0) second observation should begin immediately after a plume has been created above the surface involved.

Recording Observations: Record the opacity observations to the nearest 5% on an observational record sheet. Each momentary observation recorded represents the average opacity of emissions for a five (5) second period.

Repeat the Observations listed above and the Recording Operations listed above in this procedure until you have recorded a total of 12 consecutive opacity readings. This will occur once six intermittent plumes on which you are able to take proper readings have been observed. The 12 consecutive readings must be taken within the same period of observation but must not exceed 1 hour. Observations immediately preceding and following interrupted observations can be considered consecutive.

Average the 12 opacity readings together. If the average opacity reading equals 20% or lower, the source is in compliance with the averaged method opacity standard described in the Rule.

STABILZED SURFACE TEST METHOD

Introduction:

The purpose of this test is to check whether a property is sufficiently crusted to prevent windblown dust. (Note: This test's primary function is to provide a simplified initial assessment of surface stability. If there is any doubt as to a property's stability after performing this test, the Threshold Friction Velocity test should be conducted to more thoroughly determine a surface's erodibility potential.)

Equipment:

- One steel ball. Diameter - 5/8 (0.625) inches. Mass - 16-17 grams
- A ruler or measuring tape
- A cardboard frame with a 1 ft. by 1 ft. opening (optional)

Step 1:

Select a 1 by 1 foot Survey Area that is representative, or a typical example, of the crusted surface.

Step 2:

Hold the small steel ball one (1) foot off the ground directly above your survey area. Use a ruler or measuring tape to make sure that your hand is at the correct distance above the ground. Drop the ball within the survey area.

Step 3:

Pass/Fail Determination. Observe the ground around the ball closely before picking it up. Did the ball sink into the surface so that it is partially or fully surrounded by loose grains of dirt? Has it dropped out of view entirely? Then pick up the ball. Look closely where the ball fell. Are loose grains of dirt visible?

If you have answered "yes" to any of the previous questions, the surface has failed the first drop test. Note that if the ball causes a slight indentation on the surface but you do not see loose grains, the surface has passed the test.

Step 4:

Select two additional areas within the 1 by 1 foot survey area to drop the ball. Repeat Steps 2 and 3. If the surface passes two or all three of the drop tests, the survey area is considered as passing the test.

Step 5:

Select at least two other survey areas that are representative of the crusted surface. Pick the areas randomly and make sure they are spaced some distance apart. Drop the ball 3 times within each of these additional survey areas. Once again, if the surface passes the test twice or three times, count the survey area as passing the test.

Step 6:

Examine Results. If all of the survey areas have passed the test, the surface is stable, or sufficiently crusted. If one or more survey areas have failed the test, the surface is insufficiently crusted. If the surface fails the visible crust test, but there are minimal loose grains on the surface, the U.S. EPA recommends that the Threshold Friction Velocity test be done. Where there is little loose material that can be collected, the surface is likely to pass the Threshold Friction Velocity test.

Question and Answer – Stabilized Surface Test Method

Question:

What if blowsand is on the crusted surface? (Blowsand is thin deposits of loose grains which have not originated from the surface you are testing, but have been blown there from some surrounding area. Blowsand tends to collect in certain areas rather than uniformly over the surface. If present, it will generally cover less than 50% of the entire surface.)

Answer:

Clear the blowsand from the survey area surfaces on which you plan to drop the ball. Blowsand should not be a factor in your results.

Question:

What if material has been dumped or piled on the surface that is not blowsand, such as dirt or swimming pool waste?

Answer:

Do not do the Stabilized Surface test on those surfaces unless they have crusted over. Instead, do the Threshold Friction Velocity test on any loose surface material.

Question:

What if two of the survey areas pass with flying colors and the third survey area fails miserably?

Answer:

Chances are that the third survey area is either part of an uncrusted portion of the lot or has a much lighter kind of crust or different soil type than that of the other two survey areas. This means that the third survey area represents a different kind of surface than the other survey areas. If this is the case, examine the disturbed surface areas on the lot carefully. Using measuring tape,

segment off (literally or mentally) the portion(s) of the lot that the third survey area represents. Size it up in feet and select two additional 1 by 1 foot survey areas on which to do the visible crust test. Keep in mind that if all other areas on the lot have a stable crust except for the newly identified area, it would need to be at least 5,000 square feet in size or subject to motor vehicle disturbance (i.e. trespassing) for disturbed vacant land requirements to apply.

THRESHOLD FRICTION VELOCITY

Introduction:

The purpose of the Threshold Friction Velocity, or TFV, test method is to determine a site's susceptibility to wind-driven soil erosion. TFV can differ among disturbed vacant lots depending on the type of soil and to what extent it is disturbed. The lower the TFV, the greater the propensity for fine particles to be lifted at relatively low wind speeds. Since rocks and other non-erodible elements add protection against soil erosion, they raise TFV if present on the disturbed surface. A TFV of 100 cm/sec or greater is considered sufficiently protective.

Equipment:

- A set of sieves with the following openings: 4 millimeters (mm), 2mm, 1 mm, 0.5 mm and 0.25 mm and a lid and collector pan
- A small whisk broom or paintbrush with stiff bristles and dustpan. *(The broom/brush should preferably have one, thin row of bristles no longer than 1.5 inches in length.)*
- A spatula without holes
- A cardboard frame with a 1 ft. by 1 ft. opening
- Basic calculator
- Graduated cylinder or measuring cup *(may possibly need)*

Step 1:

Stack a set of sieves in order according to the size openings specified above, beginning with the largest size opening (4 mm) at the top. Place a collector pan underneath the bottom (0.25 mm) sieve.

Step 2:

Select a 1 foot by 1 foot survey area that is representative, or typical, of the disturbed surface. Mark this area using a cardboard frame. Check whether the surface is wet or damp. If so, return later to do this test method when the surface has dried.

Step 3:

Collect a sample of loose surface material to a depth of approximately 3/8 inch (1 cm) into a dustpan. This can best be done using a lightweight whisk broom/brush to carefully sweep the surface material within the marked survey area onto a spatula and lifting it into the dustpan. If you reach a hard, underlying subsurface that is less than 3/8 inch in depth, do not continue collecting the sample by digging into the hard surface.

Step 4:

Check the dustpan for rocks or hard-packed clumps of soil collected in your sample. Measure their diameter and remove those larger than 3/8 inch (1 cm) in diameter from the sample.

Step 5:

Carefully pour the sample into the stack of sieves, minimizing release of dust particles by slowly brushing material into the stack with a whisk broom or paintbrush. (On windy days, use the trunk or door of a car as a wind barricade.) Cover the stack with a lid. Lift up the sieve stack and gently move it using broad, horizontal circular arm motions. Complete 10 clockwise and 10 counter-clockwise motions at a speed of approximately 1 second per motion. Be careful not to move the sieve too roughly in order to avoid breaking up any naturally clumped material.

Step 6:

Remove the lid from the stack and disassemble each sieve separately, beginning with the top sieve. As you remove each sieve, examine it to make sure that all of the material has been sifted to the finest sieve through which it can pass; e.g. material in each sieve (besides the top sieve that captures a range of larger elements) should look the same size. If this is not the case, re-stack the sieves and collector pan, cover the stack with the lid, and gently rotate it using the same circular arm motions as before an additional 10 times. (You only need to reassemble the sieve(s) that contain material which requires further sifting.)

Step 7:

Line up the sieves in a row as they are disassembled, with the 4 mm sieve at one end and the collector pan at the other. Slightly tilt and gently tap each sieve and the collector pan so that all material is collected on one side. The material in the sieves and collector pan should be on the same side relative to your position. Observe the relative amount of material in each sieve and the collector pan to determine which contains the greatest volume. If this is difficult to determine, use a graduated cylinder or a measuring cup to measure the relative volume.

Step 8:

Use the table below to estimate TFV for the sieve catch with the greatest volume estimated in Step 7. For example, if the sieve containing the greatest volume is the one with the 0.5 mm opening, TFV = 58 cm/second.

Sieve Size Opening (mm)	Sieve No.	TFV (cm/sec)
4	5	> 100
2	10	100
1	18	76
0.5	35	58
0.25	60	43
Collector Pan	N/A	30

* TFV values in this table take into account the aggregate size distribution of particles between the different sieve size openings.

Step 9:

Repeat this procedure on at least two other representative areas on the disturbed surface. Average your TFV results from the three samples collected.

Step 10:

Examine Results. If the TFV you've calculated is greater than or equal to 100 cm/sec, the surface is stable.

Question and Answer – Threshold Friction Velocity Test Method

Question:

If there are hard-packed clumps of dirt on the surface, do I sieve these clumps along with the rest of the soil sample?

Answer:

If the hard-packed clumps are 1 cm or greater in size, extract them from the sample.

Question:

Can I combine all three collected soil samples into the sieve stack at once to save time?

Answer:

You may try combining the three samples after removing rocks or other non-erodible elements greater than 1 cm in diameter from each sample only if the mass of the three samples is

approximately the same. However, combined samples may be more difficult to sieve and require reassembling and re-shaking of the sieves more than once. Also, it may be difficult to visibly compare the volume of material caught in the sieves after they have been disassembled. Therefore, combining samples is not recommended.

Question:

If I see dust particles escaping when I collect a sample and transfer it to the sieves, should I start over?

Answer:

Not necessarily. A small amount of dust particles can escape without influencing the TFV results. In fact, it is very difficult to avoid having some dust escape. However, if you rush when collecting and/or transferring a sample to the sieves, you may cause too much dust to escape thus potentially causing error in your results. Or, on a relatively windy day you may lose too much dust unless you set up a wind barricade. Avoid doing this test at all on very windy days.

Question:

If you're not sure which sieve contains the greatest amount of material, can you weigh the sieves for comparison?

Answer:

While, typically, more volume corresponds to greater weight, this is not always the case. Use a measuring cup or graduated cylinder if necessary to determine the sieve that contains the greatest amount of material.

Question:

When determining TFV in step 8, can I combine material in the largest 2 sieves to estimate volume?

Answer:

No. This may fundamentally alter the premises on which the method is based and lead to an incorrect determination of stability.

SILT LOADING/CONTENT TEST METHOD

Introduction:

Silt Content Test Method. The purpose of this test method is to estimate the silt content of the trafficked parts of unpaved roads and unpaved parking lots. The higher the silt content, the more fine dust particles that are released when cars and trucks drive on unpaved roads and unpaved parking lots.

Equipment:

- A set of full height, eight inch diameter sieves with the following openings: 4 millimeters (mm), 2mm, 1 mm, 0.5 mm and 0.25 mm and a lid and collector pan
- A small whisk broom or paintbrush with stiff bristles and dustpan 1 ft. in width. *(The broom/brush should preferably have one, thin row of bristles no longer than 1.5 inches in length.)*
- A spatula without holes A small scale with half ounce increments *(e.g. postal/package scale)*
- A shallow, lightweight container *(e.g. plastic storage container)*
- A sturdy cardboard box or other rigid object with a level surface
- Basic calculator
- Cloth gloves (optional for handling metal sieves on hot, sunny days)
- Sealable plastic bags (if sending samples to a laboratory)
- Pencil/pen and paper

Step 1:

Look for a routinely traveled surface, as evidenced by tire tracks. [Only collect samples from surfaces that are not damp due to precipitation or dew. This statement is not meant to be a standard in itself for dampness where watering is being used as a control measure. It is only intended to ensure that surface testing is done in a representative manner.] Use caution when taking samples to ensure personal safety with respect to passing vehicles. Gently press the edge of a dustpan (1 foot in width) into the surface four times to mark an area that is 1 square foot. Collect a sample of loose surface material using a whiskbroom or brush and slowly sweep the material into the dustpan, minimizing escape of dust particles. Use a spatula to lift heavier

elements such as gravel. Only collect dirt/gravel to an approximate depth of 3/8 inch or 1 cm in the 1 square foot area. If you reach a hard, underlying subsurface that is less than 3/8 inch in depth, do not continue collecting the sample by digging into the hard surface. In other words, you are only collecting a surface sample of loose material down to 1 cm. In order to confirm that samples are collected to 1 cm in depth, a wooden dowel or other similar narrow object at least one foot in length can be laid horizontally across the survey area while a metric ruler is held perpendicular to the dowel.

At this point, you can choose to place the sample collected into a plastic bag or container and take it to an independent laboratory for silt content analysis. A reference to the procedure the laboratory is required to follow is at the end of this section.

Step 2:

Place a scale on a level surface. Place a lightweight container on the scale. Zero the scale with the weight of the empty container on it. Transfer the entire sample collected in the dustpan to the container, minimizing escape of dust particles. Weigh the sample and record its weight.

Step 3:

Stack a set of sieves in order according to the size openings specified above, beginning with the largest size opening (4 mm) at the top. Place a collector pan underneath the bottom (0.25 mm) sieve.

Step 4:

Carefully pour the sample into the sieve stack, minimizing escape of dust particles by slowly brushing material into the stack with a whiskbroom or brush. (On windy days, use the trunk or door of a car as a wind barricade.) Cover the stack with a lid. Lift up the sieve stack and shake it vigorously up, down and sideways for at least 1 minute.

Step 5:

Remove the lid from the stack and disassemble each sieve separately, beginning with the top sieve. As you remove each sieve, examine it to make sure that all of the material has been sifted to the finest sieve through which it can pass (e.g., material in each sieve - besides the top sieve that captures a range of larger elements - should look the same size). If this is not the case, re-stack the sieves and collector pan, cover the stack with the lid, and shake it again for at least 1 minute. (You only need to reassemble the sieve(s) that contain material, which requires further sifting.)

Step 6:

After disassembling the sieves and collector pan, slowly sweep the material from the collector pan into the empty container originally used to collect and weigh the entire sample. Take care to minimize escape of dust particles. You do not need to do anything with material captured in the

sieves -- only the collector pan. Weigh the container with the material from the collector pan and record its weight.

Step 7:

If the source is an unpaved road, multiply the resulting weight by 0.38. If the source is an unpaved parking lot, multiply the resulting weight by 0.55. The resulting number is the estimated silt loading. Then, divide by the total weight of the sample you recorded earlier in Step 2 and multiply by 100 to estimate the percent silt content.

Step 8:

Select another two routinely traveled portions of the unpaved road or unpaved parking lot and repeat this test method. Once you have calculated the silt loading and percent silt content of the 3 samples collected, average your results together.

Step 9:

Examine Results. If the average silt loading is less than 0.33 oz/ft², the surface is stable. If the average silt loading is greater than or equal to 0.33 oz/ft², then proceed to examine the average percent silt content. If the source is an unpaved road and the average percent silt content is 6% or less, the surface is stable. If the source is an unpaved parking lot and the average percent silt content is 8% or less, the surface is stable. If your field test results are within 2% of the standard (for example, 4%-8% silt content on an unpaved road), it is recommended that you collect 3 additional samples from the source according to Step 1 and take them to an independent laboratory for silt content analysis.

Independent Laboratory Analysis: You may choose to collect 3 samples from the source, according to Step 1, and send them to an independent laboratory for silt content analysis rather than conduct the sieve field procedure. If so, the test method the laboratory is required to use is: "Procedures For Laboratory Analysis Of Surface/Bulk Dust Loading Samples", (Fifth Edition, Volume I, Appendix C.2.3 "Silt Analysis", 1995), AP-42, Office of Air Quality Planning & Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina.

Question and Answer - Silt Loading/Content Test Method

Question:

If I see dust escaping when I collect a sample and transfer it to the sieves, should I start over?

Answer:

Not necessarily. A small amount of dust can escape without influencing the silt content results. In fact, it is very difficult to avoid having some dust escape. However, if you rush when collecting and/or transferring a sample to the sieves, you may cause too much dust to escape thus

potentially causing an error in your results. Or, on a relatively windy day you may lose too much dust unless you set up a wind barricade. Avoid doing this test on very windy days.

Question:

Once I calculate the percent silt content for 3 samples collected on one segment of an unpaved road, can I assume the same result for the whole length of the road?

Answer:

You may extrapolate results only to the extent that the rest of the unpaved road has the same average daily trips as the segment you tested and the surface condition on other segments of the road is the same.

Question:

If water is being used as a control measure on the source and this causes the surface to be damp, should I do the silt content test method on a damp surface?

Answer:

Do the silt content test method when the surface is dry in between water applications. The condition of the surface immediately following watering is different than after the water has evaporated. Since sources are required to be in compliance with the rule at all times, test the surface when it is dry.

Question:

If speed limit signs have been posted along an unpaved road as a control measure, do I need to test the surface for silt content?

Answer:

Yes. If speed limit signs have effectively lowered vehicle speeds on the road, the percent silt content may decrease. If signs have been ineffective in controlling speeds and no other controls are being applied, the source may be out of compliance. Either way, you should test to see whether the source meets the appropriate silt content standard.

ON-SITE WIND MONITORING EQUIPMENT

Guidance for Conducting Wind Measurements
Attachment A – Wind Monitoring Specifications

ON-SITE WIND MONITORING EQUIPMENT

Guidance for Conducting Wind Measurements

The following are AQMD requirements and recommendations for wind measurements used for data reporting or analysis. The meteorological data submitted to AQMD must be accurate and representative. To insure that the meteorological data is acceptable, facilities that wish to deviate from these recommendations must consult with AQMD staff prior to collecting data. In some cases, less stringent procedures may suffice. For example, a lower sensor height may be acceptable for windblown dust analysis from smaller construction sources. It is recommended that all facilities request that AQMD staff review and approve their monitoring plans and sensor specifications prior to the purchase and installation of equipment.

Aspects of a successful monitoring program include the selection of proper equipment, instrument siting, instrument and site maintenance, periodic audits and frequent data review. The instruments should be sited so as to characterize air flow between the source and receptor areas. In flat terrain, or where receptors are close to the source, one meteorological site may be adequate. Additional wind monitoring sites may be needed in complex terrain.

Wind Sensor Siting

The standard sensor height for measuring surface winds is 10 meters (33 feet) above ground level (AGL) over open, level terrain. This usually requires the installation of a tower or mast. For the instrument to be sited over open terrain, there shall be minimal obstructions to the wind flow, such as from buildings, hills or trees. In general, wind sensors should be located where the distance from the sensors to any obstruction is at least 10 times the height of that obstruction. When mounted on a building, wind sensors should be mounted at least 1.5 times the height of the building above the rooftop. Since these siting guidelines are sometimes not possible, especially in urban areas, it is

recommended that siting that deviates from these guidelines be reviewed by AQMD staff or an experienced consultant prior installation.

Data Recording Devices

Data loggers are the preferred method of recording and archiving the data. They are more precise and require less maintenance than strip chart recorders. Data loggers also allow data to be transmitted by telephone or radio to a central computer. All data records must be kept for a period of at least three years after the need for data collection has ended. Data recovery from a well-maintained meteorological system should be at least 90% complete on an annual basis, with no large data gaps (i.e., gaps greater than two weeks).

The U.S. Environmental Protection Agency (EPA) recommends a sampling frequency of once per second (EPA, 2000), which is typical for quality data loggers. Wind averaging periods may depend on the purpose of the data collected and the need to meet specific regulatory requirements. Either 1-hour or 15-minute averaging periods are common.

For each averaging time, wind speed and direction are usually scalar-averaged. Wind direction is defined as the direction from which the wind is blowing, measured in degrees from true north. Since wind direction has a numerical discontinuity between 360 and 001 degrees, scalar averaging of the wind direction is usually calculated using the unit vector method (EPA 2000). Resultant or vector averages are also often calculated, where the 1-second wind speeds and directions are added vectorially by breaking them into their horizontal components, adding the vector components, then recalculating a magnitude (speed) and direction. Both types of horizontal wind averaging, as well as the collection of peak instantaneous wind gusts during the averaging period and sigma theta, the standard deviation of the wind direction, are typical calculations for meteorological data loggers.

Time for the data recording system must be within five minutes of the correct local time, with data archived in Pacific Standard Time (PST) on a 24-hour clock. Thus there should be no change to Daylight Savings Time. It must also be noted whether the time stamp is at the start or the end of the averaging period. When reporting data, the convention is that time-ending data shall range from 0100 to 2400 PST for hourly averages and 0015 to 2400 PST for 15-minute averages. Time-beginning averages are reported with clock times starting at 0000 PST and ending with 2300 PST for hourly averages or 2345 PST for 15-minute averages. Reported data should have the site identification, year, day and time included at the beginning of the record.

Wind Sensor Accuracy

For wind sensors, the starting threshold must be rated as no higher than 0.5 meters per second. If there is some suspicion that the site would have a significant number of hours of wind speeds under 0.5 m/s, sensors with a lower threshold, such as 0.22 m/s, should be used. Wind speed systems shall be accurate to within 0.2 m/s ± 5 percent of the observed speed. Total wind direction system errors shall not exceed 5 degrees. This includes an instrument accuracy of ±3 degrees for linearity and ±2 degrees for alignment to a known direction. Table 1 summarizes these accuracy guidelines.

Table 1. Summary of Performance Criteria for Wind Sensors.

Sensor Type	Sensor Height	Range	Accuracy	Resolution	Starting Threshold	Procedural References
Wind Speed (Horizontal)	10 meters*	0.5 – 50 m/s	0.2 m/s ± 5% of observed wind speed	0.1 m/s	0.5 m/s	EPA, 2000 EPA, 1995
Wind Direction (Horizontal)	10 meters*	0 – 360 degrees (or 0 - 540°)	+/- 5 degrees	1 degree	0.5 m/s	EPA, 2000 EPA, 1995

* Other sensor heights may be used when appropriate and approved by AQMD.

Maintenance

Frequent data review, preferably on a daily basis, is critical for collecting good meteorological data. In addition, visual inspections of each site should be made at least once every month. This will help to identify sensor alignment problems that may not be obvious in the data. During the inspections, it is recommended that the sensors be compared to the current conditions, possibly by using hand-held instruments such as a compass or GPS and portable anemometer.

In order to ensure that the sensors operate within the manufacturer's specifications, a calibration of the sensors should be performed once every six months by a trained technician or the sensor manufacturer. In corrosive, marine or dusty conditions, more frequent calibrations may be needed. Spare sensors are helpful to avoid data loss while sensors are brought down for calibration and repairs. A logbook of calibrations and repairs is required.

Furthermore, data that is critical for regulatory purposes should be independently audited by a qualified individual who is not affiliated with the organization that maintains and calibrates the instrument. The audits should be on a schedule that is appropriate for the measurements. Typically, once per year is adequate if a routine maintenance and calibration schedule is kept. An audit report shall be written and problems shall be corrected as soon as possible. The audit shall compare the individual sensors to the sensor performance criteria (Table 1) and also look at the data collection system as a whole, including the data logger and siting, to ensure that the data are representative and accurate.

References

EPA, 1995: Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV, Meteorological Measurements. Document EPA/600/R-94-038d. United States Environmental Protection Agency Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, North Carolina.

EPA, 1998: Technical Assistance Document for Sampling and Analysis of Ozone Precursors. Document EPA-600/R-98-161. United States Environmental Protection Agency, Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, North Carolina.

EPA, 2000: Meteorological Monitoring Guidance for Regulatory Modeling Applications. Document EPA-454/R-99-005. United States Environmental Protection Agency, Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, North Carolina.

Attachment A

WIND MONITORING SPECIFICATIONS

The following information is designed to provide installation and operating parameters for a wind monitoring station or device. It is to be used for Orders for Abatement and is not designed to represent approved AQMD specifications for a wind monitoring instrument or station.

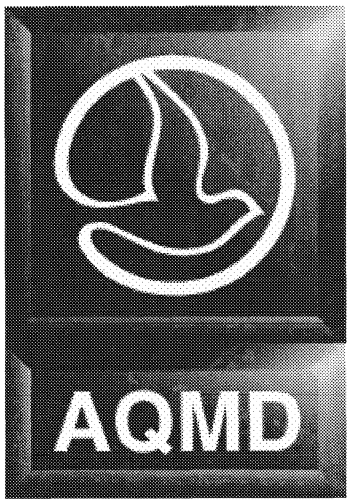
- This station, or device shall be capable of indicating the wind speed with an accuracy of 0.2 meters/sec. ± 5% of observed speed
- The instrument or station should be located on-site so as to accurately characterize the air flow field on this construction project.
- The starting threshold shall be rated as no higher than 0.5 meters per second. [1]
- Data will be recorded on a data logger, which has been chosen over a strip chart recorder because they are: more precise, require very little maintenance, and allow data to be transmitted by telephone or radio. [1]
- Three months worth of wind monitoring data will be available on-site in the form of hard copies, and made available at the Inspector's request.
- All records will be maintained by the operator for a period of two years and made available upon request.
- The logger time shall be within 5 minutes of the correct time. [1]
- A sampling rate of once per second will be employed by the monitoring station or instrument. This sampling frequency is commonly used and recognized as an industry standard.
- The operator shall submit the specifications and operating parameters, for the wind monitoring instrument or station, to AQMD for approval as an appropriate measuring instrument.
- This instrument or station shall be calibrated and maintained in accordance with the manufacturer's specifications.
- The standard height for measuring surface winds is 10 meters above ground over level, open terrain. Open terrain is defined as being away from obstructions to flow, such s buildings, hills or trees. Generally, the wind sensors should be located where the horizontal distance between the sensors and any obstruction is at least ten times the height of that obstruction. [1]
- If wind sensors are to be mounted on a building, they should be mounted at a height at least 1.5 times the building height above the roof. It is usually not a good idea to mount

wind sensors on stacks, unless the sensors can be mounted on booms at least two stack widths away from the stack, and with a wind measurement system mounted on both sides of the stack. [1]

[1] EPA, 1995: Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV, Meteorological Measurements. Document EPA/600/R-94-038d. United States Environmental Protection Agency, Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, North Carolina.

R403.1 HANDBOOK

RULE 403.1 IMPLEMENTATION HANDBOOK



South Coast Air Quality Management District

21865 Copley Drive

Diamond Bar, California 91765

April 2004

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
GOVERNING BOARD

Chairman: WILLIAM A. BURKE, Ed.D.
Speaker of the Assembly Appointee

Vice Chairman: S. ROY WILSON, Ed.D.
Supervisor, Fourth District
Riverside County Representative

MEMBERS:

MICHAEL D. ANTONOVICH
Supervisor, Fifth District
Los Angeles County Representative

JANE W. CARNEY
Senate Rules Committee Appointee

WILLIAM S. CRAYCRAFT
Council Member, City of Mission Viejo
Cities Representative, Orange County

BEATRICE J. S. LAPISTO-KIRTLEY
Mayor Pro Tem, City of Bradbury
Cities Representative, Los Angeles County/Eastern Region

RONALD O. LOVERIDGE
Mayor, City of Riverside
Cities Representative, Riverside County

JAN PERRY
Councilmember, City of Los Angeles
Cities Representative, Los Angeles County, Western Region

BILL POSTMUS
Supervisor, Fourth District
San Bernardino County Representative

JAMES W. SILVA
Supervisor, Second District
Orange County Representative

CYNTHIA VERDUGO-PERALTA
Governor's Appointee

DENNIS YATES
Council Member, City of Chino
Cities Representative, San Bernardino County

EXECUTIVE OFFICER:
BARRY R. WALLERSTEIN, D.Env.

Preface

Rule 403.1 is a companion rule to Rule 403 and is applicable to man-made sources of fugitive dust in the Coachella Valley. Figure 1 illustrates the boundaries of the Coachella Valley. This Handbook has been developed by South Coast Air Quality Management District (AQMD) staff to assist affected persons and activities in complying with Rule 403.1. Rule 403.1 dust control plan submittal requirements are applicable to sources not subject to local government dust control ordinance requirements (i.e., school districts, transportation projects, and utilities).

Any reference to a specific product name is for informational purposes only and does not represent an AQMD endorsement for the product.

Figure 1 - Coachella Valley

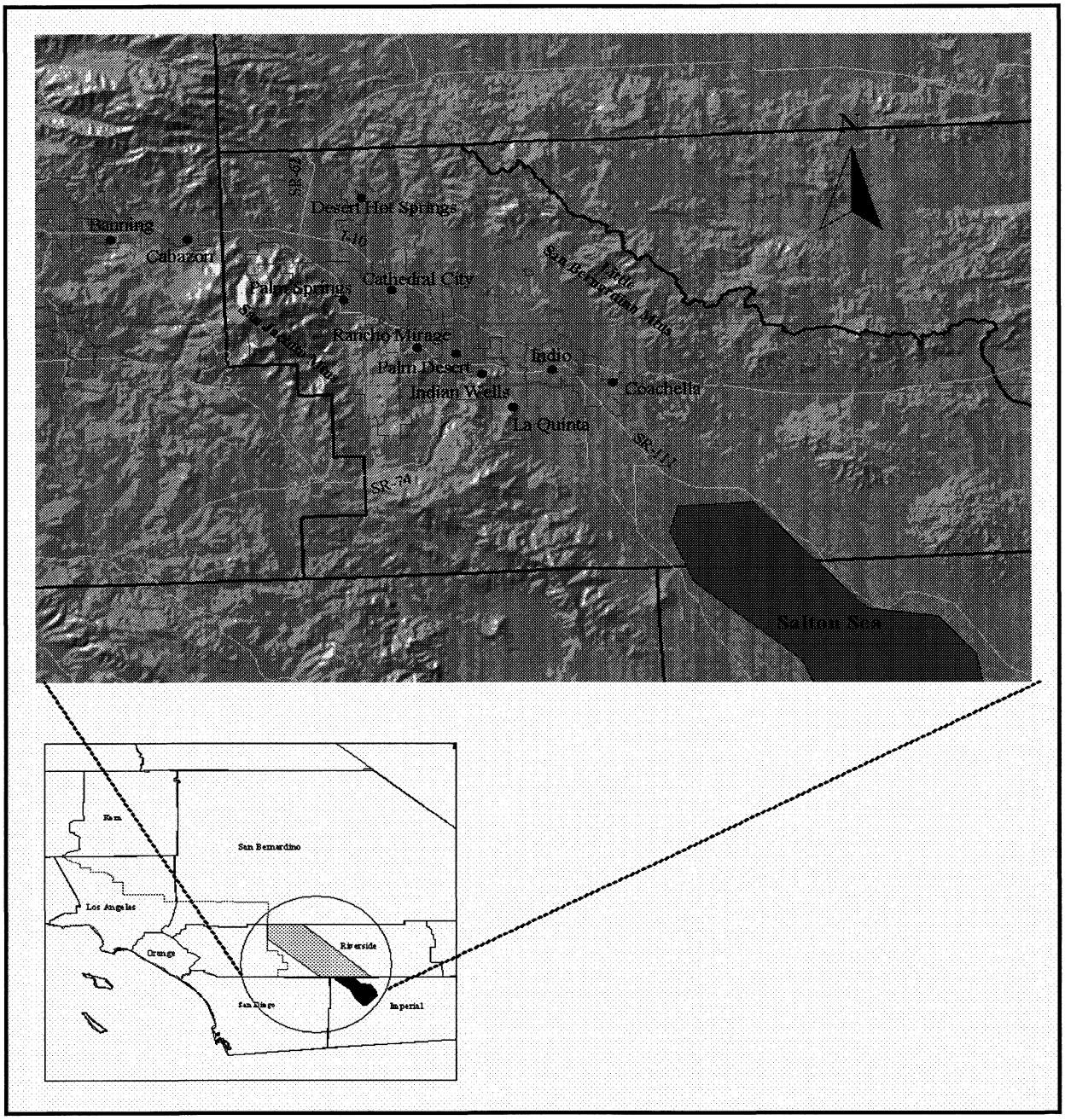


TABLE OF CONTENTS

* ***FOR SOURCES NOT SUBJECT TO LOCAL GOVERNMENT DUST CONTROL ORDINANCES***

CHAPTER 7 - TEST METHODS

CHAPTER 8 - CHEMICAL DUST SUPPRESANT VENDORS

APPLICABLE DISTRICT RULES

Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources (Rule 403.1)

APPLICABLE DISTRICT RULES

Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources (Rule 403.1)

The purpose of Rule 403.1 is to reduce fugitive dust and the resulting PM10 emissions from man-made Coachella Valley sources. Rule 403.1 dust control plan submittal requirements are applicable to fugitive dust sources not subject to local government dust control ordinance requirements (i.e., school districts, projects on federal land, utilities, etc.).

(Adopted January 15, 1993)(Amended June 16, 2000)(Amended April 2, 2004)

RULE 403.1. SUPPLEMENTAL FUGITIVE DUST CONTROL REQUIREMENTS FOR COACHELLA VALLEY SOURCES

(a) Purpose

The purpose of this rule is to reduce or prevent the amount of fine particulate matter (PM_{10}) entrained in the ambient air from anthropogenic (man-made) fugitive dust sources.

(b) Applicability

The provisions of this rule are supplemental to Rule 403 requirements and shall apply only to fugitive dust sources in the Coachella Valley.

(c) Definitions

(1) ACTIVE OPERATIONS shall mean any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface areas, or agricultural operations.

(2) AGRICULTURAL OPERATIONS means any operation occurring on a ranch or farm directly related to the growing of crops, or raising of fowls or animals for the primary purpose of making a profit or for a livelihood.

(3) ANEMOMETERS are devices used to measure wind speed in accordance with the performance standards, maintenance and calibration criteria specified in the Rule 403.1 Implementation Handbook.

(4) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter and other organic and inorganic particulate matter.

(5) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic

chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(6) COACHELLA VALLEY means that portion of Riverside County, as defined in Rule 103, subdivision (h).

(7) COACHELLA VALLEY BLOWSAND ZONE means the corridor of land extending two miles to either side of the centerline of the I-10 Freeway beginning at the SR-111/I-10 junction and continuing southeast to the I-10/ Jefferson Street interchange in Indio.

(8) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.

(9) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that vegetative ground cover and soil characteristics are similar to adjacent or near-by natural conditions;

(B) been paved or otherwise covered by a permanent structure;

(C) sustained a vegetative ground cover of at least 70 percent of the average native cover for a particular area for at least 30 days.

(10) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 and Rule 403.1 requirements at an active operation.

(11) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive emissions.

(12) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered and shall include, but not be limited to the following: such operations as grading, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, soil mulching and agricultural tilling.

(13) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(14) FUGITIVE DUST CONTROL PLAN means a plan to control fugitive dust plan as described in subdivision (e).

(15) ON-SITE means within the property lines of a property, or as otherwise approved by the Executive Officer.

(16) OPEN STORAGE PILE is any accumulation of bulk material which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(17) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

(18) PM_{10} means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable state and federal reference test methods.

(19) PROPERTY LINE means the boundaries of an area in which a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(20) RULE 403.1 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.

(21) STABILIZED SURFACE means any previously disturbed surface area which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403.1 Implementation Handbook.

(22) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by one of the following: concrete, asphaltic concrete, recycled asphalt, asphalt or other materials with equivalent performance as determined by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Public unpaved roads are any unpaved roadway owned by federal,

state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

(23) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(24) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.

(d) General Requirements

(1) Any person who is responsible for any active operation, open storage pile, or disturbed surface area, and who seeks an exemption pursuant to Rule 403, paragraph (g)(2) shall be required to determine when wind speed conditions exceed 25 miles per hour. The wind speed determination shall be based on either District forecasts or through use of an on-site anemometer as described in subdivision (g).

(2) Any person involved in active operations in the Coachella Valley Blowsand Zone shall stabilize new man-made deposits of bulk material within 24 hours of making such bulk material deposits. Stabilization procedures shall include one or more of the following:

(A) Application of water to at least 70 percent of the surface area of any bulk material deposits at least 3 times for each day that there is evidence of wind driven fugitive dust; or

(B) Application of chemical stabilizers in sufficient concentration so as to maintain a stabilized surface for a period of at least 6 months; or

(C) Installation of wind breaks of such design so as to reduce maximum wind gusts to less than 25 miles per hour in the area of the bulk material deposits.

(3) Any person involved in active operations in the Coachella Valley Blowsand Zone shall stabilize new deposits of bulk material originating from off-site undisturbed natural desert areas within 72 hours. Stabilization procedures shall include one or more of the following:

(A) Application of water to at least 70 percent of the surface area of any bulk material deposits at least 3 times for each day that there is evidence of wind driven fugitive dust; or

(B) Application of chemical stabilizers in sufficient concentration so as to maintain a stabilized surface for a period of at least six months.

(4) A person who conducts or authorizes the conducting of an active operation shall implement at least one of the control actions specified in Rule 403, Table 2 for the source category "Inactive Disturbed Surface Areas" to minimize wind driven fugitive dust from disturbed surface areas at such time when active operations have ceased for a period of at least 20 days.

(5) Any person involved in agricultural tilling or soil mulching activities shall cease such activities when wind speeds exceed 25 miles per hour. The wind speed determination shall be based on either District forecasts or through use of an on-site anemometer as described in subdivision (g).

(e) Fugitive Dust Control Plan and Other Requirements for Construction Projects/Earth-Moving Activities

(1) Any person who conducts or authorizes the conducting of an active operation with a disturbed surface area of more than 5,000 square feet shall not initiate any earth-moving activities unless a fugitive dust control plan is prepared and approved by the Executive Officer in accordance with the requirements of subdivision (f) and the Rule 403.1 Implementation Handbook. These provisions shall not apply to active operations exempted by paragraph (i)(4).

(2) Any operator required to submit a fugitive dust control plan under paragraph (e)(1) shall maintain a complete copy of the approved fugitive dust control plan on site in a conspicuous place at all times and the fugitive dust control plan must be provided upon request.

(3) Any operator required to submit a fugitive dust control plan under paragraph (e)(1) shall install and maintain signage with project contact information that meets the minimum standards of the Rule 403.1 Implementation Handbook prior to initiating any type of earth-moving activities.

(4) Any operator required to submit a fugitive dust control plan under paragraph (e)(1) for a project with a disturbed surface area of 50 or more acres shall have an Dust Control Supervisor that:

(A) is employed by or contracted with the property owner or developer; and

(B) is on-site or is available to be on-site within 30 minutes of initial contact; and

(C) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 and 403.1 requirements; and

(D) has completed the AQMD Coachella Valley Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class.

(5) Failure to comply with any of the provisions of an approved fugitive dust control plan shall be a violation of this rule.

(f) Fugitive Dust Control Plan Preparation, Submittal, and Approval Requirements

(1) A fugitive dust control plan prepared pursuant to paragraph (e)(1) must include the following information in a 8 ½ by 11 inch format:

(A) the name(s), address(es), and phone number(s) of the person(s) responsible for the preparation, submittal, and implementation of the fugitive dust control plan; and

(B) a description of the operation(s), including a map depicting the location of the site; and

(C) a listing of all sources of fugitive dust emissions within the property lines; and

(D) a description of the control measures as identified by the Rule 403.1 Implementation Handbook as applied to each of the sources identified in the fugitive dust control plan. The description of the control measures must be sufficiently detailed to demonstrate that the applicable best available control measures will be utilized and/or installed during all periods of active operations; and

(E) a description of the required contingency control measures (e.g., increased watering) for immediate implementation upon notice of visible dust crossing any property line.

(2) In the event that there are special technical (e.g., non-economic) circumstances, including safety, which prevent the use of at least one of the control measures as identified by the Rule 403.1 Implementation Handbook for any of the sources identified in the fugitive dust control plan, a justification statement must be

provided in lieu of the description. The justification statement must explain the reason(s) why the required control measures cannot be implemented.

(3) Within 30 calendar days of the receipt of a fugitive dust control plan submitted pursuant to paragraph (e)(1), the Executive Officer will either approve or apply any necessary conditions to the fugitive dust control plan in writing. For a fugitive dust control plan to be approved, the requirements of paragraph (f)(1) must be satisfied.

(4) The Executive Officer will apply conditions if the stated fugitive dust control plan measures do not satisfactorily conform to the best available control measures and guidance contained in the Rule 403.1 Implementation Handbook. The conditions necessary to modify the fugitive dust control plan will be provided in writing to the person(s) identified in subparagraph (f)(1)(A). A letter to the Executive Officer stating that such modifications will be incorporated into the fugitive dust control plan shall be deemed sufficient to result in approval of the fugitive dust control plan.

(5) Any fugitive dust control plan approved by the Executive Officer shall be valid for a period of one year from the date of approval. Any approved fugitive dust control plan must be resubmitted annually, at least 30 days prior to the expiration date, or the fugitive dust control plan shall expire as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously approved fugitive dust control plan, the submittal may contain a simple statement of no-change (Form 403NC). Otherwise, a resubmittal must contain all the items specified in subparagraphs (f)(1)(A) through (f)(1)(E).

(g) Wind Monitoring Implementation Requirements

(1) The determination of wind speed conditions in excess of 25 miles per hour, as specified in paragraphs (d)(1) and (d)(5), shall be based on the following criteria:

(A) For facilities with an on-site anemometer:

(i) When the on-site anemometer registers at least two wind gusts in excess of 25 miles per hour within a consecutive 30-minute period. Wind speeds shall be deemed to be below 25 miles per hour if

there is no recurring wind gust in excess of 25 miles per hour within a consecutive 30-minute period; or

(B) For facilities without an on-site anemometer:

(i) When wind speeds in excess of 25 miles per hour are forecast to occur in the Coachella Valley for that day. This condition shall apply to the full calendar day for which the forecast is valid. (The Executive Officer shall determine meteorological conditions which will cause wind speeds in excess of 25 miles per hour, and shall issue daily forecasts of expected wind conditions. Such forecasts shall be available to the public); or

(ii) When wind speeds in excess of 25 miles per hour are not forecast to occur by the District, and fugitive dust emissions are visible for a distance of at least 100 feet from the origin of such emissions, and there is visible evidence of wind driven fugitive dust.

(2) Any person who elects to install an on-site anemometer shall:

(A) Notify the Executive Officer no more than 10 days after installing such equipment. The notification shall contain, at a minimum, the person's name, address, telephone number, description of the operation(s), and first day of operation, as specified in the District's Rule 403.1 Implementation Handbook.

(B) Be subject to the provisions of subparagraph (g)(1)(B) for wind speed determinations if equipment outages, malfunctions, or invalid data exceed one hour during active operations on a calendar day.

(h) Recordkeeping

(1) A person subject to the provisions of this rule shall compile written daily records to document the specific actions taken to comply with this Rule. Such records shall be retained for not less than three years and shall be made available to the Executive Officer upon request.

(2) In addition to the provisions of paragraph (h)(1), any person who elects to install an on-site anemometer shall also compile written records. Such records shall contain:

(A) Location, vendor, model, and serial number of the anemometer;

(B) The time of occurrence of any wind gust in excess of 25 miles per hour during hours of active operations;

(C) The actions taken to comply with the provisions of paragraphs (d)(5) and (i)(3), as applicable.

(i) Exemptions

(1) The provisions of this rule shall not apply to ceased or inactive mining operations subject to the requirements of the Surface Mining and Recovery Act (SMARA) of 1975, provided that the provisions of the SMARA Reclamation Plan are implemented by the owner and are at least as stringent as those contained in this rule;

(2) The provisions of paragraphs (d)(2), (d)(3), and (d)(4) shall not apply to:

(A) Any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the Endangered Species Act as determined in writing by the State or federal agency responsible for making such determinations;

(B) Any disturbed surface areas or bulk material deposits with a surface area less than 2,500 square feet;

(C) Non-routine or emergency maintenance of flood control channels and water spreading basins.

(3) The provisions of paragraph (d)(5) shall not apply to agricultural tilling activities or soil mulching activities under the following conditions:

(A) If the prohibitory requirements of this Rule have occurred during six or more hours of active operations on each of two previous consecutive days, then a one-day exemption will be allowed. (These activities would again be subject to the prohibitory requirements of this Rule following this one day exemption.)

(B) If the prohibitory requirements of this Rule have occurred during sixty or more cumulative hours of active operations within a calendar month, then an exemption will be allowed for the remainder of the calendar month. (These activities would again be subject to the prohibitory requirements of this Rule at the start of the following month.)

(C) During periods of precipitation.

(4) The provisions of paragraph (e)(1) shall not apply to any active operation which is required to submit a dust control plan to any city or county government that has adopted a District-approved dust control ordinance.

(j) Fees

(1) Any person subject to a fugitive dust control plan submittal pursuant to paragraph (e)(1) shall be assessed applicable filing and evaluation fees pursuant to Rule 306.

(2) The submittal of an annual statement of no-change, pursuant to paragraph (f)(5), shall not be considered as an annual review, and therefore shall not be subject to annual review fees, pursuant to Rule 306.

COACHELLA VALLEY
WIND MONITORING

Summary of Rule 403.1 Requirements

District Wind Forecasts

On-Site Wind Monitoring Equipment

Notification Procedures

COACHELLA VALLEY WIND MONITORING

Summary of Rule 403.1 Requirements

Site specific wind monitoring is encouraged due to improved accuracy when compared to regional wind monitors. Additionally, site-specific wind monitoring may document high winds that are not captured by regional wind monitors.

The following guidance has been prepared to assist activities that conduct wind monitoring. As indicated in the guidance, activities should develop a draft site-specific wind monitoring program and forward this information to AQMD for review. The wind monitoring guidance, based on an AQMD-issued Order for Abatement, is also summarized in Attachment A to this Chapter.

Draft wind speed monitoring programs can be directed to:

Kevin Durkee
Meteorology Section
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA 91765
(909) 396-3252 (Facsimile)
kdurkee@aqmd.gov (e-mail)

Questions on submittal of a draft wind monitoring program can be directed to Kevin Durkee at (909) 396-3168.

COACHELLA VALLEY WIND MONITORING

District Wind Forecasts

Persons conducting agricultural tilling operations in the Coachella Valley and those activities which seek an exemption to Rule 403 under paragraph (i)(3) need to be aware when wind speeds exceed 25 miles per hour (mph). The wind speed determination can be either through District wind forecasts or through on-site wind monitoring equipment (anemometers). Persons that rely on District forecasts can call 1.800.CUT.SMOG, press one for air quality information, and then press five for Coachella Valley wind forecasts to receive a forecast for the following day. When there is a high wind event forecast for the Coachella Valley, the forecast is applicable for the full calendar day. Paragraphs (g)(2) and (h)(2) of Rule 403.1 describes the Rule requirements for those activities that elect to install anemometers.

COACHELLA VALLEY WIND MONITORING

On-Site Wind Monitoring Equipment Notification Procedures

Under Rule 403.1, anemometers may be installed to document on-site wind conditions. Paragraph (g)(2) specifies that the District be notified of anemometer installation and that such notification be *received* within 10 days of installing such equipment. The notification must include the following: person's name, address, telephone number, a brief description of the operation and the first date of operation. For convenience, a sample notification form is included here. All notices must be addressed as follows.

Patrick Hotra
Engineering and Compliance
Attention: Rule 403.1 Monitoring
South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, CA 91765

Date: _____

NOTICE TO INSTALL WIND MONITORING EQUIPMENT

Company Name:

Contact Person:

Phone Number (including area code):

Location of the Site:

_____

_____

Address (if available):

_____

First Date of Operating Wind Measuring Equipment: _____

Briefly Describe the Type of Operation:

_____

_____

After completing the information above, please return this form to:

Engineering and Compliance
Attention: Patrick Hotra
South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, CA 91765-4182

ON-SITE WIND MONITORING EQUIPMENT

Guidance for Conducting Wind Measurements
Attachment A – Wind Monitoring Specifications

ON-SITE WIND MONITORING EQUIPMENT

Guidance for Conducting Wind Measurements

The following are AQMD requirements and recommendations for wind measurements used for data reporting or analysis. The meteorological data submitted to AQMD must be accurate and representative. To insure that the meteorological data is acceptable, facilities that wish to deviate from these recommendations must consult with AQMD staff prior to collecting data. In some cases, less stringent procedures may suffice. For example, a lower sensor height may be acceptable for windblown dust analysis from smaller construction sources. It is recommended that all facilities request that AQMD staff review and approve their monitoring plans and sensor specifications prior to the purchase and installation of equipment.

Aspects of a successful monitoring program include the selection of proper equipment, instrument siting, instrument and site maintenance, periodic audits and frequent data review. The instruments should be sited so as to characterize air flow between the source and receptor areas. In flat terrain, or where receptors are close to the source, one meteorological site may be adequate. Additional wind monitoring sites may be needed in complex terrain.

Wind Sensor Siting

The standard sensor height for measuring surface winds is 10 meters (33 feet) above ground level (AGL) over open, level terrain. This usually requires the installation of a tower or mast. For the instrument to be sited over open terrain, there shall be minimal obstructions to the wind flow, such as from buildings, hills or trees. In general, wind sensors should be located where the distance from the sensors to any obstruction is at least 10 times the height of that obstruction. When mounted on a building, wind sensors should be mounted at least 1.5 times the height of the building above the rooftop. Since these siting guidelines are sometimes not possible, especially in urban areas, it is

recommended that siting that deviates from these guidelines be reviewed by AQMD staff or an experienced consultant prior installation.

Data Recording Devices

Data loggers are the preferred method of recording and archiving the data. They are more precise and require less maintenance than strip chart recorders. Data loggers also allow data to be transmitted by telephone or radio to a central computer. All data records must be kept for a period of at least three years after the need for data collection has ended. Data recovery from a well-maintained meteorological system should be at least 90% complete on an annual basis, with no large data gaps (i.e., gaps greater than two weeks).

The U.S. Environmental Protection Agency (EPA) recommends a sampling frequency of once per second (EPA, 2000), which is typical for quality data loggers. Wind averaging periods may depend on the purpose of the data collected and the need to meet specific regulatory requirements. Either 1-hour or 15-minute averaging periods are common.

For each averaging time, wind speed and direction are usually scalar-averaged. Wind direction is defined as the direction from which the wind is blowing, measured in degrees from true north. Since wind direction has a numerical discontinuity between 360 and 001 degrees, scalar averaging of the wind direction is usually calculated using the unit vector method (EPA 2000). Resultant or vector averages are also often calculated, where the 1-second wind speeds and directions are added vectorially by breaking them into their horizontal components, adding the vector components, then recalculating a magnitude (speed) and direction. Both types of horizontal wind averaging, as well as the collection of peak instantaneous wind gusts during the averaging period and sigma theta, the standard deviation of the wind direction, are typical calculations for meteorological data loggers.

Time for the data recording system must be within five minutes of the correct local time, with data archived in Pacific Standard Time (PST) on a 24-hour clock. Thus there should be no change to Daylight Savings Time. It must also be noted whether the time stamp is at the start or the end of the averaging period. When reporting data, the convention is that time-ending data shall range from 0100 to 2400 PST for hourly averages and 0015 to 2400 PST for 15-minute averages. Time-beginning averages are reported with clock times starting at 0000 PST and ending with 2300 PST for hourly averages or 2345 PST for 15-minute averages. Reported data should have the site identification, year, day and time included at the beginning of the record.

Wind Sensor Accuracy

For wind sensors, the starting threshold must be rated as no higher than 0.5 meters per second. If there is some suspicion that the site would have a significant number of hours of wind speeds under 0.5 m/s, sensors with a lower threshold, such as 0.22 m/s, should be used. Wind speed systems shall be accurate to within 0.2 m/s ± 5 percent of the observed speed. Total wind direction system errors shall not exceed 5 degrees. This includes an instrument accuracy of ±3 degrees for linearity and ±2 degrees for alignment to a known direction. Table 1 summarizes these accuracy guidelines.

Table 1. Summary of Performance Criteria for Wind Sensors.

Sensor Type	Sensor Height	Range	Accuracy	Resolution	Starting Threshold	Procedural References
Wind Speed (Horizontal)	10 meters*	0.5 – 50 m/s	0.2 m/s ± 5% of observed wind speed	0.1 m/s	0.5 m/s	EPA, 2000 EPA, 1995
Wind Direction (Horizontal)	10 meters*	0 – 360 degrees (or 0 - 540°)	+/- 5 degrees	1 degree	0.5 m/s	EPA, 2000 EPA, 1995

* Other sensor heights may be used when appropriate and approved by AQMD.

Maintenance

Frequent data review, preferably on a daily basis, is critical for collecting good meteorological data. In addition, visual inspections of each site should be made at least once every month. This will help to identify sensor alignment problems that may not be obvious in the data. During the inspections, it is recommended that the sensors be compared to the current conditions, possibly by using hand-held instruments such as a compass or GPS and portable anemometer.

In order to ensure that the sensors operate within the manufacturer's specifications, a calibration of the sensors should be performed once every six months by a trained technician or the sensor manufacturer. In corrosive, marine or dusty conditions, more frequent calibrations may be needed. Spare sensors are helpful to avoid data loss while sensors are brought down for calibration and repairs. A logbook of calibrations and repairs is required.

Furthermore, data that is critical for regulatory purposes should be independently audited by a qualified individual who is not affiliated with the organization that maintains and

calibrates the instrument. The audits should be on a schedule that is appropriate for the measurements. Typically, once per year is adequate if a routine maintenance and calibration schedule is kept. An audit report shall be written and problems shall be corrected as soon as possible. The audit shall compare the individual sensors to the sensor performance criteria (Table 1) and also look at the data collection system as a whole, including the data logger and siting, to ensure that the data are representative and accurate.

References

EPA, 1995: Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV, Meteorological Measurements. Document EPA/600/R-94-038d. United States Environmental Protection Agency Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, North Carolina.

EPA, 1998: Technical Assistance Document for Sampling and Analysis of Ozone Precursors. Document EPA-600/R-98-161. United States Environmental Protection Agency, Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, North Carolina.

EPA, 2000: Meteorological Monitoring Guidance for Regulatory Modeling Applications. Document EPA-454/R-99-005. United States Environmental Protection Agency, Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, North Carolina.

Attachment A

WIND MONITORING SPECIFICATIONS

The following information is designed to provide installation and operating parameters for a wind monitoring station or device. It is to be used for Orders for Abatement and is not designed to represent approved AQMD specifications for a wind monitoring instrument or station.

- This station, or device shall be capable of indicating the wind speed with an accuracy of 0.2 meters/sec. ± 5% of observed speed
- The instrument or station should be located on-site so as to accurately characterize the air flow field on this construction project.
- The starting threshold shall be rated as no higher than 0.5 meters per second. [1]
- Data will be recorded on a data logger, which has been chosen over a strip chart recorder because they are: more precise, require very little maintenance, and allow data to be transmitted by telephone or radio. [1]
- Three months worth of wind monitoring data will be available on-site in the form of hard copies, and made available at the Inspector's request.
- All records will be maintained by the operator for a period of two years and made available upon request.
- The logger time shall be within 5 minutes of the correct time [1]
- A sampling rate of once per second will be employed by the monitoring station or instrument. This sampling frequency is commonly used and recognized as an industry standard.
- The operator shall submit the specifications and operating parameters, for the wind monitoring instrument or station, to AQMD for approval as an appropriate measuring instrument.
- This instrument or station shall be calibrated and maintained in accordance with the manufacturer's specifications.
- The standard height for measuring surface winds is 10 meters above ground over level, open terrain. Open terrain is defined as being away from obstructions to flow, such s buildings, hills or trees. Generally, the wind sensors should be located where the horizontal distance between the sensors and any obstruction is at least ten times the height of that obstruction. [1]

- If wind sensors are to be mounted on a building, they should be mounted at a height at least 1.5 times the building height above the roof. It is usually not a good idea to mount wind sensors on stacks, unless the sensors can be mounted on booms at least two stack widths away from the stack, and with a wind measurement system mounted on both sides of the stack. [1]

[1] EPA, 1995: Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV, Meteorological Measurements. Document EPA/600/R-94-038d. United States Environmental Protection Agency, Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, North Carolina.

FUGITIVE DUST CONTROL PLAN GUIDANCE

- **Summary of Rule 403.1 Requirements**
- **Fugitive Dust Control Plan Application (Form 400A)**
- **Fugitive Dust Control Plan Guidance for Smaller Projects (less than 10 acres)**
- **Fugitive Dust Control Plan Guidance for Larger Projects (10 acres or greater)**
- **Statement of No-Change**

FUGITIVE DUST CONTROL PLAN GUIDANCE

Summary of Dust Control Requirements

Rule 403.1 requires submittal of a Fugitive Dust Control Plan to the AQMD prior to initiating any construction/earth-moving activities. * These requirements are only applicable to construction projects with 5,000 or more square feet of soil disturbance that are not subject to a local government dust control ordinance's fugitive dust control plan submittal requirements. *

The Fugitive Dust Control Plan submittal requirements consist of two elements:

(1) Fugitive Dust Control Plan Application (Form 400P);

and

(2) Fugitive Dust Control Plan (Form DCP or equivalent for projects with less than 10 acres of disturbed surfaces or a Site-Specific Fugitive Dust Control Plan for projects with 10 or more acres of disturbed surfaces).

Approved Fugitive Dust Control Plans are valid for one year from the date of AQMD approval. If a project will extend beyond one-year and if all sources of fugitive dust and control measures are the same as the originally approved plan, the operator can extend the applicability of the dust control plan for an additional year by submitting a Statement of No-Change (Form 403NC). A sample Form 403NC is provided later in this chapter.

The following guidance has been prepared for construction project operators that are not subject to local jurisdiction fugitive dust control plan submittal requirements to facilitate preparation of consistent fugitive dust control plans throughout the Valley.

FUGITIVE DUST CONTROL PLAN APPLICATION FORM

A Fugitive Dust Control Plan Application (Form 400P) is required for construction activities that do not submit a dust control plan to comply with a local jurisdiction dust control ordinance. Submitting a complete application is essential in expediting the process, so please read and follow the instructions carefully.

In addition to the Fugitive Dust Control Plan application (Form 400P), construction activities are required to pay the appropriate fees per AQMD Rule 306 and prepare a Fugitive Dust Control Plan. These fees are updated annually based on the consumer price index so please use the following contacts to determine the fees for your submittal.

Rule 403.1 Compliance
Attention: Patrick Hotra
South Coast Air Quality Management District
(909) 396-2995

Guidance for preparing Fugitive Dust Control Plans for smaller projects (less than 10 acres of disturbed surfaces) and larger projects (10 acres or more of disturbed surfaces) is also included in this Chapter.

APPLICATION FOR PLANS (Form 400-P)

Section I - Company Information

LEGAL NAME OF APPLICANT ☐ IRS OR ☐ S.S.NUMBER

PERMIT TO BE ISSUED TO (SEE INSTRUCTIONS)

BUSINESS MAILING ADDRESS

Section II - Facility Information

EQUIPMENT ADDRESS/LOCATION

NUMBER/STREET

CITY OR COMMUNITY CA ZIP CODE

FACILITY NAME

FACILITY ID NUMBER

NAME OF CONTACT PERSON | TITLE | CONTACT TELEPHONE NUMBER ( ) -

TYPE OF BUSINESS AT THIS FACILITY | AQMD Coachella Valley Dust Control Certificate #

Section III - Equipment Information

APPLICATION HEREBY SUBMITTED FOR:

RULE NUMBER WHICH THIS APPLICATION APPLIES TO:

TYPE OF PLAN APPLICATION: ☐ Compliance Plan ☐ Excavation Plan ☐ Other ☐ Alternative Emission Control Plan (AECP) ☐ Extreme Performance Coating Classification

IF THIS APPLICATION IS ASSOCIATED WITH CERTAIN DISTRICT APPLICATIONS(S)/PERMIT(S), ENTER APPLICATION/PERMIT NUMBER(S):

FOR THIS PROJECT HAS A CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) DOCUMENT BEEN REQUIRED BY ANOTHER GOVERNMENTAL AGENCY?
☐ No ☐ Yes, IF YES, ENTER NAME OF AGENCY AND SUBMIT A COPY IF APPROVED.

DO YOU CLAIM CONFIDENTIALITY OF DATA? (SEE INSTRUCTIONS) ☐ Yes ☐ No

OPERATING SCHEDULE

	HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
MAXIMUM			
AVERAGE			

FOR AECP PLEASE FILL IN THE TABLE BELOW:

	LBS/YEAR	DAYS/YEAR
ACTUAL USAGE TWO YEARS AGO		
ACTUAL USAGE LAST YEAR		

Section IV – Signature

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.
SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM: **TITLE OF RESPONSIBLE OFFICIAL OF FIRM:**

TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM: | RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER ( ) - | DATE SIGNED: / /

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.
SIGNATURE OF PREPARER: **TITLE OF PREPARER:**

TYPE OR PRINT NAME OF PREPARER: | PREPARER'S TELEPHONE NUMBER ( ) - | DATE SIGNED: / /

AQMD USE ONLY	APPLICATION/TRACKING #	PROJECT #	TYPE B C D	EQUIPMENT CATEGORY CODE: /	FEE SCHEDULE: $	VALIDATION

ENG. A R DATE	ENG. A R DATE	CLASS I III IV	ASSIGNMENT UNIT ENGINEER	ENF. SECT.	CHECK/MONEY ORDER #	AMOUNT $

1. Payment of Fugitive Dust Control Plan Review Fees

AQMD Rule 306 requires submittal of a Fugitive Dust Control Plan review fee. This fee is updated annually based on the consumer price index. You can check the current plan evaluation fee at http://www.aqmd.gov/rules/html/r306.html or you can contact the following:

Rule 403.1 Compliance
Attention: Patrick Hotra
South Coast Air Quality Management District
(909) 396-2995

2. Site Mapping

Provide a map showing the vicinity of the project clearly identifying the closest major cross streets or other landmarks and the project location. Label this map "**Vicinity Map**". Required map size is 8 ½ by 11".

Provide an 8 ½ by 11" or larger **Assessor Parcel Map** for the property(s) on which the project will be occurring. Outline or highlight the affected parcels. Identify location of site entrances, internal unpaved haul routes, wind fencing, areas to be chemically stabilized and other proposed and required dust control mitigations. Projects that are only installing or constructing linear features such as roads, pipelines or other utilities that boarder or cross more than one Assessor's parcel do not require Assessor's Parcel Maps, but must provide a detailed vicinity map adequately depicting the entire project area. If the project is divided into construction phases (separate physical project areas), provide a map clearly identifying the phases.

3. Attach a Fugitive Dust Control Plan

Projects with less than 10 acres of disturbed surfaces must complete and attach a Fugitive Dust Control Plan (Form DCP) or equivalent.

Projects with 10 acres or more of disturbed surfaces must complete and attach a Site-Specific Fugitive Dust Control Plan. Guidance for preparation of a Site-Specific Fugitive Dust Control Plan is included later in this Chapter.

4. Project Signage

Construction signage must be installed on-site prior to construction. Guidelines for construction signage are found in Chapter 5 of this Handbook.

Ownership Designee Form
(Form OD)

An owner's designee form is required if a Fugitive Dust Control Plan is not prepared/implemented by the property owner, developer or prime contractor.

PROJECT INFORMATION	PLEASE ENTER INFORMATION BELOW
DESIGNEE'S NAME	
COMPANY NAME	
ADDRESS/LOCATION	
PHONE NUMBER	
AFTER-HOURS PHONE NUMBER	
AQMD DUST CLASS CERTIFICATE #	
PROPERTY OWNER INFORMATION	**PLEASE ENTER INFORMATION BELOW**
PROPERTY OWNER'S NAME	
ADDRESS/LOCATION	
PHONE NUMBER	
24-HOUR, MANNED AFTER-HOURS PHONE NUMBER	

OWNER STATEMENT

I hereby authorize the person listed as my designee to act on my behalf in all matters regarding the issuance and requirements of the Fugitive Dust Control Plan for construction activities. The designee is responsible for project duration. The designee has successfully completed the AQMD Coachella Valley Fugitive Dust Control Class. Furthermore, the designee is responsible for ensuring the contractor(s), subcontractor(s), and all other persons associated with the project are in compliance with the approved Fugitive Dust Control Plan, dust control ordinance requirements, and AQMD regulations.

Owner's Signature _____ Date _____

Printed Name _____

FUGITIVE DUST CONTROL PLAN PREPARATION GUIDANCE FOR SMALLER CONSTRUCTION PROJECTS (LESS THAN 10 ACRES)

The following instructions have been prepared to assist project operators in preparing a Fugitive Dust Control Plan for construction activities with less than 10 acres of disturbed surfaces. Submitting a complete Fugitive Dust Control Plan is essential in expediting the process, so please read and follow the instructions carefully.

Fugitive Dust Control Plan Guidance

Use the attached pages (Form DCP) to describe the dust control actions to be implemented on-site. Separate the actions to be implemented during the various project phases (e.g., clearing/grubbing and mass grading, finish grading, and site construction, etc.). If applicable, describe the additional control actions to be implemented on-site.

Please remember the following when preparing a Fugitive Dust Control Plan:

A complete copy of the Fugitive Dust Control Plan and all maps must be on-site prior to beginning construction activity and must be retained on-site at all times during project construction.

Construction signage must be installed on-site prior to construction. Guidelines for construction signage are found in Chapter 5 of this Handbook.

Dust control is required 24 hours a day, 7 days a week for the duration of the project regardless of wind conditions or construction project status.

Daily recordkeeping of dust control actions is required to be compiled and retained during project duration and for three years after project completion.

Grading plans must include a statement that incorporates the approved Fugitive Dust Control Plan into the approved grading plan.

Fugitive Dust Control Plan
For Projects < 10 Acres
(Form DCP, Page 1 of 5)

Project Name: _____

Permit Number (if applicable): _____

Owner Name: _____

Anticipated Start Date: _____ **Anticipated Completion Date:** _____

Total Earth-Movement (Cubic Yards): _____

Note: Fill out completely and describe Control Actions (e.g., # of watering trucks during phases, available water GPM. etc.). Indicate N/A if not applicable

Project Phases

Source Category	Clearing, Grubbing, and Mass Grading *(Describe Control Actions)*	Finish Grading *(Describe Control Actions)*	Site Construction *(Describe Control Actions)*
Backfilling			
Clearing and Grubbing			
Clearing Forms			
Crushing			

Fugitive Dust Control Plan
For Projects < 10 Acres
(Form CP, Page 2 of 5)

Project Phases

Source Category	Clearing, Grubbing, and Mass Grading *(Describe Control Actions)*	Finish Grading *(Describe Control Actions)*	Site Construction *(Describe Control Actions)*
Cut and Fill:			
Demolition – mechanical/manual			
Disturbed soil			
Earth-moving activities			
Importing/exporting of bulk materials			

Fugitive Dust Control Plan
For Projects < 10 Acres
(Form CP, Page 3 of 5)

Project Phases

Source Category	Clearing, Grubbing, and Mass Grading *(Describe Control Actions)*	Finish Grading *(Describe Control Actions)*	Site Construction *(Describe Control Actions)*
Landscaping			
Road shoulder maintenance			
Screening			
Staging Areas			
Stockpiles/bulk material handling			

Fugitive Dust Control Plan
For Projects < 10 Acres
(Form CP, Page 4 of 5)

Project Phases

Source Category	Clearing, Grubbing, and Mass Grading *(Describe Control Actions)*	Finish Grading *(Describe Control Actions)*	Site Construction *(Describe Control Actions)*
Traffic areas for construction activities			
Trenching			
Truck unloading			
Turf overseeding			
Unpaved roads/parking lots			

Fugitive Dust Control Plan
For Projects < 10 Acres
(Form CP, Page 5 of 5)

Project Phases

Source Category	Clearing, Grubbing, and Mass Grading *(Describe Control Actions)*	Finish Grading *(Describe Control Actions)*	Site Construction *(Describe Control Actions)*
Vehicular track-out, handling, clean-up			
Weather monitoring/work practices			
Other (describe)			

FUGITIVE DUST CONTROL PLAN PREPARATION GUIDANCE FOR LARGER CONSTRUCTION PROJECTS (10 ACRES OR LARGER)

In addition to the Fugitive Dust Control Plan application (Form 400P), Rule 403.1 requires an AQMD-approved Site-Specific Fugitive Dust Control Plan for projects with 10 acres or more of disturbed surfaces. The following guidance has been prepared to describe the required elements of a Site-Specific Fugitive Dust Control Plan. A Fugitive Dust Control Plan template is provided following this initial guidance. Please submit the Site-Specific Fugitive Dust Control Plans with the applicable filing fees for approval to:

Patrick Hotra
Senior Staff Specialist
South Coast AQMD
21865 East Copley Drive
Diamond Bar, CA 91765
(909) 396-2995
(909) 396-2608 [Facsimile]
photra@aqmd.gov

Required Elements of Site-Specific Fugitive Dust Control Plan

Project Description

This section of the Fugitive Dust Control Plan must provide a complete description of the project, a development plan, a schedule of activities, and a time frame for project completion. Additionally, this section must contain a description of soil types on site and an estimated proposed expenditure for the total project dust control budget.

Water Source Identification

This section must contain a description and location of the water supply that is dedicated to dust control. Also, identify sources of a back-up water supply if proposed in conjunction with a contingency measure. This section covers earth-moving activities for the life of the project.

Coachella Valley Best Available Control Measures:

This section must include a description of the primary dust control measures selected for each source at the project site (e.g., No. 1 - Earth-Movement, No. 2 – Unpaved Roads, etc.) based on the list of CV BACM included in this Handbook. This section must also have a description of the fugitive dust control measures to be implemented during non-working hours.

Control Measures Guidance:

Suggested minimum standards for a Site-Specific Fugitive Dust Control Plan are presented below. As a reminder, specific applicable dust control ordinance requirements are provided in italics. Additionally, grading plans must include a statement that incorporates the Site-Specific Fugitive Dust Control Plan into the approved grading plan.

No. 1 EARTH-MOVEMENT

Project Phasing

If feasible, use grading permit conditions to **break the project into phases** so that only a portion of the site is disturbed at any given time to ensure control of fugitive dust. This technique is critical for project sites with greater than 100 acres.

Pre-Watering

Prior to initiating activity, **pre-water site** through use of portable irrigation lines. At least 72 hours of pre-watering is recommended for each area prior to initiating earth-movement. The operator must specify water source and available flow rate (g/m).

Watering During Earth-Movement Activities

Water applied continuously to all disturbed portions of the site by means of water truck/water pull as necessary to maintain sufficient visible moisture on the soil surface. For reference, one 2,000 gallon water truck can treat approximately 4 acres of active construction per hour during non high-wind conditions. Also, for cut and fill activities, one 10,000 gallon water pull is estimated to be necessary for each 7,000 cubic yards of daily earth-movement. Multiple 4,000 gallon water trucks may be used in place of one 10,000 gallon water pull. Touch and visual contrast are reasonably good indicators of soil moisture. Surface areas that are dry to the touch and appear lighter-colored require the application of additional water to prevent fugitive dust. The operator must specify the number and type of watering vehicles available for dust control during each project phase as well as during off-hours and the availability of back-up water trucks if the site experiences dust control problems (see also contingency measure requirements below).

Water towers are necessary for projects with more than 10 acres of active construction. Without a water tower, it can take up to 30 minutes to fill a 2,000 gallon water truck. Also, multiple water towers are necessary for projects that use water pulls as filling one 10,000 gallon water pull can drain a water tower that can take up to 40 minutes to refill.

Perimeter Controls

Wind fencing is necessary between the site and nearby residences or businesses. Off-site upwind fencing and on-site wind fencing for larger projects can also keep blowsand from being deposited onto the site or traveling through the site. Block walls, if part of the final project, can replace wind fencing during the site construction phase.

A perimeter **watering system** or fence line misting system consisting of portable irrigation equipment may be an effective fugitive dust mitigation system to protect surrounding residences and businesses. The local jurisdiction may also be provided access to this equipment.

Site Stabilization

Chemical dust suppressants are to be applied in accordance with the manufacturer's specifications and in sufficient concentrations and frequency to ensure compliance with the applicable test methods. Recordkeeping is necessary to demonstrate compliance. Wind fencing or other obstructions can keep areas previously treated with dust control suppressants free from future disturbances.

Vegetation can be a cost-effective alternative to chemical stabilization for areas that will remain inactive for long periods. Wind fencing or other obstructions can keep the vegetated area free from future disturbances.

Contingency Measures

This section must describe the contingency measures to be implemented if a primary control measure fails to adequately control dust emissions according to the applicable performance standards (e.g., plume length of greater than 100 feet, or crossing any property line, or 20 percent opacity). Also, describe the steps that will be taken to initiate a contingency measure.

No. 2 – UNPAVED ROAD TRAVEL

Surface Improvements

Paving of the internal roadway network early in a project's development phase can reduce chemical dust suppressant reapplication costs. Periodic **street cleaning** throughout project construction will likely be required to ensure compliance with the dust control ordinance track-out requirements and to reduce entrained road dust.

Application of **gravel** or other material with a lower silt content than the underlying soils can be an effective surface improvement for dust control. For reference, the specific requirements for a gravel pad to prevent track-out are minimum one inch or larger washed gravel maintained to a depth of six inches. Periodic maintenance (grading and spot reapplication) may be required.

Surface Treatments

Chemical dust suppressants designed by the manufacturer for traffic areas, and applied in accordance with manufacturer's specifications and in sufficient concentrations and frequency to ensure compliance with the applicable test methods once final roadway elevations have been reached. Limiting/restricting access to non-road areas can also reduce the need to retreat areas previously stabilized.

Constant watering of unpaved roads, haul routes, and equipment paths represents a short-term, cost-effective dust control action. High evaporation rate may justify use of chemical dust suppressants for a longer-term control. For reference, U.S. EPA studies have documented a 50 percent reduction in PM10 emissions under a water application rate of 0.2 gallons per square yard per hour.

Source Extent Reduction

Unpaved road emissions are a function of the number of vehicles traversing the area and the vehicle speeds. Accordingly, programs to **reduce vehicular trips or vehicle speeds** can reduce fugitive dust emissions. Frequent watering or application of chemical stabilizers would likely be required in addition to the source extent measures to ensure that the applicable performance standards are met.

Contingency Measures

Contingency measures must be identified for each unpaved haul road/internal access route. This section must describe the contingency measures to be implemented if a primary control measure fails to adequately control dust emissions according to the applicable performance standards (e.g., plume length of greater than 100 feet, or crossing any property line, or 20 percent opacity). Also, describe the steps that will be taken to initiate a contingency measure.

No. 3 – STORAGE PILES/BULK MATERIAL HANDLING

Wind Sheltering

Install and maintain **wind barriers** with no less than 50 percent porosity on three sides of the pile, such that the barrier is equal to or greater than the pile height.

Coverings can be used on smaller storage piles to prevent windblown dust. Any covering must be secured to ensure that it remains in place and effective.

Storage Pile Stabilization

Water applied continuously to all disturbed portions of the storage piles by means of water truck or sprinkler system as necessary to maintain sufficient visible moisture on the pile surface.

Chemical dust suppressants can be an effective control measure for storage piles with infrequent disturbances. Any product used must be applied in accordance with the manufacturer's specifications and in sufficient concentrations and frequency to ensure compliance with the applicable test methods. Recordkeeping is necessary to demonstrate compliance.

Vegetation can be a cost-effective alternative to chemical stabilization for storage piles that will remain inactive for long periods. Wind fencing or other obstructions can keep the vegetated area free from future disturbances.

Material Handling

Confining **load-in/load-out** of material to the leeward (downwind) side of the pile can reduce wind erosion of storage piles. This control measure would likely need to be implemented in conjunction with other control measures to achieve the applicable performance standards.

Stockpiles within 100 yards of occupied buildings must not be greater than eight feet in height.

Stockpiles greater than eight feet in height and not covered must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.

Contingency Measures

Contingency measures must be identified for each storage pile/material handling source. This section must describe the contingency measures to be implemented if a primary control measure fails to adequately control dust emissions according to the applicable performance standards (e.g., plume length of greater than 100 feet, or crossing any property line, or 20 percent opacity). Also, describe the steps that will be taken to initiate a contingency measure.

NO. 4 – VEHICULAR TRACK-OUT, HAULING, CLEANUP

Track-Out Prevention

Construction site accesses are to be improved with paving or gravel. If the project site is not balanced (e.g., off-site material transport), a wheel washing system and/or ribbed steel plates must be placed in the roadway before the vehicle enters the paved/graveled area to clean the tires and prevent track-out.

Covering haul vehicles or utilizing **bedliners** can prevent material from being lofted out of the vehicle or from falling out of the bottom of the vehicle.

Track-Out Mitigation

Street sweeping can be an effective mitigation measure if material is tracked out on to paved roads surrounding the site. Efforts to prevent material track-out will reduce sweeping costs.

Contingency Measures

Contingency measures must be identified for each track-out source. This section must describe the contingency measures to be implemented if a primary control measure fails to adequately control dust emissions according to the applicable performance standards (e.g., track-out extending more than 25 feet from any site access point). Also, describe the steps that will be taken to initiate a contingency measure.

NO. 5 - DISTURBED SURFACES/INACTIVE SITES

During Dust Generating Activities

Water applied continuously to all disturbed portions of the site by means of water truck/water pull as necessary to maintain sufficient visible moisture on the soil surface. For reference, one 2,000 gallon water truck can treat approximately 4 acres of active construction per hour during non high-wind conditions. Also, for cut and fill activities, one 10,000 gallon water pull is estimated to be necessary for each 7,000 cubic yards of daily earth-movement. Multiple 4,000 gallon water trucks may be used in place of one 10,000 gallon water pull. Touch and visual contrast are reasonably good indicators of soil moisture. Surface areas that are dry to the touch and appear lighter-colored require the application of additional water to prevent fugitive dust. The operator must specify the number and type of watering vehicles available for dust control during each project phase as well as during off-hours and the availability of back-up water trucks if the site experiences dust control problems (see also contingency measure requirements below).

Water towers are necessary for projects with more than 10 acres of active construction. Without a water tower, it can take up to 30 minutes to fill a 2,000 gallon water truck. Also, multiple water towers are necessary for projects that use water pulls as filling one 10,000 gallon water pull can drain a water tower that can take up to 40 minutes to refill.

Perimeter Controls

Wind fencing is necessary between the site and nearby residences or businesses. Off-site upwind fencing and on-site wind fencing for larger projects can also keep blowsand from being deposited onto the site or traveling through the site. Block walls, if part of the final project, can replace wind fencing during the site construction phase.

A perimeter **watering system** or fence line misting system consisting of portable irrigation equipment may be an effective fugitive dust mitigation system to protect surrounding residences and businesses. The local jurisdiction may also be provided access to this equipment.

Temporary Stabilization During Weekends, After Work Hours, Holidays

Depending on site soil types, **water** can be used to either maintain soils in a damp condition or to develop a surface crust.

Chemical dust suppressants, diluted in accordance with the manufacturer's specifications for short-term stabilization can be an effective technique for areas that will be subject to future disturbances.

Access Restriction

Fencing or other obstructions can keep the stabilized area free from future disturbances and thereby reduce the potential for windblown dust.

Long Term Stabilization

Chemical dust suppressants, applied in accordance with the manufacturer's specifications and in sufficient concentrations and frequency to ensure compliance with the applicable test methods can be an effective long-term stabilization technique. Recordkeeping is necessary to demonstrate compliance. Portable irrigation is necessary to ensure adequate site coverage. Wind fencing or other obstructions can keep areas previously treated with dust control suppressants free from future disturbances.

Vegetation can be a cost-effective alternative to chemical stabilization for areas that will remain inactive for long periods. Wind fencing or other obstructions can keep the vegetated area free from future disturbances.

Perimeter Controls

Wind fencing is necessary between the site and nearby residences or businesses. Off-site upwind fencing and on-site wind fencing for larger projects can also keep blowsand from being deposited onto the site or traveling through the site. Block walls, if part of the final project, can replace wind fencing during the site construction phase.

A perimeter **watering system** or fence line misting system consisting of portable irrigation equipment may be an effective fugitive dust mitigation system to protect surrounding residences and businesses. The portable watering system may be used in place of or in conjunction with watering trucks. The local jurisdiction may also be provided access to this equipment.

Contingency Measures

Contingency measures must be identified for disturbed surface areas or inactive portions of a construction site. This section must describe the contingency measures

to be implemented if a primary control measure fails to adequately control dust emissions according to the applicable performance standards (e.g., plume length of greater than 100 feet, or crossing any property line, or 20 percent opacity). Also, describe the steps that will be taken to initiate a contingency measure.

NO. 6 – UNPAVED PARKING LOTS

Areas Subject to Frequent Disturbances

Equipment staging areas are to be treated with at least one inch washed gravel maintained to a depth of four inches or treated with chemical dust suppressants designed by the manufacturer for traffic areas, and applied in accordance with the manufacturer's specifications and in sufficient concentrations and frequency to ensure compliance with the applicable test methods.

Employee parking areas are to be covered with at least one inch washed gravel maintained to a depth of four inches or treated with chemical dust suppressants designed by the manufacturer for traffic areas, and applied in accordance with the manufacturer's specifications and in sufficient concentrations and frequency to ensure compliance with the applicable test methods. If an internal roadway network is paved, employees are to be instructed to park only on paved areas.

Contingency Measures

Contingency measures must be identified for each unpaved parking lot. This section must describe the contingency measures to be implemented if a primary control measure fails to adequately control dust emissions according to the applicable performance standards (e.g., plume length of greater than 100 feet, or crossing any property line, or 20 percent opacity). Also, describe the steps that will be taken to initiate a contingency measure.

NO. 7 – EMPLOYEE TRAINING

Employee Dust Control Training and Compliance:

This section must describe how on-site personnel will ensure that the project remains in compliance with the Site-Specific Fugitive Dust Control Plan. This section must include a statement of the authority and training of personnel that will allow the attainment of this goal.

Dust Control Supervisor

Rule 403.1 paragraph (e)(4) requires a dust control supervisor for projects with greater than or equal to 50 acres of disturbed surfaces. The dust control supervisor must have completed the AQMD Coachella Valley Fugitive Dust Control Class, have a valid certificate of attendance, and have dust control as a primary responsibility with the authority to immediately employ additional dust control efforts.

DUST CONTROL PLAN TEMPLATE

A template to assist in the preparation of a Site-Specific Fugitive Dust Control Plan is provided in the following pages. Operators may use this template as a guide, however, all the elements listed in the preceding pages must be included in the Site-Specific Fugitive Dust Control Plan. Additionally use of an 8 ½ by 11 inch, stand alone Site-Specific Fugitive Dust Control Plan is required regardless if the information is included on an approved grading plan.

SITE-SPECIFIC FUGITIVE DUST CONTROL PLAN*
(SITES 10 ACRES OR GREATER)

Site Description

Please ensure that Fugitive Dust Control Plan Application (Form 400P) is completed and attached to the Site-Specific Fugitive Dust Control Plan.

Project Description

Please provide the following information as completely as possible.

No. **Description of Source(s)** [*Please provide best estimates*]

1 Earth-moving (If not applicable, check here ____)

Maximum cubic yards of earth-movement: _____/month or _____/year

Anticipated start date: _____ End date _____; or Ongoing _____ (Check)

Amount of export: _____ (Disposal site) _____

2 Unpaved roads (If not applicable, check here ____)

Mileage: _____ Estimate of average daily traffic levels: _____

Type of motor vehicles using roads: _____

3 Storage piles/Bulk Material handling (If not applicable, check here ____)

Maximum number of piles: _____

Average height: _____, length/width: _____

Configuration: ____ cone, ____ windrow, ____ other (specify) _____

4 Vehicular track-out/Cleanup (If not applicable, check here ____)

Number of access points which connect to public roads: _____

Estimate of the maximum number of vehicles that will exit the site: _____/ day

5 Disturbed surface areas (If not applicable, check here ____)

Maximum acreage: _____

Will any disturbed surface areas remain inactive for at least 10 days? Yes __ No __

6. Unpaved Parking Lots (If not applicable, check here _____)

Number of unpaved lots at this site: _____

Size of each lot: _____

Soil Types

Primary soil type on site: _____

Dust Control Budget

Estimate of project dust control budget: _____

Water Source Identification

Water source (g/m): _____

Back-up water source: _____

* Use of an 8 ½ by 11 inch, stand alone site-specific fugitive dust control plan is required regardless if the information is included on an approved grading plan.

No. 1 - EARTH-MOVEMENT

Coachella Valley Best Available Control Measures:

In the space provided below, please check and describe your dust control measures.

Control Measure	Control Action
Pre-grading Planning	Number of acres to be graded at one time: _____ Number of parcels to be phase-graded: _____
Watering (pre-grading)	Number of water trucks: _____ Frequency of application: _____ Sprinkler/hose system: _____ Describe: _____
Watering (during grading)	Number of water trucks: _____ Frequency of application: _____ Sprinkler/hose system: _____ Describe: _____
Watering (post grading)	Number of water trucks: _____ Frequency of application: _____ Sprinkler/hose system: _____ Describe: _____
Wind fencing	Maximum height: _____ Location: _____ Describe: _____ _____
Chemical stabilization	Type of product: _____ Frequency of application: _____ Concentration: _____ Describe: _____ _____
Cover haul vehicles/Bedliners in haul vehicles	Operator of haul vehicles, if other than site owner: _____ _____ _____
Other (specify)	_____
Contingency Measure(s)	_____ _____

If necessary, attach additional information.

No. 2 - UNPAVED ROAD TRAVEL*

Coachella Valley Best Available Control Measures:

In the space provided below, please check and describe your dust control measures

Control Measure	Control Action
Paving	Frequency of street sweeping: _____ Describe: _____
Gravel	Depth of gravel: _____ Describe: _____
Chemical stabilization	Type of product: _____ Frequency of application: _____ Concentration: _____ Describe: _____
Watering	Frequency of application: _____ Describe: _____
Reduce speed	Maximum speed limit: _____ miles per hour How are speeds controlled: Post signs _____; Briefings to workers _____
Trip reduction	Describe how achieved: _____
Other (specify)	_____
Contingency Measure(s)	_____

If necessary, attach additional information.

* All unpaved haul roads and parking areas must be identified on the Dust Control Plan site map and all vehicles shall only use established haul routes and parking areas.

No. 3 - STORAGE PILES/BULK MATERIAL HANDLING

Coachella Valley Best Available Control Measures:

In the space provided below, please check and describe your dust control measures

Control Measure	Control Action
Wind sheltering	Type of barriers: _____ Average height of barriers: _____ Describe: _____ _____ _____
Coverings	Types of coverings: _____ Describe: _____ _____ _____
Watering	Method of application: _____ Frequency of application: _____ Describe: _____ _____ _____
Chemical stabilization	Type of product: _____ Frequency of application: _____ Concentration: _____ Describe: _____ _____ _____
Vegetation	_____ _____
Loadin/loadout	Orientation of loadin/loadout procedures: N S E W Describe: _____ _____ _____
Contingency Measure(s)	_____ _____ _____ _____

If necessary, attach additional information.

No. 4 - VEHICULAR TRACK-OUT, HAULING, CLEANUP

Note: If trackout, spillage, or carry-out extend more than 25 feet along a paved public roadway, finalize clean-up activities within one hour. Also remove any track-out, spillage or carry-out at the conclusion of the workday.

Coachella Valley Best Available Control Measures:

In the space provided below, please check and describe your dust control measures

Control Measure	Control Action
Gravel pads	Location: _____ Size: _____
Paving	Location: _____
Track-out device	Locations: _____
Type of device	Describe: _____
Wheel washers	Location: _____ Describe: _____ _____ _____
Cover haul vehicles/ Bedliners in haul vehicles	Operator of haul vehicles, if other than site operator: _____ _____ _____ _____
Sweep/clean roadways	Frequency: _____ Type of equipment: _____ Describe: _____ _____ _____
Other (specify)	_____ _____ _____ _____
Contingency Measure(s)	_____ _____ _____ _____ _____

If necessary, attach additional information.

No. 5 - DISTURBED SURFACES/INACTIVE SITES

Coachella Valley Best Available Control Measures:

In the space provided below, please check and describe your dust control measures

Control Measure **Control Action**

During Dust Generating Activities

Watering
Method of application: _____
Frequency: _____
Describe: _____
_____

Wind fencing
Location: _____
Height: _____
Describe: _____
_____

Site access
Method of vehicle restriction: _____
_____

Chemical stabilization
Type of product: _____
Frequency of application: _____
Concentration: _____
Describe: _____
_____
_____

Vegetation
Location: _____
Plant type: _____
Describe: _____
_____

Temporary Stabilization During Weekends, After Work Hours, and on Holidays

Watering
Method of application: _____
Frequency: _____
Describe: _____
_____

Chemical stabilization
Type of product: _____
Frequency of application: _____
Concentration: _____

Site access
Method of vehicle restriction: _____

No. 5 - DISTURBED SURFACES/INACTIVE SITES (Continued)

Coachella Valley Best Available Control Measures:

In the space provided below, please check and describe your dust control measures

Long-Term Stabilization

Control Measure	Control Action
Chemical stabilization	Type of product: _____ Frequency of application: _____ Concentration: _____
Vegetation	Location: _____ Plant type: _____
Wind fencing	Location: _____ Height: _____ Describe: _____ _____
Other (specify)	_____ _____ _____
Contingency Measure(s)	_____ _____ _____ _____

If necessary, attach additional information.

NO. 6 – UNPAVED PARKING LOTS

Coachella Valley Best Available Control Measures:

In the space provided below, please check and describe your dust control measures

Control Measures	Control Action
Gravel	Location: _____
Chemical	Type of product: _____
stabilization	Frequency of application: _____
	Concentration: _____
Pave	Material to be used as dust suppressant: _____
Other (specify)	_____
	_____
	_____
Contingency	_____
Measure(s)	_____
	_____
	_____

If necessary, attach additional information.

NO. 7 – EMPLOYEE EDUCATION

Employee Dust Control Training and Compliance:

This section must provide a summary of the method by which on-site personnel will ensure that the project remains in compliance with the requirements contained in the Site-Specific Fugitive Dust Control Plan. This section must include a statement of the authority and training of personnel that will allow the attainment of this goal.

Describe:

Justification

If you believe that none of the control measures for a given source category are technically feasible or if they would conflict with other regulations please describe the justification in the space provided. Please be specific. If necessary, attach additional information.

JURISDICTION APPROVAL

CITY (COUNTY) OF: _____

APPROVED BY: _____
Print Name Signature and Title

DATE: _____

STATEMENT OF NO CHANGE FOR PROJECTS THAT LAST MORE THAN ONE YEAR

Approved Fugitive Dust Control Plans are valid for one year from the date of AQMD approval. If a project will extend beyond one-year and if all sources of fugitive dust and control measures are the same as the originally approved plan, the operator can extend the applicability of the dust control plan for an additional year by submitting a Statement of No-Change (Form 403NC). A sample Form 403NC is provided on the following page.

FORM 403NC

STATEMENT OF NO CHANGE
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

21865 Copley Drive, Diamond Bar, CA 91765

Rule 403 requires resubmittal of Fugitive Dust Control Plans at least 60 days prior to the Plan expiration date. Submittal of form 403NC will represent resubmittal of an approved Plan if conditions will not change in the upcoming year. SCAQMD acceptance of Form 403NC will make the previously approved plan valid for one additional year from its original approval date.

Please Print or Type

Contractor/ Consultant/ Owner: (Circle one of the above)			**Phone Number**
Address:	**City:**	**State:**	**Zip:**
Project Name:			
Name of Responsible Person of Organization:			
Title:			
Dust Control Supervisor:			**Phone Number:**
Date Attended Dust Class:			**ID Number:**
Project Address: (Attach location map)	**City:**	**State:**	**Zip:**
Name of Property Owner: (If different than above)			
Anticipated Completion Date:			
Type of Activity:			
Telephone Number:			
Emergency Phone Number:			

Agreement

All conditions at the site are the same as identified in the Fugitive Dust Emissions Control Plan approved by the SCAQMD on _____. *(Please provide date)* Moreover, all control measures will be implemented at the site in the manner set forth in the previously approved Plan.

_____

Signature of Owner (Date)

_____

Signature of Operator or Contractor (Date)
(If not the same as owner)

SCAQMD Use Only

Date Received _____	Staff Initial _____

DUST CONTROL SIGNAGE GUIDELINES

- **Summary of Dust Control Ordinance Requirements**
- **Dust Control Contact Signage Guidelines**

SUMMARY OF RULE 403.1 SIGNAGE REQUIREMENTS

Rule 403.1 paragraph (e)(3) requires construction/earth-moving projects subject to AQMD-approved Fugitive Dust Control Plan requirements must install and maintain signage that identifies 24-hour manned phone numbers for dust complaints. The following guidance has been prepared to assist project operators in complying in this requirement.

CONSTRUCTION SITE SIGNAGE GUIDELINES (Minimum Requirements)

The purpose of this signage is to allow the public to contact the responsible party if visible dust emissions or track-out of material is observed from a construction site.

Projects less than two weeks in duration may request a waiver of the construction site signage requirements.

SIGN AND LETTER SIZE REQUIREMENTS			
Project size	**≤ 1 Acre**	**1.01 – 9.99 Acres**	**Over 10 Acres**
Sign size	24" H x 36"W	36" x 48"	48" x 96"
Permit # *(if applicable)*	2"	3"	4"
Developer's Name	2"	3"	4"
Project Name / Tract ####	2"	3"	4"
IF YOU SEE DUST COMING FROM	2"	3"	4"
THIS PROJECT CALL:	2"	3"	4"
Name, Phone Number XXX-XXXX	3"	4.5"	6"
If you do not receive a response, Please call	1.5"	2.25"	3"
the AQMD at 1-800-CUT-SMOG	1.5"	2.25"	3"

Notes:

Signage must be located within 50 feet of each project site entrance.

Text height shall be at a minimum as shown on right side of sign template above.

Sign background must contrast with lettering, typically black text with white background.

Sign should be 1 inch A/C laminated plywood board.

The lower edge of the sign board must be a minimum of 6 feet and a maximum of 7 feet above grade.

The telephone number listed for the developer contact must be a local or a toll-free number and manned 24-hours a day, seven days per week.

RECORDKEEPING FORMS

- **Summary of Dust Control Ordinance Requirements**
- **Sample Recordkeeping Forms for Routine Construction Activities**
- **Chemical Dust Suppressant Recordkeeping Form**

RECORDKEEPING FORMS

Summary of Dust Control Requirements

Under Rule 403.1 requirements, construction activities that are subject to AQMD-approved Fugitive Dust Control Plan submittal requirements must maintain daily self-inspection records and this information must be retained for at least three years after project completion.

Additionally, any activity that utilizes chemical dust suppressants for dust control is required to maintain records indicating type of product applied, vendor name, and the method, frequency, concentration, and quantity of application.

All recordkeeping information must be made available to the local permitting authority and the AQMD immediately upon request. A copy of the recordkeeping must also be retained on-site.

The following forms have been prepared to assist in complying with these requirements.

Daily Self-Inspection Recordkeeping Form - AM HOURS

Elements Monitored	12am	1am	2am	3am	4am	5am	6am	7am	8am	9am	10am	11am	Comments
Forecasted high winds													
Wind speed													
Wind direction													
# Water trucks operating													
# Water trucks available													
Roads moist/watered													
Unstabilized areas moist/watered													
Dry areas observed													
Irrigation working													
Water tanks filled													
Water pumps working													
Chemical stabilization used													
Track-out observed													
Blow sand observed on-site													
Blowing dust observed on-site													
Blowing dust observed off-site													
Wind/snow fencing maintained													
# Complaints received													
Corrective action taken													

N= No or none Y = Yes N/A = Not applicable Name: _____ Date: _____

Daily Self-Inspection Recordkeeping Form - PM HOURS

Elements Monitored	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm	Comments
Forecasted high winds													
Wind speed													
Wind direction													
# Water trucks operating													
# Water trucks available													
Roads moist/watered													
Unstabilized areas moist/watered													
Dry areas observed													
Irrigation working													
Water tanks filled													
Water pumps working													
Chemical stabilization used													
Track-out observed													
Blow sand observed on-site													
Blowing dust observed on-site													
Blowing dust observed off-site													
Wind/snow fencing maintained													
# Complaints received													
Corrective action taken													

N= No or none Y = Yes N/A = Not applicable Name: _____ Date: _____

171

Chemical Dust Suppressant Recordkeeping Form
(Form CDS)

Activities that utilize chemical dust suppressants must retain records indicating the type of product applied, vendor name, and the method, frequency, concentration, quantity and date of application. A copy of invoices for chemical dust suppressant products or application services is also required. These records must be retained for at least three years after project completion.

PROJECT INFORMATION	PLEASE ENTER INFORMATION BELOW
PLAN/PERMIT NUMBER *(IF APPLICABLE)*	
PROPERTY OWNER NAME/PHONE	
CONSTRUCTION PROJECT NAME	
PROJECT ADDRESS/LOCATION	
DUST SUPPRESSANT PRODUCT INFORMATION	
DATE/TIME OF APPLICATION	
NAME OF PRODUCT	
DILUTION RATE	
APPLICATION RATE	
ACREAGE/SQUARE FOOTAGE TREATED	
TRAFFIC OR NON-TRAFFIC AREA	
DUST SUPPRESSANT APPLICATOR INFORMATION	
APPLICATOR NAME	
CONTACT	
PHONE	
WARRANTEE TERMS *(IF APPLICABLE)*	

Signature of Form Preparer: _____ Date: _____

TEST METHODS

- **Opacity Test Methods**
- **Stabilized Surface**
- **Threshold Friction Velocity**
- **Silt Loading/Content**

April 2004

OPACITY TEST METHODS

Time Averaged Method:

Note: This method can only be conducted by an individual who is a California Air Resources Board (CARB) certified Visible Emission Evaluation (VEE) observer. Qualification and testing requirements for a CARB-certified VEE observer can be obtained from the AQMD.

These procedures are for evaluating continuous fugitive dust emissions and are for the determination of the opacity of continuous fugitive dust emissions by a qualified observer. Continuous fugitive dust emissions sources include activities that produce emissions continuously during operations such as earthmoving, grading, and trenching. Emissions from these types of continuous activities are considered continuous even though speed of the activity may vary and emissions may be controlled to 100%, producing no visible emissions, during parts of the operation. The qualified observer should do the following:

Position: Stand at a position at least twenty (20) feet from the fugitive dust source in order to provide a clear view of the emissions with the sun oriented in the 140° sector to the back. Consistent as much as possible with maintaining the above requirements, make opacity observations from a position such that the line of sight is approximately perpendicular to the plume and wind direction. The observer may follow the fugitive dust plume generated by mobile earth moving equipment, as long as the sun remains oriented in the 140° sector to the back. As much as possible, do not include more than one plume in the line of sight at one time.

Field Records: Record the name of the site, fugitive dust source type (e.g., earthmoving, grading, trenching), method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the fugitive dust source. Also, record the time, estimated distance to the fugitive dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position relative to the fugitive dust source, and color of the plume and type of background on the visible emission observation when opacity readings are initiated and completed.

Observations: Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of sight. Make opacity observations at a point just beyond where material is no longer being deposited out of the plume (normally three (3) feet above the surface from which the plume is generated). The initial observation should begin immediately after a plume has been created above the surface involved. Do not look continuously at the plume, but instead observe the plume momentarily at 15-second intervals. For fugitive dust from earthmoving equipment, make opacity observations at a point just beyond where material is not being deposited out of the plume (normally three (3) feet above the mechanical equipment generating the plume).

Recording Observations: Record the opacity observations to the nearest 5% every fifteen (15) seconds on an observational record sheet. Each momentary observation recorded represents the

average opacity of emissions for a fifteen (15) second period. If a multiple plume exists at the time of an observation, do not record an opacity reading. Mark an "x" for that reading. If the equipment generating the plume travels outside of the field of observation, resulting in the inability to maintain the orientation of the sun within the 140° sector or if the equipment ceases operating, mark an "x" for the fifteen (15) second interval reading. Readings identified as "x" shall be considered interrupted readings.

Data Reduction For Time-Averaged Method: For each set of twelve (12) or twenty four (24) consecutive readings, calculate the appropriate average opacity. Sets shall consist of consecutive observations, however, readings immediately preceding and following interrupted readings shall be deemed consecutive and in no case shall two sets overlap, resulting in multiple violations.

Intermittent Emissions Method

Note: This method can only be conducted by an individual who is a California Air Resources Board (CARB) certified Visible Emission Evaluation (VEE) observer. Qualification and testing requirements for a CARB-certified VEE observer can be obtained from the AQMD.

This procedure is for evaluating intermittent fugitive dust emissions: This procedure is for the determination of the opacity of intermittent fugitive dust emissions by a qualified observer. Intermittent fugitive dust emissions sources include activities that produce emissions intermittently such as unpaved road travel, screening, dumping, and stockpiling where predominant emissions are produced intermittently. The qualified observer should do the following:

Position: Stand at a position at least twenty (20) feet from the fugitive dust source in order to provide a clear view of the emissions with the sun oriented in the 140° sector to the back. Consistent as much as possible with maintaining the above requirements, make opacity observations from a position such that the line of sight is approximately perpendicular to the plume and wind direction. As much as possible, do not include more than one plume in the line of sight at one time.

Field Records: Record the name of the site, fugitive dust source type (e.g., pile, material handling, transfer, loading, sorting), method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the fugitive dust source. Also, record the time, estimated distance to the fugitive dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position relative to the fugitive dust source, and color of the plume and type of background on the visible emission observation when opacity readings are initiated and completed.

Observations: Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of sight. Make opacity observations at a point just beyond where material is no longer being deposited out of the plume (normally three (3) feet above the surface from which the plume is generated). Make two observations per plume at the same point, beginning with the first reading at zero (0) seconds and the second reading at five (5) seconds. The zero (0) second observation should begin immediately after a plume has been created above the surface involved.

Recording Observations: Record the opacity observations to the nearest 5% on an observational record sheet. Each momentary observation recorded represents the average opacity of emissions for a five (5) second period.

Repeat the Observations listed above and the Recording Operations listed above in this procedure until you have recorded a total of 12 consecutive opacity readings. This will occur once six intermit plumes on which you are able to take proper readings have been observed. The 12 consecutive readings must be taken within the same period of observation but must not exceed 1 hour. Observations immediately preceding and following interrupted observations can be considered consecutive.

Average the 12 opacity readings together. If the average opacity reading equals 20% or lower, the source is in compliance with the averaged method opacity standard described in the Rule.

STABILZED SURFACE TEST METHOD

Introduction:

The purpose of this test is to check whether a property is sufficiently crusted to prevent windblown dust. (Note: This test's primary function is to provide a simplified initial assessment of surface stability. If there is any doubt as to a property's stability after performing this test, the Threshold Friction Velocity test should be conducted to more thoroughly determine a surface's erodibility potential.)

Equipment:

- One steel ball. Diameter - 5/8 (0.625) inches. Mass - 16-17 grams
- A ruler or measuring tape
- A cardboard frame with a 1 ft. by 1 ft. opening (optional)

Step 1:

Select a 1 by 1 foot Survey Area that is representative, or a typical example, of the crusted surface.

Step 2:

Hold the small steel ball one (1) foot off the ground directly above your survey area. Use a ruler or measuring tape to make sure that your hand is at the correct distance above the ground. Drop the ball within the survey area.

Step 3:

Pass/Fail Determination. Observe the ground around the ball closely before picking it up. Did the ball sink into the surface so that it is partially or fully surrounded by loose grains of dirt? Has it dropped out of view entirely? Then pick up the ball. Look closely where the ball fell. Are loose grains of dirt visible?

If you have answered "yes" to any of the previous questions, the surface has failed the first drop test. Note that if the ball causes a slight indentation on the surface but you do not see loose grains, the surface has passed the test.

Step 4:

Select two additional areas within the 1 by 1 foot survey area to drop the ball. Repeat Steps 2 and 3. If the surface passes two or all three of the drop tests, the survey area is considered as passing the test.

Step 5:

Select at least two other survey areas that are representative of the crusted surface. Pick the areas randomly and make sure they are spaced some distance apart. Drop the ball 3 times within each of these additional survey areas. Once again, if the surface passes the test twice or three times, count the survey area as passing the test.

Step 6:

Examine Results. If all of the survey areas have passed the test, the surface is stable, or sufficiently crusted. If one or more survey areas have failed the test, the surface is insufficiently crusted. If the surface fails the visible crust test, but there are minimal loose grains on the surface, the U.S. EPA recommends that the Threshold Friction Velocity test be done. Where there is little loose material that can be collected, the surface is likely to pass the Threshold Friction Velocity test.

Question and Answer – Stabilized Surface Test Method

Question:

What if blowsand is on the crusted surface? (Blowsand is thin deposits of loose grains which have not originated from the surface you are testing, but have been blown there from some surrounding area. Blowsand tends to collect in certain areas rather than uniformly over the surface. If present, it will generally cover less than 50% of the entire surface.)

Answer:

Clear the blowsand from the survey area surfaces on which you plan to drop the ball. Blowsand should not be a factor in your results.

Question:

What if material has been dumped or piled on the surface that is not blowsand, such as dirt or swimming pool waste?

Answer:

Do not do the Stabilized Surface test on those surfaces unless they have crusted over. Instead, do the Threshold Friction Velocity test on any loose surface material.

Question:

What if two of the survey areas pass with flying colors and the third survey area fails miserably?

Answer:

Chances are that the third survey area is either part of an uncrusted portion of the lot or has a much lighter kind of crust or different soil type than that of the other two survey areas. This means that the third survey area represents a different kind of surface than the other survey areas. If this is the case, examine the disturbed surface areas on the lot carefully. Using measuring tape, segment off (literally or mentally) the portion(s) of the lot that the third survey area represents.

Size it up in feet and select two additional 1 by 1 foot survey areas on which to do the visible crust test. Keep in mind that if all other areas on the lot have a stable crust except for the newly identified area, it would need to be at least 5,000 square feet in size or subject to motor vehicle disturbance (i.e. trespassing) for disturbed vacant land requirements to apply.

THRESHOLD FRICTION VELOCITY

Introduction:

The purpose of the Threshold Friction Velocity, or TFV, test method is to determine a site's susceptibility to wind-driven soil erosion. TFV can differ among disturbed vacant lots depending on the type of soil and to what extent it is disturbed. The lower the TFV, the greater the propensity for fine particles to be lifted at relatively low wind speeds. Since rocks and other non-erodible elements add protection against soil erosion, they raise TFV if present on the disturbed surface. A TFV of 100 cm/sec or greater is considered sufficiently protective.

Equipment:

- A set of sieves with the following openings: 4 millimeters (mm), 2mm, 1 mm, 0.5 mm and 0.25 mm and a lid and collector pan
- A small whisk broom or paintbrush with stiff bristles and dustpan. *(The broom/brush should preferably have one, thin row of bristles no longer than 1.5 inches in length.)*
- A spatula without holes
- A cardboard frame with a 1 ft. by 1 ft. opening
- Basic calculator
- Graduated cylinder or measuring cup *(may possibly need)*

Step 1:

Stack a set of sieves in order according to the size openings specified above, beginning with the largest size opening (4 mm) at the top. Place a collector pan underneath the bottom (0.25 mm) sieve.

Step 2:

Select a 1 foot by 1 foot survey area that is representative, or typical, of the disturbed surface. Mark this area using a cardboard frame. Check whether the surface is wet or damp. If so, return later to do this test method when the surface has dried.

Step 3:

Collect a sample of loose surface material to a depth of approximately 3/8 inch (1 cm) into a dustpan. This can best be done using a lightweight whisk broom/brush to carefully sweep the surface material within the marked survey area onto a spatula and lifting it into the dustpan. If you reach a hard, underlying subsurface that is less than 3/8 inch in depth, do not continue collecting the sample by digging into the hard surface.

Step 4:

Check the dustpan for rocks or hard-packed clumps of soil collected in your sample. Measure their diameter and remove those larger than 3/8 inch (1 cm) in diameter from the sample.

Step 5:

Carefully pour the sample into the stack of sieves, minimizing release of dust particles by slowly brushing material into the stack with a whisk broom or paintbrush. (On windy days, use the trunk or door of a car as a wind barricade.) Cover the stack with a lid. Lift up the sieve stack and gently move it using broad, horizontal circular arm motions. Complete 10 clockwise and 10 counter-clockwise motions at a speed of approximately 1 second per motion. Be careful not to move the sieve too roughly in order to avoid breaking up any naturally clumped material.

Step 6:

Remove the lid from the stack and disassemble each sieve separately, beginning with the top sieve. As you remove each sieve, examine it to make sure that all of the material has been sifted to the finest sieve through which it can pass; e.g. material in each sieve (besides the top sieve that captures a range of larger elements) should look the same size. If this is not the case, re-stack the sieves and collector pan, cover the stack with the lid, and gently rotate it using the same circular arm motions as before an additional 10 times. (You only need to reassemble the sieve(s) that contain material which requires further sifting.)

Step 7:

Line up the sieves in a row as they are disassembled, with the 4 mm sieve at one end and the collector pan at the other. Slightly tilt and gently tap each sieve and the collector pan so that all material is collected on one side. The material in the sieves and collector pan should be on the same side relative to your position. Observe the relative amount of material in each sieve and the collector pan to determine which contains the greatest volume. If this is difficult to determine, use a graduated cylinder or a measuring cup to measure the relative volume.

Step 8:

Use the table below to estimate TFV for the sieve catch with the greatest volume estimated in Step 7. For example, if the sieve containing the greatest volume is the one with the 0.5 mm opening, TFV = 58 cm/second.

Sieve Size Opening (mm)	Sieve No.	TFV (cm/sec)
4	5	> 100
2	10	100
1	18	76
0.5	35	58
0.25	60	43
Collector Pan	N/A	30

* TFV values in this table take into account the aggregate size distribution of particles between the different sieve size openings.

Step 9:

Repeat this procedure on at least two other representative areas on the disturbed surface. Average your TFV results from the three samples collected.

Step 10:

Examine Results. If the TFV you've calculated is greater than or equal to 100 cm/sec, the surface is stable.

Question and Answer – Threshold Friction Velocity Test Method

Question:

If there are hard-packed clumps of dirt on the surface, do I sieve these clumps along with the rest of the soil sample?

Answer:

If the hard-packed clumps are 1 cm or greater in size, extract them from the sample.

Question:

Can I combine all three collected soil samples into the sieve stack at once to save time?

Answer:

You may try combining the three samples after removing rocks or other non-erodible elements greater than 1 cm in diameter from each sample only if the mass of the three samples is approximately the same. However, combined samples may be more difficult to sieve and require reassembling and re-shaking of the sieves more than once. Also, it may be difficult to visibly compare the volume of material caught in the sieves after they have been disassembled. Therefore, combining samples is not recommended.

Question:

If I see dust particles escaping when I collect a sample and transfer it to the sieves, should I start over?

Answer:

Not necessarily. A small amount of dust particles can escape without influencing the TFV results. In fact, it is very difficult to avoid having some dust escape. However, if you rush when collecting and/or transferring a sample to the sieves, you may cause too much dust to escape thus potentially causing error in your results. Or, on a relatively windy day you may lose too much dust unless you set up a wind barricade. Avoid doing this test at all on very windy days.

Question:

If you're not sure which sieve contains the greatest amount of material, can you weigh the sieves for comparison?

Answer:

While, typically, more volume corresponds to greater weight, this is not always the case. Use a measuring cup or graduated cylinder if necessary to determine the sieve that contains the greatest amount of material.

Question:

When determining TFV in step 8, can I combine material in the largest 2 sieves to estimate volume?

Answer:

No. This may fundamentally alter the premises on which the method is based and lead to an incorrect determination of stability.

SILT LOADING/CONTENT TEST METHOD

Introduction:

Silt Content Test Method. The purpose of this test method is to estimate the silt content of the trafficked parts of unpaved roads and unpaved parking lots. The higher the silt content, the more fine dust particles that are released when cars and trucks drive on unpaved roads and unpaved parking lots.

Equipment:

- A set of full height, eight inch diameter sieves with the following openings: 4 millimeters (mm), 2mm, 1 mm, 0.5 mm and 0.25 mm and a lid and collector pan
- A small whisk broom or paintbrush with stiff bristles and dustpan 1 ft. in width. *(The broom/brush should preferably have one, thin row of bristles no longer than 1.5 inches in length.)*
- A spatula without holes A small scale with half ounce increments *(e.g. postal/package scale)*
- A shallow, lightweight container *(e.g. plastic storage container)*
- A sturdy cardboard box or other rigid object with a level surface
- Basic calculator
- Cloth gloves (optional for handling metal sieves on hot, sunny days)
- Sealable plastic bags (if sending samples to a laboratory)
- Pencil/pen and paper

Step 1:

Look for a routinely traveled surface, as evidenced by tire tracks. [Only collect samples from surfaces that are not damp due to precipitation or dew. This statement is not meant to be a standard in itself for dampness where watering is being used as a control measure. It is only intended to ensure that surface testing is done in a representative manner.] Use caution when taking samples to ensure personal safety with respect to passing vehicles. Gently press the edge of a dustpan (1 foot in width) into the surface four times to mark an area that is 1 square foot. Collect a sample of loose surface material using a whiskbroom or brush and slowly sweep the material into the dustpan, minimizing escape of dust particles. Use a spatula to lift heavier

elements such as gravel. Only collect dirt/gravel to an approximate depth of 3/8 inch or 1 cm in the 1 square foot area. If you reach a hard, underlying subsurface that is less than 3/8 inch in depth, do not continue collecting the sample by digging into the hard surface. In other words, you are only collecting a surface sample of loose material down to 1 cm. In order to confirm that samples are collected to 1 cm in depth, a wooden dowel or other similar narrow object at least one foot in length can be laid horizontally across the survey area while a metric ruler is held perpendicular to the dowel.

At this point, you can choose to place the sample collected into a plastic bag or container and take it to an independent laboratory for silt content analysis. A reference to the procedure the laboratory is required to follow is at the end of this section.

Step 2:

Place a scale on a level surface. Place a lightweight container on the scale. Zero the scale with the weight of the empty container on it. Transfer the entire sample collected in the dustpan to the container, minimizing escape of dust particles. Weigh the sample and record its weight.

Step 3:

Stack a set of sieves in order according to the size openings specified above, beginning with the largest size opening (4 mm) at the top. Place a collector pan underneath the bottom (0.25 mm) sieve.

Step 4:

Carefully pour the sample into the sieve stack, minimizing escape of dust particles by slowly brushing material into the stack with a whiskbroom or brush. (On windy days, use the trunk or door of a car as a wind barricade.) Cover the stack with a lid. Lift up the sieve stack and shake it vigorously up, down and sideways for at least 1 minute.

Step 5:

Remove the lid from the stack and disassemble each sieve separately, beginning with the top sieve. As you remove each sieve, examine it to make sure that all of the material has been sifted to the finest sieve through which it can pass (e.g., material in each sieve - besides the top sieve that captures a range of larger elements - should look the same size). If this is not the case, re-stack the sieves and collector pan, cover the stack with the lid, and shake it again for at least 1 minute. (You only need to reassemble the sieve(s) that contain material, which requires further sifting.)

Step 6:

After disassembling the sieves and collector pan, slowly sweep the material from the collector pan into the empty container originally used to collect and weigh the entire sample. Take care to minimize escape of dust particles. You do not need to do anything with material captured in the

sieves -- only the collector pan. Weigh the container with the material from the collector pan and record its weight.

Step 7:

If the source is an unpaved road, multiply the resulting weight by 0.38. If the source is an unpaved parking lot, multiply the resulting weight by 0.55. The resulting number is the estimated silt loading. Then, divide by the total weight of the sample you recorded earlier in Step 2 and multiply by 100 to estimate the percent silt content.

Step 8:

Select another two routinely traveled portions of the unpaved road or unpaved parking lot and repeat this test method. Once you have calculated the silt loading and percent silt content of the 3 samples collected, average your results together.

Step 9:

Examine Results. If the average silt loading is less than 0.33 oz/ft², the surface is stable. If the average silt loading is greater than or equal to 0.33 oz/ft², then proceed to examine the average percent silt content. If the source is an unpaved road and the average percent silt content is 6% or less, the surface is stable. If the source is an unpaved parking lot and the average percent silt content is 8% or less, the surface is stable. If your field test results are within 2% of the standard (for example, 4%-8% silt content on an unpaved road), it is recommended that you collect 3 additional samples from the source according to Step 1 and take them to an independent laboratory for silt content analysis.

Independent Laboratory Analysis: You may choose to collect 3 samples from the source, according to Step 1, and send them to an independent laboratory for silt content analysis rather than conduct the sieve field procedure. If so, the test method the laboratory is required to use is: "Procedures For Laboratory Analysis Of Surface/Bulk Dust Loading Samples", (Fifth Edition, Volume I, Appendix C.2.3 "Silt Analysis", 1995), AP-42, Office of Air Quality Planning & Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina.

Question and Answer - Silt Loading/Content Test Method

Question:

If I see dust escaping when I collect a sample and transfer it to the sieves, should I start over?

Answer:

Not necessarily. A small amount of dust can escape without influencing the silt content results. In fact, it is very difficult to avoid having some dust escape. However, if you rush when collecting and/or transferring a sample to the sieves, you may cause too much dust to escape thus

potentially causing an error in your results. Or, on a relatively windy day you may lose too much dust unless you set up a wind barricade. Avoid doing this test on very windy days.

Question:

Once I calculate the percent silt content for 3 samples collected on one segment of an unpaved road, can I assume the same result for the whole length of the road?

Answer:

You may extrapolate results only to the extent that the rest of the unpaved road has the same average daily trips as the segment you tested and the surface condition on other segments of the road is the same.

Question:

If water is being used as a control measure on the source and this causes the surface to be damp, should I do the silt content test method on a damp surface?

Answer:

Do the silt content test method when the surface is dry in between water applications. The condition of the surface immediately following watering is different than after the water has evaporated. Since sources are required to be in compliance with the rule at all times, test the surface when it is dry.

Question:

If speed limit signs have been posted along an unpaved road as a control measure, do I need to test the surface for silt content?

Answer:

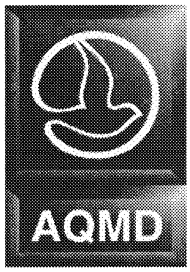
Yes. If speed limit signs have effectively lowered vehicle speeds on the road, the percent silt content may decrease. If signs have been ineffective in controlling speeds and no other controls are being applied, the source may be out of compliance. Either way, you should test to see whether the source meets the appropriate silt content standard.

R403 AG HANDBOOK

Rule 403 Agricultural Handbook

Measures to Reduce Dust from Agricultural Operations in the South Coast Air Basin

Prepared by



South Coast
Air Quality
Management District

December 1998

As you may be aware, our air quality is among the worst in the nation for dust and soot, or more technically, small suspended particulate matter. Although agricultural operations are not among the largest contributors to this problem in this area, federal law requires that all sources here implement best available control measures on their dust sources.

South Coast Air Quality Management District (AQMD) staff, in conjunction with local farm bureaus, local representatives from the Natural Resources Conservation Service (NRCS), local Resource Conservation Districts (RCDs), and local University of California Cooperative Extension staff have developed the enclosed conservation practices to reduce dust from agricultural operations and to help clean our air and meet federal requirements. The list of conservation practices represents a menu approach in which producers can select the practices that are most appropriate for their specific operations. Producers that voluntarily implement the suggested minimum number of conservation practices for each category in Section II by June 30, 1999 and complete and maintain the self-monitoring form in Section V of this document will maintain an exemption from AQMD's stringent fugitive dust regulations. If your farm is smaller than 10 contiguous acres, is located outside the South Coast Air Basin (see map on page 1), or is primarily used for the purpose of raising fowl or animals you do not have to implement the conservation practices, however, they are recommended to preserve your soil by minimizing dust lost to the air.

These conservation practices were developed through an open process with producers and their local agricultural agency representatives. If you have any questions, comments, or would like assistance in interpreting the conservation practices, please contact the AQMD at (909) 396-2000, or your local farm bureau, RCD, NRCS, or Cooperative Extension representative. Additional information on conservation practices can be found by calling the phone numbers listed on page 3 of this packet.

The AQMD would like to thank you for your efforts to keep our skies clear.

TABLE OF CONTENTS

LIST OF FIGURES

Section I

Purpose

To reduce the dust and corresponding PM10 emissions (**P**articulate **M**atter less than **10** microns in diameter) generated from agricultural operations and to meet federal requirements to implement appropriate particulate matter reduction programs.

Rule 403 Applicability

Agricultural operations that have 10 contiguous acres or less, or are primarily used for the purpose of raising fowl or animals, or are outside the South Coast Air Basin (see Figure 1)[1] will remain exempt from Rule 403. Agricultural operations in excess of 10 contiguous acres and are conducted within the South Coast Air Basin can voluntarily implement the conservation practices and complete the self-monitoring form no later than June 30, 1999, and maintain their exemption from all Rule 403 requirements. After July 1, 1999, producers who do not implement the conservation practices become subject to all other Rule 403 requirements. Failure to meet Rule 403 requirements may result in mandatory conservation class(es), required dust control plans, fines, or other penalties.

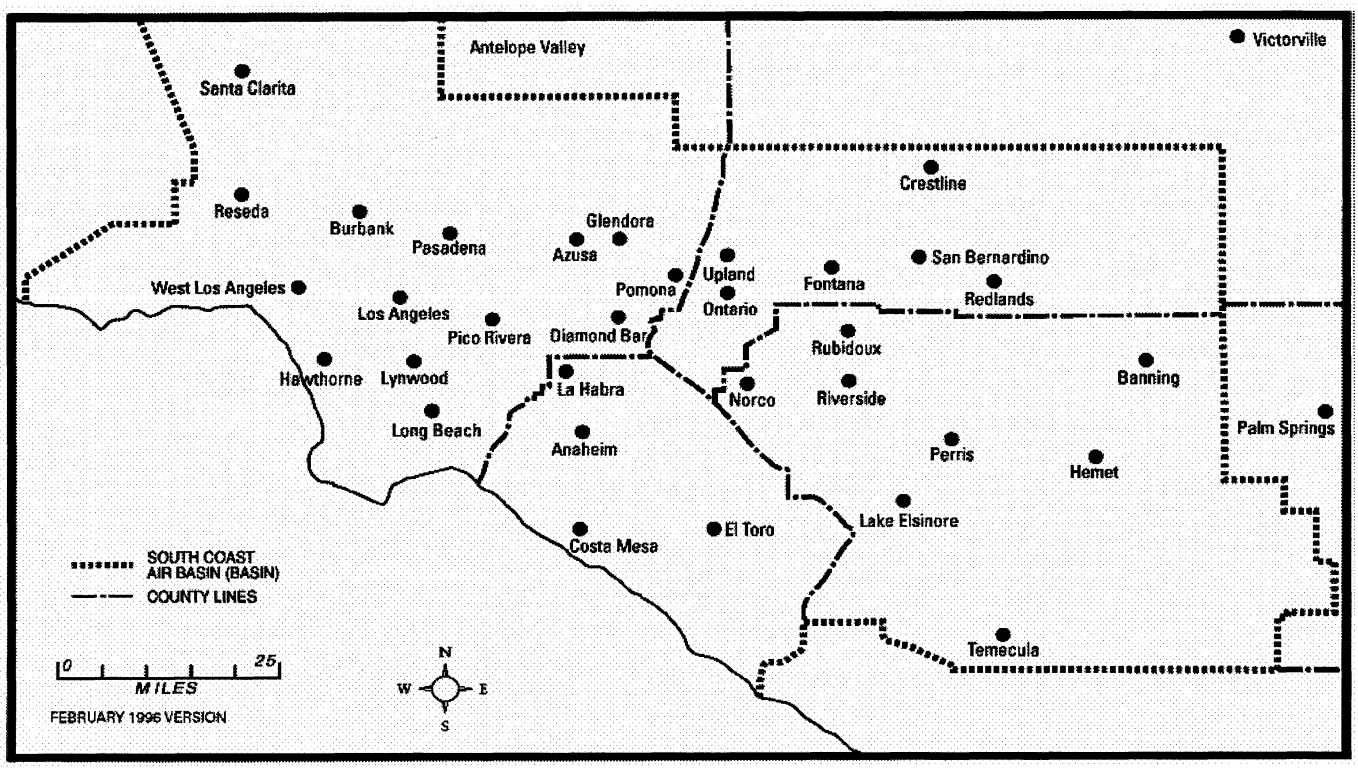


FIGURE 1

[1] *If your agricultural operation is outside the South Coast Air Basin or 10 contiguous acres or less, conservation practices are encouraged, but no actions are required.*

Section I

Conservation Practice Selection

Producers who voluntarily implement the suggested minimum number of conservation practices listed under each category in Section II by June 30, 1999 and complete and maintain the self-monitoring form (Section V) will be exempt from the requirements of Rule 403. The list of conservation practices will be updated annually to reflect any new developments in control technology. Producers that do not elect to implement sufficient conservation practices become subject to all Rule 403 requirements beginning July 1, 1999.

The list of conservation practices is divided into the six categories presented below. The italicized text underneath the category descriptions represent the suggested minimum number of conservation practices to be implemented in order to maintain a Rule 403 exemption. Producers can also choose alternative conservation practices or provide a technical justification if the suggested minimum number of conservation practices for a category (e.g., inactive) can not be implemented on-site (see Sections III and IV)

1. Active - applicable to agricultural activities involved in disturbing the soil *(not applicable to orchards, vine crops, nurseries, range land, and irrigated pasture).*

(producers must cease activities during wind conditions greater than 25 mph and implement at least one of the other conservation practices)

2. Inactive - applicable to agricultural sites when no soil disturbance activities are being conducted *(not applicable to orchards, vine crops, nurseries, range land, and irrigated pasture)*

(at least three of the conservation practices must be implemented within this category)

3. Farm Yard Areas - applicable to disturbed surfaces used by people or vehicles (e.g., equipment storage yards) on at least eight calendar days per year

(at least one of the conservation practices must be implemented within this category)

4. Track-Out - applicable to vehicles or other equipment carrying soil from an unpaved surface to a paved public road

(at least one of the conservation practices must be implemented within this category)

5. Unpaved Roads - applicable to private unpaved roads used by producers

(at least one of the conservation practices must be implemented within this category)

6. Storage Piles - applicable accumulations of material

(at least one of the conservation practices must be implemented within this category)

Section I

Alternative Conservation Practices

Producers can implement alternative conservation practices that are more suitable to their specific farming operations. Producers that elect to implement alternative conservation practices and want to qualify for the Rule 403 exemption must provide a description of the alternative conservation practices to the AQMD. Please refer to Section III (page 11) of this Handbook for AQMD submittal instructions.

Technical Justifications

In the event that there are special technical (e.g., non-economic) circumstances, including safety, which prevent implementation of the suggested minimum number of conservation practices for each category in Section II, producers can submit a justification statement to the AQMD. The justification statement must explain the reason(s) why the suggested minimum number of conservation practices within a category can not be implemented on-site. Please refer to Section IV (page 12) of this Handbook for AQMD submittal instructions.

Conservation Practice Implementation Guidance

Technical assistance with selecting, adopting, and implementing any of the conservation practices listed in Section II is available, free of charge, from your local Resource Conservation District (RCD), Natural Resources Conservation Service (NRCS) office, or Cooperative Extension office. Cost-sharing incentives to implement practices that reduce dust may also be available from these resource agencies. Phone numbers of RCD, NRCS, and Cooperative Extension offices within the South Coast Air Basin are listed below.

NRCS/RCD Offices

Los Angeles, Urban Office	(213) 580-8890	
Riverside/Orange County	(909) 684-1552	(909) 683-7691
Redlands	(909) 799-7407	
San Jacinto	(909) 654-7733	(909) 654-7139
Apple Valley	(760) 242-2906	

University of California Cooperative Extension

(909) 683-6491

Section II

1. Active Conservation Practices

Exempted operations: orchards, vine crops, nurseries, range land, and irrigated pasture

Producers that want a Rule 403 exemption must implement the Activity Modification conservation practice and at least one of the other conservation practices.

Activity Modification
Cease soil preparation and/or maintenance activities (does not include harvesting activities) during wind conditions in excess of 25 miles per hour (mph) unless such activities result in a net reduction in wind driven fugitive dust (i.e., if wind driven dust is not visible from tilled soil, but is visible from untilled soil within the same agricultural parcel). A one-day exemption from this prohibition is allowed if wind conditions in excess of 25 mph have occurred on two consecutive days.

Producers that want a Rule 403 exemption must implement at least one of the other four conservation practices listed below.

1. Soil Moisture Monitoring
Ensure adequate soil moisture levels at the time of tillage or soil maintenance activities to prevent visible dust emissions from extending more than 100 feet from any source within the agricultural parcel.

2. Irrigation System
Irrigate or bed fields as soon as feasible after land leveling or releveling to prevent the field being left in a smooth dry condition.

3. Minimum Tillage
Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops in narrow slots or tilled strips. *Your local NRCS, RCD, or Cooperative Extension office can provide guidance on various minimum tillage practices.*

4. Mulching
Uniformly distribute plant residues, manure, or other suitable materials not produced on the site to the soil surface prior to disturbing the soil.

Section II

2. Inactive Conservation Practices

Exempted operations: orchards, vine crops, nurseries, range land, and irrigated pasture

Producers that want a Rule 403 exemption must implement at least three of the following nine conservation practices listed below.

1. Local Jurisdiction Ordinance
Compliance with a local jurisdiction's ordinance intended to reduce windblown dust emissions.

2. Cover Crop
Establish a cover crop that establishes a minimum of 60 percent ground cover on fields that will remain fallow until the next crop planting. Vegetative growth to be managed, if necessary, by mowing, grazing, approved chemicals or other means that maintain the necessary cover. *(Native or volunteer vegetation that meets the minimum ground cover requirements also represents an acceptable cover crop).*

3. Crop Residue Management
Maintain crop residues from previous crops that establishes a minimum of 60 percent ground cover on fields that will remain fallow until the next crop planting. Implements such as undercutters or sweeps that sever roots and lift weeds without burying or destroying much of the residue are most efficient for maintaining surface cover.

4. Surface Roughening
Conduct surface roughening by bedding, rough disking, or tillage that leaves the surface covered with stable clods. Disc fallow fields in the early spring to get the winter weeds before they mature seed and before it dries out so clods will be produced. List or bed up in May to get early summer weeds before they seed and before it is too dry to bed.

5. Minimum Tillage
Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops in narrow slots or tilled strips. *Your local NRCS, RCD, or Cooperative Extension office can provide guidance on various minimum tillage practices.*

Section II

2. Inactive Conservation Practices (Concluded)

Exempted operations: orchards, vine crops, nurseries, range land, and irrigated pasture

6. Cross Wind Stripcropping

Establish crops in strips established across the prevailing wind erosion direction and arranged so that strips susceptible to wind erosion are alternated with strips having a protective cover that is resistant to wind erosion.

7. Field Windbreaks

Plant or maintain a single or multiple row of trees or shrubs adjacent to windward edge of the field as close to perpendicular as practical with the direction of erosive winds. Avoid conflicts with any above or below ground utilities. *Local RCD, NRCS, or Cooperative Extension staff can provide technical assistance on selecting proper tree species, appropriate spacing, and maintenance requirements.*

8. Ridge Roughness

Establish ridges by normal tillage and planting equipment as close to perpendicular as practical with the direction of erosive winds (not appropriate for unstable soils such as sands or loamy sands). After establishment, ridges shall be maintained through those periods when wind erosion is expected to occur, or until growing crops provide enough cover to protect the soil from wind erosion.

9. Wind Barriers

Plant or maintain perennial or annual plants interspersed throughout a crop field as close to perpendicular as practical with the direction of erosive winds. To be effective, the selected plant(s) must create a stand at least three feet tall. *Selection of plants for wind barriers should favor species or varieties tolerant to herbicides used on adjacent crops. Local RCD, NRCS, or Cooperative Extension staff can provide technical assistance on selecting proper tree species, appropriate spacing, and maintenance requirements.*

Section II

3. Farm Yard Area Conservation Practices

Farm yard areas refer to disturbed surfaces used by people or vehicles (e.g., equipment storage yards) on at least eight calendar days per year.

Exempted operations: none

Producers that want a Rule 403 exemption must implement at least one of the four conservation practices listed below.

1. Vegetation
Establish or maintain vegetation at sufficient density to prevent wind driven dust.

2. Dust Suppressants
Apply water or approved dust suppressants at a sufficient quantity and frequency to prevent wind driven dust.

3. Surface Area Modification
Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches) at sufficient quantity and frequency to prevent wind driven dust.

4. Disturbed Surface Area Reduction
Reduce farm yard area by at least 50 percent from the original disturbed surface area. To qualify, the original disturbed surface area must be treated (e.g., vegetation, watering that establishes a crust, chemical stabilization, etc.) to prevent wind driven dust.

Section II

4. Track-Out Conservation Practices

Exempted operations: none

Producers that want a Rule 403 exemption must implement at least one of the four conservation practices listed below.

1. Track-Out Area Improvements

Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet with an acceptable width to accommodate traffic ingress and egress from the site.

2. Track-Out Prevention

Check or clean the undercarriage and wheels on haul trucks before leaving field or install a track-out control device to prevent the track-out of soil onto paved public roads.

3. End of Row Equipment Turn Around Areas

Prohibit turning tractors and implements on paved public roads if soil will be dropped on the road or clean pavement after practices have ceased.

Section II

5. Unpaved Roads Conservation Practices

Exempted operations: none

Producers that want a Rule 403 exemption must implement at least one of the four conservation practices listed below.

1. Speed Control

Control speed to 15 miles per hour (mph) on unpaved roads through worker notifications, signage, or any other necessary means.

2. Access Restriction

Restrict access to private unpaved roads currently used by the public either through signage or physical access restrictions.

3. Unpaved Road Treatments

Treat unpaved roads with water, mulch, chemical dust suppressants or other cover during heavy use periods. Unpaved farm roads should be treated early enough so that mud will not stick to tires and be carried onto paved public roads.

4. Surface Modification

Cover frequently traveled unpaved roads with a low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches).

Section II

6. Storage Pile Conservation Practices

Exempted operations: none

Producers that want a Rule 403 exemption must implement at least one of the four conservation practices listed below.

1. Wind Sheltering
Enclose material in a three-sided barrier equal to the height of the material. *Open side of the barrier should be oriented to the leeward (downwind) side of the material.*

2. Watering
Apply water at a sufficient quantity and frequency to prevent wind driven dust.

3. Chemical Stabilization
Apply an approved dust suppressants at a sufficient quantity and frequency to prevent wind driven dust. *Best for use on storage piles subject to infrequent disturbances.*

4. Covering
Install tarps, plastic, or other material as a temporary cover. *Coverings should be anchored to prevent wind from removing the cover.*

Section III

Submittal Instructions for Alternative Conservation Practices

Producers can voluntarily implement alternative conservation practices that are more suitable to their specific farming operations. However, producers that elect to implement alternative conservation practices and want to qualify for the Rule 403 exemption must provide a description of the alternative conservation practices to the AQMD.

Producers that want to implement alternative conservation practices must notify the AQMD by August 1, 1999, or 30 days prior to starting a new farming operation.

The notification must include a description of the alternative conservation practice(s) that will be implemented on-site.

After receipt of a notification, the AQMD will consult with the Natural Resources Conservation Service and the applicable Resource Conservation District to determine the appropriateness of the alternative conservation practice(s).

The AQMD will then notify the producer in writing if the alternative conservation practices are considered acceptable. Producers will be exempt from implementing conservation practices on the source category (e.g., active, inactive, unpaved roads, etc.) in which alternative conservation practices are proposed until the AQMD has notified said producer whether the alternative conservation practices are acceptable. If the alternative conservation practices are deemed unacceptable, the AQMD will notify the producer of such a determination and will establish a 30-day grace period to identify acceptable alternative conservation practices. During this 30-day grace period, the AQMD will work with the producer and the appropriate resource agency personnel to identify acceptable alternative conservation practices.

Notifications can be mailed or delivered to:

Rule 403 Compliance
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA 91765-4182

Notifications can also be submitted electronically to:

mlaybourn@aqmd.gov

Section IV

Submittal Instructions for Justification Statements

In the event that there are special technical (e.g., non-economic) circumstances, including safety, which prevent implementation of the suggested minimum number of conservation practices within each category listed in Section II, a justification statement must be submitted in order for a producer to qualify for a Rule 403 exemption.

Producers that want to submit a justification statement must notify the AQMD by August 1, 1999, or 30 days prior to starting a new farming operation.

The justification statement must explain the reason(s) why the suggested minimum number of conservation practices within a category can not be implemented on-site.

After receipt of a justification statement, the AQMD will consult with the Natural Resources Conservation Service and the applicable Resource Conservation District to determine the appropriateness of the information submitted.

The AQMD will then notify the producer in writing if the justification statement(s) are considered acceptable. Producers will be exempt from implementing conservation practices on the source category (e.g., active, inactive, unpaved roads, etc.) in which a justification statement is proposed until the AQMD has notified said producer whether the justification statement is acceptable. If the justification statement is deemed unacceptable, the AQMD will notify the producer of such a determination and will establish a 30-day grace period to identify any alternative conservation practices or other possible justification statements. During this 30-day grace period, the AQMD will work with the producer and the appropriate resource agency personnel to identify alternative conservation practices or other possible justification statements.

Justification statements can be mailed or delivered to:

Rule 403 Compliance
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA 91765-4182

Justification statements can also be submitted electronically to:

mlaybourn@aqmd.gov

Section V

Conservation Practice Self Monitoring Form

The following form has been prepared to assist producers in documenting implementation of the conservation practices. Producers are required to prepare and maintain this form to qualify for a Rule 403 exemption.

A sample completed conservation practice self-monitoring form is also provided following the blank form.

Section V

Farm Name: _____

Producer Signature: _____

Date: _____

Conservation Practice Self Monitoring Form[1]

	Active[2]		Inactive[2]		Farm Yard Area		Track-Out		Unpaved Roads		Storage Piles
√	Activity Modification **(Mandatory)**		*(minimum of three)*		*(minimum of one)*		*(minimum of one)*		*(minimum of one)*		*(minimum of one)*
	(minimum of one from below)		Local Jurisdiction Ordinance		Vegetation		Track-Out Area Improvements		Speed Control		Wind Sheltering
	Soil Moisture		Cover Crop		Dust Suppressants		Track-Out Prevention		Access Restriction		Watering
	Irrigation System		Crop Residue Management		Surface Area Modification		End of Row Turn Around Areas		Unpaved Road Treatments		Chemical Stabilization
	Minimum Tillage		Surface Roughening		Disturbed Surface Area Reduction		*Alternative Practices*		Surface Modification		Covering
	Mulching		Minimum Tillage		*Alternative Practices*		*Justification*		*Alternative Practices*		*Alternative Practices*
	Alternative Practices		Cross Wind Stripcropping		*Justification*				*Justification*		*Justification*
	Justification		Field Windbreaks								
			Ridge Roughness								
			Wind Barriers								
			Alternative Practices								
			Justification								

[1] If you wish to choose different practices for different fields and/or farm areas, separate sheets must be filled out for each site.

[2] The following operations are exempt from active and inactive land conservation practices: orchards, vine crops, nurseries, range land, and irrigated pasture.

Section V

Farm Name: AAAA Farms

Producer Signature: John Smith

Date: 6/19/99

Conservation Practice Self Monitoring Form[1]

	Active[2]		Inactive[2]		Farm Yard Area		Track-Out		Unpaved Roads		Storage Piles
√	Activity Modification **(Mandatory)**		*(minimum of three)*		*(minimum of one)*		*(minimum of one)*		*(minimum of one)*		*(minimum of one)*
	(minimum of one from below)	√	Local Jurisdiction Ordinance		Vegetation	√	Track-Out Area Improvements	√	Speed Control		Wind Sheltering
	Soil Moisture		Cover Crop		Dust Suppressants		Track-Out Prevention		Access Restriction		Watering
√	Irrigation System	√	Crop Residue Management		Surface Area Modification		End of Row Turn Around Areas		Unpaved Road Treatments	√	Chemical Stabilization
	Minimum Tillage		Surface Roughening	√	Disturbed Surface Area Reduction		*Alternative Practices*		Surface Modification		Covering
	Mulching		Minimum Tillage		*Alternative Practices*		*Justification*		*Alternative Practices*		*Alternative Practices*
	Alternative Practices	√	Cross Wind Stripcropping		*Justification*				*Justification*		*Justification*
	Justification		Field Windbreaks								
			Ridge Roughness								
			Wind Barriers								
			Alternative Practices								
			Justification								

[1] If you wish to choose different practices for different fields and/or farm areas, separate sheets must be filled out for each site.

[2] The following operations are exempt from active and inactive land conservation practices: orchards, vine crops, nurseries, range land, and irrigated pasture.

Section VI

Opting for Rule 403 General Provisions

AQMD in conjunction with local producers and staff from the NRCS, RCDs, and Cooperative Extension have developed the conservation practices contained in this Handbook to be more appropriate for farming operations than the traditional dust control requirements for construction projects, landfills, and other dust sources.

Producers that do not voluntarily implement the conservation practices before July 1, 1999, or within 30 days of starting a farming operation at a new site would become subject to the general requirements contained in AQMD Rule 403. The following is a general summary of the Rule 403 requirements.

- visible emissions prohibited from crossing the site property line [Section (d)(1)]

- at least one best available control measure must be implemented for each source [Section (d)(2)]

- upwind/downwind PM10 differential prohibited from exceeding 50 $\mu g/m^3$ [Section (d)(4)]

- all track-out must be prevented or removed within one hour [Section (d)(5)]

- any operation with more than 100 acres of disturbed surfaces must submit a fugitive dust control plan that specifies at least one control action and one contingency control action for each source category (e.g., tilling, unpaved roads, etc.). A filing fee of $160.60 is required with all fugitive dust control plan submittals.

Producers that would like more information can obtain a copy of Rule 403 and the general Rule 403 Handbook, which details traditional best available control measures, by calling the AQMD at (909) 396-2000 or through the internet at:

www.aqmd.gov

Section VI

Failure to Comply with Rule 403

The intent of the AQMD is to work with producers and local resource agencies (e.g., NRCS, RCDs, Farm Bureaus, Cooperative Extension, etc.) to reduce dust and the corresponding PM10 emissions from agricultural operations through the voluntary implementation of good conservation practices. These emission reductions are necessary as part of the region's efforts to attain State and Federal air quality standards. Failure to achieve compliance with the State and Federal air quality standards by the mandated attainment date could result in Federal action that would significantly impact our region.

Prior to June 30, 1999, the AQMD has conducted a comprehensive outreach program to inform local producers of the voluntary conservation practices and options available to maintain a Rule 403 exemption. After July 1, 1999, failure to meet Rule 403 requirements could subject the producer mandatory conservation class(es), required dust control plans, fines, or other penalties.

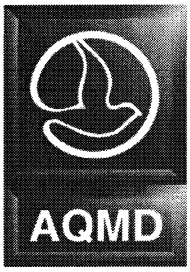
R403 CV AG HANDBOOK

Rule 403 Coachella Valley

Agricultural Handbook

Measures to Reduce Dust from Agricultural Operations in the Coachella Valley

Prepared by



South Coast Air Quality Management District

April 2004

As you may be aware, our air quality is among the worst in the nation for dust and soot, or more technically, small suspended particulate matter. Although agricultural operations are not among the largest contributors to this problem in this area, federal law requires that all sources here implement best available control measures on their dust sources.

South Coast Air Quality Management District (AQMD) staff, in conjunction with the Riverside County Farm Bureau, Coachella Valley producers, and local representatives from the Natural Resources Conservation Service (NRCS) has developed the enclosed conservation practices to reduce dust from agricultural operations and to help clean our air and meet federal requirements. The list of conservation practices represents a menu approach in which producers can select the practices that are most appropriate for their specific operations. Producers that voluntarily implement the suggested minimum number of conservation practices for each category in Section II by December 31, 2004 and complete and maintain the self-monitoring form in Section V of this document will maintain an exemption from AQMD's stringent fugitive dust regulations. If your farm is smaller than 10 contiguous acres or is primarily used for the purpose of raising fowl or animals you do not have to implement the conservation practices, however, they are recommended to preserve your soil by minimizing dust lost to the air. If your farm is within the South Coast Air Basin (Orange County, western Riverside County, and the non-desert portions of Los Angeles and San Bernardino Counties) there is a separate list of conservation practices that must be implemented to maintain a Rule 403 exemption.

These conservation practices were developed through an open process with producers and their local agricultural agency representatives. If you have any questions, comments, or would like assistance in interpreting the conservation practices, please contact the AQMD at (909) 396-2000, or your local farm bureau, RCD, or NRCS. Additional information on conservation practices can be found by calling the phone numbers listed on page 3 of this packet.

The AQMD would like to thank you for your efforts to keep our skies clear.

TABLE OF CONTENTS

LIST OF FIGURES

Section I

Purpose

To reduce the dust and corresponding PM10 emissions (**P**articulate **M**atter less than **10** microns in diameter) generated from agricultural operations and to meet federal requirements to implement appropriate particulate matter reduction programs.

Rule 403 Applicability

Agricultural operations that have 10 contiguous acres or less or are primarily used for the purpose of raising fowl or animals will remain exempt from Rule 403. Agricultural operations in excess of 10 contiguous acres and are conducted within the Coachella Valley (see Figure 1 below) can voluntarily implement the conservation practices and complete the self-monitoring form no later than January 1, 2005, and maintain their exemption from all Rule 403 requirements. After January 1, 2005, producers who do not implement the conservation practices become subject to all other Rule 403 requirements. Failure to meet Rule 403 requirements may result in mandatory conservation class(es), required dust control plans, fines, or other penalties.

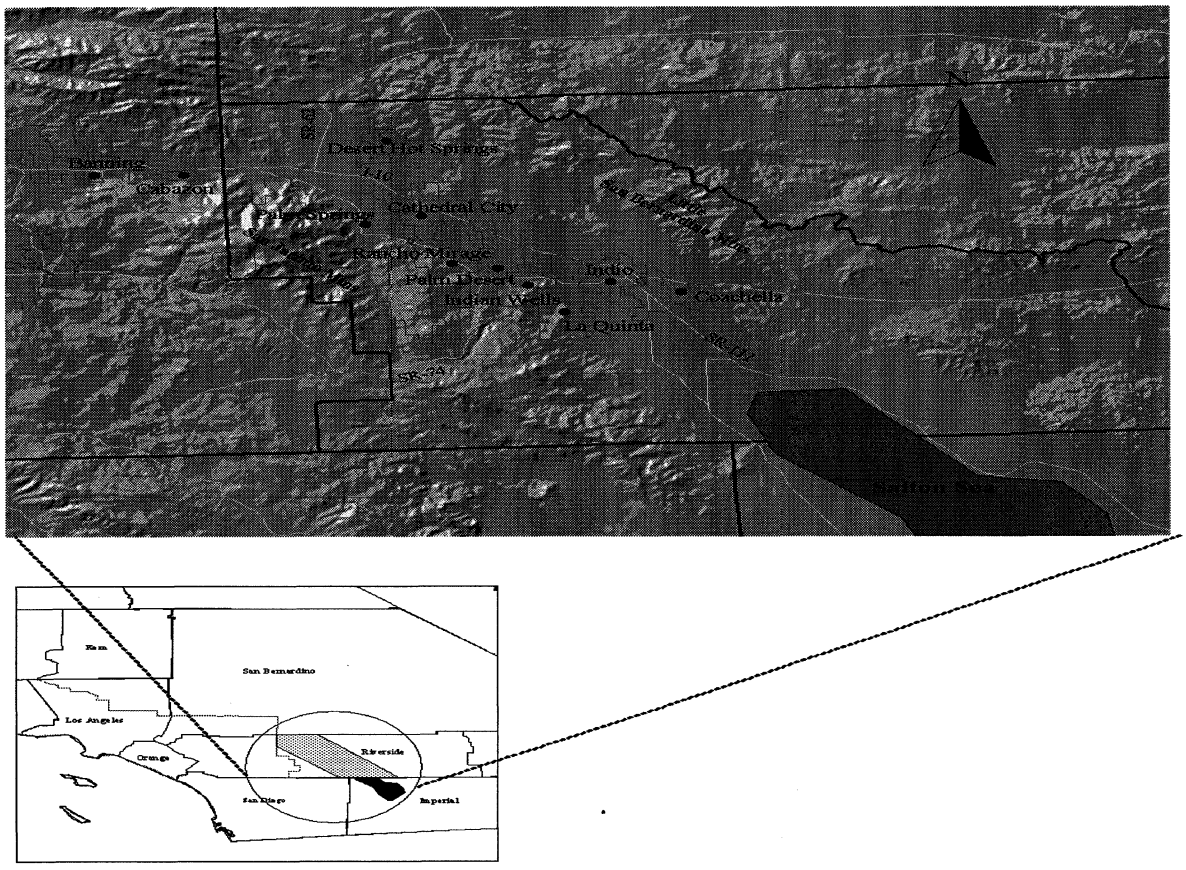


FIGURE 1

Section I

Conservation Practice Selection

Producers who voluntarily implement the minimum number of conservation practices listed under each category in Section II by January 1, 2005, and complete and maintain the self-monitoring form (Section V) will be exempt from the requirements of Rule 403. The list of conservation practices may be updated periodically to reflect any new developments in control technology. Producers that do not elect to implement sufficient conservation practices become subject to all Rule 403 requirements beginning January 1, 2005.

The list of conservation practices is divided into the six categories presented below. The italicized text underneath the category descriptions represent the minimum number of conservation practices to be implemented in order to maintain a Rule 403 exemption. Producers can also choose alternative conservation practices or provide a technical justification if the minimum number of conservation practices for a category (e.g., inactive) can not be implemented on-site (see Sections III and IV).

1. Active - applicable to agricultural activities involved in disturbing the soil *(not applicable to established orchards, vine crops, nurseries, range land, and irrigated pasture).*

(producers must cease activities during wind conditions greater than 25 mph (as specified in AQMD Rule 403.1 and implement at least one of the other conservation practices. Additional information on the tilling prohibitions is included Section II under the heading – Activity Modification)

2. Inactive - applicable to agricultural sites when no soil disturbance activities are being conducted *(not applicable to established orchards, vine crops, nurseries, range land, and irrigated pasture)*

(at least three of the conservation practices must be implemented within this category)

3. Farm Yard Areas - applicable to disturbed surfaces used by people or vehicles (e.g., equipment storage yards) on at least eight calendar days per year

(at least one of the conservation practices must be implemented within this category)

4. Track-Out - applicable to vehicles or other equipment carrying soil from an unpaved surface to a paved public road

(at least one of the conservation practices must be implemented within this category)

5. Unpaved Roads - applicable to private unpaved roads used by producers

(producers must implement a surface treatment when more than 25 vehicles per day use an unpaved and at least one of the conservation practices must be implemented during other time periods)

6. Storage Piles - applicable accumulations of material

(at least one of the conservation practices must be implemented within this category)

Section I

Alternative Conservation Practices

Producers can implement alternative conservation practices that are more suitable to their specific farming operations. Producers that elect to implement alternative conservation practices and want to qualify for the Rule 403 exemption must provide a description of the alternative conservation practices to the AQMD. Please refer to Section III (page 11) of this Handbook for AQMD submittal instructions.

Technical Justifications

In the event that there are special technical (e.g., non-economic) circumstances, including safety, which prevent implementation of the minimum number of conservation practices for each category in Section II, producers can submit a justification statement to the AQMD. The justification statement must explain the reason(s) why the suggested minimum number of conservation practices within a category can not be implemented on-site. Please refer to Section IV (page 12) of this Handbook for AQMD submittal instructions.

Conservation Practice Implementation Guidance

Technical assistance with selecting, adopting, and implementing any of the conservation practices listed in Section II is available, free of charge, from your local Farm Bureau, Resource Conservation District (RCD), or Natural Resources Conservation Service (NRCS) office. Cost-sharing incentives to implement practices that reduce dust may also be available from these resource agencies. Phone numbers of local Farm Bureau, Riverside County Cooperative Extension, RCD, and NRCS offices are listed below.

Farm Bureau/NRCS/RCD Offices

Riverside County Farm Bureau	(909) 684-6732
Riverside County Cooperative Extension	(909) 683-6491
Riverside Resource Conservation District	(909) 683-7691
Indio NRCS offices	(760) 347-3675

Section II

1. Active Conservation Practices

Exempted operations: established orchards, date groves, vine crops, nurseries, range land, and irrigated pasture

Producers that want a Rule 403 exemption must implement the Activity Modification conservation practice and at least one of the other conservation practices.

Activity Modification (Mandatory)

Cease agricultural tilling or soil mulching activities (does not include harvesting activities) during wind conditions in excess of 25 miles per hour (mph) consistent with AQMD Rule 403.1 paragraphs (d)(5) and (i)(3). A one-day exemption from this prohibition is allowed if wind conditions in excess of 25 mph have occurred on six hours or more hours on each of two previous consecutive days. Additionally, if 25 mph wind conditions have occurred during sixty or more cumulative hours of active operations within a calendar month, the tilling / soil mulching prohibitions will no longer be applicable for the remainder of the month. To invoke these exemptions, records of wind conditions must be maintained and made available to the Executive Officer upon request.

Producers that want a Rule 403 exemption must implement at least one of the other four conservation practices listed below.

1. Soil Moisture Monitoring

Ensure adequate soil moisture levels at the time of tillage or soil maintenance activities to prevent visible dust emissions from extending more than 100 feet from any source within the agricultural parcel.

2. Irrigation System

Irrigate or bed fields as soon as feasible based on Coachella Valley crop schedule after land leveling or releveling to prevent the field being left in a smooth dry condition. If the field will not be planted based on the Coachella Valley crop schedule, then stabilize or implement Inactive Conservation Practices (e.g., surface roughing, cover crop, etc.).

3. Minimum Tillage

Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops in narrow slots or tilled strips. *Your local NRCS, RCD, or Riverside County Cooperative Extension office can provide guidance on various minimum tillage practices.*

4. Mulching

Uniformly distribute plant residues, manure, or other suitable materials not produced on the site to the soil surface prior to disturbing the soil.

Section II

2. Inactive Conservation Practices

Exempted operations: established orchards, date grove, vine crops, nurseries, range land, and irrigated pasture

Producers that want a Rule 403 exemption must implement at least three of the following eight conservation practices listed below.

1. Cover Crop

Establish a cover crop that establishes a minimum of 60 percent ground cover on fields that will remain fallow until the next crop planting. Vegetative growth to be managed, if necessary, by mowing, grazing, approved chemicals or other means that maintain the necessary cover. *(Native or volunteer vegetation that meets the minimum ground cover requirements also represents an acceptable cover crop).*

2. Crop Residue Management

Maintain crop residues from previous crops that establishes a minimum of 60 percent ground cover on fields that will remain fallow until the next crop planting. Implements such as undercutters or sweeps that sever roots and lift weeds without burying or destroying much of the residue are most efficient for maintaining surface cover.

3. Surface Roughening

Conduct surface roughening by bedding, rough disking, or tillage that leaves the surface covered with stable clods. Disc fallow fields in the early spring to get the winter weeds before they mature seed and before it dries out so clods will be produced. List or bed up in May to get early summer weeds before they seed and before it is too dry to bed.

4. Minimum Tillage

Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops in narrow slots or tilled strips. *Your local Farm Bureau, NRCS, or Riverside County Cooperative Extension, office can provide guidance on various minimum tillage practices.*

Section II

2. Inactive Conservation Practices (Concluded)

Exempted operations: orchards, vine crops, nurseries, range land, and irrigated pasture

5. Cross Wind Stripcropping

Establish crops in strips established across the prevailing wind erosion direction and arranged so that strips susceptible to wind erosion are alternated with strips having a protective cover that is resistant to wind erosion.

6. Field Windbreaks

Plant or maintain a single or multiple row of trees or shrubs adjacent to windward edge of the field as close to perpendicular as practical with the direction of erosive winds. Avoid conflicts with any above or below ground utilities. *Local Farm Bureau, Riverside County Cooperative Extension, or NRCS office can provide technical assistance on selecting proper tree species, appropriate spacing, and maintenance requirements.*

7. Ridge Roughness

Establish ridges by normal tillage and planting equipment as close to perpendicular as practical with the direction of erosive winds (not appropriate for unstable soils such as sands or loamy sands). After establishment, ridges shall be maintained through those periods when wind erosion is expected to occur, or until growing crops provide enough cover to protect the soil from wind erosion.

8. Wind Barriers

Plant or maintain perennial or annual plants interspersed throughout a crop field as close to perpendicular as practical with the direction of erosive winds. To be effective, the selected plant(s) must create a stand at least three feet tall. *Selection of plants for wind barriers should favor species or varieties tolerant to herbicides used on adjacent crops. Local Farm Bureau, Riverside County Cooperative Extension, RCD, or NRCS offices can provide technical assistance on selecting proper tree species, appropriate spacing, and maintenance requirements.*

Section II

3. Farm Yard Area Conservation Practices

Farm yard areas refer to disturbed surfaces used by people or vehicles (e.g., equipment storage yards) on at least eight calendar days per year.

Exempted operations: none

Producers that want a Rule 403 exemption must implement at least one of the four conservation practices listed below.

1. Vegetation

Establish or maintain vegetation at sufficient density to prevent wind driven dust.

2. Dust Suppressants

Apply water or approved chemical stabilizers at a sufficient quantity and frequency to prevent wind driven dust.

3. Surface Area Modification

Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches) at sufficient quantity and frequency to prevent wind driven dust.

4. Disturbed Surface Area Reduction

Reduce farm yard area by at least 50 percent from the original disturbed surface area. To qualify, the original disturbed surface area must be treated (e.g., vegetation, watering that establishes a crust, chemical stabilization, etc.) to prevent wind driven dust.

Section II

4. Track-Out Conservation Practices

Exempted operations: none

Producers that want a Rule 403 exemption must implement at least one of the three conservation practices listed below.

1. Track-Out Area Improvements

Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet with an acceptable width to accommodate traffic ingress and egress from the site.

2. Track-Out Prevention

Check or clean the undercarriage and wheels on haul trucks before leaving field or install a track-out control device to prevent the track-out of soil onto paved public roads.

3. End of Row Equipment Turn Around Areas

Prohibit turning tractors and implements on paved public roads if soil will be dropped on the road or clean pavement after practices have ceased.

Note: the California Motor Vehicle Code (CVC) prohibits the depositing of soil on highways and requires removal of such material. Text from CVC section 23112(b) and 23113(a) is included below.

CVC 23112(b)

> *No person shall place, deposit, or dump, or cause to be placed, deposited, or dumped, any rocks, refuse, garbage, or dirt in or upon any highway, including any portion of the right-of-way thereof, without the consent of the state or local agency having jurisdiction over the highway.*

CVC 23113(a)

> *Any person who drops, dumps, deposits, or throws, or causes or permits to be dropped, dumped, deposited, placed, or thrown, upon any highway or street any material described in section 23112 ... shall immediately remove the material or cause the material to be removed*

Section II

5. Unpaved Roads Conservation Practices

Exempted operations: none

Producers that want a Rule 403 exemption must implement the surface improvement conservation practice when more than 25 vehicles per day will utilize the unpaved road and at least one of the other conservation practices during all other times.

Surface Treatment (Mandatory)

Treat unpaved roads when more than 25 vehicles per day will use the road. Treatment options include water, mulch, chemical dust suppressants or material with a low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches) such that visible dust emissions do not exceed 20 percent opacity. Unpaved farm roads should be treated early enough so that mud will not stick to tires and be carried onto paved public roads.

Producers that want a Rule 403 exemption must also implement at least one of the three conservation practices listed below.

1. Speed Control

Control speed to 15 miles per hour (mph) on untreated unpaved roads through worker notifications, signage, or any other necessary means.

2. Access Restriction

Restrict access to private unpaved roads currently used by the public either through signage or physical access restrictions.

3. Unpaved Road Treatments

Treat unpaved roads with water, mulch, chemical dust suppressants, or low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches) during heavy use periods.

Section II

6. Storage Pile Conservation Practices

Exempted operations: none

Does not apply to storage of material with a low silt content (i.e., gravel)

Producers that want a Rule 403 exemption must implement at least one of the four conservation practices listed below.

1. Wind Sheltering

Enclose material in a three-sided barrier equal to the height of the material. *Open side of the barrier should be oriented to the leeward (downwind) side of the material.*

2. Watering

Apply water at a sufficient quantity and frequency to prevent wind driven dust.

3. Chemical Stabilization

Apply an approved dust suppressants at a sufficient quantity and frequency to prevent wind driven dust. *Best for use on storage piles subject to infrequent disturbances.*

4. Covering

Install tarps, plastic, or other material as a temporary cover. *Coverings should be anchored to prevent wind from removing the cover.*

Section III

Submittal Instructions for Alternative Conservation Practices

Producers can voluntarily implement alternative conservation practices that are more suitable to their specific farming operations. However, producers that elect to implement alternative conservation practices and want to qualify for the Rule 403 exemption must provide a description of the alternative conservation practices to the AQMD.

Producers that want to implement alternative conservation practices must notify the AQMD by December 1, 2004, or 30 days prior to starting a new farming operation. The notification must include a description of the alternative conservation practice(s) that will be implemented on-site.

After receipt of a notification, the AQMD will consult with the Natural Resources Conservation Service and the applicable Resource Conservation District to determine the appropriateness of the alternative conservation practice(s).

The AQMD will then notify the producer in writing if the alternative conservation practices are considered acceptable. Producers will be exempt from implementing conservation practices on the source category (e.g., active, inactive, unpaved roads, etc.) in which alternative conservation practices are proposed until the AQMD has notified said producer whether the alternative conservation practices are acceptable. If the alternative conservation practices are deemed unacceptable, the AQMD will notify the producer of such a determination and will establish a 30-day grace period to identify acceptable alternative conservation practices. During this 30-day grace period, the AQMD will work with the producer and the appropriate resource agency personnel to identify acceptable alternative conservation practices.

Notifications can be mailed or delivered to:

Rule 403 Compliance
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA 91765-4182

Notifications can also be submitted electronically to:

mlaybourn@aqmd.gov
(909) 396-3066
(909) 396-3252

Section IV

Submittal Instructions for Justification Statements

In the event that there are special technical (e.g., non-economic) circumstances, including safety, which prevent implementation of the suggested minimum number of conservation practices within each category listed in Section II, a justification statement must be submitted in order for a producer to qualify for a Rule 403 exemption.

Producers that want to submit a justification statement must notify the AQMD by December 1, 2004, or 30 days prior to starting a new farming operation.

The justification statement must explain the reason(s) why the suggested minimum number of conservation practices within a category can not be implemented on-site. After receipt of a justification statement, the AQMD will consult with the Natural Resources Conservation Service and the applicable Resource Conservation District to determine the appropriateness of the information submitted.

The AQMD will then notify the producer in writing if the justification statement(s) are considered acceptable. Producers will be exempt from implementing conservation practices on the source category (e.g., active, inactive, unpaved roads, etc.) in which a justification statement is proposed until the AQMD has notified said producer whether the justification statement is acceptable. If the justification statement is deemed unacceptable, the AQMD will notify the producer of such a determination and will establish a 30-day grace period to identify any alternative conservation practices or other possible justification statements. During this 30-day grace period, the AQMD will work with the producer and the appropriate resource agency personnel to identify alternative conservation practices or other possible justification statements.

Justification statements can be mailed or delivered to:

Rule 403 Compliance
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA 91765-4182

Justification statements can also be submitted electronically to:

mlaybourn@aqmd.gov

Section V

Conservation Practice Self Monitoring Form

The following form has been prepared to assist producers in documenting implementation of the conservation practices. Producers are required to prepare and maintain this form at the farm offices to qualify for a Rule 403 exemption. This information must be provided to the AQMD Executive Officer upon request. One form can be prepared and maintained for multiple farming operations provided that the conservation practices are the same at all sites.

A sample completed conservation practice self-monitoring form is also provided following the blank form.

Section V
Conservation Practice Self Monitoring Form[1]

Farm Name: _____

Producer Signature: _____

Date: _____

	Active[2]		Inactive[2]		Farm Yard Area		Track-Out		Unpaved Roads		Storage Piles
√	Activity Modification **(Mandatory)**		*(minimum of three)*		*(minimum of one)*		*(minimum of one)*		Surface treatment on high use roads **(Mandatory)**		*(minimum of one)*
	(minimum of one from below)		Cover Crop		Vegetation		Track-Out Area Improvements				Wind Sheltering
	Soil Moisture		Crop Residue		Dust Suppressants		Track-Out Prevention		*(minimum of one)*		Watering
	Irrigation System		Surface Roughening		Surface Area Modification		End of Row Turn Around Areas		Speed Control		Chemical Stabilization
	Minimum Tillage		Minimum Tillage		Disturbed Surface Area Reduction		*Alternative Practices*		Access Restriction		Covering
	Mulching		Cross Wind Stripcropping		*Alternative Practices*		*Justification*		Unpaved Road Treatments		*Alternative Practices*
	Alternative Practices		Field Windbreaks		*Justification*				Surface Modification		*Justification*
	Justification		Ridge Roughness						*Alternative Practices*		
			Wind Barriers						*Justification*		
			Alternative Practices								
			Justification								

[1] If you wish to choose different practices for different fields and/or farm areas, separate sheets must be filled out for each site.
[2] The following operations are exempt from active and inactive land conservation practices: orchards, vine crops, nurseries, range land, and irrigated pasture.

Section V
Conservation Practice Self Monitoring Form[1]

Farm Name: AAAA Farms

Producer Signature: John Smith

Date: 6/19/99

	Active[2]		Inactive[2]		Farm Yard Area		Track-Out		Unpaved Roads		Storage Piles
√	Activity Modification **(Mandatory)**		*(minimum of three)*		*(minimum of one)*		*(minimum of one)*	√	Surface treatment on high use roads **(Mandatory)**		*(minimum of one)*
	(minimum of one from below)	√	Cover Crop		Vegetation	√	Track-Out Area Improvements				Wind Sheltering
	Soil Moisture		Crop Residue		Dust Suppressants		Track-Out Prevention		*(minimum of one)*		Watering
√	Irrigation System	√	Surface Roughening		Surface Area Modification		End of Row Turn Around Areas	√	Speed Control	√	Chemical Stabilization
	Minimum Tillage		Minimum Tillage	√	Disturbed Surface Area Reduction		*Alternative Practices*		Access Restriction		Covering
	Mulching		Cross Wind Stripcropping		*Alternative Practices*		*Justification*		Unpaved Road Treatments		*Alternative Practices*
	Alternative Practices	√	Field Windbreaks		*Justification*				Surface Modification		*Justification*
	Justification		Ridge Roughness						*Alternative Practices*		
			Wind Barriers						*Justification*		
			Alternative Practices								
			Justification								

[1] If you wish to choose different practices for different fields and/or farm areas, separate sheets must be filled out for each site.
[2] The following operations are exempt from active and inactive land conservation practices: orchards, vine crops, nurseries, range land, and irrigated pasture.

Section VI

Opting for Rule 403 General Provisions

AQMD in conjunction with local producers and staff from the Farm Bureau, NRCS, and RCDs have developed the conservation practices contained in this Handbook to be more appropriate for farming operations than the traditional dust control requirements for construction projects, landfills, and other dust sources.

Producers that do not voluntarily implement the conservation practices before January 1, 2005, or within 30 days of starting a farming operation at a new site would become subject to the general requirements contained in AQMD Rule 403. The following is a general summary of the Rule 403 requirements.

- visible emissions prohibited from crossing the site property line [Section (d)(1)]
- at least one best available control measure must be implemented for each source [Section (d)(2)]
- upwind/downwind PM10 differential prohibited from exceeding 50 $\mu g/m^3$ [Section (d)(3)]
- all track-out must be removed within one hour if material extends more than 25 feet from a site [Section (d)(4)]
- sites with more than five acres of disturbed surfaces or those with more than 100 cubic yards of import or export must install a track-out prevention device at each location where vehicles exit the site [Section (d)(5)]

Producers that would like more information can obtain a copy of Rule 403 and the general Rule 403 Handbook, which details traditional best available control measures, by calling the AQMD at (909) 396-2000 or through the internet at:

www.aqmd.gov

Section VI

Failure to Comply with Rule 403

The intent of the AQMD is to work with producers and local resource agencies (e.g., NRCS, RCDs, and Farm Bureaus, etc.) to reduce dust and the corresponding PM10 emissions from agricultural operations through the voluntary implementation of good conservation practices. These emission reductions are necessary as part of the region's efforts to attain State and Federal air quality standards. Failure to achieve compliance with the State and Federal air quality standards by the mandated attainment date could result in Federal action that would significantly impact our region.

After January 1, 2005, failure to meet Rule 403 requirements could subject the producer mandatory conservation class(es), required dust control plans, fines, or other penalties.