

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**

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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.

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Section I

Purpose

To reduce the dust and corresponding PM10 emissions (Particulate Matter 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.

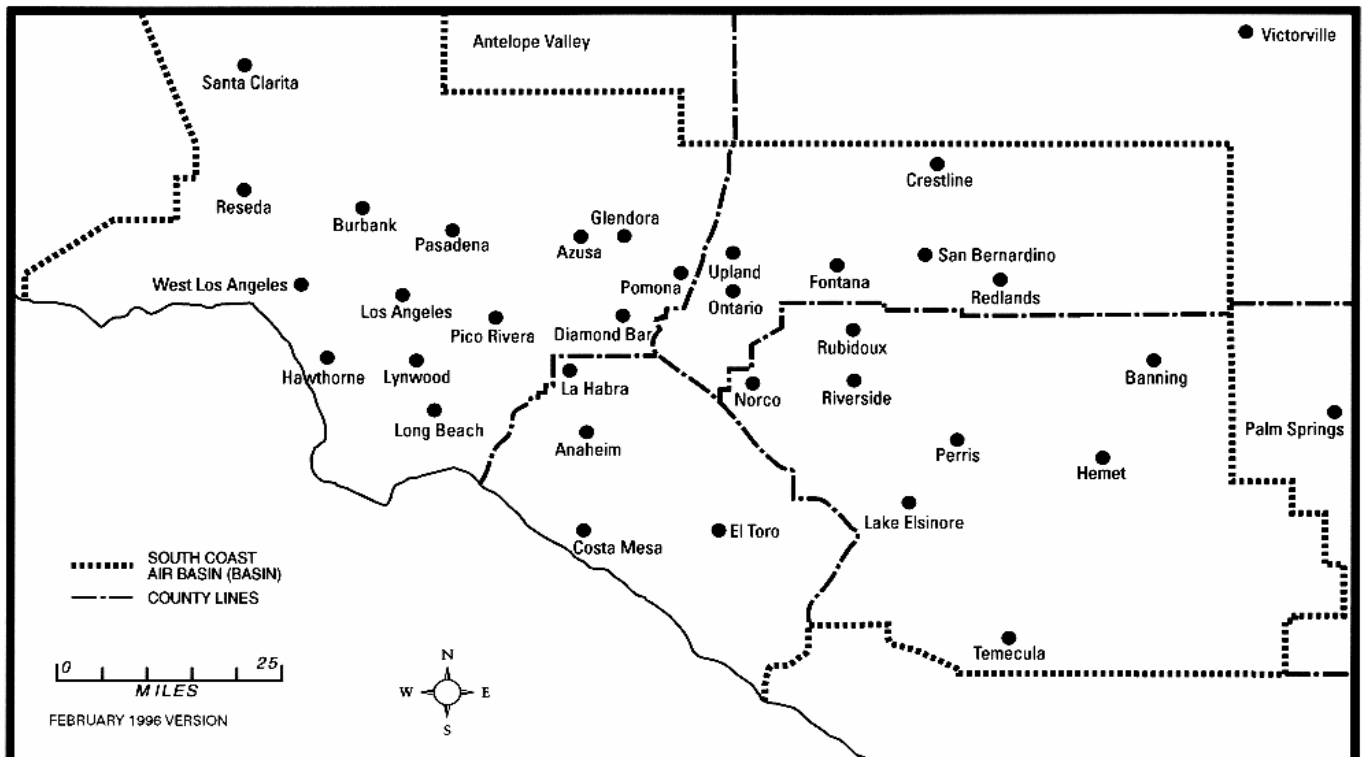


FIGURE 1

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 Form¹

	Active ²	Inactive ²	Farm Yard Area	Track-Out	Unpaved Roads	Storage Piles
√	Activity Modification (Mandatory)	<i>(minimum of three)</i>	<i>(minimum of one)</i>	<i>(minimum of one)</i>	<i>(minimum of one)</i>	<i>(minimum of one)</i>
	<i>(minimum of one from below)</i>	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	<i>Alternative Practices</i>	Surface Modification	Covering
	Mulching	Minimum Tillage	<i>Alternative Practices</i>	<i>Justification</i>	<i>Alternative Practices</i>	<i>Alternative Practices</i>
	<i>Alternative Practices</i>	Cross Wind Stripcropping	<i>Justification</i>		<i>Justification</i>	<i>Justification</i>
	<i>Justification</i>	Field Windbreaks				
		Ridge Roughness				
		Wind Barriers				
		<i>Alternative Practices</i>				
		<i>Justification</i>				

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 Form¹

	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 $\mu\text{g}/\text{m}^3$ [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.