

Mojave Desert
Air Quality Management District



List and Implementation Schedule for
District Measures to Reduce PM
Pursuant to Health & Safety Code §39614(d)

Adopted
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I Executive Summary

In 2003, the Legislature enacted Health and Safety Code (H&S Code) §39614 (SB 656, Sher), to reduce public exposure to PM10 and PM2.5. H&S Code §39614 requires the California Air Resources Board (CARB) in consultation with local air pollution control and air quality management districts (air districts), to develop and adopt, by January 1, 2005, a list of the most readily available, feasible, and cost-effective control measures that could be employed by CARB and the air districts to reduce PM10 and PM2.5 (collectively PM). The list of proposed control measures were to be based on rules, regulations, and programs existing in California as of January 1, 2004. H&S Code §39614 also requires that by July 31, 2005, air districts to adopt implementation schedules for appropriate measures. Finally, by no later than January 1, 2009, CARB must prepare a report describing actions taken to fulfill the requirements of the legislation as well as recommendations for further actions to assist in achieving the State PM standards. H&S Code §39614 sunsets on January 1, 2011, unless extended.

On November 18, 2004, CARB adopted *Proposed List of Measures to Reduce Particulate Matter – PM10 and PM2.5* to satisfy the initial requirements of H&S Code §39614. The CARB adopted document contains a table entitled “SB656 List of Air District Measures that Reduce Particulate Matter” (Local PM Measures List). H&S Code §39614(d) requires the Mojave Desert Air Quality Management District (MDAQMD) to adopt an implementation schedule for the most cost-effective local measures from this list.

This document has been prepared to meet the requirements of H&S Code §39614(d) by analyzing each control measure on the Local PM Measures List and placing each into one of four (4) categories. The first category includes measures that are already being implemented by the MDAQMD in its Rules and programs. The second category lists measures that do not need to be implemented within the MDAQMD because there are no sources of that type currently located within the district and any new sources would be required to install Best Available Control Technology (BACT) pursuant to the MDAQMD’s New Source Review (NSR) regulations. A third category includes those measures that are included or could be included in rules scheduled for adoption or modification in the near future. The final category lists those measures which require additional cost effectiveness analysis to determine if such rules are feasible to implement within the MDAQMD.

II Background

A. PM In General

Ambient PM is comprised of both directly emitted PM such as dust or soot, known as primary PM, as well as PM formed in the atmosphere from the reactions of precursor gases, known as secondary PM. These precursor gases include nitrogen oxides (NOx), sulfur oxides (SOx), volatile organic compounds (VOC), and ammonia. NOx, SOx, and

ammonia combine to form secondary ammonium nitrate and sulfate. VOC can form secondary organic aerosols, as well as participate in the production of secondary ammonium nitrate. NO_x and VOC are also precursors of ambient ozone. Sources of ambient PM include combustion sources such as trucks and passenger cars, off-road equipment, industrial processes, residential wood burning, and forest and agricultural burning; fugitive dust from paved and unpaved roads, construction, mining and agricultural activities; and ammonia from sources such as livestock operations, fertilizer application, and motor vehicles. In general, combustion processes form fine particles, whereas emissions from dust sources tend to be predominantly coarse particles.

PM emissions can be suspended in the air and carried long distances. Thus, PM can be an air pollutant that exists over large geographical expanses, potentially affecting numerous people. The health threat from these emissions arises because PM can be inhaled deep into the lungs, where they can persist and cause respiratory damage. The health risk from an inhaled dose of PM depends on the size, composition, and concentration of the particulate. Larger particles tend to deposit in the tracheal-bronchial region, and smaller ones in the alveolar region of the lungs. Although everyone is potentially affected by PM exposure, certain sensitive groups are specially vulnerable to its effects. These at-risk individuals include people with chronic obstructive lung disease or cardiovascular disease, individuals with influenza and asthma, elderly individuals, and children.

B. PM in the MDAQMD

The jurisdiction of the MDAQMD covers 20,000 square miles of desert terrain and contains 450,000 persons. The large majority of the MDAQMD is relatively rural and sparsely populated. There are a few densely populated centers of urban development including but not limited to the Victor Valley (The cities of Adelanto, Hesperia, Victorville and surrounding areas) and the Morongo Basin. Over 63% of the MDAQMD's population resides in the Victor Valley area, with 13% in the Barstow area, another 19% in the Morongo Basin, and 13% in and around Lucerne Valley.

The climate in the MDAQMD is desert. The cool moist costal air from the South Coast Air Basin is blocked by the San Gabriel and San Bernardino mountain ranges. The area is characterized by hot, dry summers and mild winters with annual rainfall averaging 2 to 5 inches per year. Meteorology tends to be influenced by a moderately intense anticyclonic circulation except during frontal activity (storms) in the winter. During the winter there are an average to 20-30 frontal systems. In the summer the MDAQMD is usually influenced by a Pacific Subtropical High cell that sits off the coast of California. The prevailing winds are out of the west and south, resulting in a general west to east flow across the MDAQMD.

The MDAQMD's PM tends to be primarily fugitive dust. This dust appears to be generated by both local sources and by region-wide dust during moderate to high wind episodes. These regional episodes tend to be multi-district and sometimes interstate in scope. The MDAQMD has identified the local source of fugitive dust to be primarily

unpaved road travel, construction and local disturbed areas of soil concentrating in the urban populated areas within the district. Certain stationary sources located within the rural Lucerne Valley have also been identified as contributing to the locally generated PM in that area.

C. MDAQMD Federal and State PM Designations

All of the MDAQMD has been designated non-attainment for the State PM10 standard. USEPA designated the San Bernardino County portion of the MDAQMD nonattainment for the Federal PM10 standard in two separate actions, the first in 1990 (for the Searles Valley), the second in 1994 (for the remainder of the MDAQMD in San Bernardino County). The southwest (Victor Valley) portion of the MDAQMD has been designated non-attainment for the State and Federal PM2.5 standards.

III PM Measures Currently Implemented

The PM control measures listed in Table 1 are those that are currently being implemented within the MDAQMD. These measures are either identical to or equivalent in stringency to those listed in the Local Agency Measures list as adopted by CARB.

**Table 1
PM Measures Currently Implemented Within the MDAQMD**

CARB #	CARB Measure Description	MDAQMD Rule/Program
49.a	<u>Combustion Sources. Cement Kilns:</u> a) Limits NOx emissions from cement kilns during periods of operation other than start-up or shut-down to between 6.4-7.2 lb/ton clinker produced averaged over a 30 day period depending on kiln type. Additional limits are specified for start-up and shut-down periods.	MDAQMD Rule 1161 – <i>Portland Cement Kilns.</i>
49.b	<u>Combustion Sources. Cement Kilns:</u> b) Limits NOx emissions from cement kilns to 11.6 lbs/ton of clinker produced averaged over any 24 consecutive hour period and to 6.4 lbs/ton of clinker produced averaged over a 30 day period.	MDAQMD Rule 1161 – <i>Portland Cement Kilns.</i>
51.a	<u>Combustion Sources. Furnaces:</u> a) Glass Melting Furnaces - Sets NOx emission limits of 4.0 pounds per ton of glass pulled for glass melting furnaces. Sets NOx emission limits of 5.5 pounds per ton of glass pulled for glass melting furnaces.	Limit Imposed Via Permit. Only source in MDAQMD is equipped with BACT via New Source Review.

CARB #	CARB Measure Description	MDAQMD Rule/Program
57.	<u>Storage, Transfer and Dispensing Operations. Gasoline Transfer and Dispensing Facilities:</u> Limits emissions of VOC from gasoline dispensing facilities through equipment and operational requirements. For equipment and testing requirements see ARB Executive Orders.	MDAQMD Rules 461 – <i>Gasoline Transfer and Dispensing</i> , 462 – <i>Organic Liquid Loading</i> and 463 – <i>Storage of Organic Liquids</i> .
58.a	<u>Storage, Transfer and Dispensing Operations. Organic Liquid Storage:</u> a) Limits VOC emissions from storage tanks with a capacity of 264 gallons and greater through operational and equipment requirements.	MDAQMD Rules 461 – <i>Gasoline Transfer and Dispensing</i> , 462 – <i>Organic Liquid Loading</i> and 463 – <i>Storage of Organic Liquids</i> .
58.b	<u>Storage, Transfer and Dispensing Operations. Organic Liquid Storage:</u> b) Limits VOC emissions from any above-ground stationary tank with a capacity of 75,000 liters (19,815 gallons) or greater used for storage of organic liquids, and any above-ground tank with a capacity between 950 liters (251 gallons) and 75,000 liter (19,815 gallons) used for storage of gasoline by setting tank roof, other performance, and self-inspection requirements. Sets forth conditions for the cleaning and degassing of aboveground and underground stationary tanks, reservoirs, or other containers storing or last used to store VOC.	MDAQMD Rules 461 – <i>Gasoline Transfer and Dispensing</i> , 462 – <i>Organic Liquid Loading</i> and 463 – <i>Storage of Organic Liquids</i> .
59.a	<u>Leaks and Releases. Equipment Leaks (Valves and Flanges):</u> a) Limits VOC and methane emissions from leaking equipment at petroleum refineries, chemical plants, bulk plants, and bulk terminals including, but not limited to: valves, connectors, pumps, compressors, pressure relief devices, diaphragms, hatches, sight-glasses, fittings, sampling ports, meters, pipes, vessels, and refinery wastewater collection system components to between 100-500 ppm depending on equipment type.	MDAQMD Rule 1102 – <i>Fugitive Emissions of VOCs from Components at Pipeline Transfer Stations</i> .
59.b	<u>Leaks and Releases. Equipment Leaks (Valves and Flanges):</u> b) Limits VOC emissions from leaking equipment at petroleum facilities and chemical plants by setting forth leak standards and requirements for component identification, operator inspection, maintenance, and atmospheric pressure relief devices.	MDAQMD Rule 1102 – <i>Fugitive Emissions of VOCs from Components at Pipeline Transfer Stations</i> .

CARB #	CARB Measure Description	MDAQMD Rule/Program
60.	<u>Product Manufacturing. Coatings and Ink Manufacturing:</u> Sets forth operational and “housekeeping” requirements for coatings and ink manufacturing.	MDAQMD Rule 1117 – <i>Graphic Arts</i>
68.	<u>Coating Operations. Architectural Coatings:</u> Several districts have adopted regulations consistent with ARB’s Suggested Control Measure (SCM) which limits the content of VOC in architectural coatings to between 100-730 g/l. ARB’s SCM was adopted in June 22, 2000. For example see rules adopted by SJVAPCD, SDAPCD, SMAQMD, SBAPCD, TeCAPCD, MDAQMD, and AVAQMD.	MDAQMD Rule 1113 – <i>Architectural Coatings</i>
80.	<u>Coating Operations. Vehicle Refinishing:</u> Limits VOC emissions from coatings applied on Group I vehicles and equipment and Group II vehicles through operating requirements and by limiting VOC content of products to between 2.8-7.0 lbs/gal.	MDAQMD Rule 1116 – <i>Automotive Refinishing Operations</i>
82.	<u>Coating Operations. Wood Products Coatings:</u> Specifies VOC content of wood products coatings between 275-760 g/l depending on product. Requires wood strippers to have a maximum VOC content of 350 g/l or a maximum vapor pressure of 2mm Hg. The rule allows for use of an approved emission control system in lieu of VOC content limits and also includes an averaging provision. Exempts facilities that use less than one gallon of coatings per day.	MDAQMD Rule 1114 – <i>Wood Products Coating Operations.</i>
89.	<u>General Rules. Visible Emission Limits (PM10, PM2.5):</u> Prohibits discharges into the atmosphere from any single source of emission of any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour which is: 1) as dark or darker in shade as that designated as No. 1 on the Ringlemann Chart (20% opacity), as published by the United States Bureau of Mines, or 2) of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in 1). Provides the option of exempting permitted outdoor residential burns.	MDAQMD Rule 401 – <i>Visible Emissions</i>
90.	<u>General Rules. Combustion Contaminants (PM10, PM2.5):</u> Prohibits discharges into the atmosphere from the burning of fuel of combustion contaminants exceeding 0.23 gram per cubic meter (0.1 grain per cubic foot) of gas calculated to 12% of	MDAQMD Rule 409 – <i>Combustion Contaminants</i>

CARB #	CARB Measure Description	MDAQMD Rule/Program
	carbon dioxide at standard conditions averaged over a minimum of 25 consecutive minutes.	
91.	<u>General Rules. Grain Loading (PM10):</u> Prohibits release or discharge into the atmosphere from any source or single processing unit, exclusive of sources emitting combustion contaminants only, PM emissions in excess of 0.1 grains per cubic foot of dry exhaust gas at standard conditions.	MDAQMD Rules 404 – <i>Particulate Matter - Concentration</i> and 405 – <i>Solid Particulate Matter – Weight</i> .
92.	<u>Transportation Related Programs. DMV Funds (AB 2766 Funds): Motor Vehicle Registration Fee Program (Many districts implement this program):</u> State law authorizes air districts to assess motor vehicle registration fees of between \$2-\$4 (MV Fees) to reduce air pollution from motor vehicles and for related planning, monitoring, enforcement, and technical studies necessary for the implementation of the California Clean Air Act. Twenty-six air districts have implemented a motor vehicle registration fee program. ARB’s guidance stresses funding cost-effective projects that help implement clean air plans and that reduce the most emissions per dollar spent. Example: SCAQMD’s Mobile Source Air Pollution Reduction Review Committee; BAAQMD’s Transportation Fund for Clean Air (vehicle buy-back clean school buses, vehicle incentives, etc.); SJVAPCD’s REMOVE Program.	The MDAQMD currently implements the DMV Funds Program.
93.a	<u>Transportation Related Programs. Heavy-Duty Engine Incentive Program :</u> a) Helps fleets pay for new lower emission heavy-duty engines, lower emission retrofits, and engine replacements. Public and private fleets are eligible if they use medium or heavy-duty on-road gas or diesel vehicles over 14,000 pounds gross weight or off-road commercial equipment including construction, agricultural, stationary agricultural water pump, commercial marine vessels, locomotives, forklifts, or airport ground support equipment. The program is funded by the air district and by the Carl Moyer Incentive Program sponsored by ARB.	The MDAQMD currently implements the Carl Moyer Program.
93.b	<u>Transportation Related Programs. Heavy-Duty Engine Incentive Program :</u> b) Provides incentive funds for the differential cost associated with the reduced emission technology as compared with the	The MDAQMD currently implements the Carl Moyer Program.

CARB #	CARB Measure Description	MDAQMD Rule/Program
	<p>cost of conventional technology. Eligible funding categories include heavy-duty on-road vehicles, off-road vehicles, locomotives, marine vessels, electric forklifts, electric airport ground support equipment and stationary agricultural irrigation pump engines. The SJVAPCD received \$25 million in State transportation funds from special legislation for the Valley Emergency Clean Air Program (VECAP). The air district added the VECAP funds to the Heavy Duty Engine Incentive Program.</p>	
94.	<p><u>Transportation Related Programs. Lower Emission School Bus Program:</u> The Lower-Emission School Bus Program provides financial incentives to school districts to replace older school buses using both air district and ARB grant funding.</p>	<p>The MDAQMD currently implements the Lower Emission School Bus Program.</p>
95.	<p><u>Transportation Related Programs. Moyer Program:</u> The Carl Moyer Memorial Air Quality Standards Attainment Program provides funds on an incentive-basis for the incremental cost of cleaner than required engines and equipment. Eligible projects include cleaner on-road, off-road, marine, locomotive and stationary agricultural pump engines, as well as forklifts, airport ground support equipment, and auxiliary power units. The program achieves near-term reductions in NOx and PM emissions. Most districts currently implement this program</p>	<p>The MDAQMD currently implements the Carl Moyer Program.</p>
100.	<p><u>Transportation Outreach Program:</u> Requires employers with 100 or more employees to register with the air district annually and collect survey data on their employee's commute distances and ridesharing participation every two years. This rule allows the air district to devote resources and efforts in assisting employers with their voluntary trip reduction efforts.</p>	<p>The MDAQMD Community Relations and Education department runs an extensive public outreach program regarding all types of air quality issues including but not limited to, transportation related issues.</p>
101.	<p><u>Transportation Related Programs. Spare the Air Program:</u> Many air districts have implemented public outreach programs to encourage the general public and employers to take actions to reduce transportation related emissions. SMAQMD, SJVAPCD, and BAAQMD have implemented Spare the Air Programs. Spare the Air is a voluntary, summertime effort aimed at reducing air pollution (specifically, ground-level ozone).</p>	<p>The MDAQMD Community Relations and Education department runs an extensive public outreach program regarding all types of air quality issues including but not limited to, transportation related issues.</p>

CARB #	CARB Measure Description	MDAQMD Rule/Program
102.	<u>Transportation Related Programs. Public Awareness Programs:</u> Some air districts have implemented public awareness programs that: 1) support voluntary employer based trip reduction programs, 2) encourage alternative modes of transportation, 3) encourage cities and counties to incorporate air quality beneficial policies into local planning and development activities, 4) promote demonstrations of low emission vehicles and refueling infrastructure, and/or 5) continue public education by informing residents about air quality status, air pollutant health effects, sources of pollution, and actions individuals and communities can take to help improve air quality.	The MDAQMD Community Relations and Education department runs an extensive public outreach program regarding all types of air quality issues including but not limited to, transportation related issues.

IV PM Measures For Which There Are No Sources

The PM control measures listed in Table 2 will not be implemented within the MDAQMD because there are currently no sources within the MDAQMD which would be regulated by such measures. If a new source belonging to a source category regulated by a measure listed in Table 2 were to locate within the MDAQMD, it would be subject to the requirements of New Source Review and would be required to meet Best Available Control Technology (BACT) limits for any equipment which emits or has the potential to emit air contaminants for which the MDAQMD is non-attainment (See MDAMD Rule 1303(A)).

**Table 2
PM Measures for Which There Are No Sources Within the MDAQMD**

CARB #	CARB Measure Description
48.	<u>Combustion Sources. Lime Kilns:</u> Limits NOx emissions from lime kilns to between 0.10-0.20 lbs/MM Btu depending on fuel type.
50.	<u>Combustion Sources. Petroleum Coke Calcining Operations:</u> Does not allow operation of petroleum coke calcining equipment unless the uncontrolled emissions of oxides of sulfur from such basic equipment, expressed as sulfur dioxide (SO2), are reduced by at least 80 percent.
61	<u>Product Manufacturing. Fiberboard Manufacturing:</u> Limits VOC emissions from fiberboard manufacturing by requiring use of capture and control systems with specified efficiencies.
62	<u>Product Manufacturing. Food Product Manufacturing and Processing:</u> Limits VOC emissions from solvents used in food product manufacturing and processing operations by limiting the VOC content of products used to between 120-400 g/l depending on product, or by the use of a control device.

CARB #	CARB Measure Description
63	<u>Product Manufacturing. Pharmaceuticals and Cosmetics Manufacturing Operations:</u> Sets forth equipment and operational requirements for pharmaceuticals and cosmetic manufacturing.
65a	<u>Product Manufacturing. Polymeric Cellular Products (Foam):</u> a) Sets forth emission limits for polymeric cellular products manufacturing operations. All steps of the manufacturing operation and the storage of the final product for a maximum of 48 hours are subject to the requirements of this rule.
65b	<u>Product Manufacturing. Polymeric Cellular Products (Foam):</u> b) Limits VOC emissions from the manufacture of foam products composed of polystyrene, polyethylene or polypropylene to between 2.4-2.8 lbs of VOC emissions per 100 lbs of product produced and by requiring emission abatement devices. A control device with at least 98% efficiency may be used in lieu of the above emissions requirements.
66	<u>Product Manufacturing. Surfactant Manufacturing:</u> Requires the total emissions of VOC from the surfactant manufacturing equipment, before being vented to the atmosphere, be reduced to 0.5 pound per 1000 pounds of surfactant produced or by 95 percent (wt) or more; and all ports used for inspection, taking samples, or adding ingredients must be closed when not in use.
69	<u>Coating Operations. Glass Coatings:</u> Limits VOC emissions from the coating of glass products by limiting the VOC content of coating products to between 2.3-6.7 lbs/gal, depending on the product, or installing control equipment.
71.	<u>Coating Operations. Magnet Wire Coating Operations:</u> This rule applies to all coating operations on magnet wire, where the wire is continuously drawn through a coating applicator. Under this rule, any person shall not use or apply any magnet wire coating which contains more than 200 grams VOC per liter (1.67 lb/gal) of coating, less water and exempt compounds. The rule also provides for use of approved emission control systems.
72.	<u>Coating Operations. Marine Coating Operations:</u> Applies to coating operations of marine and fresh water vessels, oil drilling platforms, navigational aids and component parts; and structures intended for exposure to a marine environment. Limits VOC emissions from marine coatings by limiting VOC content of coatings to between 275-650 g/l depending on product. Requires use of non-VOC materials for surface preparation and equipment cleaning. Allows use of specified air pollution control equipment which captures VOC emissions associated with coating, cleaning, and surface preparation, in lieu of use of low-VOC coatings and non-VOC materials used in cleaning and surface preparation.
73	<u>Coating Operations. Metal Container, Closure, and Coil Coating Operations:</u> Limits VOC emissions from metal container, metal closure and metal coil coating operations through operational controls and by limiting the VOC content of products up to 660 g/l depending on product type.
75	<u>Coating Operations. Motor Vehicle Assembly Line Coating Operations:</u> Sets forth VOC emission limits and VOC content of motor vehicle coatings. This rule applies to all assembly line coating operations conducted during the manufacturing of new motor vehicles.

CARB #	CARB Measure Description
76	<u>Coating Operations. Paper, Fabric, and Film Coating Operations:</u> This rule applies to all persons applying coatings or wash primers to paper, fabric, or film substrates. The drying and curing processes covered under this rule include, but are not limited to, heated, forced-air dried, and non-heated processes. The rule specifies VOC content of applicable coatings and sets forth application method and cleaning requirements.
77	<u>Coating Operations. Plastic, Rubber, and Glass Coatings:</u> Specifies VOC content of coatings used on plastic, rubber, and glass and sets forth transfer efficiency requirements. The rule allows for use of an approved emission control system in lieu of VOC content limits.
78	<u>Coating Operations. Screen Printing Operations:</u> Specifies VOC content of screen printing materials and applies to persons performing screen printing operations or who sell, distribute, or require the use of screen printing materials.

V PM Measures To Be Analyzed and Potentially Implemented

The PM measures listed in Table 3 are those that the MDAQMD will analyze and consider for adoption during rule making that is scheduled for the near future. Certain of the measures listed are already included in the indicated MDAQMD Rule/Program, however, they have been included in Table 3 to ensure that there is a re-evaluation of the stringency and effectiveness of the particular measure. The MDAQMD will analyze each particular listed measure, determine if it is cost effective for implementation, determine if a better alternative exists and adopt changes to the appropriate rules and/or programs on or before the date indicated. Inclusion of a measure in Table 3 does not necessarily mean that the measure will be adopted exactly in the form and to the extent listed.

**Table 3
PM Measures to be Analyzed and Potentially Implemented Within the MDAQMD**

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Adoption Date
13.	<u>Non-Agricultural Open Burning, Prohibition of Residential Open Burning. Of All Outdoor Residential Open Burning:</u> Prohibits outdoor residential open burning. Limits open burning to permitted activities (e.g., agricultural burning, infectious disease, wildland vegetation management) or exempted activities (ceremonial fires, recreational fires, cooking fires, etc.)	MDAQMD Rule 444 – <i>Open Burning</i>	02/27/06
14.	<u>Non-Agricultural Open Burning, Prohibition of Residential Open Burning. Where Waste Service is Available:</u> Prohibits burning of greenwaste if served by an organized waste disposal service. No other residential waste may be burned anywhere.	MDAQMD Rule 444 – <i>Open Burning</i>	02/27/06

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Adoption Date
15.	<u>Non-Agricultural Open Burning, Prohibition of Residential Open Burning. In Specified Highly Populated Areas:</u> Prohibits outdoor burning of green waste in populated areas in specified geographical locations.	MDAQMD Rule 444 – <i>Open Burning</i>	02/27/06
16.	<u>Non-Agricultural Open Burning, Prohibition of Residential Open Burning. Within Small Lots and Setbacks:</u> Prohibits outdoor burning of natural vegetation from the premises on lots smaller than one acre in size, where the burn pile is less than 100 feet from neighboring residence, or where greenwaste collection is offered by a franchise hauler.	MDAQMD Rule 444 – <i>Open Burning</i>	02/27/06
17	<u>Non-Agricultural Open Burning, Mandatory Curtailment of Non-Agricultural Open Burning. During Periods with Predicted High PM or Ozone Levels:</u> Prohibits planned burning or further ignitions during days when atmospheric conditions and the level of open burning are predicted to result in high PM or ozone concentrations (can prohibit additional burns on burn days.	MDAQMD Rule 444 – <i>Open Burning</i>	02/27/06
18	<u>Non-Agricultural Open Burning, Control Smoke Production. Limits during Burn Days in Smoke Sensitive Areas:</u> Requires Fire Chief to grant permit and limit burns to 25 per day in specific Smoke Sensitive Area (defined by rule); permit is only valid with daily authorization number.	MDAQMD Rule 444 – <i>Open Burning</i>	02/27/06
19	<u>Non-Agricultural Open Burning, Control Smoke Production. Emission Limits for Mechanized Burners:</u> Sets emission limits for mechanized burners not to equal or exceed No. 1 on Ringelmann Chart published by the U.S. Bureau of Mines for periods aggregating more than 30 minutes in any eight-hour period. Requires burning permit.	MDAQMD Rule 444 – <i>Open Burning</i>	02/27/06
20.	<u>Non-Agricultural Open Burning, Performance Standards for Allowed Burns: Drying Times:</u> Establishes minimum drying times for any green waste to be burned and pile size limits. Sets bounds on time of day for ignition and completion.	MDAQMD Rule 444 – <i>Open Burning</i>	02/27/06
21.	<u>Non-Agricultural Open Burning, Performance Standards for Allowed Burns: Burn Duration</u> Restricts ignition hours and requires smoldering fires to be extinguished.	MDAQMD Rule 444 – <i>Open Burning</i>	02/27/06

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Adoption Date
22.a	<u>Non-Agricultural Open Burning, Performance Standards for Allowed Burns: Preparation of Fuels & Management of Burns:</u> a) Sets requirements for burn piles (e.g. stack to ignite quickly, burn with minimum of smoke, ignite only for burn within same day, avoid public nuisance) prior and during burning.	MDAQMD Rule 444 – <i>Open Burning</i>	02/27/06
22.b	<u>Non-Agricultural Open Burning, Performance Standards for Allowed Burns: Preparation of Fuels & Management of Burns:</u> b) Sets requirements for burns on land to be cleared for residential or commercial development. APCO can restrict or prohibit the burning of poison oak	MDAQMD Rule 444 – <i>Open Burning</i>	02/27/06
23.	<u>Non-Agricultural Open Burning, Performance Standards for Allowed Burns: Permits Required:</u> Requires permits for all types of outdoor burning.	MDAQMD Rule 444 – <i>Open Burning</i>	02/27/06
24.a	<u>Fugitive Dust. Construction: Earthmoving:</u> a) Requires water or chemical stabilizers/dust suppressants be applied, in conjunction with optional wind barriers, to limit visible dust emissions (VDE) to 20% opacity. Specifies that a Dust Control Plan must be submitted for areas of 40 acres or larger where earth movement of 2500 cubic yards or more on at least 3 days is intended.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2 – <i>Fugitive Dust Control for the MDPA</i> .	11/28/05
24.b	<u>Fugitive Dust. Construction: Earthmoving:</u> b) Prohibits VDE beyond property line and an upwind/downwind PM10 differential of more than 50 µg/m ³ . Requires implementation of Best Available Control Measures (BACM) for all sources such that visible emissions do not exceed this limit 100 feet from the point of origin of earth-moving activities. List of BACM is contained in the Rule 403 Implementation Handbook. Specifies that a Dust Control Plan or a commitment to implement Table 1 and 2 control measures through a large operation notification (LON) is required for large operations projects with a disturbed surface area 100 acres or larger, or projects with daily earth movement of 10,000 cubic yards or more.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Adoption Date
25.a	<u>Fugitive Dust. Construction: Demolition:</u> a) Requires application of dust suppressants to limit VDE to not more than 20% opacity. Sets bulk material and track-out requirements.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
25.b	<u>Fugitive Dust. Construction: Demolition:</u> b) Prohibits VDE beyond property line. Requires application of BACM. Specifies that upwind-downwind PM10 levels must not exceed 50 ug/m ³ . Sets track-out requirements.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
26.a	<u>Fugitive Dust. Construction: Grading Operations:</u> a) Requires pre-watering to limit VDE to 20% opacity. Requires phasing of work to reduce disturbed soil.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
26.b	<u>Fugitive Dust. Construction: Grading Operations:</u> b) Requires water application to increase moisture content to proposed cut, and grading each phase separately to coincide with the construction phase. Specifies that chemical stabilizers are to be applied to graded areas where construction will not begin for more than 60 days after grading.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
27.a	<u>Fugitive Dust. Inactive Disturbed Land:</u> a) Requires restricting vehicle access. Specifies that water/dust suppressants must be applied to meet stabilized surface definition; if area is greater than 0.5 acres and the area is inactive more than 7 days, must comply with stabilized soil definition.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
27.b	<u>Fugitive Dust. Inactive Disturbed Land:</u> b) Prohibits VDE beyond property line and an upwind/downwind PM10 differential of more than 50 ug/m ³ . Requires BACM (e.g., chemical stabilization, frequent watering, and revegetation) at all times and high wind measures (e.g., chemical stabilization to maintain a stabilized surface or watering three times per day) under high wind conditions.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Adoption Date
28.a	<u>Fugitive Dust. Bulk Materials: Handling/Storage:</u> a) Establishes wind barrier and watering or stabilization requirements to limit VDE to 20% opacity. Specifies bulk materials must be stored in accordance with the definition for stabilized surface. Requires outdoor materials be covered with tarps, plastic, etc.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
28.b	<u>Fugitive Dust. Bulk Materials: Handling/Storage:</u> b) Prohibits VDE beyond property line and an upwind/downwind PM10 differential of more than 50 µg/m ³ . Requires use of BACM (e.g., wind sheltering, watering, chemical stabilizers, altering load-in/load-out procedures, or coverings).	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
29.	<u>Fugitive Dust. Storage, Handling, and Transport of Petroleum Coke, Coal, and Sulfur:</u> Limits opacity from operations to ½ Ringelmann; ensures enclosure of all coke piles including compliance schedule; requires District approved plan or Best Available Control Measures (BACM) for any open piles of coal or sulfur; requires street-sweeping or limits silt loading on roads and truck exteriors with quarterly testing; requires paving and maintenance of roads; requires covers or slot-tops for transport trucks.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
30.a	<u>Fugitive Dust. Carryout and Track-out:</u> a) Requires track-out removal at the end of the workday, if the track-out is less than 50 feet; or removal as soon as possible if the track-out exceeds 50 feet. Specifies a track-out control device must be installed at all access points to public roads. Requires maintaining sufficient length of paved interior roads to allow dirt/mud to drop off before leaving site and mud/dirt removal from interior paved roads with sufficient frequency to prevent track-out	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
30.b	<u>Fugitive Dust. Carryout and Track-out:</u> b) Requires removing any track-out within one hour; or selecting a Table 3 track-out prevention option and removing track-out at the end of the workday, if the track-out is less than 50 feet, and removing track-out as soon as possible, if it exceeds 50 feet. Table 3 track-out options include road surface paved or chemically stabilized from point of intersection with a public paved road to distance of at least 100 feet by 20 feet, or installation of track-out control device from point	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Adoption Date
	of intersection with a public paved road to a distance of at least 25 feet by 20 feet.		
31.	<u>Fugitive Dust. Carryout and Track-out: Clean-Up Methods:</u> Requires manual sweeping; sweeping with a rotary brush/broom with sufficient wetting to limit VDE to 20% opacity; or operating a PM10 street sweeper with 80% efficiency per SCAQMD Rule 1186.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
32.a	<u>Fugitive Dust. Disturbed Open Areas:</u> a) Applies to non-agricultural areas of 3 acres or larger which have been unused for 7 days or more. Requires water/dust suppressants application to unvegetated areas sufficient to limit VDE to 20% opacity. Specifies vegetation must be established to limit VDE to 20% opacity. Requires paving, applying gravel, or applying stabilizers to limit VDE to 20% opacity. Upon evidence of trespass, requires posting of “no trespass” signs or installing barriers to prevent access to area.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
32.b	<u>Fugitive Dust. Disturbed Open Areas:</u> b) Applies to non-agricultural areas of one-half acre or larger for residential use; and all non-residential areas. Requires application of chemical stabilizers; watering with sufficient frequency to establish a surface crust, or establishing drought-resistant vegetation as quickly as possible.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
33.a	<u>Fugitive Dust. Paved Road Dust: New/Modified Public and Private Roads:</u> a) Requires paved shoulders for all roads with average daily vehicle trips (ADVT) of 500 or more. If ADVT is 500-3000, then average shoulder width is at least 4 feet. If ADVT is greater than 3000, then average shoulder width is at least 8 feet. Curbing adjacent to and contiguous with a paved lane or shoulder can be used in lieu of shoulder width requirements. Intersections, auxiliary entry and exit lanes may be constructed adjacent to and contiguous with a paved roadway in lieu of shoulder requirements. Specifies if ADVT is 500 or greater, and medians are part of the roadway, then medians are to be constructed with minimum 4-foot shoulder widths adjacent to traffic lanes. Where speed limits are below 45 mph, medians are to be constructed with curbing.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Adoption Date
	Specifies medians are to be landscaped to meet stabilized surface requirements. As an option to shoulder paving or vegetation requirements, oils or chemical dust suppressants can be used, according to the specified widths, and must be maintained to limit VDE to 20% opacity. Specifies requirements for contingency notification.		
33.b	<u>Fugitive Dust. Paved Road Dust: New/Modified Public and Private Roads:</u> b) Establishes curbing or paved shoulder requirements in the event of a contingency notification: For ADVT of 500 or more, curbing or paved shoulders are required, for ADVT of 500-3000, shoulder widths shall be at least 4 feet, for ADVT greater than 3000, shoulder widths shall be at least 8 feet. Establishes median requirements in the event of a contingency notification. For medians with ADVT of 500 or more, must pave median area with typical roadway materials, unless speed limits less than 45 mph, or medians are landscaped with ground cover and there is curbing, or medians are treated with chemical stabilizers to maintain stabilized surface.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
34.	<u>Fugitive Dust. Paved Road Dust: Street Sweeping:</u> Requires use of certified PM10 efficient street sweepers by governmental agencies or their street sweeping contractors where the contract date, purchase date, or lease date is after January 1, 2000. Specifies certified sweepers are to be used for all routine street sweeping except roads with curbs, paved road shoulders greater than 4 feet width, within 1000 feet of an unpaved road, and provided documentation of such is provided. Certified sweepers are to be maintained according to manufacturer’s specifications.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
35.	<u>Fugitive Dust. Paved Road Dust: Street Sweeping Sand & Cinders Used for Anti-skid Material on Icy Roads, VMT Limit, & Free Bus:</u> Requires vacuum-street sweeping on roads to remove sand and cinders that were placed on the road during winter storms as an anti-skid material. Street sweeping is required after the roads dry sufficiently for the street sweepers to remove the material. This rule also limits the peak daily VMT (vehicle miles traveled)	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Adoption Date
	projected with future development, and encourages the use of a free bus system to reduce VMT.		
36.	<p><u>Fugitive Dust. Unpaved Parking Lots/Staging Areas:</u> Requires, for days with 75 or more vehicle trips, limiting VDE to 20% opacity and implementing at least one of the following control measures: 1) applying water, 2) applying uniform layer of washed gravel, 3) applying chemical/organic dust suppressant, 4) using vegetative materials, 5) paving, 6) using any other method to limit VDE to 20% opacity.</p> <p>Requires, for days with 100 or more vehicle trips, limiting VDE to 20% opacity, complying with requirements for stabilized surface, or implementing at least one of the following control measures: 1) applying water, 2) applying chemical/organic dust suppressant, 3) applying road mix, 4) paving, 5) using any other method that results in a stabilized surface.</p> <p>Sets as an option to the above, obtaining a Fugitive PM10 Management Plan that: 1) achieves at least 50% control efficiency, 2) describes location, length, and area of unpaved traffic areas, 3) describes traffic conditions (vehicle trips per unit time, types of vehicles), 4) describes control measures used and application details, and 5) describes expected results of road surface condition.</p>	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
37.a	<p><u>Fugitive Dust. Unpaved Roads: Control Requirements:</u> a) Requires, for days with 75 or more vehicle trips, limiting VDE to 20% opacity and implementing at least one of the following control measures: 1) applying water, 2) applying uniform layer of washed gravel, 3) applying chemical/organic dust suppressant, 4) using vegetative materials, 5) paving, or 6) using any other method to limit VDE to 20% opacity.</p> <p>Requires, for days with 100 or more vehicle trips, limiting VDE to 20% opacity, complying with requirements for stabilized surface, or implementing at least one of the following control measures: 1) applying water, 2) applying chemical/organic dust suppressant, 3) applying roadmix, 4) paving, or 5) using any other method that results in stabilized</p>	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Adoption Date
	surface. Sets as option to above, obtaining a Fugitive PM10 Management Plan that: 1) achieves at least 50% control efficiency, 2) describes location, length, and area of unpaved traffic areas, 3) describes traffic conditions (vehicle trips per unit time, vehicle types), 4) describes controls measures used and application details, and 5) describes expected results of road surface condition.		
37.b	<u>Fugitive Dust. Unpaved Roads: Control Requirements:</u> b) Sets applicability standard: unpaved road must be more than 50 feet wide at all points or must not be within 25 feet of property line, or have more than 20 vehicle trips per day. Specifies all roads with ADT greater than the average ADT of all unpaved roads within its jurisdiction must be treated. Requires annual treatment of unpaved public roads beginning in 1998 and continuing for each of 8 years thereafter by implementing one of the following: 1) paving at least one mile with typical roadway material, 2) applying chemical stabilizers to at least two miles to maintain stabilized surface, 3) implementing at least one of the following on at least three miles of road surface: a) installing signage at ¼ mile intervals limiting speed to 15 mph, b) installing speed control devices every 500 feet, or c) maintaining roadway in a manner which limits speed to 15 mph.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
38.a	<u>Fugitive Dust. Weed Abatement Activities:</u> a) Sets pre-activity requirements: 1) pre-watering to limit VDE to 20% opacity, or 2) phasing work to reduce amount of disturbed surface area. Requires, during active operations, applying water to limit VDE to 20% opacity. Sets stabilization requirements during periods of inactivity: 1) restricting vehicle access to area, or 2) applying water or chemical stabilizers to meet conditions of a stabilized surface.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
38.b	<u>Fugitive Dust. Weed Abatement Activities:</u> b) Specifies weed abatement activities are subject to standards of Rule 403, unless: 1) mowing or cutting is used, instead of discing, and stubble is maintained at least three inches above the soil, or 2) if discing is used, there is a determination of a potential fire	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Adoption Date
	hazard. Specifies that after discing, the requirement for taking action on disturbed surface areas applies.		
39.	<u>Fugitive Dust. Windblown Dust: Definitions:</u> Defines windblown dust as any visible emissions from any disturbed surface area which is generated by wind action alone. Specifies wind gusts as maximum instantaneous wind speed.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
40.	<u>Fugitive Dust. Windblown Dust: Construction/Earth Moving:</u> Requires, for earthmoving, ceasing all active operations, applying water to soil not more than 15 minutes prior to moving such soil if subject to large operation requirements or if seeking an exemption from property line or upwind/downwind standard. Requires, for unpaved roads at construction sites, applying chemical stabilizers prior to a wind event, applying water twice per hour during active operations, stopping all vehicular traffic if subject to large operation requirements or if seeking an exemption from property line or upwind/downwind standard.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
41.	<u>Fugitive Dust. Windblown Dust: Disturbed Areas:</u> Requires, if operations remain inactive for not more than 4 consecutive days, application of water and chemical stabilizers in sufficient concentrations to maintain a stabilized surface for 6 months traffic if subject to large operation requirements or if seeking an exemption from property line or upwind/downwind standard. Requires application of chemical stabilizers prior to wind event; applying water 3 times per day; if evidence of wind driven fugitive dust, increasing watering to 4 times per day; or establish vegetative ground cover within 21 days after active operations have ceased traffic if subject to large operation requirements or if seeking an exemption from property line or upwind/downwind standard.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Adoption Date
42.a	<u>Fugitive Dust. Bulk Materials/Storage Piles:</u> a) Requires application of water twice per hour or installation of temporary coverings if subject to large operation requirements or if seeking an exemption from property line or upwind/downwind standard.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
42.b	<u>Fugitive Dust. Bulk Materials/Storage Piles:</u> b) Additional bulk material control requirements for Coachella Valley sources.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
43.	<u>Fugitive Dust. Wind Blown Dust: Open Areas:</u> Requires 50% vegetation cover, or 75% wet or saturated water cover, or 4-inch deep gravel on open areas that may cause or contribute to an exceedance of the federal PM-10 standard.	MDAQMD Rules 403 – <i>Fugitive Dust</i> , 403.1 – <i>Fugitive Dust Control for the SVPA</i> , and 403.2	11/28/05
44.a	<u>Fugitive Dust. Agricultural Operations:</u> a) Limits fugitive dust from off-field agricultural sources such as unpaved roads with more than 75 trips/day and bulk materials handling by requiring producers to draft and implement a Fugitive Dust Management Plan with district approved control methods.	Potential New Rule	11/27/06
44.b	<u>Fugitive Dust. Agricultural Operations:</u> b) Producers that voluntarily implement district approved conservation practices and complete and maintain the self-monitoring plan can maintain an exemption from the Rule 403 general requirements.	Potential New Rule	11/27/06
44.c	<u>Fugitive Dust. Agricultural Operations:</u> c) Cease tilling/mulching activities when wind speeds are greater than 25 mph (Coachella Valley).	Potential New Rule	11/27/06
44.d	<u>Fugitive Dust. Agricultural Operations:</u> d) Limits fugitive dust from paved and unpaved roads and livestock operations by requiring: 1) ceasing all hay grinding activities between 2 and 5 p.m. if visible emissions extend more than 50 feet from a hay grinding source, and 2) treating all unpaved access connections to livestock operations and unpaved feed lane access areas with either pavement, gravel (maintained to a depth of 4 inches), or asphaltic road-base.	Potential New Rule	11/27/06

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Adoption Date
44.e	<u>Fugitive Dust. Agricultural Operations:</u> e) Reduces fugitive dust from livestock feed yards by requiring a dust plan that contains procedures assuring moisture factor between 20% and 40% for manure in the top three inches of occupied pens and outlines manure management practices, including removal.	Potential New Rule	11/27/06
85.	<u>Solvent Cleaning and Degreasing. Use of Solvents (VOC):</u> Limits VOC emissions from VOC containing materials or equipment not subject to VOC limits in any other, specific district regulation to no more than 833 lbs/month. A control device may be used in lieu of the monthly throughput limit.	MDAQMD Rule 442 – <i>Usage of Solvents</i>	11/28/05

VI PM Measures Requiring Further Evaluation

The MDAQMD has determined that the PM measures listed in Table 4 require further evaluation before a determination of whether they should be implemented within the MDAQMD can be made. Many of these measures require additional cost effectiveness data. Some of the listed measures require a determination of the numbers and types of affected sources located within the MDAQMD. The MDAQMD will evaluate these measures based upon feasibility and cost effectiveness of potential implementation on or before the date indicated.

**Table 4
PM Measures Requiring Further Evaluation**

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Evaluation Date
1.	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Public Awareness Program:</u> Informs the public about the indoor wood combustion control program. The program covers three areas: program effectiveness and tracking; key program elements; and communication strategy. The goal is to inform the public about potential health hazards of wood smoke and to encourage better wood burning practices or use of heating devices (e.g. some programs recommend use of manufactured firelogs instead of wood in fireplaces).	None Currently	10/27/08
2.a	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Curtailment During Periods with Predicted High PM Levels, Mandatory:</u> a) Restricts use of wood-burning fireplaces and heaters during periods	None Currently	10/27/08

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Evaluation Date
	when atmospheric conditions and the level of wood burning activity are predicted to result in high PM concentrations. Exempts households that use wood as primary sole source of heat and households in areas where natural gas service is not available		
2.b	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Curtailment During Periods with Predicted High PM Levels, Mandatory:</u> b) Prohibits use of wood-burning appliances during periods when atmospheric conditions and the level of wood burning activity are predicted to result in high PM concentrations. Exempts U.S. EPA certified wood-burning appliances. A secondary source of heat is required in all dwellings.	None Currently	10/27/08
3.	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Curtailment During Periods with Predicted High PM Levels, Voluntary:</u> Informs the public about periods predicted to have high PM concentrations and encourages public to refrain from using wood-burning fireplaces and heaters during such periods. Some air districts exempt U.S. EPA certified wood-burning appliances from curtailment.	None Currently	10/27/08
4.	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Require All Specified Wood-Burning Devices Installed be U.S. EPA-Certified, Phase II or Equivalent, Wood-Burning Heaters:</u> Prevents the sale and installation of wood-burning heaters that are not U.S. EPA-certified or equivalent. These wood-burning heaters must meet Phase II standards established in Subpart AAA of Part 60 of Title 40 of the Code of Federal Regulations. Phase II devices are designed to achieve more efficient combustion and lower particulate emissions than conventional devices.	None Currently	10/27/08
5.	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Require All Specified Wood-Burning Devices Installed be U.S. EPA-Certified, Phase II or Equivalent, Wood-Burning Heaters and Wood-Burning Fireplaces:</u> Prevents the sale and installation of wood-burning heaters and wood-burning fireplaces that emit PM in higher concentrations than specified for U.S. EPA certified Phase II wood heaters. Allowable wood-burning	None Currently	10/27/08

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Evaluation Date
	appliances must be air district or U.S. EPA certified. The requirement also applies to masonry fireplaces.		
6.	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Require All Specified Wood-Burning Devices Installed be U.S. EPA-Certified, Phase II or Equivalent, Prohibits the Installation of Non-EPA Certified Wood-Burning Appliances & Wood-Burning Fireplaces (except pellet stoves):</u> Prohibits the installation of any non-U.S. EPA certified wood-burning appliance in dwellings, except for pellet stoves. Prohibits the installation of wood-burning fireplaces, including low emission fireplaces that are exempt from U.S. EPA testing.	None Currently	10/27/08
7.	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Number of Units, New Residential Developments:</u> Limits the number of wood-burning fireplaces and wood-burning heaters that may be installed in new residential developments.	None Currently	10/27/08
8.	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Number of Units, New Nonresidential Properties:</u> Limits the number of wood-burning appliances that may be installed in new nonresidential properties.	None Currently	10/27/08
9.	<u>Wood-Burning Fireplaces and Wood-Burning Heaters</u> <u>Number of Units, Additional Units in Existing Properties:</u> Limits the number of additional wood-burning appliances that may be installed in existing residential and nonresidential properties	None Currently	10/27/08
10.a	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Replacement of Non-Certified Appliances Upon Sale of Property:</u> a) Assures that each wood-burning heater included in real property upon sale or transfer is U.S. EPA Phase II certified or equivalent. Non-complying devices must be removed or rendered inoperable.	None Currently	10/27/08
10.b	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Replacement of Non-Certified Appliances Upon Sale of Property:</u> b) Requires replacing, removing or rendering inoperable any non-U.S. EPA certified wood-burning appliance upon sale of a dwelling (excluding pellet stoves, but including fireplaces).	None Currently	10/27/08

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Evaluation Date
11	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Control of Wood Moisture Content:</u> Sets moisture standard for “seasoned wood” offered for sale, since burning dry wood increases heating performance	None Currently	10/27/08
12.	<u>Wood-Burning Fireplaces and Wood-Burning Heaters. Prohibit Fuel Types:</u> Prohibits the burning of materials not intended for use in wood-burning fireplaces and wood-burning heaters (e.g., garbage, treated wood, and plastic products)	None Currently	10/27/08
45.a	<u>Combustion Sources. Boilers, Steam Generators, and Process Heaters:</u> a) Limits NOx emissions from gaseous fuel or liquid fuel fired boilers, steam generators, or process heaters with a total rated heat input greater than 5 million Btu/hr to between 5-40 ppmv depending on fuel type, use, and burner capacity.	MDAQMD Rules 1157 – <i>Boilers and Process Heaters</i> and 1158 - <i>Electric Utility Operations.</i>	04/23/07
45.b	<u>Combustion Sources. Boilers, Steam Generators, and Process Heaters:</u> b) Limits NOx emissions from any petroleum refinery boiler or process heater with a maximum rated capacity greater than 40 million Btu/hr to 0.03 pound per million BTU of heat input (25 ppmv) when firing at the maximum rated capacity. Alternative Emission Control Plans allowed which result in equivalent emissions. All units subject to this rule are now under the SCAQMD’s RECLAIM Program.	MDAQMD Rules 1157 – <i>Boilers and Process Heaters</i> and 1158 - <i>Electric Utility Operations.</i>	04/23/07
45.c	<u>Combustion Sources. Boilers, Steam Generators, and Process Heaters:</u> c) Limits NOx emissions from gaseous fuel or liquid fuel fired boilers, steam generators, or process heaters with a total rated heat input greater than 5 million Btu/hr to between 30-40 ppmv depending on fuel type.	MDAQMD Rules 1157 – <i>Boilers and Process Heaters</i> and 1158 - <i>Electric Utility Operations.</i>	04/23/07

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Evaluation Date
45.d	<u>Combustion Sources. Boilers, Steam Generators, and Process Heaters:</u> d) Limits NO _x emissions from gaseous, liquid, or solid fossil fuel fired boilers, steam generators, or process heaters with a total rated heat input starting at 2 million Btu/hr up to 5 million Btu/hr used in any industrial, institutional, or commercial operation to 30 ppmv or 0.037 pounds per million Btu of heat input.	MDAQMD Rules 1157 – <i>Boilers and Process Heaters</i> and 1158 - <i>Electric Utility Operations.</i>	04/23/07
45.e	<u>Combustion Sources. Boilers, Steam Generators, and Process Heaters:</u> e) Limits NO _x emissions from any boilers, steam generators, or process heater with a total rated heat input starting at 1 million Btu/hr up to 5 million Btu/hr to 30 ppmv.	MDAQMD Rules 1157 – <i>Boilers and Process Heaters</i> and 1158 - <i>Electric Utility Operations.</i>	04/23/07
45.f	<u>Combustion Sources. Boilers, Steam Generators, and Process Heaters:</u> f) Limits NO _x emissions from new and existing natural gas-fired large (commercial) water heaters, small (industrial) boilers, and process heaters that have a rated heat input starting at 75,000 Btu/hr up to and including 2 million Btu/hr to between 30-55 ppmv depending on burner size. Exempts residential and low use units.	MDAQMD Rules 1157 – <i>Boilers and Process Heaters</i> and 1158 - <i>Electric Utility Operations.</i>	04/23/07
45.g	<u>Combustion Sources. Boilers, Steam Generators, and Process Heaters:</u> g) Limits NO _x emissions from new natural gas-fired large (commercial) water heaters, small (industrial) boilers, and process heaters that have a rated heat input starting at 75,000 Btu/hr up to and including 2 million Btu/hr to between 30-55 ppmv depending on burner size. Exempts residential and low use units.	MDAQMD Rules 1157 – <i>Boilers and Process Heaters</i> and 1158 - <i>Electric Utility Operations..</i>	04/23/07
46.a.	<u>Combustion Sources. Turbines:</u> a) Limits NO _x emissions to the atmosphere from the operation of stationary gas turbines to between 9-65 ppmv depending on turbine operating capacity, yearly run time, and fuel type. Exemptions include emergency standby and laboratory units.	MDAQMD Rules 1159 – <i>Stationary Gas Turbines</i> and 1158 - <i>Electric Utility Operations.</i>	2/26/07
46.b	<u>Combustion Sources. Turbines:</u> b) Limits NO _x emissions to the atmosphere from the operation of stationary gas turbines to between 3-65 ppmv depending on turbine operating capacity, yearly run	MDAQMD Rules 1159 – <i>Stationary Gas Turbines</i> and	2/26/07

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Evaluation Date
	time, and fuel type. Exemptions include emergency standby and laboratory units.	1158 - <i>Electric Utility Operations</i>	
46.c	<u>Combustion Sources. Turbines:</u> c) Limits NOx emissions from the operation of gas turbines to 9-25 ppm for turbines in size range of 2.9 to 10 MW.	MDAQMD Rule 1159 – <i>Stationary Gas Turbines.</i>	2/26/07
47.a	<u>Combustion Sources. IC Engines:</u> a) Limits NOx emissions from gaseous- and liquid-fueled stationary and portable engines over 50 bhp to 36 ppm or higher and VOC to 250 ppm or higher depending on use category of engine (i.e. portable, stationary, oil field, fired by sewage digester gas, etc.)	MDAQMD Rule 1160 – <i>Internal Combustion Engines.</i>	04/23/07
47.b	<u>Combustion Sources. IC Engines:</u> b) Limits NOx emissions from spark ignited internal combustion engines over 50 bhp to 25-75 ppmv, VOC emissions to 250-750 ppmv, and CO emissions to 2000 ppmv depending on engine type and size.	MDAQMD Rule 1160 – <i>Internal Combustion Engines.</i>	04/23/07
47.c	<u>Combustion Sources. IC Engines:</u> c) Limits NOx emissions from spark ignited internal combustion engines over 50 bhp from 25-125 ppmv depending on engine type and size and NMHC to 250-750 ppmv depending on engine size.	MDAQMD Rule 1160 – <i>Internal Combustion Engines.</i>	04/23/07
49.c	<u>Combustion Sources. Cement Kilns:</u> c) Limits PM emissions to 30 pounds per hour for kiln feed rates of 75 tons per hour or greater. Limits PM emissions to 0.40 pound per ton of kiln feed for kiln feed rates less than 75 tons per hour.	Rule 1161 – <i>Portland Cement Kilns</i>	04/23/07
51.b	<u>Combustion Sources. Furnaces:</u> b) Central Furnaces - Sets a NOx emission limit of 40 ng/joule for gas fired residential units with rating less than 175,000 Btu/hr.	None Currently	8/27/07
52.a	<u>Combustion Sources. Residential Water Heaters:</u> a) Limits NOx emissions from water heaters with heat input rates equal to or less than 75,000 Btu per hour to 20 ng/joule of heat output and sets future limit to 10 ng/joule of heat output.	None Currently	8/27/07
52.b	<u>Combustion Sources. Residential Water Heaters:</u> b) Limits NOx emissions from water heaters with heat input rates equal to or less than 75,000 Btu per hour to 40 ng/joule of heat output.	None Currently	08/27/07

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Evaluation Date
53.	<u>Combustion Sources. Commercial Charbroiling Operations:</u> Requires new and existing chain driven charbroilers to be equipped with a catalytic oxidizer control device.	None Currently	04/23/07
54.	<u>Composting and Related Operations. General Administrative Requirements:</u> Requires composting and chipping and grinding facilities to register and provide facility and throughput information including, general facility information, type and amount of feedstock, products generated and process description. Annual updates also required.	None Currently	08/25/08
55.	<u>Composting and Related Operations. Chipping and Grinding Operations:</u> Prevents inadvertent decomposition associated with stockpiling of green and/or food wastes by establishing holding or processing time requirements for chipping and grinding activities.	None Currently	08/25/08
56.	<u>Composting and Related Operations.</u> Requires co-composting operations (biosolids and/or manure combined with bulking agents) to reduce VOC and ammonia emissions by 80% by conducting active composting within a total permanent enclosure and conducting curing using an aeration system that operates under negative pressure for a least 90% of its operating cycle and venting of VOC and ammonia emissions to a control device (biofilter). As an alternative, facilities subject to this rule may also submit a compliance plan that presents and demonstrates an alternative method of compliance. The rule requires recordkeeping and source testing which includes the submittal of a testing protocol. Exemptions are also provided for facilities that meet certain specific requirements.	None Currently	08/25/08
70.	<u>Coating Operations. Graphic Arts:</u> Limits VOC emissions from graphic arts operations by limiting the VOC content of products to between 150-300 g/l or by installing a control device.	MDAQMD Rule 1117 – <i>Graphic Arts</i>	02/25/08
74.	<u>Coating Operations. Metal Parts and Products Coatings:</u> Limits VOC emissions from the coating of metal parts and products not regulated by other specific regulations by limiting coating VOC content to between 2.3-3.5 lbs/gal depending on process and coating type.	MDAQMD Rule 1115 – <i>Metal Parts & Products Coating Operations.</i>	04/28/08

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Evaluation Date
79.	<u>Coating Operations. Spray Booth Facilities:</u> Further reduces VOC emissions from spray coating or laminating operations in high VOC-emitting facilities. This rule applies to any spray booth facility, except petroleum industry facilities, that uses VOC-containing materials that amount to more than 40,000 pounds (20 tons) per year of VOC emissions in any emission inventory year and requires that emissions be reduced by 65% beyond applicable rule requirements through the use of a control device or low VOC product.	Currently covered by category specific rules	04/28/08
81.	<u>Coating Operations. Wood Flat Stock Coatings:</u> Limits VOC content of coatings, inks, and adhesives applied to wood flat stock for the purpose of manufacturing a finished wood panel intended for attachment to the inside walls of buildings, including, but not limited to, homes and office buildings, mobile homes, trailers, prefabricated buildings and similar structures, boats and ships, or a finished exterior wood siding intended for use in construction to 250 g/l. A control device may be installed in lieu of the VOC requirement.	MDAQMD Rule 1114 – <i>Wood Products Coating Operations.</i>	04/28/08
83.a	<u>Solvent Cleaning and Degreasing. Cleaning Operations:</u> a) Limits VOC emissions from solvent cleaning operations and activities by reducing VOC content of cleaning products to between 25 g/l-900 g/l depending on process.	MDAQMD Rule 442 – <i>Usage of Solvents and 1104 – Organic Solvent Degreasing Operations</i>	Rule 442 – 11/28/05 Rule 1104 - 4/24/06
83.b	<u>Solvent Cleaning and Degreasing. Cleaning Operations:</u> b) Limits VOC emissions from solvent cleaning operations and activities by reducing VOC content of cleaning products to between 50 g/l-900 g/l depending on process.	MDAQMD Rule 442 – <i>Usage of Solvents and 1104 – Organic Solvent Degreasing Operations</i>	Rule 442 – 11/28/05 Rule 1104 - 4/24/06
84.a	<u>Solvent Cleaning and Degreasing. Degreasing Operations:</u> a) Limits VOC emissions from cold cleaners and vapor degreasers by limiting product	MDAQMD Rule 442 – <i>Usage of</i>	Rule 442 – 11/28/05 Rule 1104 -

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Evaluation Date
	VOC content to 25 g/l. Air-tight and airless cleaning systems can be used in lieu of meeting the VOC limit.	<i>Solvents and 1104 – Organic Solvent Degreasing Operations</i>	4/24/06
84.b	<u>Solvent Cleaning and Degreasing. Degreasing Operations:</u> b) Limits VOC emissions from cold cleaners by limiting product VOC content to 25 g/l for (900g/l for exempted categories.).	MDAQMD Rule 442 – <i>Usage of Solvents and 1104 – Organic Solvent Degreasing Operations</i>	Rule 442 – 11/28/05 Rule 1104 - 4/24/06
84.c	<u>Solvent Cleaning and Degreasing. Degreasing Operations:</u> c) Limits VOC emissions from batch-loaded vapor degreasers by setting equipment and operating requirements.	MDAQMD Rule 442 – <i>Usage of Solvents and 1104 – Organic Solvent Degreasing Operations</i>	Rule 442 – 11/28/05 Rule 1104 - 4/24/06
84.d	<u>Solvent Cleaning and Degreasing. Degreasing Operations:</u> d) Limits VOC emissions from cold cleaners to 50 g/l. Limits VOC emissions from vapor degreasers by setting equipment requirements. Air-tight and airless cleaning systems can be used in lieu of meeting the VOC limit.	MDAQMD Rule 442 – <i>Usage of Solvents and 1104 – Organic Solvent Degreasing Operations</i>	Rule 442 – 11/28/05 Rule 1104 - 4/24/06
86.a	<u>Soil Decontamination (VOC):</u> a) Limits the emissions of organic compounds from soil that has been contaminated by organic chemical or petroleum chemical leaks or spills, and requires description of an acceptable procedure for controlling emissions from underground storage tanks during removal or replacement through the use of operational requirements and by limiting the amount of soil to be processed daily.	None Currently	10/22/07

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Evaluation Date
86.b	<u>Soil Decontamination (VOC):</u> b) Limits VOC emissions from excavating, grading, handling and treating VOC contaminated soil as a result of leakage from storage or transfer operations, accidental spillage, or other deposition by requiring that soil with VOC concentrations above 1000 ppm be containerized, sealed, and shipped away for disposal.	None Currently	10/22/007
87.a	<u>Miscellaneous. Solid Waste Landfills (VOC):</u> a) Limits VOC emissions from municipal solid waste landfills through installation of gas collection and control systems.	MDAQMD Rule 900 – <i>Standards of Performance for New Stationary Sources</i> , §(C)(2)(c) and 1126 – <i>Municipal Solid Waste Landfills</i>	10/22/07
87.b	<u>Miscellaneous. Solid Waste Landfills (VOC):</u> b) Limits VOC emissions from the waste decomposition process at solid waste disposal sites through requirements for gas collection and control systems.	MDAQMD Rule 900 – <i>Standards of Performance for New Stationary Sources</i> , §(C)(2)(c) and 1126 – <i>Municipal Solid Waste Landfills</i>	10/22/07
88.	<u>Woodworking Operations (PM10):</u> Requires any woodworking facility that uses a pneumatic conveyance system connected to woodworking equipment to vent sawdust emissions to a PM10 emissions control device, such that there are no visible emissions; to cover sawdust storage bins at all times; and to take measures to prevent visible emissions from waste disposal activities from crossing any property line.	None Currently	02/25/08

CARB #	CARB Measure Description	MDAQMD Rule/Program	Proposed Evaluation Date
98.	<u>Lawn Mower Buy Back Program:</u> Encourages trading of gasoline-powered mowers, by providing funds to offset the purchase cost of electric mowers (e.g., in early 2004, the SMAQMD participated in a program that paid 50% of the purchase price for 700 mowers).	None Currently	02/25/08

VII. Conclusion

The MDAQMD is committed to control PM in a cost effective and feasible manner and to expedite the attainment and maintenance of the State and Federal PM standards. In addition to the evaluation and adoption of the methods listed herein, the MDAQMD will update and revise Tables 3 and 4 as a part of any subsequently adopted PM planning document.