

**KERN COUNTY AIR POLLUTION CONTROL DISTRICT
DAVID L. JONES, APCO**



August 9, 2007

TO: Interested Parties

SUBJECT: Final Draft Staff Report for KCAPCD Rule Development Schedule for SB 656
(Fugitive Dust Control Measures)

Senate Bill 656 (Sher), codified as Health and Safety Code §39614, was adopted to reduce public exposure to PM10 and PM2.5 (collectively referred to as particulate matter or PM). KCAPCD staff was required to review the state's list of most readily available, feasible and cost effective particulate matter (PM) control measures and identify those controls that could reduce PM exposure. Staff has identified several PM control strategies from that list that are appropriate to consider for future rule development.

Kern County Air Pollution Control District intends to adopt a schedule for proposed SB 656 rule development at the KCAPCD Board of Directors Meeting on September 13, 2007 at 2:00 PM located at the California City Hall, 21000 Hacienda Boulevard in California City. An informational workshop was previously held on October 25, 2006. The draft final staff report is available and can be downloaded from the District's website at www.kernair.org. Copies are also available by contacting Debra at the District office at (661) 862-5250 or sending a written request to kcapcd@co.kern.ca.us or fax at (661) 862-5251.

Comments on the draft staff report will be taken until August 30, 2007. Please be aware that no formal rules or regulations have been proposed yet, and the District's actions are pertaining to a schedule for the rule development process only. Formal rule development will occur, which includes workshops and additional opportunities to comment on proposed District actions.

Should you have any questions, please telephone Julie Damo of our office at (661) 862-5250.

Sincerely,

David L. Jones, APCO
Air Pollution Control Officer

DLJ: JAD: dg
Enclosure

I. PURPOSE

Senate Bill 656 (Sher), codified as Health and Safety Code §39614, was adopted in the previous legislative session to reduce public exposure to PM10 and PM2.5 (collectively referred to as PM). KCAPCD staff are required to review the state's list of most readily available, feasible and cost effective particulate matter (PM) control measures and identify those controls that could reduce PM exposure. Staff has identified several PM control strategies from that list that are appropriate to consider.

II. BACKGROUND

KCAPCD Setting

The Kern County Air Pollution Control District (KCAPCD) is located on the western edge of the Mojave Desert and includes the Indian Wells Valley. This high desert area is separated from valleys and coastal areas by several large mountain ranges. The climate is characterized as extremely arid and hot. Relative humidity commonly falls below 10 percent during the hottest part of the day. Temperatures rise above 100° Fahrenheit for sixty to seventy days between May through September with almost no rainfall. The desert's dry conditions contribute to the formation of fugitive dust, which consists of particulate matter.

Regulatory Background of Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles suspended in the air and includes particulate matter smaller than 10 microns in size (PM10) and smaller than 2.5 microns in size (PM2.5). The PM sources are very diverse and these sources vary according to the geographical region of the state. In some areas, specific source types are a major part of the problem, ranging from windblown dust to residential wood combustion. In other areas of the State, particularly in urban areas, many different sources are significant, reflecting various urban activities ranging from road dust and wood burning, to motor vehicles, diesel engines and other combustion sources.

As a first step towards the implementation of Senate Bill 656, the Air Resource Board has approved a list of the most readily available, feasible, and cost-effective control measures that can be employed by air districts to reduce PM10 and PM2.5. The list is based on rules, regulations, and programs existing in California as of January 1, 2004. There a total of 103 control measures and the measures can be grouped according to thirteen categories:

1. Wood-burning fireplaces and heaters
2. Non-agricultural open burning
3. Fugitive dust
4. Stationary combustion sources
5. Composting and related operations
6. Storage, transfer and dispensing operations
7. Leaks and releases
8. Product manufacturing
9. Coatings

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10. Solvent cleaning and degreasing
11. Miscellaneous operations
12. General rules to reduce directly emitted PM
13. Mobile source programs

As a second step, each air district has prioritized the particulate matter control measures based on the nature and severity of the PM problem in their area and cost-effectiveness. The Districts are also required to adopt control measure implementation schedules. Addressing the identified control measures will require formal District rule development. The implementation of the air district schedules, coupled with state's ongoing programs, will ensure continued progress in reducing public exposure to PM and attainment of the State and federal standards.

Control Measure Elimination Process

Districts are required to implement appropriate control measures from the SB 656 list. Control measures were selected according to severity and nature of District PM problems and feasibility and cost effectiveness assessment specific to the District area and sources. In order to evaluate the feasibility, the 103 particulate matter control measures were examined and ranked according to seven different groups:

1. Control measure is feasible and rule implementation will require research to adopt or amend existing rules.
2. Control measure is similar to an existing Kern County Air Pollution Control District rule.
3. Control measure is feasible but will require extensive resources, i.e. staff and funds, to implement.
4. Control measure has not been adopted by District.
5. Control measures needs to be research to determine applicability to District.
6. Control measure is the same as current District rule.
7. Control measure has not been adopted by District due to lack of "applicable" stationary sources and control measure requires extensive resources, i.e. staff and funds, to implement.

Control measures falling into groups 2, 3, 6 and 7 were eliminated from the list of possible control measures to be implemented. Groups 2 and 6 were removed since the controls already exist in some form. Control measures from groups 3 and 7 were eliminated because the measures were more applicable to larger Districts with more resources and/ or stationary sources.

For group 6, the areas of product manufacturing and mobile sources were removed from list. Product manufacturing is a subset of the emission inventory stationary source category of "Industrial Processes" and East Kern Industrial Process emissions are mainly generated from mineral process subset of the Emission Inventory. Other Industrial Process emissions are negligible compared to mineral processes. Mobile sources were also removed from the prospective control measure list since the District does not have direct jurisdiction over mobile sources and some programs are already a part of District activities, i.e. Carl Moyer and DMV funds.

After eliminating groups 2, 3, 6, 7 and the areas of product manufacturing and mobile sources, 37 control measures were left on the list of prospective control measures. The cost effectiveness in

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dollars per ton for the remaining 37 was examined. Values for cost effectiveness were obtained from the SB 656 information. For “not applicable” or “not estimated” cost effectiveness, value was assumed to be zero. For cost effectiveness value ranges, a mean cost was calculated and assigned to the control measure. A comparison value of \$6000 per ton was used as a cutoff amount for cost effectiveness. Any technology costing more than a mean value of \$6000 per ton was assumed to be not cost effective and was eliminated from list. Cutoff cost of \$6000 per ton of PM-10 was obtained from KCAPCD’s BACT Determination Policy dated 3/6/00. List was reduced to 22 potential control measures.

Remaining measures were examined according to District log of Authority to Construct projects, District 2004 Emission Inventory, District log of complaints and other District-inspection activities. Five years of ATC projects were examined. The ATC log and Emission Inventory together served as a list of all currently permitted source operations, expected emissions and a good representation of expected areas of growth. The complaint log served as a representation of sources currently not holding a District permit.

Cleaning operations, woodworking operations, paved road dust, weed abatement activities and preparation of fuels/ management of burns were eliminated from the list based on information from the 2004 Emission Inventory. Cleaning was removed from list since operation is a VOC-only source and emissions for total organic compounds (TOC) and reactive organic compounds were 2.0% and 3.4% of District’s total TOC and ROC sources. Woodworking operation emissions are less than 0.05 percent of District’s total particulate matter and PM emission inventory. Paved road dust was only 6.4% of total particulate matter. Total emissions from weed abatement activities and preparation of fuel/ management of burns were small. Commercial charbroiling operations were removed from list since currently only three commercial charbroiling operations are permitted in District. Coating and Ink Manufacturing was removed from list since category accounted for only 0.6 percent of total ATC projects over the last 5 years and projected growth is expected to be minimal.

Upon closer examination, three other control measures were eliminated. Control measure #19, emission limits for mechanized burners, was removed from prospective list upon examination of District Rules 401 and 417, Visible Emissions and Agricultural and Prescribed Burning. Rule 417. III.A.5 requires all permitted burn activities to comply with other District Rules. KCAPCD Rule 401 limits visible emissions to no greater than Ringelmann 1 for more than three minutes in any one-hour. Spray booth facilities, control measure # 79, was also removed since the rule pertains to facilities using greater than 20 tons per year of VOC-containing material. Out of the six major stationary sources, only two have spray booth facilities and none of the activities amount to greater than 20 tons of VOC-containing material. Measure #43 was also removed from District list since majority of our fugitive dust problems occur from disturbed surface areas rather than open areas. Control measure 43 was a mitigation response by Great Basin Unified APCD to fugitive wind blown dust problems caused by Owens Lake. Other measures presented in the District final list of prioritized SB 656 control measures will adequately address District wind blown dust emissions.

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Final Subset of Proposed and Prioritized Control Measures

Eight total control measures were remaining from the original 103. Method of rule implementation was assigned to each measure and measures were grouped according to three categories: fugitive dust, agricultural operations, and windblown dust. The fugitive dust category was ranked high priority due to the large amount of expected emissions from fugitive dust and ease of rule implementation. Fugitive dust control measures will require only modifying existing District Rule 402. Fugitive dust from agricultural operations will also require a modification of current District Rule 402 but will be implemented at a later date since agricultural constitutes a relatively small portion of District activities. Windblown dust will also be considered for implementation at a later time since control measure will require a new rule. Table 1 summarizes regulatory information for the District' subset of proposed control measures.

Table 1 District Final Subset List Of Prioritized SB 656 Control Measures

Control Measure	Implementation	Corresponding District Rule	CE (\$/ton)
Fugitive Dust High Priority (Board to Consider Adoption by 6/30/08)			
Inactive Disturbed Land	Modify Rule 402	SJVAPCD Rule 8021 and SCAQMD Rule 403	Not estimated
Carryout and Track-out	Modify Rule 402	SJVAPCD Rule 8041 and SCAQMD Rule 403	\$100
Carryout and Track-out: Clean-up Materials	Modify Rule 402	SJVAPCD Rule 8041	Not estimated
Agricultural Operations Medium Priority (Board to Consider Adoption by 6/30/09)			
Agricultural Operations	New Rule/Modify Rule 402	SCAQMD Rule 403.1	\$8
Windblown Dust Medium Priority (Board to Consider Adoption by 6/30/09)			
Windblown Dust: Definitions	New Rule	SCAQMD 403	Not applicable
Windblown Dust: Construction/ Earth-Moving	New Rule	SCAQMD 403	\$197
Windblown Dust: Disturbed Areas	New Rule	SCAQMD 403	\$197
Windblown Dust: Bulk Materials/ Storage Piles (RACM to BACM)	New Rule	SCAQMD 403	\$197

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Fugitive dust emissions are dust emissions that are not attributed to a stack or vent. District Rule 402 regulates fugitive dust emissions in the Kern County portion of the Mojave Desert. Rule 402 requires PM-10 monitoring or submission of a fugitive dust plan for large active operations. All potential sources of fugitive dust must comply with Reasonably Available Control Measures (RACM) and a fugitive dust plan is a formal RACM implementation description. Current version of Rule 402 does not address the source categories of inactive disturbed land, carryout and trackout, and agricultural operations. Table 2 provides a description of proposed Rule 402 revisions.

Table 2 Control Measures Requiring Amendments to Existing District Rule

Category and Control Measure	Description of Potential Control Measure
Fugitive Dust: Inactive Disturbed Land	<ul style="list-style-type: none"> • Restrict vehicle access • Apply water/dust suppressants • Inactive disturbed land must meet stabilized surface definition • If area is greater than 0.5 acres in an urban area or 2 acres in a rural area and the area is inactive more than 7 days, must also comply with stabilized soil definition
Fugitive Dust: Carryout and Track-out	<ul style="list-style-type: none"> • Remove track-out 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 • Install a track-out control at all access points to public roads • Maintain sufficient length of paved interior roads to allow dirt/mud to drop off before leaving site • Remove mud/dirt removal from interior paved roads with sufficient frequency to prevent track-out <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • Remove any track-out within one hour • Track-out prevention option and remove track-out at the end of the workday or as soon as possible depending on length of track-out • Track-out options: Pave road surface, chemically stabilize surface or track-out device
Fugitive Dust: Carryout and Track-out, Clean-Up Methods	<ul style="list-style-type: none"> • Manual sweeping • Sweep with a rotary brush/broom with sufficient moisture to limit visible emissions to 20% opacity • Operate a PM10 street sweeper with 80% efficiency
Fugitive Dust: Agricultural Operations	<ul style="list-style-type: none"> • Cease tilling/mulching activities when wind speeds are greater than 25 mph.

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Windblown dust is another category that can also be considered a fugitive dust source. Wind blown dust is defined as visible emissions generated only by wind action. Category is a significant part of Eastern Kern's particulate matter emissions and Rule 402 deals only with particulate matter from human sources.

Table 3 Control Measures Requiring Adoption of New District Rule

Category and Control Measure	Description of Potential Control Measure
Windblown Dust: Definitions	<ul style="list-style-type: none"> • 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
Windblown Dust: Construction/Earth Moving	<ul style="list-style-type: none"> • Cease earthmoving for all active operations • Apply 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. Apply chemical stabilizers prior to a wind event • Apply water twice per hour on unpaved roads at construction sites during active operations • Stop all vehicular traffic if subject to large operation requirements or if seeking an exemption from property line or upwind/downwind standard
Windblown Dust: Disturbed Areas	<ul style="list-style-type: none"> • If operations remain inactive for not more than 4 consecutive days, apply water and chemical stabilizers 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 • Apply chemical stabilizers prior to wind event • Apply water 3 times per day until stabilized • Plant 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
Windblown Dust: Bulk Materials/Storage Piles	<ul style="list-style-type: none"> • Apply additional water if compatible with stored product • Install temporary coverings if subject to large operation requirements or if seeking an exemption from property line or upwind/downwind standard • Bulk material control requirements

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CONCLUSION

KCAPCD plans the following rule development in order to fulfill the requirements of SB 656:

- Develop and consider adoption of a modification of District Rule 402, Fugitive Dust, by no later than June 30, 2008;
(The KCAPCD is considering reducing the thresholds for various components within the existing rule including the requirements for road paving, plumes, trackout, and fugitive dust plans.)
- Develop and consider adoption of a modification of an existing rule or a new rule, Agricultural Operations, by no later than June 30, 2009; and
(The Agricultural Operations Control Measure would address tilling and mulching during high wind events.)
- Develop and consider adoption of a new rule, Windblown Dust, by no later than June 30, 2009.
(The Windblown Dust Rule would address operations during high wind events for non-agricultural activities.)

A workshop will be held on each of these control measures prior to consideration of the rule for adoption by the KCAPCD Governing Board.