

# **SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT**

## **FINAL DRAFT STAFF REPORT**

### **Revised Proposed New Rule 4565 (Biosolids, Animal Manure, and Poultry Litter Operations)**

March 15, 2007

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#### **I. SUMMARY**

##### **A. Reasons for Rule Development and Implementation**

In terms of state and federal standards, the California Air Resources Board (ARB) and United States Environmental Protection Agency (EPA) classified the San Joaquin Valley Air Basin (SJVAB) as a non-attainment area for ozone. The District is classified as a serious non-attainment area for the federal 8-hour ozone National Ambient Air Quality Standards (NAAQS). It is anticipated that attainment of the eight-hour standard will require the control measures cited in the District's Extreme Ozone Attainment Demonstration Plan (Ozone Plan), which includes a control measure for composting/biosolids operations. Since Revised Proposed New Rule 4565 is a control measure in the District's Ozone Plan, it is subject to Federal Register, Clean Air Act (CAA), and California Health and Safety Code (CH&SC) requirements. Additionally, anti-backsliding provisions commit the District to develop all control measures listed in the Ozone Plan (Federal Register Volumes 69 and 70). This rulemaking project is intended to satisfy the attainment goal listed in the Ozone Plan. Additionally, the rulemaking project will seek to obtain as much VOC emissions reduction from the source category as is expeditiously practicable, technologically feasible, and economically reasonable, as determined by the District's Governing Board. Furthermore, the rule is intended to satisfy the requirements identified in Table 1.

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<b>Table 1: Anti-backsliding and Ozone Plan Commitments</b>		
<b>Subject</b>	<b>Reference</b>	<b>Requirement</b>
Anti-backsliding	69 Federal Register 23955	Districts shall develop all control measures listed in the Ozone Plan until the District is designated as in attainment for the 8-hour NAAQS.
BACM	Federal Register 8/18/94	Provisions in attainment plans should include the application of best available control measures (BACM) to existing major stationary sources.
BARCT	CH&SC 40919(a)(3)	Ozone attainment plans should provide for best available retrofit technology (BARCT) for existing permitted sources.
Deadlines	Ozone Plan	Rule adoption by the 1st quarter of 2007.
All Feasible Controls	CH&SC 40914(a)(2)	Ozone attainment plans should include "all feasible control measures."
RACT	Federal Clean Air Act (CAA) Sections 182(b)(2) and 182(f)	Ozone attainment plans shall assure that reasonable available control technology (RACT) for volatile organic compounds (VOC) is in use at sources and on source categories at or above the RACT threshold.
RACT Threshold	70 Federal Register 30592-30596	The applicable RACT threshold for control measures shall be the threshold in effect on June 15, 2004. The Districts threshold on June 15, 2004 was 10 tons per year (tpy) for VOC. Therefore, 10 tpy is the RACT threshold for Proposed Rule 4565.
Reductions	Ozone Plan	The rule shall reduce VOC emissions by at least 14% from the baseline by 2010. Fourteen percent of the baseline used for the Ozone Plan (0.7 tpd) is 0.1 tpd.
Timeline	CAA Section 172(c)(1)	Ozone attainment plans shall implement control measures as expeditiously as practicable, and provide for attainment.

**B. Description of the Project**

The main objective of this rulemaking project is to limit VOC emissions from facilities that manage biosolids, animal manure or poultry litter. Biosolids are sewage sludge that has been treated to meet standards for land application under Part 503 of the Clean Water Act. Sewage sludge is treated in the wastewater process, generally through aerobic or anaerobic microbial activity for a specified time at a specified temperature. Sewage sludge requires treatment to ensure that its release into the environment is protective of human health and the environment as required by the Clean Water Act.

**II. CURRENT REGULATIONS**

Currently, the District does not have any prohibitory rules that specifically regulate VOC emissions from facilities that manage biosolids, animal manure, and poultry litter. However, some composting facilities may already be subject to permit requirements as a new or modified source or as a source emitting significant air emissions under District Rule 2010 (Permits Required) and District Rule 2201 (New and Modified Stationary Source Review Rule).

**III. DISCUSSION**

Biosolids, animal manure, and poultry litter are commonly managed in one of three ways: buried in landfill, applied to land to enrich the soil, or composted either alone or with other materials to make a soil amendment. When biosolids, animal manure, or poultry litter are composted with other materials like greenwaste or bedding, it is called co-composting. Looking at biosolids specifically, the California Association of Sanitation Agencies (CASA) surveyed facilities that generate biosolids. The 750,000 dry tons per year of biosolids in California are managed in the following ways:

- 4% surface disposed
- 5% incinerated or stored in temporary storage
- 6% disposed of in landfills
- 12% used as alternative daily cover (ADC) at landfills
- 54% land applied
- 16% composted

Revised Proposed New Rule 4565 would address VOC emissions from landfill, land application, composting, and co-composting operations.

**A. Section 1.0 Purpose/Section 2.0 Applicability**

The purpose of the rule is to limit volatile organic compound (VOC) emissions from operations that manage biosolids, animal manure, or poultry litter. The rule applies to any

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facility that landfills, land-applies, composts, or co-composts material containing one or more of the following: biosolids, animal manure, or poultry litter. Sewage treatment plants or other wastewater treatment facilities are not subject to this rule unless the operator landfills, land applies, composts, or co-composts the treated material (biosolids) on site.

## **B. Section 3.0 Definitions**

This section lists definitions that pertain to the rule. During the course of rule development, adding and modifying definitions have improved rule clarity. The revised proposed rule has changed the carbon dioxide respiration end points and the Solvita Maturity Index numbers for active, curing, and finished compost to match Test Methods for the Examination of Composting and Compost by the US Composting Council Research and Education Foundation (TMECC) Table 05.08-1 guidelines. Language was also added to the biosolids definition to clarify that biosolids that have completed the composting process are considered finished compost for purposes of this rule. This distinction was of concern to some landfill operators who may choose to use composted material as an alternative daily cover (ADC).

## **C. Section 4.0 Exemptions**

Except for records that verify the exemption, this section delineates the facilities that are not subject to rule. The types of exempt facilities include:

- Facilities subject to District Rule 4570 (Confined Animal Facilities) or specifically exempt under Rule 4570;
- Composting/co-composting facilities whose throughput includes a total of less than 100 wet tons per year of biosolids, animal manure, and poultry litter;
- Facilities that land apply less than 10,000 tons per year of biosolids, animal manure, or poultry litter; and
- Operations that bag un-composted biosolids, animal manure, or poultry litter for sale.

As required under federal and state mandates with respect to districts that are in non-attainment of established air quality standards, any rule project seeks to obtain as much VOC emissions reduction from the source category as is expeditiously practicable, technologically feasible, and economically reasonable, as determined by the District's Governing Board. Therefore, any source subject to District Rule 4570 is already subject to VOC limits for its operations, including any landfill, land application, or composting/co-composting operations. Facilities that are specifically exempt from Rule 4570 are smaller operations whose emissions are not significant, as determined during the rule project.

The exempted compost/co-compost facilities are operations for which there is no established "best practices." Providing an exemption for these facilities prevents the

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inclusion of facilities that accept small amounts of biosolids, but may be accepting large amounts of greenwaste, which will be addressed later as a separate project.

District staff used two concepts to determine the maximum amount of material that could be land applied at a given facility before mitigation measures would be required. The concepts are the District's RACT emission level and the research done by South Coast Air Quality Management District (SCAQMD) staff for Rule 1133.2 (Emission Reductions from Co-Composting Operations). Since there is no peer-reviewed data about biosolids and land application, the co-composting emission factor was used as a surrogate.

As noted in Table 1 above, the RACT threshold for the District is 10 tons per year. SCAQMD Rule 1133.2 uses 1.78 pounds VOC per wet ton of material as an uncontrolled emission factor. During the background research for its rule, SCAQMD staff measured emissions as high as 2.36 pounds VOC per wet ton at a co-composting facility within the District's boundaries. To calculate the amount of material corresponding to 10 tons VOC emissions per year, the 10 tons per year RACT limit was divided by the emission factor. Using the 1.78 figure yields about 11,200 wet tons of material per year and using the 2.36 figure yields about 8,470 wet tons per year. District staff rounded the calculated amount of material land applied to 10,000 tons per year, which is equivalent to an emission factor of 2.0.

Some facilities bag un-composted animal manure or poultry litter for sale. District staff expects that emission from such facilities would be minimal, since, within 15 days of receipt, the material is placed in airtight bags or removed from the site. The facilities are not deliberately composting the material, so emissions from "incidental" composting would be minimal.

## **D. Section 5.0 Requirements**

Section 5.0 of the rule addresses the specific requirements for landfill operations, land application operations, and composting/co-composting operations. This section also includes provisions for VOC control equipment and source testing. The paragraphs below outline the main rule requirements.

### *1. Landfill Operations*

Within 24 hours of receipt, biosolids, animal manure, or poultry litter are required to be covered with either six inches of soil, six inches of finished compost, or a waterproof covering or any other alternative daily cover (ADC) that landfills are allowed to use under CH&SC Section 20690. The rule specifically prohibits the use of biosolids or biosolids-derived material as ADC, but allows operators other options as provided by the CH&SC. In addition, landfill operators may choose an alternative mitigation measure that provides at least 10% VOC emission reduction. The District and EPA must approve this alternative mitigation measure. The procedure for approval is outlined in Section 6.3 of the revised proposed rule.

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Under California rules for solid waste management, landfills must cover waste at the end of each working day, so this provision will not affect these operations. Although the state rule allows 24 hours, waste arriving at landfills is always moving. Once material arrives at the landfill site, within a short time, other wastes are piled on top of the material or the material moved from the working face and compacted. Even the very last truckload of material received on a given day would be covered within a short amount of time, since, under California Code of Regulations (CCR) for solid waste management, the landfill operator is required to cover all landfilled material at the end of each operating day.

The CCR allows biosolids as ADC, meaning that biosolids can be used as the cover over the working face of the landfill required at the end of the working day. As currently proposed, the rule provision would prevent the use of biosolids as an ADC. In a 1998 survey, the California Association of Sanitation Agencies (CASA) estimated that 12% of all biosolids generated in California are used as ADC. All of the landfills that reported using biosolids as ADC are located outside the District boundaries. This means that instituting this rule provision will not affect current landfill operations and will strongly discourage the use of biosolids as ADC in the future, preventing possible future VOC emissions from that material.

Publicly owned treatment works (POTWs), i.e., sewage treatment plants, generate biosolids on-site and could conceivably landfill those biosolids on-site and therefore, the phrase “received at the facility” would have no meaning in this case. The proposed rule mentions “movement from location of generation.” The phrase caused more confusion than clarification, so it was removed from the requirements in the revised proposed rule.

## 2. *Land Application*

As noted at the beginning of Discussion section, the CASA survey found that 54% of all biosolids were land applied. This is the single largest use of biosolids and dwarfs the next three uses combined. Individual counties may prohibit or regulate land application of biosolids. More specifically, The Strategic County-wide Biosolids Plan for Santa Barbara noted that, in general:

- San Joaquin, Stanislaus, and Tulare counties ban land application of biosolids,
- Fresno, Kings, and Kern counties ban land application of Class B biosolids, and
- Madera County has significant regulations for land application of biosolids.

According to a report by the Iowa State University and the University of Iowa Study Group, the following odor reductions were documented for land application:

- Injection with full soil coverage – 85%-90%
- Surface applied, incorporated immediately by plowing – 50%
- Surface applied, incorporation delayed by 3 hours – 0 – 10%
- Surface applied, incorporation delayed by 6 hours – 0 – 5%
- Surface applied, incorporation delayed by 12 hours – 0 – 5%
- Surface applied, incorporation delayed by 24 hours – 0 – 5%

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In the same report, the study group found that covering liquid manure lagoons with chopped-straw has 75% odor reduction. Several of the components of odor are VOCs, and therefore, District staff has equated odor reduction to VOC emission reduction.

In the Revised Proposed New Rule 4565, operators who land-apply biosolids, animal manure, or poultry litter would be required to either inject the material at least three inches below the soil surface, or to apply the material and then incorporate it within three hours. Immediate incorporation may not always be practical. For example, when there has been significant rainfall in a short amount of time, it may not be possible to work the ground on that day. For those situations when the material cannot be injected or land-incorporated within the 3-hour timeframe, operators would be required to cover the material until the material could be injected or land incorporated. The three-hour timeframe was chosen to have at least a 10% emission reduction of the emissions released prior to direct injection/land incorporation. Also, some facilities receive materials before daybreak to reduce traffic during the day. A special provision has been included to address this situation. The provision allows materials received after 6 pm to be incorporated by 12:00 pm (noon) the following day due to safety issues that otherwise would occur when land incorporating at night.

Publicly owned treatment works (POTWs), i.e., sewage treatment plants, generate biosolids on-site and could conceivably land apply those biosolids on-site and therefore, the phrase “received at the facility” would have no meaning in this case. The proposed rule mentions “movement of material from point of generation.” The phrase caused more confusion than clarification, so it was removed from the requirements of the rule.

### 3. *Composting/Co-composting Facilities*

Recognizing that there is no such thing as a typical composting facility, and not all options are feasible for all facilities, staff developed a control option menu approach for these facilities. Operators of composting facilities are required to choose a specified number of practices and technology from a list, which staff believes satisfies the CH&SC Code 40919(a)(3) requirement for BARCT and Federal Registry 8/18/94 requirement for BACM. In each case, facilities can use mitigation measures listed in the rule or develop mitigation measures of their own to comply with the rule requirements. The options in the rule include both management practice options (e.g., managing moisture content; covering piles with finished compost between turnings) and technology options (e.g., use of aerated static piles and in-vessel composting systems).

Furthermore, in order to acknowledge that some VOC mitigation measures are only cost-effective for larger facilities, staff developed the concept of Class One and Class Two mitigation measures. Class One mitigation measures are considered BARCT and cost-effective options for all facilities, regardless of size. These measures are management practices found to be best practices for all composting operations. Class Two mitigation measures are the technology options and achieve reductions greater than Class One mitigation measures, however they are not cost effective for facilities with throughputs of less than 100,000 wet tons per year. The estimated cost effectiveness of implementing Class Two mitigation measures for facilities with throughputs of at least 100,000 wet tons

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per year is about \$9,800 to \$41,300 per ton of VOC reduced. On the other hand, for facilities with throughputs less than 100,000 wet tons per year, the estimated cost effectiveness of implementing Class Two mitigation measures is between \$48,000 to \$860,000 per ton of VOC reduced. Appendix C of the Final Draft Staff Report details the costs and cost effectiveness analysis.

In general, aerobic composting conditions result in less VOC emissions than anaerobic composting conditions. Based on this premise, the Southwest Clean Air Agency (SWCAA) identified in their Hanaford Farm Best Available Control Technology Determination several composting parameters that minimize emissions by promoting aerobic composting conditions. These include:

- Scraping/cleaning of process areas—SWCAA stated that scraping or sweeping clean all process areas of compostable material each day is required to prevent material from being compacted. These compacted materials often give off offensive odors thus, presumably, are decaying anaerobically;
- Maintaining a minimum oxygen concentration of at least 5%, by volume, in the free air space of composting material and turn piles if low oxygen levels are detected;
- Maintaining a compost moisture content no greater than 70%-- SWCAA stated that when compost moisture exceeds 70%, the amount of free air space may be reduced to the point where anaerobic conditions are likely to develop. In addition, excessive amounts of water surrounding composting material can slow oxygen transfer to the point that anaerobic conditions develop on the surface of the material even when adequate oxygen exists within the free air space; and
- Maintaining carbon to nitrogen ratios of piles of at least 20:1.

Additionally, staff believes that rapid processing or covering of organic waste material will minimize VOC emissions. This is based on discussions by the Dairy Permitting Advisory Group and Rule 4651 (Soil Decontamination). Staff believes that the same principals that suggest minimizing exposed surface area of manure and contaminated soil results in minimization of VOC emissions would apply to compost piles.

For the Class Two mitigation measures, the rule contains supplementary requirements for the process. VOC emissions would be measured on the fourth day after initial pile formation for aerated static piles (ASPs) and in-vessel composting. The capture efficiency of an ASP or in-vessel process cannot be easily quantified, so the purpose of the testing is to assure that the process is capturing as much of the VOC generated by the process as possible.

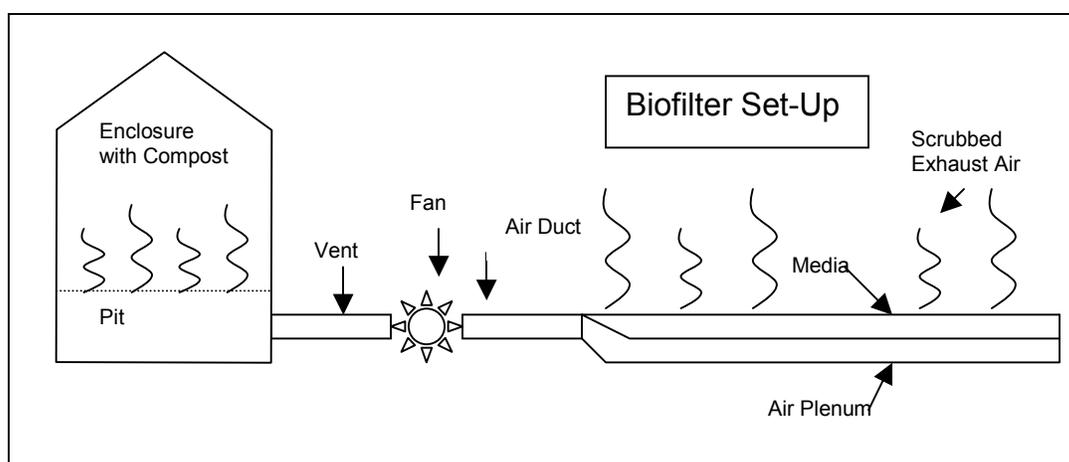
#### 4. *VOC Emission Control Systems*

The most commonly used VOC emission control device at composting facilities are biofilters. Currently, biofilters are used at over 200 composting facilities in Europe, over

twenty composting facilities in the United States of America, and at least five composting facilities in California.

The typical biofilter design consists of fans, ducts, media support (a bed liner), an air plenum, and the media (typically a blend of finished compost, soil, and/or wood chips). Wall ventilation and pit fans blow air from the building and pit through ducts into an air plenum below the biofilter media. The air passes through the media, where microorganisms treat the air before it is released to the atmosphere. A schematic of a biofilter is shown in Figure 1 below.

**Figure 1- Sample Biofilter Design**



As shown above, biofilters are technologically simple yet effective VOC controls. At Las Virgenes composting facility in Calabasas, CA, the biofilter routinely removes over 80% of the VOC (Peters). This is similar to results found by other researchers. Revised Proposed New Rule 4565 requires operators to monitor the biofilter for five parameters: temperature, moisture, pH, appearance (visual inspection), and fugitive VOCs. Since the control over a biofilter is less direct than for thermal oxidizers, monitoring these parameters would allow the operator to determine that the biofilter is within the most optimal range for VOC removal.

While it is most likely that operators at composting facilities would choose biofilters as their VOC control device, Revised Proposed New Rule 4565 does allow for operational flexibility by also addressing controls for non-biofilters. Additionally, both biofilters and non-biofilters would be required to prove their control efficiency through source test every two years.

**E. Section 6.0 Administrative Requirements**

Section 6.0 has been designed to match the administrative requirements with requirements in other sections of the rule. For example, records required are in Section 6.1, test methods are in Section 6.2, etc. Furthermore, the records for exempt facilities are in Section 6.1.1, records for landfills are in Section 6.1.2, and so forth. Section 6.3 outlines the procedure for operators wishing to implement an alternative mitigation measure. This procedure mirrors the one in SCAQMD Rule 1133.2. Based on conversations with EPA Region IX staff, approval of the alternative mitigation measure would include EPA approval in addition to the APCO approval.

**F. Section 7.0 Compliance Schedule**

Landfill operations would be required to comply with all rule provisions within twelve (12) months of rule adoption. Land application facilities have a two tier approach based on amount of material incorporated. Facilities utilizing less than 100,000 wet tons per year would have 12 months to come into full compliance. Large facilities, meaning facilities that handle more than 100,000 wet tons per year of biosolids, animal manure, or poultry litter would most likely require more equipment to meet the proposed land application requirements. For these largest facilities, the operator would be in full compliance within 18 months of rule adoption.

Operators of compost facilities with throughputs of less than 100,000 wet tons per year would comply within eighteen (18) months of rule adoption; operators of compost/co-compost facilities with throughputs of at least 100,000 wet tons per year would comply within thirty-six (36) months of rule adoption. For those facilities that plan to convert compost/co-compost operations to energy generation operations, extended compliance schedule is allowed if the operator meets specific provisions within defined timeframes. Composting/co-composting operations not part of the energy generation operation would be required to meet the same compliance schedule as if they were not part of an energy generation conversion. A composting/co-composting operation originally planned for energy generation operation that does not become part of the energy generation operation would be in-vessel operation with 90% control of VOC emissions.

**IV. COMPARISON BETWEEN PROPOSED NEW RULE 4565 and SCAQMD RULE 1133.2**

Staff noted that there are some significant differences between Revised Proposed New Rule 4565 and SCAQMD Rule 1133.2. This should not be interpreted to mean that one rule is more stringent than the other, but due, instead, to the following factors:

1. Technology has changed significantly since SCAQMD Rule 1133.2 was adopted;
2. Additional research projects regarding mitigation measures have been completed since SCAQMD Rule 1133.2 was adopted; and

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3. The socioeconomic climate of the SCAQMD is significantly different from that of the San Joaquin Valley Unified Air Pollution Control District.

Table 2 summarizes the significant differences between SCAQMD Rule 1133 and SJVUAPCD Proposed New Rule 4565. Please note staff only included the significant differences, not all of the differences, between the two rules.

<b>Table 2: Significant Differences</b>			
	<b>SCAQMD Rule 1133.2</b>	<b>SJVUAPCD Rule 4565</b>	<b>Reason</b>
Facilities Other Than Co-Composting	Rule does not apply to these operations	Management practices for facilities that landfill and land apply.  Management practices and control technology for large composting facilities; management practices only for other composting facilities	Knowledge of VOC control options has increased since Rule 1133.2 adoption and staff believes that cost-effective methods of controlling VOC emissions from these facilities exist.
Co-Composting Threshold for Applicability	Facilities with at least 1,000 to 3,000 tpy throughput	Facilities that handle 100 tpy or more of biosolids, animal manure, or poultry litter	Staff believes that there are reasonable, cost effective options for facilities with throughputs of at $\geq 100$ tpy that would not impose an undue burden on operators.
Control Requirements	In-vessel composting with 70 – 80% VOC control efficiency	VOC control efficiency 10% -80% depending on type of operation and facility throughput	Management practices (mitigation measures) are effective, reasonable, and have been achieved in practice for smaller facilities.  In-vessel composting is not cost-effective for smaller or medium facilities and there are no known, unsubsidized facilities in the SCAQMD that would comply with such rule requirements.

## V. VOC EMISSION REDUCTION ANALYSIS

District staff estimates that current VOC emissions from land application and composting of biosolids, animal manure, and poultry litter is over 3,500 tons of VOC per year with estimated emission reduction of 1,400 tons per year when the rule is fully implemented. This represents about a 40% reduction in the baseline VOC emissions for this source category. The VOC emission reduction analysis is included in Appendix B of the Final Draft Staff Report.

## VI. COSTS AND COST EFFECTIVENESS ANALYSIS

The California Health and Safety Code 40920.6(a) requires the San Joaquin Valley Unified Air Pollution Control District to conduct a cost effectiveness analysis of available

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emission control options before adopting each BARCT rule. The purpose of conducting a cost effectiveness analysis is to evaluate the economic reasonableness of the pollution control measure or rule. The analysis also serves as a guideline in developing the control requirements listed in a rule.

District staff has evaluated costs and cost effectiveness for sources affected by Revised Proposed New Rule 4565.

- For landfill operations and land application operations, no additional costs are expected as a result of following the rule requirements.
- For composting facilities, the cost of instituting the Class One mitigation measures is estimated to have no cost impact, since the mitigation measures represent best practices for composting/co-composting operations.
- For the largest composting facilities, meaning those that have throughput of at least 100,000 wet tons per year, total annualized costs range from about \$5.8 million to \$24 million for all facilities to implement the Class Two mitigation measures. With estimated emission reductions of 595 tons VOC per year, District staff estimates that the cost effectiveness would range between \$9,800 per ton VOC reduced and \$41,000 per ton VOC reduced.
- For composting facilities with throughput less than 100,000 wet tons per year, the cost effectiveness value ranges from \$48,000 to \$856,000. Therefore, District staff believes that it is not cost effective to require facilities with throughputs less than 100,000 wet tons per year to implement Class Two mitigation measures. It should be noted, however, that the rule provides operators of small composting facilities with the flexibility to comply by implementing Class One measures only or a combination of a specified number of Class One and Class Two measures.

Details of the analysis are in Appendix C of this staff report.

## VII. SOCIOECONOMIC IMPACT ANALYSIS

Pursuant to state law, District staff is required to analyze the socioeconomic impacts of any proposed rule or rule amendment that significantly affects air quality or strengthens an emission limitation. During the first workshop, District staff solicited volunteers from stakeholders, and manufacturers and vendors of control devices to participate as members of the socioeconomic focus group for the rule. District staff worked closely with the focus group to determine direct compliance costs of the proposed rule provisions. The District's independent consultant participated with the focus group to identify and analyze the socioeconomic impacts of the proposed rule. District staff has considered the socioeconomic analysis to further refine the proposed rule. The socioeconomic impact analysis report is attached to this staff report as Appendix D. A draft of the socioeconomic impact analysis report was posted for comment to interested parties on February 8, 2007. The final socioeconomic report will be presented to the District Governing Board at the public hearing for the revised proposed rule in order to disclose any expected economic impacts.

**VIII. ENVIRONMENTAL IMPACTS**

Pursuant to the California Environmental Quality Act (CEQA), District staff has investigated the likely environmental impacts of Revised Proposed New Rule 4565. Based on the lack of evidence to the contrary, District staff has concluded that the revised proposed rule will not have any significant adverse effects on the environment. Staff recommends filing a Notice of Exemption under the provisions of Public Resource Code 15061 (b)(3).

**IX. RULE CONSISTENCY ANALYSIS**

Pursuant to state Health and Safety Code, Section 40272.2, District staff has prepared a rule consistency analysis. The proposed rule provisions are consistent with EPA policy and guidelines for sources subject to Revised Proposed New Rule 4565. Details of the rule consistency analysis are attached as Appendix E to this staff report.

**X. RULE DEVELOPMENT PROCESS**

As part of the rule development process, District staff conducted public scoping meetings in March 2005 and public workshops in October 2006 and January 2007. Staff has conducted a socioeconomic focus group meeting in order to present, discuss, and solicit comments on the compliance costs and impact to businesses as part of the socioeconomic impact analysis. The proposed socioeconomic impact analysis was posted for written comment February 8, 2007.

In addition to the workshops, staff has met with stakeholders to receive comments on the technical aspects and compliance costs of the proposed rule. The comments received from the public, affected sources, California Air Resources Board, and United States Environmental Protection Agency during the public workshop process and technical consultation meetings have been incorporated into the proposed rule as appropriate. Appendix A of the Proposed Staff Report outlines the significant comments received and the responses of District staff to the February 15, 2007 version of the rule.

Proposed New Rule 4565 and the Final Draft Staff Report, including the analyses mandated by CH&SC, have been published before the public hearing for the District Governing Board to consider the adoption of the proposed rule. The notice of the public hearing for this rule project will be published in a general circulation newspaper in each of the eight San Joaquin Valley counties, and has been mailed to affected sources and interested parties. The public notice solicited written comments and will identify the name and telephone numbers of the District staff who answered questions and responded to comments. The adoption schedule allowed the District meet the Ozone Plan commitment to adopt a rule by first quarter of 2007.

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### XI. REFERENCES

1. Anit, Selvi, Artuz, Robert, Biofiltration of Air, <http://www.rpi.edu/dept/chem.-eng/Biotech-Environ/MISC/biofilt/biofiltration.htm>.
2. Bartlett, Jerry Vice President Cedar Grove Composting Facility, e-mail correspondence.
3. California Air Resources Board 2005 Almanac, available through links at [http://www.arb.ca.gov/app/emsinv/emseic\\_query.php?F\\_YR=2004&F\\_DIV=-4&F\\_SEASON=A&SP=2005&SPN=2005\\_Almanac&F\\_AREA=CA&F\\_EICSUM=199](http://www.arb.ca.gov/app/emsinv/emseic_query.php?F_YR=2004&F_DIV=-4&F_SEASON=A&SP=2005&SPN=2005_Almanac&F_AREA=CA&F_EICSUM=199).
4. California Air Resources Board 2003 Almanac, available through links at [http://www.arb.ca.gov/app/emsinv/emssumcat\\_query.php?F\\_DIV=0&F\\_DD=Y&F\\_YR+2002&F-SESON+A&SP=2003f&F\\_AREA=CO&F\\_CO=2003](http://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_DIV=0&F_DD=Y&F_YR+2002&F-SESON+A&SP=2003f&F_AREA=CO&F_CO=2003).
5. California Code of Regulations, Title 14 Division 7 available at <http://www.ciwmb.ca.gov/Regulations/Title14>.
6. CIWMB, SWIS database; Conversion Technologies for Municipal Residuals May 3, 2001; Best Management Practices for Greenwaste Composting Operations July 29, 2003; and Second Assessment of California's Compost and Mulch Producing Infrastructure May 2004, available through links at <http://www.ciwmb.ca.gov>.
7. Fondahl, Lauren, Biosolids Coordinator, EPA Region 9, e-mail correspondence 10/14/04.
8. Garcia, Elizabeth Legislative and Regulatory Coordinator for Norcal e-mail correspondence and Norcal website at [http://www.sunsetscavenger.com/jepson\\_prairie\\_organics.htm](http://www.sunsetscavenger.com/jepson_prairie_organics.htm).
9. Iowa State University and The University of Iowa Study Group, Concentrated Animal Feeding Operations Air Quality Study, February 2002; available on-line at <http://www.public-health.uiowa.edu/ehsrc/CAFOSTudy.htm>
10. Peters, Deborah, Communications and Media Coordinator Las Virgenes MWD, e-mail correspondence.
11. San Joaquin Valley Unified Air Pollution Control District Co-composting Operation BACT Project #S-1032219, Application S-4212.
12. Sercu, Bram, Kristof Demeestere, et al, Degradation of Isobutanol at High Loading Rates in a Compost Biofilter, Journal of the Air and Waste Management Association, 2005, 55:1217-1227. ISSN 1047-3289.
13. Schmidt, David, Janni, Kevin, Nicolai, Richard, Biofilter Design Information, Biosystems and Agricultural Engineering Update, 2004, BAEU-18, <http://www.manure.umn.edu/assets>.
14. Sonoma Technology Inc (STI) Contract 903340 available through links at [http://www.valleyair.org/Workshops/public\\_workshops\\_past.htm#Rule%204565%20\(Composting/Biosolids%20Operations\)](http://www.valleyair.org/Workshops/public_workshops_past.htm#Rule%204565%20(Composting/Biosolids%20Operations)).
15. South Coast Air Quality Management District Rule 1133, Rule 1133 Technical Report, and Source Tests available through links at [http://www.valleyair.org/Workshops/public\\_workshops\\_past.htm#Rule%204565%20\(Composting/Biosolids%20Operations\)](http://www.valleyair.org/Workshops/public_workshops_past.htm#Rule%204565%20(Composting/Biosolids%20Operations)).

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16. Southwest Clean Air Agency, Technical Support Document Little Hanaford Farms, SWCAA ID: 2228, April 19, 2005.
17. van Lith, Chris, Leson, Gero, Michelsen, Richard, Evaluating Design Options for Biofilters, Journal of the Air and Waste Management Association, 1997, 47:37-48. ISSN 1047-3289.
18. Wallace, Z, How to Interpret Compost Analysis, 2005, available at <http://www.wallacez.freeseve.ca.uk/analysis>.
19. Wheeler, PA, Stewart, I, Dumitrean, P, Donovan, B, Health Effects of Composting, 2001, ISBN 1 857 05680 9, available through [publications@wrcplc.co.uk](mailto:publications@wrcplc.co.uk).

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