

BOARD MEETING DATE: September 5, 2025

AGENDA NO. 31

PROPOSAL: Determine That Proposed Amended Rules 1133 – Emission Reductions from Direct Land Application, 1133.1 – Chipping and Grinding Operations, 1133.2 – Emission Reductions from Co-Composting Operations, and 1133.3 – Emission Reductions from Composting Operations, Are Exempt from CEQA; Amend Rules 1133, 1133.1, 1133.2, and 1133.3; and Submit Rules 1133, 1133.1, 1133.2, and 1133.3 Into State Implementation Plan

SYNOPSIS: Proposed Amended Rules (PARs) 1133, 1133.1, 1133.2, and 1133.3, will implement control measure BCM-10 – Emission Reductions from Direct Land Application of Chipped and Ground Uncomposted Greenwaste, from the South Coast Air Basin 2024 Attainment Plan for the 2012 Annual PM_{2.5} National Ambient Air Quality Standard, and comply with the federal Clean Air Act requirements for Most Stringent Measures. The proposed amended rules will further reduce VOC and ammonia emissions from chipping and grinding operations, co-composting operations, and composting operations by regulating the supply of uncomposted greenwaste for direct land application. Additionally, PAR 1133.2 will introduce composting best management practices for previously uncontrolled existing co-composting operations.

COMMITTEE: Stationary Source, June 20, 2025, Reviewed

RECOMMENDED ACTIONS:

Adopt the attached Resolution:

1. Determining that PAR 1133 – Emission Reductions from Direct Land Application, PAR 1133.1 – Chipping and Grinding Operations, PAR 1133.2 – Emission Reductions from Co-Composting Operations, and PAR 1133.3 – Emission Reductions from Composting Operations, are exempt from the requirements of the California Environmental Quality Act;
2. Amending Rules 1133, 1133.1, 1133.2, and 1133.3; and
3. Directing staff to submit Proposed Amended Rules 1133, 1133.1, 1133.2, and 1133.3 into the State Implementation Plan.

Background

Rule 1133 – Composting and Related Operations – General Administrative Requirements (Rule 1133), Rule 1133.1 – Chipping and Grinding Activities (Rule 1133.1), and Rule 1133.2 – Emission Reductions from Co-Composting Operations (Rule 1133.2) were adopted in 2003 to develop an emissions inventory and to implement technically and economically feasible control options for composting operations. Rule 1133 requires composting, chipping and grinding facilities to register with South Coast AQMD, to pay a fee, and to provide facility information and annual throughput updates. Rule 1133.1 establishes holding or processing time requirements for chipping and grinding activities to prevent inadvertent decomposition associated with stockpiling greenwaste for extended periods of time. Rule 1133.2 requires new co-composting operations to enclose their active co-composting operations and to use forced-air aeration systems for operations to control 80 percent of VOC and ammonia emissions.

In 2011, Rule 1133.3 – Emission Reductions from Greenwaste Composting Operations (Rule 1133.3) was adopted, establishing Best Management Practices (BMPs) for greenwaste composting operations for previously uncontrolled composting. Also, Rule 1133.1 was amended in 2011, establishing a maximum holding time requirement for greenwaste. Combined, the four rules of the Rule 1133 Series apply to 98 facilities within the South Coast Air Basin and Coachella Valley.

The South Coast Air Basin is a “serious” nonattainment area for the 2012 PM_{2.5} National Ambient Air Quality Standard (NAAQS). On June 7, 2024 the South Coast Air Basin 2024 Attainment Plan for the 2012 Annual PM_{2.5} Standard (2024 PM_{2.5} Plan) was adopted. The 2024 PM_{2.5} Plan includes a request for a 5-year extension to demonstrate attainment of the PM_{2.5} annual standard by December 31, 2030. Under the federal Clean Air Act, areas classified as serious nonattainment seeking an extension of the attainment date are required to demonstrate that the attainment plan includes Most Stringent Measures (MSMs). Control measure BCM-10 – Emission Reductions from Direct Land Application of Chipped and Ground Uncomposted Greenwaste, an element of the 2024 PM_{2.5} Plan, is identified as MSM.

Proposal

Proposed Amended Rule 1133 – Emission Reductions from Direct Land Application (PAR 1133) regulates the supply of uncomposted greenwaste for direct land application to reduce VOC emissions and ammonia, by restricting suppliers from providing uncomposted greenwaste unless an acceptable direct land application technique is used:

either 1) land incorporation by tilling, injecting, or plowing to depth of six (6) inches; or 2) cover uncomposted greenwaste with six (6) inches of finished compost or compost overs. After completing a Best Available Retrofit Control Technology (BARCT) assessment, PAR 1133.2 – Emission Reductions from Co-Composting Operations requires previously uncontrolled existing co-composting operations to use best management practices at their operations by requiring active phase compost piles be covered with at least six (6) inches of finished compost or compost overs within 24 hours of initial pile formation and requiring active phase compost piles be sufficiently wet prior to turning. The proposed amendments also lower or establish exemption limits uniformly to 100 tons of material per calendar year in the PAR 1133 Series, including PAR 1133, PAR 1133.1 – Chipping and Grinding Operations, PAR 1133.2, and PAR 1133.3 – Emission Reductions from Composting Operations, further reducing potential VOC and ammonia emissions.

Public Process

The PAR 1133 Series was developed through a public process. A Working Group was formed, which included representatives from industry, consultants, and community and environmental groups. Three working group meetings were held on: January 30, 2025; May 7, 2025; and June 5, 2025. Staff also met individually with stakeholders and visited sites affected by the proposed amended rules. In addition, a Public Workshop was held on July 9, 2025, to present the PAR 1133 Series, cost-effectiveness, and receive public comment.

Key Issues

Through the rulemaking process, staff has worked with stakeholders to address and resolve issues. Staff is not aware of any remaining key issues.

Emission Reductions

Implementation of the PAR 1133 Series is expected to reduce VOC emissions by 2.34 tons per day and reduce ammonia emissions by 0.19 ton per day upon adoption of rule amendments.

California Environmental Quality Act

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project (the PAR 1133 Series) is exempt from CEQA pursuant to CEQA Guidelines Sections 15061(b)(3) and 15308. Further, there is no substantial evidence that any of the exceptions, as set forth in CEQA Guidelines Section 15300.2, apply to the proposed project. A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062 and is included as Attachment K to this Board Letter. If the proposed project is approved, the Notice of Exemption will be filed for posting with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties, and with the State Clearinghouse of the Governor's Office of Land Use and Climate Innovation.

Socioeconomic Impact Assessment

The Socioeconomic Impact Assessment considers the direct impacts of the PAR 1133 Series on facilities utilizing composting operations. There are 98 facilities that are subject to the PAR 1133 Series requirements, with the majority of the facilities being classified under the sector of Administrative and Support and Waste Management and Remediation Services per the North American Industrial Classification System (NAICS 56). Among the 98 affected facilities, up to 73 facilities may qualify as small businesses based on various small business definitions. The affected facilities will incur recurring costs associated with implementing BMPs and conducting recordkeeping but no upfront capital costs. The total present value of the compliance costs over the 2025–2039 period is estimated to range from \$2.25 million at a 4% discount rate to \$2.73 million at a 1% discount rate. The unadjusted average annual cost of implementing the PAR 1133 Series is estimated to be \$194,925, calculated as total costs divided evenly across the 2025–2039 period. This estimate is not affected by the discount rate. About 69% of the estimated costs are attributable to recordkeeping, while the BMPs account for about 31%. The Final Socioeconomic Impact Assessment is set forth in as Appendix A to the Final Staff Report, which is included as Attachment J to this Board Letter.

AQMP and Legal Mandates

Under Health and Safety Code Section 40460(a), the South Coast AQMD is required to adopt an AQMP demonstrating compliance with all federal regulations and standards. The PAR 1133 Series implements, from the 2024 PM2.5 Plan, control measure BCM-10 – Emission Reductions from Direct Land Application of Chipped and Ground Uncomposted Greenwaste by regulating the supply of uncomposted greenwaste for direct land application.

The PAR 1133 Series updates BARCT requirements by introducing composting best management practices for previously uncontrolled existing co-composting operations pursuant to Health and Safety Code Section 40920.6.

Implementation and Resource Impact

Existing staff resources are adequate to implement the proposed amended rules.

Attachments

- A. Summary of Proposal
- B. Key Issues and Responses
- C. Rule Development Process
- D. Key Contacts List
- E. Resolution
- F. Proposed Amended Rule 1133
- G. Proposed Amended Rule 1133.1
- H. Proposed Amended Rule 1133.2
- I. Proposed Amended Rule 1133.3
- J. Final Staff Report, with the Final Socioeconomic Impact Assessment
- K. Notice of Exemption from CEQA
- L. Board Meeting Presentation

ATTACHMENT A
SUMMARY OF PROPOSAL

**Proposed Amended Rule (PAR) 1133 Series – Composting, Chipping and Grinding,
and Related Operations**

PAR 1133 – Emission Reductions from Direct Land Application

Title and Purpose

- Updates to reflect Most Stringent Measure BCM-10 – Emission Reductions from Direct Land Application of Chipped and Ground Uncomposted Greenwaste

Applicability

- Clarifies applicability to uncomposted greenwaste suppliers subject to Rule 1133.1, Rule 1133.2, or Rule 1133.3

Requirements

- Regulates supply of uncomposted greenwaste
- If supplied to agricultural operations, the recipient must inform supplier of intent to use an acceptable land application technique

Recordkeeping

- Updates to demonstrate rule compliance with three-year retention

Prohibitions

- Restricts supply to direct land application of: 1) foodwaste; 2) biosolids; 3) digestate; and 4) manure
- Allows supply of digestate for direct land application if intended for land incorporation or covered, similar to uncomposted greenwaste techniques

Exemptions

- Exempts de minimus supply of 100 tons of uncomposted greenwaste per calendar year

PAR 1133.1 – Chipping and Grinding Operations

Title and Purpose

- Updates to standardize term “Chipping and Grinding Operation”

Reporting

- Moves and renames existing Annual Update requirement from Rule 1133

Exemptions

- Reduces de minimus exemption to 100 tons per calendar year
- Removes palm exemption and low moisture content exemptions that are inconsistent with statewide waste handling regulations

PAR 1133.2 – Emission Reductions from Co-Composting Operations

Requirements

- Expands composting active phase completion standards
- Updates composting curing phase completion standards
- Revises enclosure requirements to allow colorimetric tubes or other approved methods to measure fugitive ammonia or hydrocarbon emissions

Existing Small-capacity Co-Composting Operation Alternative

- Allows use of alternative composting best management practices

Publicly-owned Small-capacity Co-Composting Operation Alternative

- Reorganizes existing exemption as a compliance alternative

Test Methods and Protocol

- Modernizes source testing procedures, consistent with recently amended rules
- Updates Solvita test methods for consistency with Rule 1133.3
- Specifies background ammonia and hydrocarbon measurement methods

Reporting

- Moves and renames existing Annual Update requirement from Rule 1133

Exemptions

- Lowers de minimus exemption to 100 tons per calendar year
- Adds exemption for source testing to develop operation-specific emission factors
- Removes existing small-capacity co-composting operation and publicly-owned small-capacity co-composting operation exemptions

PAR 1133.3 – Emission Reductions from Composting Operations

Title and Purpose

- Updates to standardize term “composting operations”

Applicability

- Excludes bioreactors with design capacity less than 1,000 tons per calendar year, such as countertop, standalone, or package rapid composting units

Requirements

- Expands composting active phase completion standards
- Updates composting curing phase completion standards

Test Methods and Protocol

- Modernizes source testing procedures, consistent with recently amended rules

Reporting

- Moves and renames existing Annual Update requirement from Rule 1133

Exemptions

- Exempts de minimus compost operations up to 100 tons per calendar year
- Establishes agricultural operations exemption, consistent with other rules of Rule 1133 Series, and school exemption, for primary purpose of education

ATTACHMENT B
KEY ISSUES AND RESPONSES

Proposed Amended Rule 1133 Series – Composting, Chipping and Grinding, and Related Operations

Proposed Amended Rule 1133 – Emission Reductions from Direct Land Application

Proposed Amended Rule 1133.1 – Chipping and Grinding Operations

Proposed Amended Rule 1133.2 – Emission Reductions from Co-Composting Operations

Proposed Amended Rule 1133.3 – Emission Reductions from Composting Operations

Through the rulemaking process, staff has worked with stakeholders to address and resolve issues. Staff is not aware of any remaining key issues.

ATTACHMENT C

RULE DEVELOPMENT PROCESS

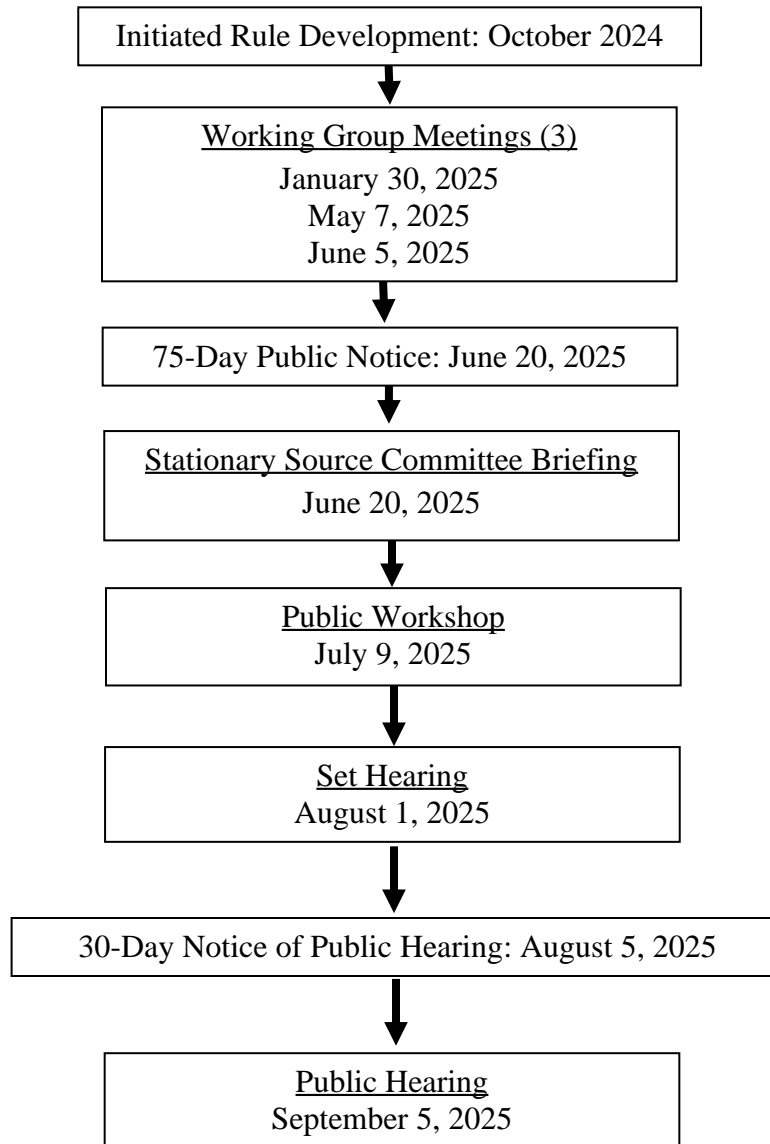
Proposed Amended Rule 1133 Series – Composting, Chipping and Grinding, and Related Operations

Proposed Amended Rule 1133 – Emission Reductions from Direct Land Application

Proposed Amended Rule 1133.1 – Chipping and Grinding Operations

Proposed Amended Rule 1133.2 – Emission Reductions from Co-Composting Operations

Proposed Amended Rule 1133.3 – Emission Reductions from Composting Operations



11 months spent in rule development

One (1) Public Workshop

One (1) Stationary Source Committee Meeting

Three (3) Working Group Meetings

ATTACHMENT D
KEY CONTACTS LIST

Burrtec Waste Industries, Inc
California Compost Coalition
California Department of Resources Recycling and Recovery (CalRecycle)
City of Bakersfield, Solid Waste Division
City of Los Angeles, Department of Building & Safety, Local Enforcement
Agency (LEA) Program
City of Los Angeles Sanitation and Environment, Solid Resources
Processing & Construction Division
City of Vernon, Department of Health and Environmental Control, LEA
Clean Water SoCal
CR&R Environmental Services
Edgar & Associates
Environmental Management Consulting
Inland Empire Regional Composting Authority
Inland Empire Utilities Agency
Integrated Waste Management Consulting, LLC
Los Angeles County, Department of Public Health, LEA
Los Angeles County Sanitation Districts
Orange County Health Care Agency, Environmental Health Division, LEA
Orange County Sanitation District
Orange County Waste & Recycling
Provost & Pritchard Consulting Group
Riverside County, Department of Environmental Health, LEA
San Bernardino County, Division of Environmental Health Services, LEA
Tierra Verde Industries
Yorke Engineering

ATTACHMENT E

RESOLUTION NO. 25-____

A Resolution of the Governing Board of the South Coast Air Quality Management District (South Coast AQMD) determining that Proposed Amended Rule 1133 – Emission Reductions from Direct Land Application, Proposed Amended Rule 1133.1 – Chipping and Grinding Operations, Proposed Amended Rule 1133.2 – Emission Reductions from Co-Composting Operations, and Proposed Amended Rule 1133.3 – Emission Reductions from Composting Operations, are exempt from the requirements of the California Environmental Quality Act (CEQA).

A Resolution of the South Coast AQMD Governing Board amending Rule 1133 – Composting and Related Operations – General Administrative Requirements, Rule 1133.1 – Chipping and Grinding Activities, Rule 1133.2 – Emission Reductions from Co-Composting Operations, and Rule 1133.3 – Emission Reductions from Greenwaste Composting Operations.

A Resolution of the South Coast AQMD Governing Board directing staff to submit Proposed Amended Rule 1133 – Emission Reductions from Direct Land Application, Proposed Amended Rule 1133.1 – Chipping and Grinding Operations, Proposed Amended Rule 1133.2 – Emission Reductions from Co-Composting Operations, and Proposed Amended Rule 1133.3 – Emission Reductions from Composting Operations for inclusion into the State Implementation Plan.

WHEREAS, the South Coast AQMD Governing Board finds and determines that Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 are considered a “project” as defined by CEQA; and

WHEREAS, the South Coast AQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l) and has conducted a CEQA review and analysis of Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 pursuant to such program (South Coast AQMD Rule 110); and

WHEREAS, the South Coast AQMD Governing Board finds and determines that after conducting a review of the proposed project in accordance with CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA, and CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA, that Proposed Amended Rule 1133, Proposed Amended Rule 1133.1,

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Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 are exempt from CEQA; and

WHEREAS, the South Coast AQMD Governing Board finds and determines that since Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 will achieve VOC and ammonia emission reductions by restricting the supply of uncomposted greenwaste for direct land application and by requiring composting best management practices for existing smaller co-composting operations, which can be accomplished without physical modifications; thus, it can be seen with certainty that implementation of Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 would not cause a significant adverse effect on the environment. Therefore, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption; and

WHEREAS, the South Coast AQMD Governing Board finds and determines that the proposed project is also categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for the Protection of the Environment, because Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 are designed to further protect or enhance the environment by improving public health and air quality through anticipated reductions in VOC and ammonia emissions; and

WHEREAS, the South Coast AQMD Governing Board has determined that there is no substantial evidence indicating that any of the exceptions set forth in CEQA Guidelines Section 15300.2 – Exceptions, apply to the proposed project; and

WHEREAS, the South Coast AQMD staff has prepared a Notice of Exemption for the proposed project, that is completed in compliance with CEQA Guidelines Section 15062 – Notice of Exemption; and

WHEREAS, the South Coast AQMD Governing Board has determined that the Final Socioeconomic Impact Assessment for Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 is consistent with the March 17, 1989 Governing Board Socioeconomic Resolution for rule amendment; and

WHEREAS, the South Coast AQMD Governing Board has determined that the Final Socioeconomic Impact Assessment for Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule

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1133.3, as presented in the Final Staff Report, is consistent with the provisions of Health and Safety Code Sections 40440.8, 40728.5, and 40920.6; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 will result in increased costs to the affected industries, yet such costs are considered to be reasonable, with a total annualized cost as specified in the Final Socioeconomic Impact Assessment, as presented in the Final Staff Report; and

WHEREAS, the South Coast AQMD Governing Board has actively considered the Final Socioeconomic Impact Assessment for Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3, as presented in the Final Staff Report, and has made a good faith effort to minimize adverse socioeconomic impacts; and

WHEREAS, the South Coast AQMD staff conducted a Public Workshop on July 9, 2025 regarding Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3; and

WHEREAS, Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 and supporting documentation, including but not limited to, the Notice of Exemption and Final Staff Report, which includes the Final Socioeconomic Impact Assessment, were presented to the South Coast AQMD Governing Board and the South Coast AQMD Governing Board has reviewed and considered this information, as well as has taken and considered staff testimony and public comment prior to approving the project; and

WHEREAS, the South Coast AQMD Governing Board finds and determines, taking into consideration the factors in section (d)(4)(D) of the Governing Board Procedures (codified as section 30.5(4)(D)(i) of the Administrative Code), that modifications to the proposed project, to Proposed Amended Rule 1133 to correct grammar and paragraph (c)(7) to clarify the definition of digestate, to Proposed Amended Rule 1133.1 to correct grammar and paragraph (c)(6) to clarify the definition of landclearing, to Proposed Amended Rule 1133.2 to correct grammar, to correct punctuation, and paragraph (c)(11) to clarify the definition of digestate, and to Proposed Amended Rule 1133.3 to correct grammar and paragraph (c)(13) to clarify the definition of digestate, since the Notice of Public Hearing was published are not so substantial as to significantly affect the meaning of Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 within the meaning of Health and Safety Code Section 40726 because: (a) the changes do not impact emission

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reductions, (b) the changes do not affect the number or type of sources regulated by the rules, (c) the changes are consistent with the information contained in the Notice of Public Hearing, and (d) the consideration of the range of CEQA alternatives is not applicable because the proposed project is exempt from CEQA; and

WHEREAS, Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 will be submitted to California Air Resources Board (CARB) and United States Environmental Protection Agency (U.S. EPA) for inclusion into the State Implementation Plan; and

WHEREAS, Health and Safety Code Section 40727 requires that prior to adopting, amending, or repealing a rule or regulation, the South Coast AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the Final Staff Report; and

WHEREAS, the South Coast AQMD Governing Board has determined that a need exists to amend Rule 1133, Rule 1133.1, Rule 1133.2, and Rule 1133.3 to implement Best Available Retrofit Control Technology, implement control measure BCM-10 – Emission Reductions from Direct Land Application of Chipped and Ground Uncomposted Greenwaste of the South Coast Air Basin Attainment Plan for the 2012 Annual PM2.5 Standard, and partially satisfy federal Clean Air Act Section 188(e) requirements for a five-year extension of the attainment date by demonstrating the implementation of a Most Stringent Measure; and

WHEREAS, the South Coast AQMD Governing Board has determined, pursuant to Health and Safety Code Section 40001(c), that there is a problem that Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 will alleviate, namely the failure to attain the National Ambient Air Quality Standards for the 2012 annual PM2.5 standard, and that these rules will promote the attainment of state and federal ambient air quality standards; and

WHEREAS, the South Coast AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from Health and Safety Code Sections 39002, 39650 et. seq., 40000, 40001, 40440, 40441, 40702, 40725 through 40728.5, 40920.6, and 41508; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 are written and displayed so that their meanings can be easily understood by the persons directly affected by them; and

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WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 are in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 do not impose the same requirements as any existing state or federal regulations, and the proposed amended rules are necessary and proper to execute the powers and duties granted to, and imposed upon, South Coast AQMD; and

WHEREAS, the South Coast AQMD Governing Board, in amending Rule 1133, Rule 1133.1, Rule 1133.2, and Rule 1133.3, references the following statutes which the South Coast AQMD hereby implements, interprets or makes specific: Clean Air Act Section 188(e), and Health and Safety Code Sections 39002, 40001, 40406, 40702, 40440(a), 40725 through 40728.5, 40920.6, and 41511; and

WHEREAS, Health and Safety Code Section 40727.2 requires the South Coast AQMD to prepare a written analysis of existing federal air pollution control requirements applicable to the same source type being regulated whenever it adopts, or amends a rule, and the South Coast AQMD's comparative analysis of Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 is included in the Final Staff Report; and

WHEREAS, the Public Hearing has been properly noticed in accordance with all provisions of Health and Safety Code Sections 40725 and 40440.5; and

WHEREAS, the South Coast AQMD Governing Board has held a Public Hearing in accordance with all provisions of law; and

WHEREAS, the South Coast AQMD Governing Board specifies the Planning, Rule Development, and Implementation Manager overseeing the rule development for Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed project is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

NOW, THEREFORE BE IT RESOLVED, that the South Coast AQMD Governing Board does hereby determine, pursuant to the authority granted by law, that Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule

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1133.2, and Proposed Amended Rule 1133.3 are exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption. The South Coast AQMD Governing Board does also hereby determine, pursuant to the authority granted by law, that the Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 are categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for the Protection of the Environment. No exceptions to the application of the categorical exemption set forth in CEQA Guidelines Section 15300.2 – Exceptions, apply to the proposed project. This information has been presented to the South Coast AQMD Governing Board, whose members exercised their independent judgment and reviewed, considered, and approved the information therein prior to acting on Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3; and

BE IT FURTHER RESOLVED, that the South Coast AQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 as set forth in the attached, and incorporated herein by reference.

BE IT FURTHER RESOLVED, that the South Coast AQMD Governing Board requests that Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 be submitted for inclusion in the State Implementation Plan; and

BE IT FURTHER RESOLVED, that the Executive Officer is hereby directed to forward a copy of this Resolution and Proposed Amended Rule 1133, Proposed Amended Rule 1133.1, Proposed Amended Rule 1133.2, and Proposed Amended Rule 1133.3 and supporting documentation to CARB for approval and subsequent submittal to the U.S. EPA for inclusion into the State Implementation Plan.

DATE: _____

CLERK OF THE BOARDS

PROPOSED AMENDED RULE 1133: **EMISSION REDUCTIONS FROM DIRECT
LAND APPLICATION COMPOSTING AND
RELATED OPERATIONS — GENERAL
ADMINISTRATIVE REQUIREMENTS**

[Rule index to be added after Amendment]

(a) Purpose

The purpose of this rule is to reduce emissions of volatile organic compounds and ammonia by establishing requirements and prohibitions on Organic Material for Direct Land Application. This rule sets forth administrative requirements for existing and new chipping and grinding activities and composting operations. The purpose of this rule is to create an emissions related informational database on composting and related operations through a registration process.

(b) Applicability

This rule applies to owners or operators who supply, sell, market, offer for sale, or manufacture Organic Material and are subject to any of the following: Rule 1133.1 – Chipping and Grinding Operations (Rule 1133.1), Rule 1133.2 – Emission Reductions from Co-Composting Operations (Rule 1133.2), or Rule 1133.3 – Emission Reductions from Composting Operations (Rule 1133.3). of chipping and grinding activities and composting operations unless otherwise exempt under subdivision (g).

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

- (1) ACTIVE PHASE is the portion of the composting process characterized by rapid decomposition and biological instability, generating temperatures of at least 122 degrees Fahrenheit (50 degrees Celsius). The Active Phase includes the Pathogen Reduction Process.
- (1) — AGRICULTURAL COMPOSTING is composting conducted in agricultural settings where the feedstock consists of wastes generated on-site by the production and processing of farm or agricultural products.
- (2) AGRICULTURAL OPERATIONS are as defined in Rule 102 – Definition of Terms.
- (2) — BACKYARD COMPOSTING is composting conducted by a household including, but not limited to, single family residences, duplexes, or apartment buildings.
- (3) BIOMASS POWER GENERATION FACILITY is an electrical generation facility that uses biomass, which includes Greenwaste, Woodwaste, and orchard removal trees, as fuel to generate electricity.

- (4) BIOSOLIDS are the residual solid wastes produced by the anaerobic digestion of sewage and other Organic Waste Material at publicly owned treatment works.
- ~~(3) CHIPPING AND GRINDING is any activity that mechanically reduces the size of greenwaste, woodwaste, and/or foodwaste.~~
- ~~(4) COMMUNITY COMPOSTING is composting conducted by a residential neighborhood association using feedstock generated within the residential neighborhood to produce compost for the neighborhood's use.~~
- ~~(5) COMPOST is a product resulting from the controlled biological decomposition of organic materials.~~
- (5) COMPOST OVERS are woody materials that do not decompose in a typical composting cycle and are screened out of Finished Compost at the end of composting. -Compost Overs have completed the Pathogen Reduction Process.
- ~~(6) COMPOSTING is a process in which solid organic waste materials are decomposed in the presence of oxygen under controlled conditions through the action of bacteria and other microorganisms.~~
- ~~(7) COMPOSTING OPERATIONS are facilities involved in composting organic materials including, but not limited to, greenwaste, biosolids, manure and foodwaste.~~
- (6) CURING PHASE is the portion of the composting process that begins immediately after the end of the Active Phase of composting and characterized by slower decomposition until reaching biological stability.
- (7) DIGESTATE is the residual material solid waste produced by the anaerobic digestion of Organic Waste Material excluding sewage or Biosolids.
- (8) DIGESTION OPERATION is a facility that operates one or more anaerobic digesters to facilitate the decomposition of Organic Waste Material.
- (9) DIRECT LAND APPLICATION is the final deposition of Organic Material on a parcel of land.
- (10) FINISHED COMPOST is a humus-like material that results from the controlled biological decomposition of Organic Waste Material and is biologically stable. Both the Active Phase and Curing Phase of composting are required to achieve this product.
- ~~(11)(8) FOODWASTE is any food scraps collected from the food service industry, grocery stores, or residential food scrap collection. Foodwaste also includes food scraps foodwaste that areis chipped and ground. Food scraps co-collected with curbside Greenwaste collection are considered Greenwaste.Foodwaste mixed with greenwaste is considered foodwaste.~~

- ~~(12)(9)~~ GREENWASTE is any organic-waste of organic origin material-generated from gardening, agriculture, or landscaping activities including, but not limited to, grass clippings, leaves, tree and shrub trimmings, and plant remains. Food scraps collected with curbside Greenwaste collection are considered Greenwaste. Small woody materials, such as prunings and trimmings up to four (4) inches in diameter, are Greenwaste.
- ~~(13)~~ INTERMEDIATE MATERIAL is Greenwaste that has completed the Pathogen Reduction Process but is not considered Finished Compost or Compost Overs. Intermediate Material may also include Digestate if feedstock was exclusively Greenwaste and has completed the Pathogen Reduction Process.
- ~~(14)~~ MANURE is the solid waste and soiled bedding produced by livestock and zoological operations from the keeping of animals.
- ~~(10)~~ NURSERY COMPOSTING is composting conducted at a nursery to produce compost for on-site use.
- ~~(15)~~ ORGANIC MATERIAL is any solid finished product, byproduct, intermediate, or feedstock for composting. Organic Material includes Finished Compost, Compost Overs, Intermediate Material, and Organic Waste Material.
- ~~(16)~~ ORGANIC MATERIAL SUPPLIER is a facility that supplies, sells, markets, offers for sale, or manufactures Organic Material for use offsite.
- ~~(17)~~ ORGANIC WASTE MATERIAL is any waste material of organic origin that may be used as feedstock to produce Finished Compost, Compost Overs, or Intermediate Material. Organic Waste Material includes Greenwaste, both curbside and non-curbside, Woodwaste, Foodwaste, Biosolids, Digestate, and Manure.
- ~~(18)~~ PATHOGEN REDUCTION PROCESS is the process outlined in Title 14, Section 17868.3 of the California Code of Regulations.
- ~~(11)~~ PORTABLE CHIPPING AND GRINDING is chipping and grinding utilizing equipment with a manufacturer's rating of 170 brake horsepower or less.
- ~~(12)~~ RECREATIONAL FACILITIES COMPOSTING is composting conducted at parks, arboretums and other recreational facilities using feedstock generated on-site to produce compost for on-site use.
- ~~(19)~~ UNCOMPOSTED GREENWASTE is Greenwaste that has not at least completed the Pathogen Reduction Process. Intermediate Material, Finished Compost, and Compost Overs are not considered Uncomposted Greenwaste.
- ~~(20)(13)~~ WOODWASTE is lumber, and the woody material portion of mixed demolition wastes and mixed construction wastes. Large woody materials, such as

branches, tree trunks, and stumps exceeding four (4) inches in diameter are Woodwaste.

(d) Requirements

No owner or operator of an Organic Material Supplier shall supply, sell, market, or offer for sale Uncomposted Greenwaste, unless:

- (1) Otherwise allowed by the Local Enforcement Agency;
- (2) The recipient of Uncomposted Greenwaste is a(n):
 - (a) Co-eComposting operation subject to Rule 1133.2;
 - (b) Composting operation subject to Rule 1133.3;
 - (c) Digestion Operation;
 - (d) Biomass Power Generation Facility;
 - (e) Agricultural Operation; or
 - (f) Facility located outside of South Coast AQMD; and
- (3) For supply to Agricultural Operations, the recipient of Uncomposted Greenwaste informs the owner or operator of intent to use an acceptable Direct Land Application technique, either:
 - (a) Land incorporation by tilling, injecting, or plowing that covers Uncomposted Greenwaste with soil to a depth of six (6) inches; or
 - (b) Cover Uncomposted Greenwaste with at least six (6) inches of Finished Compost or Compost Overs.

~~Operators of chipping and grinding activities and composting operations shall meet the following requirements:~~

- ~~(1) No later than July 1, 2003, operators of existing chipping and grinding activities and composting operations shall register with the District by submitting the complete and applicable information required in accordance with subdivision (e) of this rule.~~
- ~~(2) Prior to start of operation, operators of new chipping and grinding activities and composting operations, shall register with the District by submitting the complete and applicable information required in accordance with subdivision (e) of this rule.~~
- ~~(3) No later than July 1, 2004, and every year thereafter, operators of chipping and grinding activities and composting operations registered with the District shall update their registration information by providing any changes to the information submitted in accordance with subdivision (e) of this rule.~~

(e) Recordkeeping~~Registration Process~~

The owner or operator of an Organic Material Supplier shall:

- (1) Record for each recipient of Uncomposted Greenwaste, if applicable:
 - (a) Recipient's name, recipient type as described in paragraph (d)(2), mailing address, email address, and telephone number;
 - (b) Dates of receipt and daily quantity supplied expressed in tons;
 - (c) For recipient type Agricultural Operations, the acceptable Direct Land Application technique as described in paragraph (d)(3); and
 - (d) Each destination address or latitude and longitude coordinates; and
- (2) Maintain records on-site for a period of at least three (3) years. Records shall be made available to the Executive Officer upon request.

~~The registration and annual update required pursuant to subdivision (d) of this rule shall, at a minimum, include the following information:~~

- ~~(1) Facility name;~~
- ~~(2) Facility location address and mailing address;~~
- ~~(3) Facility legal owner(s), contact person, title, telephone number, and mailing address;~~
- ~~(4) Facility operator (s), contact person, title, telephone number, and mailing address;~~
- ~~(5) Number of employees at the facility;~~
- ~~(6) Applicable California Integrated Waste Management Board's permit number, identification number, and facility classification;~~
- ~~(7) Type and amount of materials received and type and amount of products produced for the preceding year;~~
- ~~(8) Facility design capacity (throughput) in tons per year;~~
- ~~(9) Facility actual throughput in tons per month for the preceding calendar year. For new facilities, projected throughput must be provided;~~
- ~~(10) Feedstock description;~~
- ~~(11) Facility process description including, process diagram and a description of chipping and grinding operations and composting methods used (if applicable);~~
- ~~(12) Published tipping fee schedule for the preceding calendar year by feedstock, and;~~
- ~~(13) Number of air quality and odor-related enforcement actions issued in writing against the facility by any Local Enforcement Agency and the California Integrated Waste Management Board for the preceding calendar year.~~

(f) Prohibitions~~Fees~~

No owner or operator of an Organic Material Supplier shall supply, sell, market, or offer for sale for Direct Land Application the following Organic Material:

(1) Foodwaste.

(2) Biosolids.

(3) Manure.

(4) Digestate not considered Intermediate Material, unless the recipient of Digestate informs the owner or operator of intent to use an acceptable Direct Land Application technique, either:

(a) Land incorporation by tilling, injecting, or plowing that covers Digestate with soil to a depth of six (6) inches; or

(b) Cover Digestate with at least six (6) inches of Finished Compost or Compost Overs.

~~The operator of any activity or facility subject to registration and annual update requirements pursuant to this rule shall be subject to a one-time fee equivalent to the plan submittal fee in accordance with Rule 306 at the time of registration.~~

(g) Exemptions

The owner or operator of an Organic Material Supplier that supplies, sells, or markets less than 100 tons of Uncomposted Greenwaste per calendar year shall be exempt from the requirements of paragraphs (d)(2) and (d)(3), provided that the owner or operator records and maintains records in accordance with subdivision (e).

~~The following types of facilities and operations are exempt from the requirements of this rule:~~

~~(1) — Portable chipping and grinding;~~

~~(2) — Community composting;~~

~~(3) — Agricultural composting;~~

~~(4) — Nursery composting;~~

~~(5) — Recreational facilities composting;~~

~~(6) — Backyard Composting; and~~

ATTACHMENT G

(Adopted January 10, 2003)(Amended July 8, 2011)(Amended TBD)

PROPOSED AMENDED RULE 1133.1 CHIPPING AND GRINDING OPERATIONS

[Rule index to be added after Amendment]

(a) Purpose

The purpose of this rule is to prevent inadvertent decomposition occurring during eChipping and gGrinding Operationsactivities, including sStockpile operations.

(b) Applicability

This rule applies to owners and operators of eChipping and gGrinding Operations that are not subject to Rule 1133.2 – Emission Reductions from Co-eComposting Operations or Rule 1133.3 – Emission Reductions from Composting Operations.activities to produce materials other than active or finished compost, unless otherwise exempted under subdivision (f) of this rule. The requirements of Rule 403 – Fugitive Dust, also apply to these activities.

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

- (1) — ~~ACTIVE COMPOST~~ is material that is in the process of being rapidly decomposed and is biologically unstable. Active compost is generating temperatures of at least 122 degrees Fahrenheit during decomposition. Active compost includes, but is not limited to, pathogen-reduced mulch.
- (2) — ~~AGRICULTURAL CHIPPING AND GRINDING~~ is any chipping and grinding activity conducted at an agricultural site where organic waste material is generated on-site by the production and/or processing of farm products, and the chipped and ground organic waste material is used on-site.
- (1) AGRICULTURAL OPERATIONS are as defined in Rule 102 – Definition of Terms.
- (2) BIOMASS POWER GENERATION FACILITY is an electrical generation facility that uses biomass, which includes Greenwaste, Woodwaste, and orchard removal trees, as fuel to generate electricity.
- (3) CHIPPING AND GRINDING OPERATION is any operationactivity that mechanically reduces the size of gGreenwaste, wWoodwaste, and/or fFoodwaste.
- (4) — ~~COMPOSTING~~ is a process in which solid organic waste materials are decomposed in the presence of oxygen under controlled conditions through the action of bacteria and other microorganisms.

- (5) — ~~COMPOST OVERS are the oversized woody materials that do not decompose in a typical composting cycle and are screened out of finished product at the end of composting. Compost overs have been through the pathogen reduction process outlined in Title 14, Section 17868.3 of the California Code of Regulations.~~
- (6) — ~~CURBSIDE GREENWASTE is greenwaste that is collected from receptacles designated for residential household greenwaste. Curbside greenwaste also includes screened curbside greenwaste containing only grass clippings, leaves, and/or twigs that is not considered non-curbside greenwaste as defined in paragraph (c)(13).~~
- (7) — ~~FINISHED COMPOST is a humus-like material and/or compost overs that result from the controlled biological decomposition of organic waste materials and is biologically stable.~~
- (4)(8) FOODWASTE is any food scraps collected from the food service industry, grocery stores, or residential food scrap collection. Foodwaste also includes food scraps that are chipped and ground. Food scraps co-collected with curbside Greenwaste collection are considered Greenwaste.
- (5)(9) GREENWASTE is any ~~organic-waste~~ of organic origin material generated from gardening, agriculture, or landscaping activities including, ~~but not limited to,~~ grass clippings, leaves, tree and shrub trimmings, and plant remains. Food scraps co-collected with curbside Greenwaste collection are considered Greenwaste. Small woody materials, such as prunings and trimmings up to four (4) inches in diameter, are Greenwaste. It includes curbside, non-curbside, and mixed greenwaste.
- (10) — ~~INADVERTENT DECOMPOSITION is decomposition of greenwaste and/or foodwaste associated with stockpiling greenwaste and/or foodwaste for an extended period of time, and is not considered part of normal chipping and grinding operations.~~
- (6)(11) LANDCLEARING is an operation activity in which ~~where~~ trees and plants grown at the site are cut, then chipped or ground and then removed from the site to clear the site for fire protection. The resulting material is ~~and subsequently stored at a publicly designated site.~~
- (12) — ~~MIXED GREENWASTE is curbside greenwaste that is mixed with non-curbside greenwaste.~~
- (13) — ~~NON-CURBSIDE GREENWASTE is any greenwaste that is not collected from receptacles designated for residential household greenwaste.~~

~~(14) — PALM CHIPPING AND GRINDING is any activity that mechanically reduces the size of palm trees waste.~~

~~(7)(15) PORTABLE CHIPPING AND GRINDING OPERATION is an operation that mechanically reduces the size of Greenwaste, Woodwaste, or Foodwaste operating at valid locations using with equipment registered in accordance with the Statewide Portable Equipment Registration Program (PERP), permitted for use at various locations in accordance with Regulation II – Permits, or is otherwise exempt from permitting in accordance with Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II. chipping and grinding utilizing equipment with a manufacturer's rating of 170 brake horsepower or less.~~

~~(16) — RAINY DAY is any day with at least 0.05 inches of rain reported by the National Weather Service or a cooperative weather reporting station for the site closest to where the chipping and grinding activity occurs.~~

~~(8)(17) STOCKPILE is a supply of raw materials tipped and stored prior to being utilized on-site or removed from the site. Raw materials before and after chipping and grinding are also included.~~

~~(18) — WET WEATHER CONDITIONS are weather conditions following a rainy day not to exceed 10 days.~~

~~(9)(19) WOODWASTE is lumber, and the woody material portion of mixed demolition wastes and mixed construction wastes. Large woody materials, such as branches, tree trunks, and stumps exceeding four (4) inches in diameter are Woodwaste. Woodwaste also includes large wood materials of curbside greenwaste or mixed greenwaste that is screened or unscreened, such as tree trimmings, branches, tree trunks, stumps, and limbs exceeding 2 inches in any dimension.~~

(d) Requirements

The owner or operator of a ~~e~~Chipping and ~~g~~Grinding Operation activity shall ~~comply with the following requirements:~~

- ~~(1) Not accept Foodwaste shall not be taken at the facility, unless otherwise allowed by the Local Enforcement Agency to handle fFoodwaste.~~
- ~~(2) Chip or grind and utilize on-site or remove curbside, non-curbside, or mixed gGreenwaste from the site within 48 hours of receipt, excluding observance of official federal and state holidays, or up to seven (7) days maximum, with approval from the Local Enforcement Agency.~~

(e) Recordkeeping

The owner or operator of a Chipping and Grinding Operation shall:

- ~~(3) — Maintain all the operational records for the prior five years of operation, with the most recent two years retained at the facility, which shall be immediately available upon request by the Executive Officer. The remaining three years of records shall be made available to the Executive Officer within one week of request.~~
- (1)(4) Maintain the following records, as applicable, on-site for two years:
- (A) A copy of the annual Chipping and Grinding Operation report submitted in accordance with subdivision (f) facility's AQMD registration and annual updates submitted in compliance with Rule 1133;
 - (B) Records of date, type, and amount of gGreenwaste received;
 - (C) Records of date, type, amount of gGreenwaste removed from the site, and location where they are transferred to;
 - (D) Records of approved time extensions from the Local Enforcement Agency; and Records of dates of rainy days and wet weather conditions and description of specific conditions that limited normal operations;
 - (E) Records of temperature in accordance with paragraph (g)(3). or moisture content measurements; and
 - (F) — Records of dates and amount of curbside greenwaste chipped and ground.
- (2) Maintain records for the prior five (5) years of operation. The , with the most recent two (2) years shall be retained on-site, which shall be immediately available upon request by the Executive Officer. The remaining three (3) years of records shall be made available to the Executive Officer within one (1) week of request.
- ~~(5) — The time requirements specified in paragraph (d)(2) may be extended by the number of rainy days and wet weather conditions that impede normal chipping and grinding operations provided that records are maintained in accordance with subparagraph (d)(4)(D).~~

(f) Reporting

The owner or operator of a Chipping and Grinding Operation shall submit to the Executive Officer annually, no later than July 1st of each calendar year, a report summarizing Chipping and Grinding Operation of the previous calendar year in a format approved by the Executive Officer. The report shall include including annual totals of Greenwaste and other feedstocks received and annual totals of Chipping and Grinding Operation products removed from the site.

(e) — Moisture Content Measurement

~~Moisture content will be determined by collecting at least 10 samples of chipped and ground greenwaste from various locations of the pile at a depth of at least 12 inches below pile surface. The samples shall then be mixed thoroughly and analyzed for moisture content by ASTM method D4442 (December 2007), ASTM method D4444 (May 2008) or ASTM method E871-82 (December 2006).~~

(g)(f) Exemptions

- (1) The owner or operator of a Chipping and gGrinding Operation with a throughput of less than 100 tons per calendar year activities of greenwaste derived from the site and utilized on-site shall be exempt from the requirements of paragraphs (d)(2) and subdivisions (e) and (f), except for subparagraph (e)(1)(B) to record throughput and paragraph (e)(2) to maintain records, (d)(3), and (d)(4) provided less than 1,000 cubic yards of materials are either sold or given away.
- (2) Portable chipping and grinding, agricultural chipping and grinding, landclearing chipping and grinding, woodwaste chipping and grinding, and palm chipping and grinding activities. The owner or operator of any of the following types of operations shall be exempt from the requirements of paragraphs (d)(2) and subdivisions (e) and (f); (d)(3), and (d)(4).
 - (A) Portable Chipping and Grinding Operations.
 - (B) Agricultural Operations.
 - (C) Landclearing, provided that the public agency designating the storage site has notified the applicable fire protection agency.
 - (D) Chipping and Grinding Operations processing exclusively Woodwaste.
- ~~(3) Chipped and ground curbside greenwaste shall be exempt from the requirements of paragraph (d)(2) provided that the moisture content is less than 30%, measured in accordance with subdivision (e) and the temperature or moisture content measurements are maintained on-site in accordance with subparagraph (d)(4)(E).~~
- (3)(4) The owner or operator of aA bBiomass pPower gGeneration fFacility or a facility processing organic material as a biomass fuel for a biomass power generation facility shall be exempt from the requirements of paragraph (d)(2), provided that the material temperature is maintained at below 122 degrees Fahrenheit (50 degrees Celsius) or the moisture content is less than 30%, measured in accordance with subdivision (e) and the temperature or moisture content measurements are maintained on-site in accordance with subdivision (e) paragraph (d)(4)(E). This exemption shall not apply to material processed for purposes other than biomass power generation fuel.

- (5) — ~~The operator of a landfill or biomass power generation facility shall be exempt from the requirements of paragraph (d)(4), provided that the operator does not perform chipping and grinding of greenwaste on site.~~

PROPOSED AMENDED RULE 1133.2 EMISSION REDUCTIONS FROM CO-COMPOSTING OPERATIONS

[Rule index to be added after Amendment]

(a) Purpose

The purpose of this rule is to reduce volatile organic compounds (VOC) and ammonia (NH_3)-emissions from eCo-eComposting oOperations.

(b) Applicability

This rule applies to owners and operators of all new and existing eCo-eComposting oOperations.

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

(1) ACTIVE PHASE is the portion of the composting process characterized by rapid decomposition and biological instability, generating temperatures of at least 122 degrees Fahrenheit (50 degrees Celsius). The Active Phase includes the Pathogen Reduction Process.

~~(2)(4)~~ AERATION SYSTEM is a system where air is forced through oOrganic Waste mMaterials being composted, through the use of fans or blowers.

~~(2)~~ AGRICULTURAL COMPOSTING is composting conducted in agricultural settings where the feedstock consists of wastes generated on-site by the production and processing of farm or agricultural products.

~~(3)~~ AGRICULTURAL OPERATIONS are as defined in Rule 102 – Definition of Terms.

~~(3)~~ ACTIVE CO-COMPOSTING is the phase of the composting process that begins when organic materials are mixed together for composting and lasts a minimum of 22 days.

~~(4)~~ BASELINE EMISSIONS FACTORS are the uncontrollednon-controlled emission factors for eCo-eComposting oOperations for VOC and ammonia, respectively.

~~(5)~~ BIOFILTRATION is a pollution control technology that removes and oxidizes VOC and ammonia through the action of bacteria and other microorganisms.

~~(6)~~ BIOSOLIDS are the residual solid wastes produced by the anaerobic digestion of sewage and other Organic Waste Material at publicly owned treatment works.

~~(7)(6)~~ CO-COMPOSTING OPERATION is an operation that compostsing where any amount of bBiosolids and/or greater than 20 percent mManure, by volume, are mixed with bulking agents, such as sawdust, and other Organic Waste Material, to

- produce compost. ~~Co-composting includes both the active and curing phases of the composting process.~~
- (7) ~~COMPOST is a product resulting from the controlled biological decomposition of organic materials.~~
- (8) COMPOST OVERS are woody materials that do not decompose in a typical composting cycle and are screened out of Finished Compost at the end of composting. Compost Overs have completed the Pathogen Reduction Process.
- (8) ~~COMPOSTING is a process in which solid organic waste materials are decomposed in the presence of oxygen under controlled conditions through the action of bacteria and other microorganisms.~~
- (9) CONTROL EFFICIENCY is the effectiveness, expressed in percent, of an emission control system or mitigation measure to eliminate, reduce, or control the issuance of a specific air contaminant.
- (10)(9) CURING PHASE is the portionphase of the co-composting process that begins immediately after the end of the aActive pPhase of composting and characterized by slower decomposition until reaching biological stability. lasts 40 days or until the compost has a Solvita Maturity Index of 7 or the product respiration rate is below 10 milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry.
- (11) DIGESTATE is the residual material solid waste produced by the anaerobic digestion of Organic Waste Material excluding sewage or Biosolids.
- (12)(40) ENCLOSURE is a completely walled, floored, and roofed structure or vessel.
- (13)(44) EXISTING SMALL-CAPACITY CO-COMPOSTING OPERATIONS ~~is~~ are all eCo-eComposting oOperations that beganhave begun operations on or before January 10, 2003the date of adoption of this rule with a design capacity of less than 35,000 tons of Organic Waste Material per calendar year containing no more than 20 percent Biosolids, by volume.
- (14) FINISHED COMPOST is a humus-like material that results from the controlled biological decomposition of Organic Waste Material and is biologically stable. Both the Active Phase and Curing Phase of composting are required to achieve this product.
- (15) FOODWASTE is any food scraps collected from the food service industry, grocery stores, or residential food scrap collection. Foodwaste also includes food scraps that are chipped and ground. Food scraps co-collected with curbside Greenwaste collection are considered Greenwaste.

- ~~(16)~~(12) GREENWASTE is any organic waste of organic origin material-generated from gardening, agriculture, or landscaping activities including, but not limited to, grass clippings, leaves, tree and shrub trimmings, and plant remains. Food scraps co-collected with curbside Greenwaste collection are considered Greenwaste. Small woody materials, such as prunings and trimmings up to four (4) inches in diameter, are Greenwaste.
- ~~(13)~~ GREENWASTE COMPOSTING is composting of greenwaste by itself or greenwaste in combination with up to 20 percent manure, by volume.
- ~~(17)~~(15) MANURE is the solid waste and soiled bedding produced by livestock and zoological operations from the keeping of animals.
- ~~(14)~~ NEW CO-COMPOSTING OPERATIONS are co-composting operations that have not started operations as of the date of adoption of this rule.
- ~~(15)~~ OPERATOR is the operator of a co-composting operation.
- ~~(18)~~ ORGANIC WASTE MATERIAL is any waste material of organic origin that may be used as feedstock to produce Finished Compost, Compost Overs, or intermediate material. Organic Waste Material includes Greenwaste, both curbside and non-curbside, Woodwaste, Foodwaste, Biosolids, Digestate, and Manure.
- ~~(19)~~ PATHOGEN REDUCTION PROCESS is the process outlined in Title 14, Section 17868.3 of the California Code of Regulations.
- ~~(20)~~ PILE is Organic Waste Material that is heaped together.
- ~~(21)~~ PUBLICLY-OWNED SMALL-CAPACITY CO-COMPOSTING OPERATION is a Co-eComposting Operation owned or operated by a public entity which composts no more than 5,000 tons of Biosolids or Manure, combined, per calendar year.
- ~~(16)~~ SOLVITA MATURITY INDEX is an index that defines the stage where compost exhibits resistance to further decomposition, as tested by the Solvita Maturity Test®.
- ~~(17)~~ START-UP is the first day of active co-composting operations at the facility.
- ~~(22)~~(18) THROUGHPUT is the mass of Organic Waste Material biosolids, manure, and greenwaste in tons per calendar year as received by the Co-eComposting Operation facility and processed through composting, excluding recycled materials.
- ~~(23)~~(19) WOODWASTE is lumber, and the woody material portion of mixed demolition wastes and mixed construction wastes. Large woody materials, such as branches, tree trunks, and stumps exceeding four (4) inches in diameter are Woodwaste.
- ~~(20)~~ WOODWASTE COMPOSTING is composting of woodwaste by itself.

(24) WINDROW COMPOSTING PROCESS is the process in which Organic Waste Material is placed in elongated Piles and are mechanically turned on a periodic basis.

(d) Requirements

~~(1)~~—The owner or Operators of a ~~new eCo-eComposting eOperations~~ shall:

~~(1)(A)~~ Conduct ~~the~~ all aActive Phaseeco-composting within the confines of an eEnclosure which meets the following conditions:

~~(A)(i)~~ The inward face velocity of air through each natural draft opening in which air can enter the eEnclosure shall be a minimum of 100 feet per minute, unless the natural draft opening is equipped with a closure device that seals the natural draft opening in the event that the airflow direction changes.

~~(B)(ii)~~ The area of all natural draft openings in the eEnclosure through which air can enter the eEnclosure shall not exceed two (2) percent2% of the surface area of the eEnclosure's four (4) walls, floor, and ceiling.

~~(C)(iii)~~ The eEnclosure may be opened for brief time periods, not to exceed a total of 30 minutes per day for purposes of access or maintenance. These time periods do not need to be included in the face velocity determination or as ~~an~~ natural draft opening for the two (2) percent criteria.

~~(D)(iv)~~ No measurable increase over background levels, measured in accordance with paragraph (g)(5), of ammonia or hydrocarbons downwind outside the eEnclosure shall occur at any ~~enclosure~~ natural draft opening including any natural draft opening that occurs briefly for access or maintenance. A portable ammonia analyzer, colorimetric test, or hydrocarbon analyzer, or another alternative method approved by the Executive Officer as being equivalent or better shall be used for these measurements. The portable ammonia analyzer shall be operated per manufacturer's instructions and calibrated with certified zero and ten (10) parts per million ammonia standards. The portable hydrocarbon analyzer shall be a flame ionization detector operated per manufacturer's instructions and calibrated with certified zero and ten (10) parts per million methane standards. The owner or operator shall monitor each natural draft opening and the background levels at least daily and record monitoring results.

~~(2)~~ Conduct the Active Phase until meeting at least one of the following criteria:

~~(A)~~ For a minimum of 22 consecutive calendar days, beginning when Organic Waste Material is mixed together for composting.

- (B) The Active Phase Pile has a Compost Maturity Index of 4.5 or greater as measured by the Solvita Maturity Test in accordance with subparagraph (g)(4)(A).
 - (C) The Active Phase Pile has completed the Pathogen Reduction Process.
- ~~(3)(B)~~ Conduct the ~~all~~ eCuring Phase using an ~~a~~Aeration sSystem vented to an emission control system that operates under negative pressure for no less than 90 percent of its blower(s) operating cycle and until meeting at least one of the following criteria; and,
 - (A) For a minimum of 40 consecutive calendar days after the end of the Active Phase.
 - (B) The Curing Phase Pile has a Compost Maturity Index of 6.0 or greater as measured by the Solvita Maturity Test in accordance with subparagraph (g)(4)(A).
 - (C) The Curing Phase Pile respiration rate is below ten (10) milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry in accordance with subparagraph (g)(4)(B).
- ~~(4)(C)~~ Vent the exhaust from the eEnclosure and the ~~a~~Aeration sSystem to an emissions control system designed and operated that, either:
 - (A) Meets with a eControl eEfficiency equal to or greater than 80 percent, by weight, for VOC emissions and equal to or greater than 80 percent, by weight, for ammonia emissions, as compared to one of:-
 - (i) Inlet emission rates for VOC and ammonia, respectively, to the emission control system;
 - (ii) Baseline Emission Factors of 1.78 pounds of VOC per ton of Throughput and 2.93 pounds of ammonia per ton of Throughput, respectively; or
 - (iii) Operation-specific Baseline Emission Factors for VOC and ammonia, respectively, if submitted by the owner or operator and approved by the Executive Officer to represent the uncontrolled emission factors of the Co-eComposting Operation; or
 - (B) Does not exceed 0.35 lbs VOC emissions per ton of Throughput and does not exceed 0.58 lbs ammonia emissions per ton of Throughput.
- (5) Demonstrate compliance with paragraph (d)(4) by source testing in accordance with paragraph (g)(1):
 - (A) Within one (1) year of startup of the emission control system; and
 - (B) Every two (2) years thereafter.

- (6) In lieu of complying with paragraphs (d)(1) through (d)(5), the owner or operator of an Existing Small-eCapacity Co-eComposting Operation may select the Existing Small-eCapacity Co-eComposting Operation Alternative in accordance with subdivision (e).
- (7) In lieu of complying with paragraphs (d)(1) through (d)(5), the owner or operator of a Publicly-eOwned Small-eCapacity Co-eComposting Operation may select the Publicly-eOwned Small-eCapacity Co-eComposting Operation Alternative in accordance with subdivision (f).
- ~~(2) In lieu of complying with the requirements of paragraph (d)(1), operators of new co-composting operations may submit a compliance plan, for the approval of the Executive Officer, that demonstrates an overall emission reduction of 80 percent, by weight, for VOC emissions and 80 percent, by weight, for ammonia emissions from the baseline emission factors.~~
- ~~(3) Operators of existing co-composting operations shall submit a compliance plan, for the approval of the Executive Officer, that demonstrates an overall emission reduction of 70 percent, by weight, for VOC emissions and 70 percent, by weight, for ammonia emissions from the baseline emission factors.~~
- ~~(4) The baseline emission factors to be used under paragraphs (d)(2) and (d)(3) shall be 1.78 pounds of VOC per ton of throughput and 2.93 pounds of ammonia per ton of throughput. The Executive Officer may approve the use of operation-specific baseline emission factors in lieu of the baseline emission factors, if the operator requests the use of such baseline emission factors as part of the compliance plan submittal and demonstrates that the operation-specific baseline emissions factors are representative of noncontrolled operations.~~
- ~~(5) The operator of a co-composting operation shall submit the compliance plan required pursuant to paragraphs (d)(2) or (d)(3) at least one year prior to the start of operations for new co-composting operations and at least one year prior to the effective date of compliance for existing co-composting operations.~~
- ~~(6) The control efficiency required under subparagraphs (d)(1)(C) and (j)(2)(A) for new co-composting operations shall be demonstrated by a source test conducted as part of the permit application process and every two years thereafter.~~
- ~~(7) The control efficiency required under subparagraph (j)(2)(A) for existing co-composting operations shall be demonstrated by a source test conducted on or before January 1, 2007, and every two years thereafter.~~
- ~~(8) Within 180 days after the effective date of compliance and every two years thereafter, the operator of a co-composting operation shall perform all necessary~~

~~tests and provide a certification of compliance report that includes all source test data and all other applicable information to demonstrate compliance with the emission reduction requirement of paragraphs (d)(2) or (d)(3).~~

(e) Existing Small-eCapacity Co-eComposting Operation Alternative~~Compliance Plan~~

The owner or operator selecting the Existing Small-eCapacity Co-eComposting Operation Alternative shall:

(1) Cover each Active Phase Pile with Finished Compost or Compost Overs within 24 hours of initial Pile formation such that the top of the cover is at least six (6) inches thick.

(2) Within six (6) hours before turning for at least the first 15 days after initial Active Phase Pile formation, apply water or other liquid approved by the Executive Officer to the surface area of each Active Phase Pile until the top one-half of the Active Phase Pile is sufficiently wet to a depth of at least three (3) inches.

(A) The owner or operator shall determine if an Active Phase Pile is sufficiently wet by the squeeze ball test pursuant to subparagraph (e)(2)(B) or an alternative approved by the Executive Officer, California Air Resource Board (CARB), or United States Environmental Protection Agency (U.S. EPA).

(B) Squeeze Ball Test

The owner or operator shall take a sample of material while wearing a protective glove from the top one-half of the Active Phase Pile, at least three (3) inches below the outer surface. The owner or operator shall squeeze the sample into a ball using hand pressure. An Active Phase Pile is sufficiently wet if the sample forms a ball when compressed, but the ball may break when tapped.

(C) If the ball crumbles upon release of hand pressure, the owner or operator shall apply additional water to the Active Phase Pile prior to turning until the Active Phase Pile is sufficiently wet.

(D) If a rain event occurs within six (6) hours before turning an Active Phase Pile and the Active Phase Pile is sufficiently wet, the owner or operator may turn the Active Phase Pile without adding additional approved liquid. If the Active Phase Pile is not sufficiently wet, the owner or operator shall apply additional approved liquid to the Active Phase Pile pursuant to subparagraph (e)(2)(C) before turning.

- (3) In lieu of complying with the requirement of paragraph (e)(2), the owner or operator may turn Active Phase Piles using a windrow turner equipped with liquid spraying technology that applies approved liquid during the entire turning process.
- (4) Conduct the Active Phase until meeting at least one of the following criteria:

 - (A) For a minimum of 22 consecutive calendar days, beginning when Organic Waste Material is mixed together for composting.
 - (B) The Active Phase Pile has a Compost Maturity Index of 4.5 or greater as measured by the Solvita Maturity Test in accordance with subparagraph (g)(4)(A).
 - (C) The Active Phase Pile has completed the Pathogen Reduction Process.
- (5) Conduct the Curing Phase until meeting at least one of the following criteria:

 - (A) For a minimum of 40 consecutive calendar days after the end of the Active Phase.
 - (B) The Curing Phase Pile has a Compost Maturity Index of 6.0 or greater as measured by the Solvita Maturity Test in accordance with subparagraph (g)(4)(A).
 - (C) The Curing Phase Pile respiration rate is below ten (10) milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry in accordance with subparagraph (g)(4)(B).
- ~~(1) Compliance plans required under paragraphs (d)(2) and (d)(3) shall contain all the following elements:~~

 - ~~(A) The name(s), address(es), and telephone number(s) of the person(s) responsible for the preparation, submittal, and implementation of the compliance plan;~~
 - ~~(B) The name, address, and telephone number(s) of the facility for which the compliance plan is being prepared;~~
 - ~~(C) A description and process diagram of the co-composting operation;~~
 - ~~(D) A complete description of the control method(s) that will be used at the co-composting operation to meet the requirements under paragraphs (d)(2) or (d)(3). The description shall be in sufficient detail to demonstrate compliance with paragraphs (d)(2) or (d)(3). The acceptable control methods include, but are not limited to:~~

 - ~~(i) enclosure design or technology;~~
 - ~~(ii) aeration system design and operation;~~
 - ~~(iii) biofiltration;~~
 - ~~(iv) scrubber;~~

- ~~(v) — feedstock component optimization;~~
- ~~(vi) — biosolids thermal pre-treatment;~~
- ~~(vii) — enclosed material mixing and thermal stripping;~~
- ~~(viii) — staged active pile construction and aeration;~~
- ~~(ix) — feedstock ratio optimization;~~
- ~~(x) — process controls;~~
- ~~(xi) — best management practices; or,~~
- ~~(xii) — any combination of the methods listed above; or,~~
- ~~(xiii) — any other method approved by the Executive Officer, California Air Resources Board, and the United States Environmental Protection Agency.~~
- ~~(E) — All data, calculations methodology, calculations, records, manufacturer specifications and all other information necessary to determine that the composting methods and control methods proposed in subparagraph (e)(1)(D) will achieve the required emission reductions specified in paragraph (d)(2).~~
- ~~(F) — A methodology and calculations establishing the daily and annual VOC and ammonia emissions or projected emissions;~~
- ~~(G) — If applicable, a source test protocol developed in accordance with the requirements of subdivision (g), to establish operation specific baseline emission factors.~~
- ~~(H) — A source testing protocol developed in accordance with the requirements of subdivision (g) to demonstrate compliance with the overall emission reductions specified in paragraph (d)(2) or (d)(3).~~
- ~~(I) — An identification of all equipment needing permits to construct and operate.~~
- ~~(2) — In evaluating the plan, the Executive Officer may require tests and sampling as necessary to determine the adequacy of the plan and the likelihood of compliance with the emission reduction requirements of paragraphs (d)(2) or (d)(3).~~
- ~~(3) — The Executive Officer may approve operation specific baseline emissions factors provided the baseline emissions factors are substantiated with source test data obtained in accordance with subdivision (g) of this rule and the composting method(s) and mixture is representative of normal operations.~~
- ~~(4) — The Executive Officer shall provide interim approval of the compliance plan provided the operator submits all of the information required under paragraph (e)(1) and the Executive Officer verifies that, by design, the plan will meet the requirements of paragraph (d)(2) or (d)(3), as applicable.~~

- ~~(5) — Following the interim approval of the plan, the Executive Officer shall approve the compliance plan provided the operator submits, no later than 180 days after the effective date of compliance, a certification of compliance report that includes all source test data, and the Executive Officer verifies that the emissions from the co-composting operations comply with the requirements of paragraphs (d)(2) or (d)(3), as applicable.~~
- ~~(6) — The Executive Officer may impose conditions necessary to ensure that the co-composting operation complies with the compliance plan and all applicable AQMD rules.~~
- ~~(7) — The Executive Officer may require the operator to maintain records consistent with the compliance plan necessary to demonstrate compliance with the plan.~~
- (f) Publicly-~~o~~Wned Small-~~e~~Capacity Co-~~e~~Composting Operation Alternative
Schedule

The owner or operator selecting the Publicly-~~o~~Wned Small-~~e~~Capacity Co-~~e~~Composting Operation Alternative shall:

 - (1) Conduct the Active Phase and Curing Phase using an Aeration System that is vented to an emission control system that either:

 - (A) Meets Control Efficiency equal to or greater than 80 percent, by weight, for VOC emissions and equal to or greater than 80 percent, by weight, for ammonia emissions, as compared to one of:

 - (i) Inlet emission rates for VOC and ammonia, respectively, to the emission control system;
 - (ii) Baseline Emission Factors of 1.78 pounds of VOC per ton of Throughput and 2.93 pounds of ammonia per ton of Throughput, respectively; or
 - (iii) Operation-specific Baseline Emission Factors for VOC and ammonia, respectively, if submitted by the owner or operator and approved by the Executive Officer to represent the uncontrolled emission factors of the Co-~~e~~Composting Operation; or
 - (B) Does not exceed 0.35 lbs VOC emissions per ton of Throughput and does not exceed 0.58 lbs ammonia emissions per ton of Throughput.
 - (2) Demonstrate compliance with paragraph (f)(1), as applicable, by source testing in accordance with paragraph (g)(1):

 - (A) Within one (1) year of startup of the emission control system; and
 - (B) Every two (2) years thereafter.

- (3) Install, operate, and maintain the emission control system in accordance with the manufacturer's operation and maintenance manual or other similar written materials supplied by the manufacturer or distributor to ensure that the emission control system remains in proper operating condition.
- (4) Conduct the Active Phase until meeting at least one of the following criteria:

 - (A) For a minimum of 22 consecutive calendar days, beginning when Organic Waste Material is mixed together for composting.
 - (B) The Active Phase Pile has a Compost Maturity Index of 4.5 or greater as measured by the Solvita Maturity Test in accordance with subparagraph (g)(4)(A).
 - (C) The Active Phase Pile has completed the Pathogen Reduction Process.
- (5) Conduct the Curing Phase until meeting at least one of the following criteria:

 - (A) For a minimum of 40 consecutive calendar days after the end of the Active Phase.
 - (B) The Curing Phase Pile has a Compost Maturity Index of 6.0 or greater as measured by the Solvita Maturity Test in accordance with subparagraph (g)(4)(A).
 - (C) The Curing Phase Pile respiration rate is below ten (10) milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry in accordance with subparagraph (g)(4)(B).
- ~~(1) The effective dates of compliance for paragraphs (d)(1), (d)(2), and (d)(3) of this rule shall be as follows:~~

 - ~~(A) Upon start-up for new co-composting operations.~~
 - ~~(B) January 1, 2007 for existing co-composting operations with a facility design capacity of 100,000 tons of throughput per year or more.~~
 - ~~(C) January 1, 2008 for existing co-composting operations with a facility design capacity greater than or equal to 10,000 but less than 100,000 tons of throughput per year.~~
 - ~~(D) January 1, 2009 for existing co-composting operations with a facility design capacity less than 10,000 tons of throughput per year.~~
- ~~(2) The Executive Officer shall extend for up to three years the compliance date for an existing co-composting operation which, at the time of rule adoption and at least one year prior to the effective compliance date, has less than 3 years remaining under a non-renewable conditional use permit beyond its effective compliance date. By June 1, 2003, the operator of such an operation must submit to the Executive~~

~~Officer a copy of the conditional use permit and a letter from the responsible agency verifying that the permit is non-renewable and the date when the permit is expired.~~

(g) Testing Methods and Protocol

- (1) ~~Source Testing~~~~The operator of a co-composting operation shall conduct all required source and laboratory tests in accordance with an Executive Officer approved test protocol developed in accordance to the guidelines provided in Attachment A of this rule.~~

The owner or operator of a Co-eComposting Operation required to perform source testing shall:

- (A) Prior to conducting source testing to demonstrate compliance, submit a source test protocol for approval to the Executive Officer in accordance with the guidelines provided in Attachment A;
 - (B) Submit an updated or new source test protocol if there are any changes to the Co-eComposting Operation or if the Executive Officer requests an updated or new source test protocol;
 - (C) Conduct source testing pursuant to the valid source test protocol approved by the Executive Officer; and
 - (D) Submit the source test report to the Executive Officer within 60 days of completing all sampling for source testing.
- (2) ~~The owner or operator of the eCo-eComposting eOperation shall use a District approved laboratory approved by the Executive Officer for all required testing in accordance with the Attachment A of this rule.~~
- (3) The following methods shall be used to determine compliance with this rule:
- (A) South Coast SCAQMD Method 207.1 – Determination of Ammonia Emissions from Stationary Sources.
 - (B) South Coast SCAQMD Method 25.3 – Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources.
 - (C) South Coast SCAQMD Method 1.1 – Sample and Velocity Traverses for Stationary Sources.
 - (D) South Coast SCAQMD Method 1.2 – Sample and Velocity TraverseTraverses for Stationary Sources with Small Stacks or Ducts.
 - (E) South Coast SCAQMD Method 2.1 – Determination of Stack Gas Velocity and Volumetric Flow Rate (S-Type Pitot Tube).

- (F) South Coast SCAQMD Method 2.2 – Direct Measurement of Gas Volume through Pipes and Small Ducts.
- (G) South Coast SCAQMD Method 2.3 – Determination of Gas Velocity and Volumetric Flow Rate From Small Stacks or Ducts.
- (H) South Coast SCAQMD Method 4.1 – Determination of Moisture Content in Stack Gases.
- (4) Triplicate samples shall be taken for the following test methods:
 - (A) Test Methods for the Examination of Composting and Compost (TMECC) 05.08-E – Solvita Maturity Index (April 7, 2002) or its successor.
 - (B) TMECC 05.08-A – Specific Oxygen Uptake Rate (April 7, 2002) or its successor.
- (5) Background Ammonia and Hydrocarbon Levels

The owner or operator of a Co-eComposting Operation required to measure background levels in accordance with subparagraph (d)(1)(D) shall measure the local ambient concentration of ammonia and hydrocarbon, measured as methane, by holding the inlet of the measuring device between five (5) and six (6) feet above ground, away and upwind from the Enclosure.
- (h) Recordkeeping

The owner or operator of a Co-eComposting Operation shall:

 - (1) Maintain the following records, as applicable:
 - (A) A copy of the annual Co-eComposting Operation report submitted in accordance with subdivision (i);
 - (B) Records of dates and amounts of composting conducted;
 - (C) Application of Finished Compost, Compost Overs, and approved liquids, in accordance with subdivision (e);
 - (D) Source test reports, in accordance with subparagraph (g)(1)(D);
 - (E) Operation and maintenance of any emission control system, in accordance with subdivisions (d) or (f); and
 - (F) Manufacturer’s operation and maintenance manual or similar, in accordance with subdivisions (d) or (f).
 - (2) Maintain records for the prior five (5) years of operation. The , with the most recent two (2) years shall be retained on-site, which shall be immediately available upon request by the Executive Officer. The remaining three (3) years of records shall be made available to the Executive Officer within one (1) week of request.

~~The operator shall, at a minimum, maintain operation's records for a period of at least two years, or five years for facilities subject to Title V Permit Requirements, and make them available to the Executive Officer upon request.~~

(i) Reporting Plan Fees

The owner or operator of a Co-eComposting Operation shall submit to the Executive Officer annually, no later than July 1st of each calendar year, a report summarizing the Co-eComposting Operation of the previous calendar year in a format approved by the Executive Officer. The report shall include including annual Throughputs of each Organic Waste Material received and annual Throughputs of Finished Compost and Compost Overs.

~~Operators subject to a compliance plan submittal pursuant to paragraphs (d)(2) and (d)(3) shall be assessed, as applicable, filing and evaluation fees pursuant to Rule 306.~~

(j) Exemptions

(1) The owner or operator of an Agricultural Operation shall be exempt from The provisions of subdivisions (d) through (i), of this rule shall not apply to agricultural composting operations, greenwaste composting operations, woodwaste composting operations, co-composting operations with a design capacity of less than 1,000 tons of throughput per year, and existing co-composting operations with a design capacity of less than 35,000 tons of throughput per year containing no more than 20 percent biosolids, by volume.

(2) The owner or operator of a Co-eComposting Operation with a Throughput of less than 100 tons per calendar year shall be exempt from the provisions of subdivisions (d) through (i), except for subparagraph (h)(1)(B) to record Throughput and paragraph (h)(2) to maintain records.

(3) The provisions of subdivision (d) shall not apply to source testing for the purpose of developing operation-specific Baseline Emission Factors, provided the owner or operator obtains a valid source test protocol approved by the Executive Officer.

~~(2) Except for paragraphs (d)(6) and (d)(7), the provisions of subdivisions (d) through (i) shall not apply to new and existing co-composting operations that:~~

~~(A) Conduct co-composting operations using an aeration system that is vented to an emission control device with a control efficiency of 80 percent, by weight, for VOC emissions and 80 percent, by weight, for ammonia emissions; and,~~

- ~~(B) — Are owned and operated by a municipality which composts waste generated within the jurisdiction of the municipality; and,~~
- ~~(C) — Process less than 5,000 tons of biosolids or manure per year, combined.~~

ATTACHMENT A

GUIDELINES FOR THE DEVELOPMENT OF SOURCE TEST PROTOCOLS FOR VOC AND AMMONIA EMISSIONS FROM CO-COMPOSTING OPERATIONS

Source test protocols are to consist of testing plans to measure VOC and ammonia emissions due to the composting process. When used for determining the emission control system~~device~~ Control Efficiency~~requirement specified for new facilities~~, the measurements shall consist of lb/hr measurements at the inlet and exhaust of the emission control system~~device~~ as well as a verification of the Enclosure and are subject to the applicable requirements that follow. When used for determining the Control Efficiency~~overall emission reduction requirements~~ as compared to the Baseline Emissions~~Factors~~, emissions are to be reported as % reductions for the Active Phase~~co-composting and Curing~~ pPhases in terms of pounds of emissions per ton of Throughput (total raw material as received) and are subject to the applicable requirements that follow. The following are general requirements for all testing as well as specific requirements for the rule sections for each facility-specific protocol which must be prepared by the source test contractor and approved by the South Coast SCAQMD prior to testing. Source test protocols are facility-specific, reflecting the unique conditions and configuration of each Co-eComposting Operation and may vary from these guidelines. Any such deviations from test method(s) must be approved by South Coast AQMD in the source test protocols.

1. Alternative Test Methods

The reference test methods for ammonia, VOC, and flow rate cited in this guideline shall be used to determine compliance with this rule. Alternative test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, CARB~~the California Air Resources Board~~, and U.S. EPA~~the U.S. Environmental Protection Agency~~. For the source test protocols, as defined as the manner in which the reference test methods are employed to obtain a measurement of the emissions, alternatives to the procedures cited in these~~this~~ guidelines may be used if they are determined to be equivalent and approved in writing by the Executive Officer.

2. LAP Requirements

The sampling, analysis, and reporting shall be conducted by a laboratory/source test firm that has been approved under the South Coast SCAQMD Laboratory Approval Program (LAP) for the cited South Coast SCAQMD reference test methods, where LAP approval is available. For South Coast SCAQMD reference test methods for which no LAP program is available, the LAP approval requirement shall become effective one (1) year after the date that the LAP program becomes available for that South Coast SCAQMD reference test method.

3. Operating Conditions

The testing must be conducted under representative operating conditions with respect to seasonal conditions, compost composition, process Throughput, processing of the materials, and Pile

geometries. The following operating parameters shall be recorded during testing and reported with the test results:

- a) A thorough description of the composting process and process diagram of each processing area and including residence times in each of the composting process areas.
- b) Process ~~Throughput~~ as determined by facility's billing scales or other calibrated measuring device that represents the tons of the material as received that is present at the facility during the time of the testing. When using the South Coast AQMD District Baseline Emission Factors, the process ~~Throughput~~ is to include all of the raw ~~Organic Waste~~ Materials that are composted excluding material that is recycled from previous similar processing. Several ~~Throughputs~~ may be necessary if applicable to the different processing areas or ~~Pile~~ ages.
- c) Compost composition (percent and type of Organic Waste ~~Materials~~ i.e. ~~Biosolids~~, ~~Manure~~, ~~Greenwaste~~, etc.).
- d) Age of all ~~Piles~~ that were tested and all ~~Piles~~ present at the facility during testing, with age expressed in either calendar days or Compost Maturity Index as measured by the Solvita Maturity Test in accordance with subparagraph (e)(4)(A).
- e) Detailed ~~Dimensions~~ of all ~~Piles~~ so that a surface area for each ~~Pile~~ type can be calculated.
- f) A description of the biofilter system, including a process diagram and type of biofilter media.
- g) Age of the biofilter media.
- h) A thorough description of the humidification and moisture maintenance system for the biofilter.
- i) Identification of peripheral monitoring equipment, such as moisture or temperature sensors, and data from them during testing.

4. Ammonia Sampling

South Coast SCAQMD Method 207.1 shall be used to obtain the ammonia samples from each source of emissions to be tested. When sampling from a flux chamber, a sample line of minimal length should be connected to a midjet sampling train consisting of; two (2) midjet impingers each filled with 15 mL of 0.1N ~~Sulfuric Acid~~, an empty ~~impinger~~ bubbler, and an ~~impinger~~ bubbler filled with tared silica gel. The samples shall be analyzed for ammonium content as ammonia by ion chromatography or ion selective electrode.

5. VOC Sampling

Duplicate integrated gas samples shall be taken from each source of emissions to be tested using South Coast SCAQMD Method 25.3. ~~The South Coast AQMD Method 25.3~~ apparatus should be connected to sample directly inside the flux chamber or duct as applicable. Compost emissions are considered as water soluble sources where the 50 ppm applicability limit of South Coast AQMD Method 25.3 does not apply.

6. *Specific Requirements for Testing Co-Composting Operations Control Equipment Performance*

For surface types of emissions, such as with open faced biofilter exhausts, the exhaust emission rate shall be determined as in accordance with ~~in the following~~ Section (8) below.

For an emission control system~~device~~ inlet or exhaust that is vented through a testable duct, the gas velocity within the duct shall be measured according to South Coast SCAQMD Methods 1.1, 2.1, and 3.1. The flow rate shall also be corrected to dry standard conditions using the moisture content as determined by South Coast SCAQMD Method 4.1. This flow rate may then be used to determine mass emission rates.

~~The overall destruction~~Control eEfficiency shall be calculated as follows:

$$\underline{CEODE} = 100 \times (1 - (E / I)) \quad \text{(Equation 1)}$$

Where:

CEODE = Control~~Overall Destruction~~ Efficiency (%)

E = Total Exhaust Emission Rate (lb/hr)

I = Total Inlet Emission Rate to Emission Control System~~Device~~ (lb/hr)

7. *Specific Requirements for ~~Existing~~ Co-Composting Operations (Baseline Emission Factors)~~and New Co-Composting Operations (Overall Emissions Reduction)~~*

A proposed measurement from the ~~a~~Active Phase and ~~e~~Curing Phase~~co-composting process~~, including ~~but not limited to~~ surface emissions of all ~~p~~Piles where the materials are composted, and outlets (vents or surfaces) of emission control systems~~devices~~ must be included in the protocol. If the emissions are vented to atmosphere from a vent stack such as from an otherwise uncontrolled aerated static ~~p~~Pile or other vent to atmosphere, then the stack concentration, determined using methods specified in Sections (4) and (5) and flow rate measurements, as specified in the previous Section (6), are required. For ~~From~~ all surface types of emissions, such as from compost ~~p~~Piles and biofilter surfaces, the procedure for measuring surface emissions specified as in Section (8) is required. A measurement for fugitive emissions from aerated static ~~p~~Pile surfaces must also be included.

Each type of ~~p~~Pile must be tested. If the facility includes several identical ~~p~~Piles, then only the largest ~~p~~Pile need be tested. If the facility has more than three (3) different age ~~p~~Piles that are otherwise identical in processing and composition, then at a minimum three (3) ages can be tested including newer, middle-aged, and older, ~~and middle-aged~~ ~~p~~Piles from the Active Phase. A newer Pile in the Active Phase has not yet achieved peak temperature and is typically less than seven (7) days old or has a Compost Maturity Index (CMI) of 1.5 or less as measured by the Solvita Maturity Test in accordance with subparagraph (e)(4)(A). A middle-aged Pile in the Active Phase has achieved peak temperature and is typically between seven (7) and 14 days old or has a CMI between 1.5 and 3.0. An older Pile in the Active Phase has decreasing temperature and is typically between 14 and 22 days old or has a CMI between 3.0 and 4.5. In any case, the surface area of all

~~p~~Piles at the facility must be included in the determination of ~~p~~Pile dimensions as ~~specified~~~~recorded~~ in Section (3).

If the facility elects to use an alternative to the ~~South Coast AQMD District's b~~Baseline ~~e~~Emissions ~~f~~Factors, then a separate test must be conducted to establish this baseline on the uncontrolled ~~Co-~~~~e~~Composting ~~o~~Operation (e.g., windrow method) with the same compost mix. Following the source test to determine ~~an alternative b~~Baseline Emission Factors, facilities would have the option to use the South Coast AQMD District's bBaseline ~~e~~Emissions ~~f~~Factors or the alternative ~~b~~Baseline ~~e~~Emissions ~~f~~Factors.

Control Efficiency~~Reduction of emissions~~ shall be calculated as follows:

$$\underline{CE\% \text{ Reduction}} = 100 \times (1 - (TE / B)) \quad (\text{Equation 2})$$

Where:

CE = Control Efficiency (%)

TE = Total Emissions of Active Phase and Curing Phase Emissions (lb/ton
tThroughput)

B = South Coast AQMD District Baseline Emissions Factor or Alternative Baseline
Emissions Factor if Tested (lb/ton tThroughput)

8. *Procedure for Measuring Surface Emissions*

The procedure for measuring surface emissions such as the compost ~~p~~Pile and biofilter surfaces that cannot be tested by conventional methods through a stack or duct, is a modified form of the procedures found in the ~~US Environmental Protection Agency's (U.S. EPA) Measurement of Gaseous Emission Rates from Land Surfaces Using an Emission Isolation Flux Chamber User's Guide (U.S. EPA Guide)~~. The modifications to the procedures in the U.S. EPA Guide are specified in the following requirements.

The flux chamber encompasses a fixed surface area of 1.4 ft² and contains a sweep air system to obtain a homogeneous air sample by employing a mixing fan and sweep gas (10% ~~helium~~~~He~~ in air at 5 liters/min recommended). The sweep gas must contain a non-reactive and non-present tracer such as the aforementioned 10% helium so that a correction for the contribution of the surface flow rate can be calculated.

A minimum of ~~six (6)ten (10)~~ sample locations per Pile or a sufficient number at each ~~p~~Pile/~~surface~~ tested must be obtained in order to achieve a representative sample of the Pile surface emissions. A minimum of four (4) Piles at each Co-eComposting Operation (a newer Pile, a middle-aged Pile, an older Pile, and a pile in Curing Phase), or a sufficient number of Piles at the Co-eComposting Operation must be tested to represent the Co-eComposting Operation surface emissions. These locations can be composited for each ~~p~~Pile/~~surface~~ to reduce testing costs. For example, for one (1) hour sampling, ~~six (6)ten (10)~~ random positions on the ~~p~~Pile should be tested for ~~ten (10)6~~ minutes each. Alternatively, a lesser number of sample locations may be sampled provided that an evaluation of spatial variation demonstrates that the number of sample locations are sufficient.

The emissions ~~shall~~must be reported in units of lb/hr-ft², lb/hr, and lb/ton of ~~€~~Throughput. The following calculations shall apply to the test results:

$$\text{Surface Flow Correction Factor} = C_t / C_s \quad (\text{Equation 3})$$

Where:

C_t = Concentration of Tracer in Sweep Gas
 C_s = Concentration of Sweep Gas in Flux Chamber Sample

$$\text{Corrected Flux Chamber Results (lb/hr-ft}^2\text{)} = UFC \times SFCF \quad (\text{Equation 4})$$

Where:

UFC = Uncorrected Flux Chamber Results (lb/hr-ft²)
SFCF = Surface Flow Correction Factor

$$\text{lb/hr} = \text{lb/hr-ft}^2 \times \text{Total Compost Surface Area in Category} \quad (\text{Equation 5})$$

$$\text{lb/ton } \text{€}\text{Throughput} = \text{lb/hr} \times (24 \text{ hr/day}) / PT \quad (\text{Equation 6})$$

Where:

PT = Process Throughput (total ton/day as received)

$$\text{Total Emissions (lb/ton } \text{€}\text{Throughput)} = \sum P \quad (\text{Equation 7})$$

Where:

P = Active Phase and ~~€~~Curing Phase sources of the Facility Compost Emissions (lb/ton €Throughput)

For a facility where not every age of ~~p~~Pile was tested, the surface areas from each ~~p~~Pile in the facility must be included and sorted into appropriate age (newer, middle-aged, older in the Active Phase) and emissions categories (Active Phase and Curing Phase) from those that were measured.

ATTACHMENT I

(Adopted July 8, 2011)(Amended TBD)

PROPOSED AMENDED RULE 1133.3 EMISSION REDUCTIONS FROM GREENWASTE-COMPOSTING OPERATIONS

[Rule index to be added after Amendment]

(a) Purpose

The purpose of this rule is to reduce ~~fugitive~~ emissions of volatile organic compounds (VOC) and ammonia ~~from occurring during greenwaste eComposting eOperations.~~

(b) Applicability

This rule applies to ~~the owners and operators of all new and existing greenwaste eComposting eOperations that are not subject to Rule 1133.2 – Emission Reductions from Co-eComposting Operations and excluding Bioreactors with a design capacity of less than 1,000 tons per calendar year that produce active or finished compost from greenwaste by itself or greenwaste in combination with manure or foodwaste, unless otherwise exempted under subdivision (g) of this rule.~~

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

~~(1) — ACTIVE COMPOST means material that is in the process of being rapidly decomposed and is biologically unstable. Active compost is generating temperatures of at least 122 degrees Fahrenheit during decomposition. Active compost includes, but is not limited to, pathogen-reduced mulch.~~

~~(1)(2) ACTIVE PHASE is the portion of the composting process characterized by rapid decomposition and biological instability, generating temperatures of at least 122 degrees Fahrenheit (50 degrees Celsius). The Active Phase includes the Pathogen Reduction Process, means the phase of the greenwaste composting process that begins when organic waste materials are mixed together for composting and lasts a minimum of 22 days under controlled conditions or until the compost has a Solvita Maturity Index of five or greater measured pursuant to subparagraph (e)(4)(A).~~

~~(2) AERATION SYSTEM is a system where air is forced through Organic Waste Material being composted, through the use of fans or blowers.~~

~~(3) AGRICULTURAL OPERATIONS are as defined in Rule 102 – Definition of Terms.~~

~~(4)(3) BACKYARD COMPOSTING is means composting conducted by a household including, but not limited to, single family residences, condominiums, duplexes, or apartment buildings.~~

- (5)(4) BASELINE EMISSION FACTORS ~~are mean~~ the uncontrolled emission factors for ~~greenwaste e~~Composting o~~Operations~~ for VOC and ammonia, respectively.
- (6) BIOREACTOR is a fully or partially enclosed vessel primarily constructed of non-earthen materials that facilitates aeration with augers, tumblers, ventilation holes, or blowers to rapidly decompose solid Organic Waste Material, typically in three (3) days or fewer. The composting of Piles with an Aeration System vented to an emission control system is not a Bioreactor.
- (7) BIOSOLIDS are the residual solid wastes produced by the anaerobic digestion of sewage and other Organic Waste Material at publicly owned treatment works.
- (8)(5) COMMUNITY COMPOSTING ~~is means~~ composting conducted by a residential neighborhood association using feedstock generated within the residential neighborhood to produce compost for the neighborhood's use.
- (6) ~~COMPOSTING means a process in which solid organic waste materials are decomposed in the presence of oxygen through the action of bacteria and other microorganisms.~~
- (9)(7) COMPOST OVERS ~~are mean the oversized~~ woody materials that do not decompose in a typical composting cycle and are screened out of ~~f~~Finished Compost product at the end of composting. Compost Overs have completed the Pathogen Reduction Process. ~~Compost overs have been through the pathogen reduction process outlined in Title 14, Section 17868.3 of the California Code of Regulations.~~
- (10) COMPOSTING OPERATION is an operation where solid Organic Waste Material is decomposed in the presence of oxygen through the action of bacteria and other microorganisms.
- (11) CONTROL EFFICIENCY is the effectiveness, expressed in percent, of an emission control system or mitigation measure to eliminate, reduce or control the issuance of a specific air contaminant.
- (12)(8) CURING PHASE ~~is means~~ the ~~portion~~phase of the ~~greenwaste~~-composting process that begins immediately after the end of the ~~a~~Active p~~Phase~~ of composting and characterized by slower decomposition until reaching biological stability. ~~lasts a minimum of 40 days or until the compost has a Solvita Maturity Index of seven or the product respiration rate is below ten milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry, pursuant to subparagraph (e)(4)(B).~~
- (13) DIGESTATE is the residual material ~~solid waste~~ produced by the anaerobic digestion of Organic Waste Material excluding sewage or Biosolids.

- (9) — ~~EXISTING GREENWASTE COMPOSTING OPERATIONS~~ mean all greenwaste composting operations that have begun operations on or before July 8, 2011.
- (14)(40) FINISHED COMPOST ~~is~~means a humus-like material ~~and/or compost overs~~ that results from the controlled biological decomposition of ~~o~~Organic w~~Waste m~~Materials and is biologically stable. Both the ~~a~~Active Phase and ~~e~~Curing p~~Phases~~ of the greenwaste-composting are required to achieve this product.
- (15)(44) FOODWASTE ~~is~~means any ~~pre or post-consumer~~ food scraps collected from the food service industry, grocery stores, or residential food scrap collection. Foodwaste also includes food scraps that are chipped and ground. Food scraps co-collected with curbside Greenwaste collection are considered Greenwaste.
- (16)(42) GREENWASTE ~~is~~means any ~~organic waste of organic origin material~~ generated from gardening, agriculture, or landscaping activities including, ~~but not limited to~~, grass clippings, leaves, tree and shrub trimmings, and plant remains. Food scraps co-collected with curbside Greenwaste collection are considered Greenwaste. Small woody materials, such as prunings and trimmings up to four (4) inches in diameter, are Greenwaste.
- (13) — ~~GREENWASTE COMPOSTING~~ means composting of greenwaste by itself or a mixture with foodwaste, or with up to 20 percent manure, per pile volume basis.
- (17) MANURE is the solid waste and soiled bedding produced by livestock and zoological operations from the keeping of animals.
- (14) — ~~NEW GREENWASTE COMPOSTING OPERATIONS~~ mean greenwaste composting operations that have not started operations as of July 8, 2011.
- (18)(45) NURSERY COMPOSTING ~~is~~means composting conducted ~~at a nursery to produce compost for on-site use~~ at a facility where seedlings, young plants, and trees are grown for sale or distribution.
- (16) — ~~ORGANIC WASTE~~ means any organic waste material that includes foodwaste, greenwaste, woodwaste, or manure, or a mixture thereof.
- (19) ORGANIC WASTE MATERIAL is any waste material of organic origin that may be used as feedstock to produce Finished Compost, Compost Overs, or intermediate material. Organic Waste Material includes Greenwaste, both curbside and non-curbside, Woodwaste, Foodwaste, Biosolids, Digestate, and Manure.
- (17) — ~~OPERATOR~~ means any person that operates a greenwaste composting operation.
- (20) PATHOGEN REDUCTION PROCESS is the process outlined in Title 14, Section 17868.3 of the California Code of Regulations.
- (21)(48) PILE ~~is~~means Organic Waste~~compostable m~~Material that is heaped together.

- ~~(22)~~(49) RECREATIONAL FACILITY COMPOSTING ~~is~~means composting conducted at parks, arboretums, and other recreational facilities using feedstock generated on-site to produce compost for on-site use.
- (23) SCHOOL COMPOSTING is composting conducted at a public or private learning facility to produce compost for the primary purpose of education.
- ~~(20)~~ ~~SOLVITA MATURITY INDEX~~ means an index that defines the stage where compost exhibits resistance to further decomposition, as tested by the Solvita Maturity Test®.
- ~~(21)~~ ~~START UP~~ means the first day of active greenwaste composting operations at the facility.
- ~~(24)~~(22) THROUGHPUT ~~is~~means the mass of Organic Waste Material~~manure, foodwaste, or greenwaste~~ in tons per calendar year as received by the Composting Operation~~facility~~ and processed through composting, excluding recycled materials.
- ~~(23)~~ ~~TMECC~~ means ~~Test Methods for the Examination of Composting and Compost published by the US Composting Council Research and Education Foundation.~~
- ~~(25)~~(24) WOODWASTE ~~is~~means lumber, and the woody material portion of mixed demolition wastes and mixed construction wastes. Large woody materials, such as branches, tree trunks, and stumps exceeding four (4) inches in diameter are Woodwaste.~~Woodwaste also includes large wood materials of curbside greenwaste or mixed greenwaste that is screened or unscreened, such as tree trimmings, branches, tree trunks, stumps, and limbs exceeding two inches in any dimension.~~
- (26) WINDROW COMPOSTING is the process in which Organic Waste Material is placed in elongated Piles and are mechanically turned on a periodic basis.

(d) Requirements

- (1) ~~Effective July 8, 2011, t~~The owner or operator of a greenwaste eComposting ~~o~~Operations shall comply with the following requirements:
- (A) Chip or grind, as necessary, and use Organic Waste Material~~greenwaste~~ for on-site composting as allowed by the Local Enforcement Agency.
- (B) Use ~~f~~Foodwaste for on-site composting within 48 hours of receipt or cover ~~f~~Foodwaste with ~~screened or unscreened f~~Finished eCompost or Compost Overs until used, unless otherwise required by the Local Enforcement Agency.
- (C) Conduct the Active Phase:
- (i) For Composting Operations processing more than 5,000 tons of Foodwaste per calendar year, for all Piles containing more than ten

- (10) percent Foodwaste, by weight, by using an Aeration System that is vented to an emission control system in accordance with paragraph (d)(3).
 - (ii) For all other Piles and all other Composting Operations, either by Windrow Composting in accordance with paragraph (d)(2) or by using an Aeration System vented to an emission control system in accordance with paragraph (d)(3).
- (D) Conduct the Active Phase until meeting at least one of the following criteria:
 - (i) For a minimum of 22 consecutive calendar days, beginning when Organic Waste Material is mixed together for composting.
 - (ii) The Active Phase Pile has a Compost Maturity Index of 4.5 or greater as measured by the Solvita Maturity Test in accordance with subparagraph (e)(4)(A).
 - (iii) The Active Phase Pile has completed the Pathogen Reduction Process.
- (E) Conduct the Curing Phase until meeting at least one of the following criteria:
 - (i) For a minimum of 40 consecutive calendar days after the end of the Active Phase.
 - (ii) The Curing Phase Pile has a Compost Maturity Index of 6.0 or greater as measured by the Solvita Maturity Test in accordance with subparagraph (e)(4)(A).
 - (iii) The Curing Phase Pile respiration rate is below ten (10) milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry in accordance with subparagraph (e)(4)(B).
- (2) Windrow Composting Best Management Practices

~~Effective upon start-up for new greenwaste composting operations and effective November 8, 2011 for existing greenwaste composting operations, t~~The owner or operator of a greenwaste eComposting o~~Operations~~ conducting the Active Phase of composting by Windrow Composting shall~~processing greenwaste only or up to 20 percent manure, by volume, or up to 5,000 tons per year of foodwaste throughput shall comply with the following requirements:~~

 - (A) Cover each aActive pPhase pPile with sereened or unsereened fFinished eCompost or Compost Overs within 24ttwenty-four hours of initial pPile formation such that the top of the cover is at least six (6) inches thick, and

~~the pile shall not be turned for the first seven days of the active phase of composting, unless subparagraph (d)(2)(D) applies.~~

- (B) Within six (6) hours before turning ~~F~~for at least the first 15~~fifteen~~ days after initial Active Phase ~~p~~Pile formation for the active phase period of composting, within six hours before turning, apply water or other liquid approved by the Executive Officer as necessary to the surface area of each ~~a~~Active ~~p~~Phase ~~p~~Pile until~~such that the top one-half of the~~ Active Phase ~~p~~Pile is sufficiently wet to~~a~~ at a depth of at least three (3) inches. Alternatively, the operator may apply water during turning using a windrow turner which is equipped with water spraying technology during the entire windrow turning process.

- (i) ~~For the purpose of this subparagraph, “wet”~~ The owner or operator shall be determined if an Active Phase Pile is sufficiently wet by the means of a squeeze ball test pursuant to clause (d)(2)(B)(ii) or an alternative approved by the Executive Officer, California Air Resources Board (CARB), or~~and~~ the United States Environmental Protection Agency (U.S. EPA).

(ii) Squeeze Ball Test

~~The owner or operator~~ The ball test shall take~~be conducted by taking~~ a sample of ~~the compostable material~~ while wearing a protective glove from the top ~~one-half of the~~ Active Phase ~~p~~Pile, at least three (3) inches below the outer surface. The owner or operator shall~~material should be~~ squeezed the sample into a ball using hand pressure and wearing a protective glove. An Active Phase Pile is sufficiently wet if the sample~~There should be at least enough water to~~ forms a ball when compressed, but the ball may break when tapped.

- (iii) ~~If the ball crumbles upon release of the hand pressure, the owner or operator shall apply additional approved liquid~~water to the Active Phase Pile~~windrow prior to turning until the Active Phase Pile is sufficiently wet~~material passes the ball test.

- (iv)~~(C)~~ ~~If a rain event occurs prior to watering the pile within six (6) hours before turning an Active Phase Pile and the Active Phase pPile is sufficiently wet to a depth of three inches, the owner or operator may turn the Active Phase pPile without adding additional approved liquid~~water. If the top half of the Active Phase pPile is not

sufficiently wet dry to the three inch depth, the owner or operator shall apply additional approved liquid water to the Active Phase pile pursuant to clausesubparagraph (d)(2)(B)(iii) before turning.

~~(C)(D)~~ In lieu of complying with the requirement of subparagraph (d)(2)(B), the owner or operator may turn Active Phase Piles using a windrow turner equipped with liquid spraying technology that applies approved liquid during the entire turning process.~~If the pile needs to be turned within the first seven days for managing temperature or pathogen reduction pursuant to Title 14 Division 7, Chapter 3.1, Section 17868.3 of the California Code of Regulations, the operator does not need to re apply the screened or unscreened finished compost cover and shall apply water pursuant to subparagraph (d)(2)(B) for the first fifteen days of the active phase.~~

~~(D)(E)~~ The owner or operator may implement an alternate mitigation measure that will be based on a test protocol approved by the Executive Officer, CARBCalifornia Air Resources Board, orand the U.S. EPAUnited States Environmental Protection Agency and that eitherdemonstrates:

(1) Meets a Control Efficiencyemission reductions by at least equal to or greater than 40 percent, by weight, for VOC emissions and emission reductions by at least equal to or greater than 20 percent, by weight, for ammonia emissions; or for combined screened or unscreened finished compost cover and water application.

(2) Does not exceed 2.97 lbs VOC emissions per ton of Throughput and does not exceed 0.57 lbs ammonia emissions per ton of Throughput.

(3) Aeration System Vented to Emission Control System

~~Effective July 8, 2011, t~~The owner or operator of a greenwaste eComposting oOperations processing greater than 5,000 tons per year of foodwaste throughput conducting the Active Phase of composting using an Aeration System vented to an emission control system shall comply with the following requirements, for the purpose of regulatory compliance:

~~(A) Use Any active phase of composting containing more than 10 percent foodwaste, by weight, shall be conducted using an emission control systemdevice designed and operated that, either:~~

(i) Meetswith an overall system eControl eEfficiency of at least equal to or greater than 80 percent, by weight, each for VOC emissions and equal to or greater than 80 percent, by weight, for ammonia emissions, as compared to one of:-

- (I) Inlet emission rates for VOC and ammonia, respectively, to the emission control system;
 - (II) Baseline Emission Factors of 4.25 pounds of VOC per ton of Throughput and 0.46 pounds of ammonia per ton of Throughput, respectively; or
 - (III) Operation-specific Baseline Emission Factors for VOC and ammonia, respectively, if submitted by the owner or operator and approved by the Executive Officer to represent the uncontrolled emission factors of the Active Phase of the Composting Operation; or
- (ii) Does not exceed 0.85 lbs VOC emissions per ton of Throughput and does not exceed 0.092 lbs ammonia emissions per ton of Throughput.
- (B) Demonstrate compliance with subparagraph (d)(3)(A), as applicable, by source testing in accordance with paragraph (e)(1):
 - (i) Within one (1) year of startup of the emission control system; and
 - (ii) Every three (3) years thereafter.
- (C) Install, operate, and maintain the emission control system in accordance with the manufacturer's operation and maintenance manual or other similar written materials supplied by the manufacturer or distributor to ensure that the emission control system remains in proper operating condition.
- ~~(B) The operator may implement a control alternative if the alternative is approved by the Executive Officer, California Air Resources Board, and the United States Environmental Protection Agency, to achieve VOC and ammonia reductions that are greater than or equal to the reductions required pursuant to subparagraph (d)(3)(A).~~
- ~~(C) For new greenwaste composting operations that intend to compost greater than 5,000 tons per year of foodwaste throughput, a permit shall be obtained for an emission control device, as specified in subparagraph (d)(3)(A) or (d)(3)(B), prior to construction.~~

~~The annual throughput calculation may exclude any non-putrescible materials, including, but not limited to paper, woody, other low water, high cellulose materials, and non-compostable contaminants and green waste that are separated either before or after composting and shipped off-site for disposal provided they are quantified and appropriate records are maintained for.~~

- ~~(4) — No later than October 10, 2011, for existing greenwaste composting operations that, as of July 8, 2011, process or plan to process greater than 5,000 tons per year of foodwaste throughput, the operator shall file a permit application for an emission control device and fully implement the emission control device in accordance with subparagraphs (d)(3)(A) or (d)(3)(B) within six months upon approval of the permit application.~~
- ~~(5) — The overall control efficiency required in subparagraph (d)(3)(A) shall be demonstrated by a source test within three months after implementation of the emission control device, or within nine months of permit approval, whichever occurs sooner, and every three years thereafter. For the purpose of this rule, the baseline emission factors to be used shall be 4.25 pounds of VOC per ton of throughput and 0.46 pounds of ammonia per ton of throughput for the active phase of composting only. The Executive Officer may approve the use of alternate baseline emission factors, if the operator demonstrates through the approved source test that alternate baseline emission factors are representative of uncontrolled operations for that facility~~
- ~~(6) — All emission control devices shall be installed, operated, and maintained in accordance with the manufacturer's operation and maintenance manual or other similar written materials supplied by the manufacturer or distributor of such equipment to ensure that the system remains in proper operating conditions. Such documentation shall be made available to the Executive Officer upon request.~~
- ~~(7) — All records, including application of screened or unscreened finished compost and water, operation and maintenance of an emission control device, and source tests, shall be kept and maintained at the facility pursuant to subdivision (f).~~
- (e) Test Methods and Protocol

 - (1) Source TestingFor a greenwaste composting operation subject to paragraphs (d)(3) through (d)(5), the operator shall conduct all required source and laboratory tests in accordance with an Executive Officer approved test protocol developed in accordance with the guidelines provided in Attachment A of this rule.
The owner or operator of a Composting Operation required to perform source testing shall:

 - (A) Prior to conducting source testing to demonstrate compliance, submit a source test protocol for approval to the Executive Officer in accordance with the guidelines provided in Attachment A;

- (B) Submit an updated or new source test protocol if there are any changes to the emission control system or if the Executive Officer requests an updated or new source test protocol;
 - (C) Conduct source testing pursuant to the valid source test protocol approved by the Executive Officer; and
 - (D) Submit the source test report to the Executive Officer within 60 days of completing all sampling for source testing.
- (2) ~~For a greenwaste composting operation subject to paragraphs (d)(3) through (d)(5),~~
†The owner or operator of the Composting Operation shall use a District approved laboratory approved by the Executive Officer for all required testing in accordance with the Attachment A of this rule.
- (3) The following methods shall be used to determine compliance ~~with this rule:~~
 - (A) South Coast SCAQMD Method 207.1 – Determination of Ammonia Emissions from Stationary Sources.
 - (B) South Coast SCAQMD Method 25.3 – Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources.
 - (C) South Coast SCAQMD Method 1.1 – Sample and Velocity Traverses for Stationary Sources.
 - (D) South Coast SCAQMD Method 1.2 – Sample and Velocity ~~Traverse~~Traverses for Stationary Sources with Small Stacks and Ducts.
 - (E) South Coast SCAQMD Method 2.1 – Determination of Stack Gas Velocity and Volumetric Flow Rate (S-Type Pitot Tube).
 - (F) South Coast SCAQMD Method 2.2 – Direct Measurement of Gas Volume through Pipes and Small Ducts.
 - (G) South Coast SCAQMD Method 2.3 – Determination of Gas Velocity and Volumetric Flow Rate from Small Stacks or Ducts.
 - (H) South Coast SCAQMD Method 4.1 – Determination of Moisture Content in Stack Gases.
- (4) Triplicate samples shall be taken for the following test methods:
 - (A) Test Methods for the Examination of Composting and Compost (TMECC) 05.08-E – Solvita Maturity Index (April 7, 2002) or its successor.
 - (B) TMECC 05.08-A – Specific Oxygen Uptake Rate (April 7, 2002) or its successor.

(f) Recordkeeping

The owner or operator of a Composting Operation shall:

(1) Maintain the following records, as applicable:

- (A) A copy of the annual Composting Operation report submitted in accordance with subdivision (g);
- (B) Records of dates and amounts of composting conducted;
- (C) Application of Finished Compost, Compost Overs, and approved liquids, in accordance with paragraph (d)(2);
- (D) Source test reports, in accordance with subparagraph (e)(1)(D);
- (E) Operation and maintenance of any emission control system, in accordance with paragraph (d)(3); and
- (F) Manufacturer's operation and maintenance manual or similar, in accordance with paragraph (d)(3).

(2) Maintain records for the prior five (5) years of operation. The , with the most recent two (2) years shall be retained on-site, which shall be immediately available upon request by the Executive Officer. The remaining three (3) years of records shall be made available to the Executive Officer within one (1) week of request.

~~Records shall be kept in a format approved by the Executive Officer. All operational records and information recorded pursuant to the provisions of this rule shall be maintained for the prior five years of operation, with the most recent two years retained at the facility, which shall be immediately available upon request by the Executive Officer. The remaining three years of records shall be made available to the Executive Officer within one week of request.~~

(g) Reporting

The owner or operator of a Composting Operation shall submit to the Executive Officer annually, no later than July 1st of each calendar year, a report summarizing the Composting Operation of the previous calendar year in a format approved by the Executive Officer. The report shall include including annual Throughputs of each Organic Waste Material received and annual Throughputs of Finished Compost and Compost Overs.

(h)(g) Exemptions

(1) — Composting facilities subject to Rule 1133.2 — Emission Reductions from Co-Composting Operations, are exempt from the provisions of this rule.

- (2) ~~— If the operator of any greenwaste composting operation installs an emission control device, in accordance with paragraphs (d)(3) through (d)(6), the provisions of paragraph (d)(2) do not apply.~~
- (1)(3) The owner or operator of any of the following types of Composting facilities and Operations shall be exempt from the provisions of subdivisions (d) through (g) requirements of this rule, provided that the Composting Operation is not subject to the Local Enforcement Agency Notification or Permit regulations pursuant to Title 14 Division 7, Chapter 3.1, Section 17857.1 of the California Code of Regulations:
- (A) Community Composting;
 - (B) Nursery Composting;
 - (C) Backyard Composting; and
 - (D) Recreational Facility Composting.
 - (E) School Composting.
 - (F) Agricultural Operation.
- (2) The owner or operator of a Composting Operation with a Throughput of less than 100 tons per calendar year shall be exempt from the provisions of subdivisions (d) through (g), except for subparagraph (f)(1)(B) to record Throughput and paragraph (f)(2) to maintain records.

ATTACHMENT A

**GUIDELINES FOR THE DEVELOPMENT OF SOURCE TEST PROTOCOLS FOR
VOC AND AMMONIA EMISSIONS FROM GREENWASTE COMPOSTING
OPERATIONS**

Source test protocols are to consist of testing plans to measure VOC and ammonia emissions due to the composting process. When used for determining the emission control system~~device~~ Control Efficiency~~requirement specified for new and existing facilities~~, the measurements shall consist of lb/hr measurements at the inlet and exhaust of the emission control system~~device~~ and are subject to the applicable requirements that follow. When used for determining the Control Efficiency~~overall emission reduction~~ requirements as compared to the Baseline ~~e~~Emissions ~~f~~Factors, emissions are to be reported as % reductions for the Active ~~p~~Phase ~~composting~~ in terms of pounds of emissions per ton of Throughput (total raw material as received) and are subject to the applicable requirements that follow. The following are general requirements for all testing as well as specific requirements for the rule sections for each facility-specific protocol which must be prepared by the source test contractor and approved by the South Coast SCAQMD prior to testing. Source test protocols are facility-specific, reflecting the unique conditions and configuration of each Composting Operation and may vary from these guidelines. Any such deviations from test method(s) must be approved by South Coast AQMD in the source test protocols.

1. Alternative Test Methods

The reference test methods for ammonia, VOC, and flow rate cited in this guideline shall be used to determine compliance with this rule. Alternative test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, CARB~~the California Air Resources Board, and/or U.S. EPA~~ the U.S. Environmental Protection Agency. For the source test protocols, as defined as the manner in which the reference test methods are employed to obtain a measurement of the emissions, alternatives to the procedures cited in these~~this~~ guidelines may be used if they are determined to be equivalent and approved in writing by the Executive Officer.

2. LAP Requirements

The sampling, analysis, and reporting shall be conducted by a laboratory/source test firm that has been approved under the South Coast SCAQMD Laboratory Approval Program (LAP) for the cited South Coast SCAQMD reference test methods, where LAP approval is available. For South Coast SCAQMD reference test methods for which no LAP program is available, the LAP approval requirement shall become effective one (1) year after the date that the LAP program becomes available for that South Coast SCAQMD reference test method.

3. Operating Conditions

The testing must be conducted under representative operating conditions with respect to seasonal conditions, compost composition, process ~~Throughput~~, processing of the materials, and ~~Pile~~ geometries. The following operating parameters shall be recorded during testing and reported with the test results:

- a) A thorough description of the composting process and process diagram of each processing area and including residence times in each of the composting process areas.
- b) Process ~~Throughput~~ as determined by facility's billing scales or other calibrated measuring device that represents the tons of the material as received that is present at the facility during the time of the testing. When using the South Coast AQMD District Baseline Emission Factors, the process ~~Throughput~~ is to include all of the raw ~~Organic Waste~~ ~~Materials~~ that are composted excluding material that is recycled from previous similar processing. Several ~~Throughputs~~ may be necessary if applicable to the different processing areas or ~~Pile~~ ages.
- c) Compost composition (percent and type of Organic Waste ~~Materials~~ i.e. ~~Manure~~, ~~Greenwaste~~, ~~Foodwaste~~, etc...).
- d) Age of all ~~Piles~~ that were tested and all ~~Piles~~ present at the facility during testing, with age expressed in either calendar days or Compost Maturity Index as measured by the Solvita Maturity Test in accordance with subparagraph (e)(4)(A).
- e) Detailed dimensions of all ~~Piles~~ or the biofilter so that a surface area for each ~~Pile~~ type can be calculated.
- f) A description of the biofilter system, including a process diagram and type of biofilter media.
- g) Age of the biofilter media.
- h) A thorough description of the humidification and moisture maintenance system for the biofilter.
- i) Identification of peripheral monitoring equipment, such as moisture or temperature sensors, and data from them during testing.

4. Ammonia Sampling

South Coast SCAQMD Method 207.1 shall be used to obtain the ammonia samples from each source of emissions to be tested. When sampling from a flux chamber, a sample line of minimal length should be connected to a midjet sampling train consisting of; two (2) midjet impingers each filled with 15 mL of 0.1N ~~Sulfuric Acid~~, an empty ~~impinger~~~~bubbler~~, and an ~~impinger~~~~bubbler~~ filled with tared silica gel. The samples shall be analyzed for ammonium content as ammonia by ion chromatography or ion selective electrode.

5. VOC Sampling

Duplicate integrated gas samples shall be taken from each source of emissions to be tested using South Coast SCAQMD Method 25.3. ~~The South Coast AQMD Method 25.3~~ apparatus should be connected to sample directly inside the flux chamber or duct as applicable. Compost emissions are considered as water soluble sources where the 50 ppm applicability limit of South Coast AQMD Method 25.3 does not apply.

6. *Specific Requirements for Testing ~~Greenwaste-Composting Operations Control Equipment Performance~~*

For surface types of emissions, such as with open faced biofilter exhausts, the exhaust emission rate shall be determined as in accordance with ~~in the following~~ Section (8) below.

For an emission control system~~device~~ inlet or exhaust that is vented through a testable duct, the gas velocity within the duct shall be measured according to South Coast SCAQMD Methods 1.1, 2.1, and 3.1. The flow rate shall also be corrected to dry standard conditions using the moisture content as determined by South Coast SCAQMD Method 4.1. This flow rate may then be used to determine mass emission rates.

~~The overall destruction~~Control efficiency shall be calculated as follows:

$$\underline{CEODE} = 100 \times (1 - (E / I)) \quad \text{(Equation 1)}$$

Where:

CEODE = ~~Overall Destruction~~Control Efficiency (%)

E = Total Exhaust Emission Rate (lb/hr)

I = Total Inlet Emission Rate to Emission Control System~~Device~~ (lb/hr)

7. *Specific Requirements for ~~Existing Greenwaste-Composting Operations (Baseline Emission Factors)~~ and ~~New Greenwaste-Composting Operations (Overall Emissions Reduction)~~*

A proposed measurement from the ~~a~~Active Phase~~greenwaste-composting process~~, including ~~but not limited to~~ surface emissions of all ~~p~~Piles where the materials are composted, and outlets (vents or surfaces) of emission control systems~~devices~~ must be included in the protocol. If the emissions are vented to atmosphere from a vent stack such as from an otherwise uncontrolled aerated static ~~p~~Pile or other vent to atmosphere, then the stack concentration, determined using methods specified in Sections (4) and (5) and flow rate measurements as specified in ~~the previous~~ Section (6) are required. From all surface types of emissions such as from compost ~~p~~Piles and biofilter surfaces, the procedure for measuring surface emissions as specified in Section (8) is required. A measurement for fugitive emissions from aerated static ~~p~~Pile surfaces must also be included.

Each type of ~~p~~Pile must be tested. If the facility includes several identical ~~p~~Piles, then only the largest ~~p~~Pile need be tested. If the facility has more than three (3) different age ~~p~~Piles that are otherwise identical in processing and composition, then at a minimum three (3) ages can be tested including newer, middle-aged, and older, ~~and middle-aged~~ ~~p~~Piles from the Active Phase. A newer Pile in the Active Phase has not yet achieved peak temperature and is typically less than seven (7) days old or has a Compost Maturity Index (CMI) of 1.5 or less as measured by the Solvita Maturity Test in accordance with subparagraph (e)(4)(A). A middle-aged Pile in the Active Phase has achieved peak temperature and is typically between seven (7) and 14 days old or has a CMI between 1.5 and 3.0. An older Pile in the Active Phase has decreasing temperature and is typically between 14 and 22 days old or has a CMI between 3.0 and 4.5. In any case, the surface area of all

pPiles at the facility must be included in the determination of pPile dimensions as ~~recorded~~ specified in Section (3).

If the facility elects to use an alternative to the ~~South Coast AQMD District's bBaseline eEmissions fFactors~~, then a separate test must be conducted to establish this baseline on the uncontrolled composting operation (e.g., windrow method) with the same compost mix. Following the source test to determine ~~an alternative bBaseline Emission Factors~~, facilities would have the option to use the South Coast AQMD District's bBaseline eEmissions fFactors or the alternative bBaseline eEmissions fFactors.

Control Efficiency~~Reduction of emissions~~ shall be calculated as follows:

$$\underline{CE\% \text{ Reduction}} = 100 \times (1 - (TE / B)) \quad \text{(Equation 2)}$$

Where:

CE = Control Efficiency (%)
 TE = Total Active and Curing Phase Emissions (lb/ton tThroughput)
 B = South Coast AQMD District Baseline Emissions Factors or Alternative Baseline Emissions Factors if Tested (lb/ton tThroughput)

8. *Procedure for Measuring Surface Emissions*

The procedure for measuring surface emissions such as the compost pPile and biofilter surfaces that cannot be tested by conventional methods through a stack or duct, is a modified form of the procedures found in the ~~US Environmental Protection Agency's (U.S. EPA) Measurement of Gaseous Emission Rates from Land Surfaces Using an Emission Isolation Flux Chamber User's Guide (U.S. EPA Guide)~~. The modifications to the procedures in the U.S. EPA Guide ~~are~~ is specified in the following requirements.

The flux chamber encompasses a fixed surface area of 1.4 ft² and contains a sweep air system to obtain a homogeneous air sample by employing a mixing fan and sweep gas (10% ~~helium~~ He in air at 5 liters/min recommended). The sweep gas must contain a non-reactive and non-present tracer such as the aforementioned 10% helium so that a correction for the contribution of the surface flow rate can be calculated.

A minimum of ~~six (6) ten (10)~~ sample locations per Pile or a sufficient number at each pPile/surface tested must be obtained in order to achieve a representative sample of the Pile surface emissions. A minimum of four (4) Piles at each Composting Operation (a newer Pile, a middle-aged Pile, an older Pile, and a pile in Curing Phase), or a sufficient number of Piles at the Composting Operation must be tested to represent the Composting Operation surface emissions. These locations can be composited for each pPile/surface to reduce testing costs. For example, for one (1) hour sampling, ~~six (6) ten (10)~~ random positions on the pPile should be tested for ~~ten (10) 6~~ minutes each. Alternatively, a lesser number of sample locations may be sampled provided that an evaluation of spatial variation demonstrates that the number of sample locations is sufficient.

The emissions ~~shall~~must be reported in units of lb/hr-ft², lb/hr, and lb/ton of ~~€~~Throughput. The following calculations shall apply to the test results:

$$\text{Surface Flow Correction Factor} = C_t / C_s \quad (\text{Equation 3})$$

Where:

C_t = Concentration of Tracer in Sweep Gas
 C_s = Concentration of Sweep Gas in Flux Chamber Sample

$$\text{Corrected Flux Chamber Results (lb/hr-ft}^2\text{)} = UFC \times SFCF \quad (\text{Equation 4})$$

Where:

UFC = Uncorrected Flux Chamber Results (lb/hr-ft²)
SFCF = Surface Flow Correction Factor

$$\text{lb/hr} = \text{lb/hr-ft}^2 \times \text{Total Compost Surface Area in Category} \quad (\text{Equation 5})$$

$$\text{lb/ton } \del{\text{€}}\text{Throughput} = \text{lb/hr} \times (24 \text{ hr/day}) / PT \quad (\text{Equation 6})$$

Where:

PT = Process Throughput (total ton/day as received)

$$\text{Total Emissions (lb/ton } \del{\text{€}}\text{Throughput)} = \sum P \quad (\text{Equation 7})$$

Where:

P = Active Phase and ~~€~~Curing Phases ~~sources~~ of the Facility Compost Emissions (lb/ton ~~€~~Throughput)

For a facility where not every age of ~~p~~Pile was tested, the surface areas from each ~~p~~Pile in the facility must be included and sorted into appropriate age (newer, middle-aged, older in the Active Phase) and emissions categories (Active Phase and Curing Phase) from those that were measured.

ATTACHMENT J

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Staff Report

Proposed Amended Rule 1133 Series – Composting, Chipping and Grinding, and Related Operations

Proposed Amended Rule 1133 – Emission Reductions from Direct Land Application

Proposed Amended Rule 1133.1 – Chipping and Grinding Operations

Proposed Amended Rule 1133.2 – Emission Reductions from Co-composting Operations

Proposed Amended Rule 1133.3 – Emission Reductions from Composting Operations

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EXECUTIVE SUMMARY

Rule 1133 Series – Composting, Chipping and Grinding, and Related Operations (Rule 1133 Series) comprises four rules: Rule 1133 – Composting and Related Operations – General Administrative Requirements (Rule 1133), Rule 1133.1 – Chipping and Grinding Activities (Rule 1133.1), Rule 1133.2 – Emission Reductions from Co-eComposting Operations (Rule 1133.2), and Rule 1133.3 – Emission Reductions from Greenwaste Composting Operations (Rule 1133.3). Rule 1133 Series reduces volatile organic compound (VOC) and ammonia (NH₃) emissions from composting, reduces inadvertent decomposition from chipping and grinding activity, and gathers information regarding the compostable waste industry. Rule 1133 Series applies to chipping and grinding operations, operations that compost biosolids and manure, referred to as co-composting, and operations that compost greenwaste, foodwaste, and other compostable waste. Proposed Amended Rule (PAR) 1133 Series affects approximately 98 facilities within the South Coast AQMD and reduces emissions from the direct land application of uncomposted greenwaste and from legacy co-composting, calculated to be the source of 3.65 tons of VOC emissions per day and 0.45 ton of ammonia emissions per day.

Proposed amendments to each of the four rules are needed to implement Best Control Measure-10 (BCM-10) from the South Coast Air Basin Attainment Plan for the 2012 Annual PM_{2.5} Standard (PM_{2.5} Plan) to further reduce VOC and ammonia emissions, precursors for the air contaminant fine particulate matter (PM_{2.5}) via atmospheric reactions with oxides of nitrogen (NO_x) to form ammonium nitrate. Proposed Amended Rule 1133 – Emission Reductions from Direct Land Application (PAR 1133) establishes restrictions and prohibitions on suppliers of uncomposted greenwaste for direct land application unless uncomposted greenwaste is applied in a manner to minimize VOC and ammonia emissions. Proposed Amended Rule 1133.2 – Emission Reductions from Co-eComposting Operations (PAR 1133.2) further reduces VOC and ammonia emissions by requiring legacy co-composters, one smaller co-composting facility in operation at the time of original rule adoption in 2003, to use best management practices when composting. Proposed Amended Rule 1133.1 – Chipping and Grinding Operations (PAR 1133.1), PAR 1133.2, and Proposed Amended Rule 1133.3 – Emission Reductions from Composting Operations (PAR 1133.3) contain the information gathering elements formerly located within Rule 1133 to enable PAR 1133 to implement BCM-10. PAR 1133 Series applies to a combined 98 facilities subject to PAR 1133.1, PAR 1133.2, or PAR 1133.3. Of these 98 facilities, PAR 1133 would apply to 86 facilities that transport uncomposted greenwaste offsite. The control strategies are expected to reduce VOC emissions by 2.34 tons per day and reduce ammonia emissions by 0.19 ton per day. The total cost of the control strategies is expected to be \$195,100 per year to implement. The overall cost-effectiveness of PAR 1133 Series is estimated to be \$230 per ton of VOC reduced and \$2,900 per ton of ammonia reduced.

Development of PAR 1133 Series was conducted through a public process. Three Working Group meetings were held on January 30, 2025, May 7, 2025, and June 5, 2025, respectively. The Working Group is composed of representatives from businesses, environmental groups, public agencies, and consultants. A Public Workshop was held on July 9, 2025, where the proposed amended rule language was presented to the general public and stakeholders to solicit comments. Staff also conducted multiple site visits as part of this rulemaking process.

CHAPTER 1: BACKGROUND

INTRODUCTION

PROCESS DESCRIPTIONS

REGULATORY BACKGROUND

AFFECTED FACILITIES

PUBLIC PROCESS

INTRODUCTION

Rule 1133 Series – Composting, Chipping and Grinding, and Related Operations (Rule 1133 Series) is a collection of four rules: Rule 1133 – Composting and Related Operations – General Administrative Requirements (Rule 1133), Rule 1133.1 – Chipping and Grinding Activities (Rule 1133.1), Rule 1133.2 – Emission Reductions from Co-eComposting Operations (Rule 1133.2), and Rule 1133.3 – Emission Reductions from Greenwaste Composting Operations (Rule 1133.3), to reduce volatile organic compound (VOC) and ammonia (NH₃) emissions from composting, to reduce inadvertent decomposition from chipping and grinding activity, and to gather information regarding the compostable waste industry. Rule 1133 Series applies to chipping and grinding operations, operations that compost biosolids and manure, referred to as co-composting, and operations that compost greenwaste, foodwaste, and other compostable waste. Proposed amendments to each of the four rules are needed to implement Best Control Measure-10 (BCM-10) from the South Coast Air Basin Attainment Plan for the 2012 Annual PM_{2.5} Standard (PM_{2.5} Plan) to further reduce VOC and ammonia emissions, precursors for the air contaminant fine particulate (PM_{2.5}) via atmospheric reactions with oxides of nitrogen (NO_x) to form ammonium nitrate.

Proposed Amended Rule 1133 – Emission Reductions from Direct Land Application (PAR 1133) repurposes existing Rule 1133, the information-gathering rule for the compostable waste industry. PAR 1133 establishes restrictions and prohibitions on suppliers of uncomposted greenwaste for direct land application unless uncomposted greenwaste is applied in a manner to minimize VOC and ammonia emissions.

Proposed Amended Rule 1133.1 – Chipping and Grinding Operations (PAR 1133.1) applies to chipping and grinding operations and is meant to reduce inadvertent decomposition of materials not destined for use onsite. PAR 1133.1 more closely aligns rule language with statewide greenwaste handling rules, improving clarity and consistency.

Proposed Amended Rule 1133.2 – Emission Reductions from Co-eComposting Operations (PAR 1133.2) applies to operations that compost any amount of biosolids, the solid waste residue produced after digestion of sewage sludge at wastewater plants, or more than 20% manure by volume. PAR 1133.2 further reduces VOC and ammonia emissions by requiring legacy co-composters to use best management practices when composting. PAR 1133.2 also reduces exemption thresholds to reduce potential VOC and ammonia emissions.

Proposed Amended Rule 1133.3 – Emission Reductions from Composting Operations (PAR 1133.3) applies to all other composting operations that are not regulated by PAR 1133.2. PAR 1133.3 updates rule language for clarity and consistency with the other rules in the series. Lastly, the information gathering component of existing Rule 1133 is now located in PAR 1133.1, PAR 1133.2, and PAR 1133.3, respectively.

PROCESS DESCRIPTIONS

The compostable waste industry is a complex web of multiple media and differing pathways. Specific definitions for terms will be more closely described in Chapter 3 – Summary of Proposals. The wastes or byproducts of processing of wastes created by living beings such as plants, animals, and humans are utilized by the compostable waste industry to manufacture a variety of products for residential gardening, public landscaping, agricultural production, or other beneficial uses using mechanical equipment to produce directly or to assist biological processes via naturally-

occurring bacteria, archaea, and other organisms. The feedstocks for compost include greenwaste, woodwaste, foodwaste, biosolids, digestate, and manure.



Figure 1-1 – Greenwaste



Figure 1-2 – Woodwaste



Figure 1-3 – Foodwaste



Figure 1-4 – Biosolids



Figure 1-5 – Digestate



Figure 1-6 – Manure

The compostable waste industry is linked with fine particulate matter, or PM_{2.5}, emissions. PM_{2.5} may be emitted directly or PM_{2.5} precursors may be emitted from a variety of processes, interacting in the atmosphere to produce PM_{2.5}. NO_x and ammonia are significant precursors for PM_{2.5}, through the formation of ammonium nitrate. Ammonium nitrate is believed to contribute 20% to 35% of total PM_{2.5} in the region, varying by season and location.

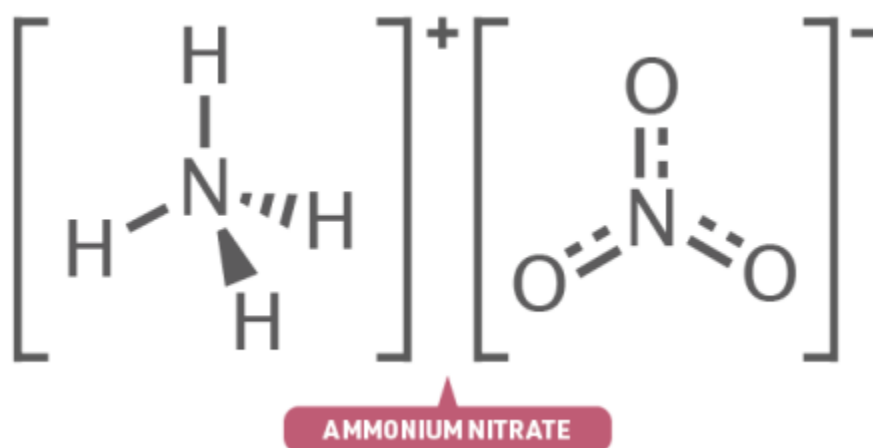


Figure 1-7 – Ammonium Nitrate

CHIPPING AND GRINDING

Chipping and grinding mechanically reduces the size of material using equipment like wood chippers, tub grinders, or horizontal grinders to increase surface area, to improve uniformity, and to increase usability. Chipping and grinding is often followed by and separate from screening and conveying to produce material to size specification and to remove stones. Screening and conveying may include magnets, suction, and water to remove metal and other contaminants. Greenwaste, woodwaste, and foodwaste are often chipped and ground, sometimes multiple times, to produce end products like wood chip for land covering, uncomposted greenwaste as a soil amendment for direct land application, or feedstock for composting. Prior to and after chipping and grinding, materials are stockpiled onsite. PM emissions are directly associated with chipping and grinding operations, and VOC and ammonia emissions are associated with stockpiling, both before and after the material is processed.

COMPOSTING

Composting is the aerobic decomposition of organic, carbon-based wastes and other feedstocks to produce a biologically-stable nutrient-rich soil amendment and usable byproducts. Common feedstocks for composting include: chipped and ground greenwaste; chipped and ground woodwaste and associated byproduct sawdust; and chipped and ground foodwaste. Composting feedstocks typically not requiring chipping and grinding include: biosolids, the solid byproduct of digestion of sewage; digestate, the solid byproduct of digestion of waste other than sewage; and manure, the waste and soiled bedding from animal keeping.

Under favorable biological conditions with consideration for temperature, moisture, oxygen levels, and pile shape, naturally-occurring bacteria, archaea, and other organisms consume the wastes and its byproducts for energy and reproduction. The elevated temperatures of composting also reduce pathogens like *E. coli* and other coliform bacteria and destroy weed seeds. Some specialized organisms consume VOC and ammonia as energy sources, such as the nitrifying bacteria *Nitrosomonas*. Composting may be divided into the active phase, when readily available energy sources are rapidly consumed under higher temperatures usually lasting a few days or weeks depending on oxygen supply and other factors, and the curing phase, a slower process typically lasting weeks or months. After composting, the product is screened to remove compost overs, a woody material byproduct, from finished compost, a humus-like material used as a soil amendment.

Composters may also produce a variety of land cover products that have completed some or all of the composting process. A medium-sized woody material may be produced from the product of active and curing phases of composting, sized larger than fine finished compost and smaller than coarse compost overs. Composters may also perform only the active phase of composting on uncomposted greenwaste to reduce pathogens and weeds in the product. Both of these products are often referred to as mulch. Mulch in common usage may also refer to uncomposted lawn clippings reapplied to lawns. Because the term “mulch” in common usage can refer to uncomposted, partially composted, or fully composted material, the term is not used in PAR 1133 Series rule language to avoid confusion. While screening and conveying are associated with the composting process, the feedstocks of composting must be moist to produce favorable biological conditions and are considered de minimus sources of PM emissions. Composting and stockpiling prior to composting are associated with VOC and ammonia emissions.

DIRECT LAND APPLICATION

Direct land application is the application of waste, byproducts, or finished products to raw land to protect soil or to add nutrients. Direct land application, as opposed to composting, is not under favorable biological conditions. For example, the only source of moisture is expected to be rain as opposed to composting's careful moisture management. As a result, biological processes that reduce emissions, such as nitrifying bacteria *Nitrosomonas*, are not expected to be active. Thus, decomposition of direct land applied materials, such as uncomposted greenwaste, is expected to result in more VOC and ammonia emissions than composting.

OTHER USES OF ORGANIC WASTE MATERIALS

Chipping and grinding, composting, and direct land application are not the only processes associated with the compostable waste industry. Chipped and ground greenwaste or foodwaste may be sent for anaerobic digestion with the resulting collected biogas used for energy or heat production. Woodwaste may be used as a fuel at biomass-fired power plants. Greenwaste, woodwaste, foodwaste, along with other solid wastes, are often burned at waste incinerators which also produce electricity.

REGULATORY BACKGROUND

The following is a summary of the air quality programs that affect the compostable waste industry.

FEDERAL CLEAN AIR ACT REQUIREMENTS

The federal Clean Air Act (CAA) obligates the United State Environmental Protection Agency (U.S. EPA) to set National Ambient Air Quality Standards (NAAQS) for air pollutants. Six air pollutants commonly found in ambient air are known as “criteria air pollutants”, specifically: 1) ozone; 2) particulate matter (PM); 3) carbon monoxide; 4) lead; 5) sulfur dioxide; and 6) nitrogen dioxide. PM is further subdivided by the size of the particulate matter: PM10 for particulate matter smaller than 10 µm (micrometer) in diameter and PM2.5, known as fine particulates, for particulate matter smaller than 2.5 µm in diameter. There are three NAAQS for PM based on size and averaging time: 1) 24-hour PM10 standard; 2) 24-hour PM2.5 standard; and 3) annual PM2.5 standard.

In 2012, U.S. EPA lowered the primary annual NAAQS for PM2.5 to 12.0 micrograms per cubic meter (µg/m³).¹ Under the CAA, there are two tiers of nonattainment for areas that fail to meet PM2.5 standards; “moderate” and “serious.” Nonattainment areas are classified by the U.S. EPA into one of these two tiers based on the levels of PM2.5 in the region. Effective April 15, 2015, the U.S. EPA designated the South Coast Air Basin (Basin) as a “moderate” nonattainment area for the 2012 annual PM2.5 NAAQS.² In the 2016 Air Quality Management Plan (AQMP), South Coast AQMD requested reclassification of the Basin to “serious” nonattainment for the 2012 annual PM2.5 standard as provided in the CAA. The 2016 AQMP was adopted by the South Coast AQMD Governing Board on March 3, 2017, and submitted to U.S. EPA for approval on April 27, 2017, via the California Air Resources Board (CARB). On December 9, 2020, U.S. EPA reclassified the Basin from “moderate” to “serious” nonattainment for the 2012 annual PM2.5

¹ National Ambient Air Quality Standards for Particulate Matter, 78 Fed. Reg. 3086 (January 15, 2013)

² Air Quality Designations for the 2012 Primary Annual Fine Particle (PM2.5) National Ambient Air Quality Standards (NAAQS), 80 Fed. Reg. 2206 (Jan. 15, 2015)

NAAQS per South Coast AQMD's previous request, establishing an attainment deadline of December 31, 2025.³

SOUTH COAST AIR BASIN ATTAINMENT PLAN FOR THE 2012 ANNUAL PM2.5 STANDARD (PM2.5 PLAN)

To achieve attainment with the 2012 annual PM2.5 NAAQS, South Coast AQMD prepared the PM2.5 Plan,⁴ adopted by the South Coast AQMD Governing Board on June 7, 2024. Included in the PM2.5 Plan is a request for a 5-year extension to demonstrate attainment of the standard by December 31, 2030. Under CAA Section 188(e), areas classified as serious nonattainment seeking an extension of the attainment date are required to demonstrate that the attainment plan includes Most Stringent Measures (MSMs). Title 40 of the Code of Federal Regulations, Section 51.1000 (Subpart Z) states in pertinent part:

Most stringent measure (MSM) is any permanent and enforceable control measure that achieves the most stringent emissions reductions in direct PM2.5 emissions and/or emissions of PM2.5 plan precursors from among those control measures which are either included in the SIP for any other NAAQS, or have been achieved in practice in any state, and that can feasibly be implemented in the relevant PM2.5 NAAQS nonattainment area.

BCM-10 – Emission Reductions from Direct Land Application of Chipped and Ground Uncomposted Greenwaste is identified as MSM and states:

This control measure seeks reductions in NH3 emissions from direct land application (DLA) of chipped and ground uncomposted greenwaste to agricultural land, public land for erosion control or roadway management, and consumers' properties for gardening or landscaping purposes. This control measure proposes to require composting of chipped and ground greenwaste, in accordance with the Best Management Practices (BMP) requirements of Rule 1133.3, prior to DLA.

A second control measure listed in the PM2.5 Plan for the compostable waste source category is BCM-11 – Emission Reductions from Organic Waste Composting. However, BCM-11 is not identified as MSM. The PM2.5 Plan states regarding BCM-11:

This control measure seeks emission reductions of NH3 from the processing of organic waste materials including foodwaste, greenwaste, and agricultural waste. Control approaches include foodwaste co-digestion and integration of anaerobic digestion (AD) with composting. If foodwaste is the only feedstock input to AD, the resulting digestate could be included into greenwaste composting where emission control is governed by Rule 1133.3. This control measure proposes to expand the applicability of Rules 1133.2 and 1133.3 to regulate the co-digestion of foodwaste with biosolids and the integration of foodwaste digestate with greenwaste composting for further emission reductions. An integrated AD-composting system will result in less overall waste and a more useful product.

³ Approval and Promulgation of Implementation Plans; Designation of Areas for Air Quality Planning Purposes; California; South Coast Moderate Area Plan and Reclassification as Serious Nonattainment for the 2012 PM2.5 NAAQS, 85 Fed. Reg. 71264 (November 9, 2020)

⁴ [https://www.aqmd.gov/home/air-quality/air-quality-management-plans/other-state-implementation-plan-\(sip\)-revisions/2012-annual-pm2-5-plan](https://www.aqmd.gov/home/air-quality/air-quality-management-plans/other-state-implementation-plan-(sip)-revisions/2012-annual-pm2-5-plan)

PAR 1133 Series incorporates BCM-10 as MSM via amendments to Rule 1133. As BCM-11 is not an MSM and requires more study to assess impacts, it is not included in this rulemaking.

RULE HISTORY

Elements of Rule 1133 Series were originally adopted in 2003 and subsequent rulemaking occurred in 2011:

2003 ADOPTION OF RULE 1133, RULE 1133.1, AND RULE 1133.2

In 2003, adoption of Rule 1133, Rule 1133.1, and Rule 1133.2 occurred,⁵ partially implementing Control Measure WST-02 – Emission Reductions from Composting, which were included in the 1994 and 1997 AQMPs as well as in the 1999 amendment to the 1997 Ozone State Implementation Plan for the South Coast Air Basin. The control measure called for the development of an emissions inventory as well as identification of technically and economically feasible control options for composting operations.

Rule 1133 required composting and chipping and grinding facilities to register with South Coast AQMD, to pay a fee, and to provide their facility and throughput information along with annual updates of their throughput.

Rule 1133.1 established holding or processing time requirements for chipping and grinding activities in order to prevent inadvertent decomposition associated with stockpiling waste for extended periods of time.

Rule 1133.2 required new co-composting operations to enclose their active composting operations and to use forced-air aeration systems for their curing part of the operation to control 80% of their VOC and ammonia emissions. Rule 1133.2 also required existing co-composting operations to control 70% of their VOC and ammonia emissions.

2011 ADOPTION OF RULE 1133.3 AND AMENDMENT OF RULE 1133.1

In 2011, the South Coast AQMD Governing Board adopted Rule 1133.3 to implement Control Measure MCS-04 in the 2007 AQMP and amended Rule 1133.1 for consistency with statewide requirements for chipped and ground greenwaste.⁶

Rule 1133.3 established Best Management Practices (BMPs) for greenwaste composting operations for previously uncontrolled composting by requiring active phase compost piles be covered with at least six (6) inches of finished compost or compost overs within 24 hours of initial pile formation and requiring active phase compost piles be sufficiently wet prior to turning.

Rule 1133.1 amended the rule with a maximum holding time requirement of 48 hours or up to seven (7) days with Local Enforcement Agency (LEA) approval to conform to statewide requirements in the California Code of Regulations, Title 14, Division 7, Chapter 3.1.

FEDERAL PROGRAMS

Sewage Sludge Disposal Standards

U.S. EPA promulgated standards for the use or disposal of sewage sludge in Title 40, Chapter I, Subchapter O, Part 503 of the Code of Federal Regulations (40 CFR Part 503).⁷ 40 CFR Part 503

⁵ <http://www3.aqmd.gov/hb/2003/January/030131a.html>

⁶ <https://www.aqmd.gov/docs/default-source/agendas/governing-board/2011/2011-jul8-037.pdf>

⁷ <https://www.epa.gov/biosolids/sewage-sludge-laws-and-regulations>

contains requirements for the control of pathogens, vectors, and heavy metal for sludge composting operations. To qualify as Class A compost, Appendix B to Part 503 – Pathogen Treatment Process, generally requires processes to further reduce pathogens (PFRP). PFRP requires that open windrow composting maintain the temperature of the compost at 131 degrees Fahrenheit or higher for 15 days or longer, and during this time there must be a minimum of five (5) turnings of the windrows. For in-vessel or aerated static pile (ASP) composting, the PFRP requires the active pile temperature be at least 131 degrees Fahrenheit or higher for three (3) days. This process ensures that virtually all human pests and pathogens are destroyed. Since food residuals contain human pathogens, fungi, and bacteria, this PFRP should be conducted when foodwaste is being mixed with greenwaste for composting.

STATE PROGRAMS

California Department of Resources Recycling and Recovery (CalRecycle)

CalRecycle oversees the state's waste management, recycling, and waste reduction programs, including organic materials management such as chipping and grinding operations and composting operations. CalRecycle develops statewide rules, including by emergency pathways, for these programs and, in the case of organic materials, assists in enforcement at the local level with training and support.

California Senate Bill (SB) 1383

In 2016, the state of California approved Senate Bill (SB) 1383 directing CalRecycle to implement a short-lived climate pollutant reduction strategy for methane emissions including compostable waste.⁸ SB 1383 set targets to reduce compostable waste such as greenwaste and foodwaste sent to landfills by 75% by 2025. SB 1383 and CalRecycle rule changes, such as the loss of diversion credit for greenwaste as alternative daily cover at disposal sites, have resulted in a significant increase of greenwaste, woodwaste, and foodwaste diverted away from disposal at landfills and towards chipping and grinding operations and composting operations.

Illegal Disposal Emergency Regulations

In 2025, in response to widespread illegal dumping and disposal of compostable waste and comingled waste in the Antelope Valley area of Los Angeles County, CalRecycle adopted emergency regulations that defined land application activities and placed these activities within CalRecycle's regulations including operator filing requirements, state minimum standards, recordkeeping, and LEA inspection requirements.⁹ The emergency regulations were to ensure that land application of compostable material or digestate are appropriately regulated to ensure protection of public health and safety and the environment. The emergency regulations require testing of material prior to land application, limit land application of compostable material to six (6) inches in depth, capping farms at three (3) applications per year while all others at just once per year, and restrict more material from being added until existing material is tilled or incorporated into soil.

⁸ <https://calrecycle.ca.gov/organics/slep/>

⁹ <https://calrecycle.ca.gov/laws/rulemaking/illegaldisposal/>

LOCAL PROGRAMS

In addition to South Coast AQMD regarding air quality issues, several other local programs exert significant control over chipping and grinding operations and composting operations with foci including solid waste issues, stormwater runoff, and land use.

Local Enforcement Agency (LEA)

Within the South Coast AQMD's jurisdiction, at least eight different Local Enforcement Agencies (LEAs) operate to ensure compliance with CalRecycle's statewide waste management program.¹⁰ LEAs have the primary responsibility for ensuring the correct operation and closure of solid waste facilities, including chipping and grinding operations and composting operations, in California. LEAs are typically programs within departments of city or county government, such as public health or building and safety. LEAs may also be special districts.

LEAs investigate complaints, receive and process notification, registrations, and permits for solid waste operations, including chipping and grinding and composting, and conduct periodic inspections of facilities. These activities of the various LEAs are reported to CalRecycle and maintained in a statewide database known the Solid Waste Information System or SWIS.¹¹ The types of solid waste activities found in this database include locations of Rule 1133 Series activity such as landfills, transfer stations, composting sites, and in-vessel digestion sites. For each site, the database contains information about the location, landowner, operator, activity type, regulatory and operational status, authorized waste types, LEA, inspections, and enforcement action records.

AFFECTED FACILITIES

PAR 1133 Series affects approximately 98 facilities within the South Coast AQMD based on a review of South Coast AQMD Permits to Operate, inspection reports, and Annual Emissions Reporting (AER) data, as well as the CalRecycle SWIS database. Using these tools, 43 facilities were detected that exclusively perform chipping and grinding subject to PAR 1133.1. A total of four facilities are considered co-composting operations and PAR 1133.2 applies. Lastly, 51 facilities perform composting subject to PAR 1133.3.

PUBLIC PROCESS

Development of PAR 1133 Series was conducted through a public process. Three Working Group meetings were held on January 30, 2025, May 7, 2025, and June 5, 2025, respectively. The Working Group is composed of representatives from businesses, environmental groups, public agencies, and consultants. The purpose of the Working Group meetings is to discuss proposed concepts and work through the details of South Coast AQMD's proposal. Additionally, a Public Workshop was held on July 9, 2025. The purpose of the Public Workshop is to present the proposed amended rule language to the general public and stakeholders, and to solicit comments. Staff also conducted multiple site visits as part of this rulemaking process.

¹⁰ <https://www2.calrecycle.ca.gov/SolidWaste/LEA/Directory/>

¹¹ <https://www2.calrecycle.ca.gov/SolidWaste/Site/Search>

CHAPTER 2: BARCT ASSESSMENT

INTRODUCTION

BARCT ANALYSIS APPROACH

**ASSESSMENT OF SOUTH COAST AQMD REGULATORY
REQUIREMENTS**

ASSESSMENT OF EMISSION LIMITS FOR EXISTING UNITS

OTHER REGULATORY REQUIREMENTS

ASSESSMENT OF POLLUTION CONTROL TECHNOLOGIES

INITIAL BARCT EMISSION LIMIT AND OTHER CONSIDERATIONS

**COST-EFFECTIVENESS AND INCREMENTAL COST-
EFFECTIVENESS ANALYSES**

BARCT EMISSION LIMIT RECOMMENDATION SUMMARY

INTRODUCTION

PAR 1133 Series rule development was initiated in response to implement BCM-10 in the PM2.5 Plan. Additionally, South Coast AQMD periodically assesses rules to ensure that Best Available Retrofit Control Technology (BARCT) is reflected in rule requirements. To implement BCM-10 and ensure that Rule 1133 Series reflects BARCT, a BARCT assessment was conducted to identify the potential to further reduce emissions.

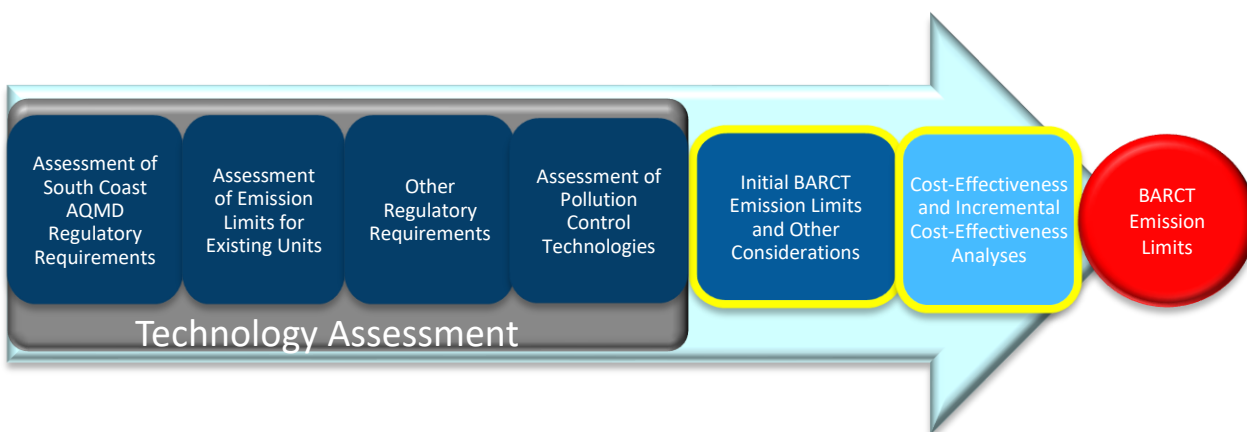
BARCT is defined in the Health & Safety Code Section 40406 as “an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.” Consistent with state law, BARCT emission limits take into consideration environmental impacts, energy impacts, and economic impacts. The BARCT analysis approach follows a series of steps conducted for each equipment category.

BARCT ANALYSIS APPROACH

The BARCT analysis approach follows a series of steps conducted for each operation type within PAR 1133 Series, specifically chipping and grinding operations subject to PAR 1133.1, co-composting operations subject to PAR 1133.2, and composting operations subject to PAR 1133.3. PAR 1133 regarding supply of uncomposted greenwaste, applies to all three types of operations.

The steps for BARCT analysis include:

- Assessment of South Coast AQMD Regulatory Requirements
- Assessment of Emissions Limits for Existing Units
- Other Regulatory Requirements
- Assessment of Pollution Control Technologies
- Initial BARCT Emission Limits and Other Considerations
- Cost-Effectiveness and Incremental Cost-Effectiveness Analyses
- BARCT Emission Limit



The BARCT assessment included a review of technologies and emission reduction strategies. As part of the technology assessment, a cost-effectiveness analysis was conducted for technologies with potential to reduce emissions. A cost-effectiveness analysis determines the cost per ton of pollutant reduced. In the 2022 AQMP, a cost-effectiveness threshold of \$36,000 per ton of VOC reduced was established. After adjusting for inflation, the cost-effectiveness threshold is \$41,400

per ton of VOC reduced (2024 U.S. Dollars). An incremental cost-effectiveness analysis was also conducted for proposed controls and monitoring methods to establish BARCT, if applicable, and is discussed in Chapter 4. At the present time, the South Coast AQMD Governing Board has not established a cost-effectiveness threshold for PM_{2.5} or PM_{2.5} precursor ammonia.

ASSESSMENT OF SOUTH COAST AQMD REGULATORY REQUIREMENTS

As part of the BARCT assessment, staff reviewed existing South Coast AQMD regulatory requirements that affect VOC and ammonia emissions for chipping and grinding operations, co-composting operations, and composting operations subject to the Rule 1133 Series. Chipping and grinding operations, subject to Rule 1133.1, must chip and grind greenwaste and utilize on-site or remove from the site within 48 hours of receipt, excluding official federal and state holidays, or up to 7 days maximum, with approval from the LEA. Co-composting operations, subject to Rule 1133.2, must conduct the active phase of composting of their various feedstocks including biosolids and manure within an enclosure and must conduct the curing phase of composting using an aeration system, vented to controls with equal to or greater than 80% control efficiency for VOC and ammonia, respectively. Composting operations, subject to Rule 1133.3, must use best management practices for their composting. If composting large amounts of foodwaste, an aeration system is required, venting to controls with equal to or greater than 80% control efficiency for VOC and ammonia, respectively.

ASSESSMENT OF EMISSION LIMITS FOR EXISTING UNITS

Staff examined the current requirements of air quality permits for facilities subject to the Rule 1133 Series, including permits to operate for chipping and grinding equipment, permits to operate for enclosures, aeration systems, and associated biofilters for co-composting operations, and aeration systems and associated biofilters for composting operations. Staff assessed the emission limits and practices of those existing units and determined that the emission limits of 80% control of VOC and ammonia emissions as well as best management practices were consistent with the emission limits and practices expressed in the existing Rule 1133 Series. Staff did not detect any required practices or emission limits more stringent than those required by the Rule 1133 Series.

OTHER REGULATORY REQUIREMENTS

As part of the BARCT assessment, staff examined chipping and grinding, co-composting, and composting rules promulgated by other jurisdictions. In 2007, the San Joaquin Valley Air Pollution Control District (SJVAPCD) adopted SJVAPCD Rule 4565 – Biosolids, Animal Manure, and Poultry Litter Operations (SJVAPCD Rule 4565). SJVAPCD Rule 4565 requires that operators of co-composting facilities with throughputs between 20,000 wet tons per year and 100,000 wet tons per year to implement a combination of four mitigation measures, designed to reduce VOC emissions by 40% when used in combination, consistent with Rule South Coast AQMD 1133.3 best management practices. South Coast AQMD Rule 1133.2 exempts co-composting operations, if in operation at the time of rule adoption in 2003, with a design capacity of less than 35,000 tons of throughput per year containing no more than 20% biosolids, by volume, from any control requirements.

In 2011, SJVAPCD adopted Rule 4566 – Organic Material Composting Operations (SJVAPCD Rule 4566). SJVAPCD Rule 4566 contains similar provisions to South Coast AQMD Rule 1133.3 regarding composting.

DISCUSSION REGARDING BEST CONTROL MEASURE-11 (BCM-11) – EMISSION REDUCTIONS FROM ORGANIC WASTE COMPOSTING

Within the PM_{2.5} Plan, in addition to BCM-10, is a second control measure pertaining to the compostable waste industry, referred to as BCM-11. BCM-11 states:

This control measure seeks emission reductions of NH₃ from the processing of organic waste materials including foodwaste, greenwaste, and agricultural waste. Control approaches include foodwaste co-digestion and integration of anaerobic digestion (AD) with composting. If foodwaste is the only feedstock input to AD, the resulting digestate could be included into greenwaste composting where emission control is governed by Rule 1133.3. This control measure proposes to expand the applicability of Rules 1133.2 and 1133.3 to regulate the co-digestion of foodwaste with biosolids and the integration of foodwaste digestate with greenwaste composting for further emission reductions. An integrated AD-composting system will result in less overall waste and a more useful product.

While anaerobic digestion of foodwaste is technologically feasible, it is still in a research phase with several research foodwaste operations in-place across South Coast AQMD. The California Air Pollution Control Officers Association (CAPCOA) is also studying foodwaste digestion and composting with their associated emission factors and is preparing to publish updated emission factors for those processes in the near future. Second, the compostable waste industry is currently in a period of transition, shifting from a disposal model to a reuse model under SB 1383. This transition has not been seamless with documented misconduct in neighboring jurisdictions. In addition, numerous waste facilities have recently ceased operating or had problematic operations, including Southeast Resource Recovery Facility (SERRF) in Long Beach, Commerce Refuse-to-Energy in the City of Commerce, Desert View Power (formerly Colmac Energy) in Mecca, El Sobrante Landfill in Corona, Chiquita Canyon Landfill in Castaic, and Sunshine Canyon Landfill in Sylmar. Implementing BCM-11 into rule language would be expected to take considerable time to account for emerging research and unintended consequences to the waste industry thus staff did not implement BCM-11 in this rulemaking. Staff will continue to monitor progress in the research to evaluate when such activities are deemed technologically feasible.

ASSESSMENT OF POLLUTION CONTROL TECHNOLOGIES

Staff assessed two approaches to reduce VOC and ammonia emissions from existing co-composting with design capacity of less than 35,000 tons per calendar year, described below.

BEST MANAGEMENT PRACTICES (BMPs)

Adopted as part of Rule 1133.3 in 2011, a best management practice (BMP) for composting required applying finished compost or compost overs to the top of composting piles so that the peak is six (6) inches thick. Source tests demonstrated that the bulk of emissions escape from the top one-third of compost piles. Finished compost is required to be applied to active phase piles within 24 hours of initial pile construction. The finished compost or compost overs cover acts as a “pseudo-biofilter”, adsorbing VOC and ammonia emissions. A second BMP required that piles be

adequately wet prior to turning. According to a 2010 greenwaste mitigation measure study¹, the application of six inches finished compost to the surface of a greenwaste windrow resulted in a 53% reduction in VOC emissions for the 22-day active phase period compared to the regular greenwaste windrow without finished compost on it. In a 2007 emissions study in Modesto², a 75% reduction in VOC emissions was achieved with a six-inch layer of finished compost cover for the first two weeks of the active composting phase. Another 2010 emissions research paper³ using a compost cap of oversized materials screened from finished compost, known as compost overs, showed a reduction of average ozone formation by 27% in five-day-old piles and by 36% in 21-day-old piles. In their 2011 rulemaking, staff concluded that Rule 1133.3 BMPs reduce VOC emissions by 40% and ammonia emissions by 20%.

ENCLOSURE VENTED TO EMISSION CONTROL SYSTEM

Adopted as part of Rule 1133.2 in 2003, non-exempt co-composting operations were required to conduct the active phase of composting within enclosures and to conduct the curing phase under negative pressure, both vented to controls. The minimum control efficiency of these measures must be 80% control of VOC emissions and 80% control of ammonia emissions.

INITIAL BARCT EMISSION LIMIT AND OTHER CONSIDERATIONS

Currently, there is no emission limit for existing co-composting operations with a design capacity of less than 35,000 tons throughput per year. Uncontrolled co-composting emission factors are 1.78 pounds VOC per ton of throughput and 2.93 pounds ammonia per ton of throughput, as published in South Coast AQMD document *Guidelines for Calculating Emissions from Greenwaste Composting and Co-Composting Operations*.⁴ Such a facility, if operating at their throughput limit, would be capable of emitting 31.1 tons of VOC and 51.2 tons of ammonia per year.

COST-EFFECTIVENESS AND INCREMENTAL COST-EFFECTIVENESS ANALYSES

BEST MANAGEMENT PRACTICES (BMPs)

The cost for BMPs as described in Rule 1133.3 adoption, at the time of that rulemaking, was determined to be \$1.15 per ton throughput. Adjusting for inflation based on the California Consumer Price Index from Year 2010 dollars to Year 2024 dollars results in an adjusted cost of \$1.73 per ton throughput. The annual cost to implement BMPs at a co-composting operation with a design capacity of 35,000 tons per year is calculated to be \$60,700 per year. The expected emission reductions associated with BMPs at a co-composting operation with a design capacity of 35,000 tons per year are calculated to be 12.4 tons of VOC per year and 10.3 tons of ammonia per year. At the low end, for a facility with a design capacity of 100 tons per year, the annual cost is

¹ SJVAPCD, 2010a. Comparison of Mitigation Measures for Reduction of Emissions Resulting from Greenwaste Composting, Project 09-01 CCOS Draft Final Report.

² CIWMB, 2007. Emissions Testing of Volatile Organic Compounds from Greenwaste Composting at the Modesto Compost Facility in the San Joaquin Valley, Contractor's Report to the California Integrated Waste Management Board, October 31, 2007.

³ CalRecycle, 2010. An Investigation of the Potential for Ground-Level Ozone Formation Resulting from Compost Facility Emissions, Contractor's Report to the California Department of Resources Recycling and Recovery, December 2010.

⁴ <https://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/greenwaste-and-composting.pdf>

expected to be \$173 per year with the expected emission reductions calculated to be 0.04 tons VOC and 0.03 tons ammonia per year.

ENCLOSURE VENTED TO EMISSION CONTROL SYSTEM

Cost data to implement enclosure vented to an emission control system was collected from facilities implementing enclosures to comply with other South Coast AQMD rules and from public data sources. Capital cost for construction on a negative pressure enclosure for a co-composting operation with design capacity of 35,000 tons per year is expected to be approximately \$9,570,000, with additional cost of \$75,000 for a biofilter emission control system. Recurring costs for operation of the enclosure vented to an emission control system, including maintenance and electricity to operate blowers to maintain a negative pressure environment, are expected to be \$1,000,000 per year.

In accordance with South Coast AQMD practice to use the Discounted Cash Flow method to account for capital costs, with an interest rate of 4% and life of equipment of 10 years yields $PVF_{(4,10)} = 8.11$. Thus, the Present Value to construct and to operate each enclosure vented to an emission control system over 10 years is calculated at \$17,760,000, or \$1,776,000 annually. The expected emission reductions associated with this control strategy are calculated to be 24.9 tons of VOC per year and 41.0 tons of ammonia per year.

Combining the costs with the associated emission reductions, Table 2-1 and Table 2-2 presents cost-effectiveness and incremental cost-effectiveness for each control strategy for both VOC and ammonia:

Table 2-1 BARCT VOC Assessment Summary		
Proposed Requirement	Best Management Practices	Enclosure Vented to Control
Annualized Cost (\$)	\$60,700	\$1,776,000
Emission Reductions (tons VOC/year)	12.4	24.9
Cost-Effectiveness (per ton VOC)	\$4,900	\$71,500
Incremental Cost- Effectiveness (per ton VOC)		\$138,000

Table 2-2 BARCT Ammonia Assessment Summary		
Proposed Requirement	Best Management Practices	Enclosure Vented to Control
Annualized Cost (\$)	\$60,700	\$1,776,000
Emission Reductions (tons ammonia/year)	10.3	41.0
Cost-Effectiveness (per ton ammonia)	\$5,900	\$43,400
Incremental Cost-Effectiveness (per ton ammonia)		\$56,000

Thus, for co-composting operations that began operating in 2003 or earlier with a design capacity of less than 35,000 tons throughput per year, BMPs were found to be cost-effective with respect to VOC while enclosure with an emission control system was found not to be cost-effective or incremental cost-effective with respect to VOC.

Regarding Table 2-2, the South Coast AQMD Governing Board has not established an approved cost-effectiveness threshold for ammonia, as opposed to VOC or NO_x. The cost-effectiveness thresholds, established in the 2022 AQMP, for VOC and NO_x are \$36,000 per ton and \$325,000 per ton, respectively, and are adjusted annually for inflation. The reason for the disparity by almost an order of magnitude between the two cost-effectiveness thresholds is because the cost-effectiveness threshold for NO_x is a health benefit-based threshold, taking into account societal benefits, while the VOC cost-effectiveness threshold is not. Staff proposes to reexamine this control measure after the South Coast AQMD Governing Board establishes a cost-effectiveness threshold for ammonia.

BARCT EMISSION LIMIT RECOMMENDATION SUMMARY

Based on the BARCT assessment, staff proposes to require co-composting operations with a design capacity of less than 35,000 tons throughput per year to employ BMPs. Table 2-3 below shows the cost-effectiveness for the proposed requirement:

Table 2-3 BARCT Assessment Summary		
Proposed Requirement	Cost-Effectiveness (\$/ton VOC)	Cost-Effectiveness (\$/ton ammonia)
Best Management Practices	\$4,900	\$5,900

CHAPTER 3: SUMMARY OF PROPOSALS

INTRODUCTION

PROPOSED AMENDED RULE 1133 SERIES DEFINITIONS

PROPOSED AMENDED RULE 1133

PROPOSED AMENDED RULE 1133.1

PROPOSED AMENDED RULE 1133.2

PROPOSED AMENDED RULE 1133.3

INTRODUCTION

PAR 1133 Series is being amended to implement control measure BCM-10 from the PM2.5 Plan. PAR 1133 restricts the supply of uncomposted greenwaste for direct land application to certain operations or with certain techniques to reduce VOC and ammonia emissions. In addition, PAR 1133.2 requires certain legacy co-composting operations to begin to use best management practices at their operations. The proposed amendments also lower thresholds for exemption to further reduce potential emissions of VOC and ammonia.

The following describes the definitions for PAR 1133 Series and, for each operation-specific rule, the structure of the rule and explanations of the provisions incorporated. New provisions and any modifications to provisions that have been incorporated are also explained. PAR 1133 Series also includes grammatical and editorial changes for clarity.

PROPOSED AMENDED RULE 1133 SERIES DEFINITIONS

Several definitions are proposed to be added, deleted, or substantially modified for clarity and consistency across the entire PAR 1133 Series. Key definition changes are discussed below:

- *Active Phase* – consolidation of *Active Co-eComposting* and *Active Compost definitions*; modified to relocate time and testing requirements from Definition subdivisions to Requirement subdivisions.
- *Agricultural Operations* – new definition to replace *Agricultural Chipping and Grinding* and *Agricultural Composting* definitions; defined to refer to Rule 102 for consistency.
- *Biomass Power Generation Facility* – new definition to implement acceptable uses for *Uncomposted Greenwaste* and better explain existing exemption for *Chipping and Grinding Operations*. Biomass includes *Greenwaste*, *Woodwaste*, orchard removal trees and could also include material like biochar which is derived from *Woodwaste*.
- *Bioreactor* – new definition added to clarify exclusion from applicability in PAR 1133.3. A *Bioreactor*, in the context of PAR 1133 Series, is a countertop, standalone, or package unit that, with the addition of heat or aeration, rapidly decomposes food scraps and other *Organic Waste Material* into a product that may be used as a soil amendment. Examples of *Bioreactors* are pictured below:



Figures 3-1 through 3-4 – Examples of Bioreactors

- *Biosolids* – new definition added to clarify newly-defined *Organic Waste Material*.
- *Chipping and Grinding Operation* – new definition to replace *Chipping and Grinding* and to standardize rule language across PAR 1133 Series to “operation”.

- *Co-eComposting Operation* – new definition to replace *Co-eComposting* and to standardize rule language across PAR 1133 Series to “operation”.
- *Compost Overs* – modified to remove qualifier “oversized”; the definition *Compost Overs* now includes both the oversized, coarse woody fraction following *Active Phase* and *Curing Phase* of composting as well as the midsized, medium-screened woody fraction, sometimes referred to as compost mulch.
- *Composting Operation* – new definition to replace *Composting*, *Composting Operations*, and *Greenwaste Composting* and to standardize rule language across PAR 1133 Series to “operation”.
- *Control Efficiency* – new definition added for consistency and clarity and consolidate differing verbiage in rule text referring to emission reduction, control efficiency, or destruction efficiency.
- *Curing Phase* – consolidation with deleted *Curing* definition; modified to relocate time and testing requirements from Definition subdivisions to Requirement-type subdivisions.
- *Digestate* – new definition added to clarify newly-defined *Organic Waste Material*.
- *Digestion Operation* – new definition to implement acceptable uses for *Uncomposted Greenwaste*.
- *Direct Land Application* – new definition to implement restrictions for *Uncomposted Greenwaste*.
- *Existing Small-Capacity Co-eComposting Operation* – modification of existing definition *Existing Co-eComposting Operation*; new definition added to clarify implementation of BMPs for previously-exempt legacy *Co-eComposting Operations*.
- *Existing Greenwaste Composting Operations* – definition deleted as all phase-in time periods for requirements for legacy facilities have elapsed and distinction between new and existing facility types is no longer necessary.
- *Finished Compost* – consolidation of deleted *Compost* definition in various Rule 1133 series rules.
- *Foodwaste* – modification to reflect changes as a result of SB 1383. Previous definition labeled *Greenwaste* with any amount of *Foodwaste*, including table food scraps, as *Foodwaste*. SB 1383 encourages residences to dispose of food scraps with curbside *Greenwaste*. Definition clarifies that food scraps co-collected with residential curbside *Greenwaste* is considered *Greenwaste*, not *Foodwaste*.
- *Greenwaste* – consolidation of deleted definitions *Curbside Greenwaste*, *Mixed Greenwaste*, and *Non-Curbside Greenwaste*; definition modified to reflect changes as a result of SB 1383 and add clarity regarding sorting. As explained above in *Foodwaste*, *Greenwaste* includes food scraps co-collected with residential curbside *Greenwaste*. Smaller woody waste less than 4 inches in diameter is typically prunings and trimming with attached greenery, higher nitrogen content, and higher potential to emit ammonia, thus is *Greenwaste* instead of *Woodwaste*.
- *Inadvertent Decomposition* – definition deleted as it is not used within rule requirements.
- *Intermediate Material* – new definition added to implement direct land application requirements; refers to land coverings that have undergone the *Pathogen Reduction Process* such as pathogen-reduced mulch and may also include *Digestate* if the *Digestate* comes exclusively from the digestion of *Greenwaste* and has undergone the *Pathogen Reduction Process*.

- *Landclearing* – definition modified to add clarity and align with statewide regulations.
- *Manure* – new definition added to clarify newly-defined *Organic Waste Material*.
- *New Co-Composting Operations* – definition deleted as all phase-in time periods for requirements for legacy facilities have elapsed and distinction between facility types is no longer necessary.
- *New Greenwaste Composting Operations* – definition deleted as all phase-in time periods for requirements for legacy facilities have elapsed and distinction between facility types is no longer necessary.
- *Operator* – definition deleted and newer verbiage “owner or operator” used throughout rule text.
- *Organic Material* – new definition added to implement direct land application requirements; refers to feedstocks, intermediate products, and final products of composting.
- *Organic Material Supplier* – new definition added to implement direct land application requirements; refers to facilities subject to PAR 1133 Series that supply *Organic Material*.
- *Organic Waste Material* – modification of previous definition *Organic Waste*; refers to feedstocks to produce intermediate or final products of composting, such as *Greenwaste*, *Woodwaste*, *Foodwaste*, *Biosolids*, *Digestate*, or *Manure*.
- *Palm Chipping and Grinding* – definition deleted as exemption that referred to this definition was deleted for inconsistency with statewide regulations.
- *Pathogen Reduction Process* – new definition added for consistency and clarity, referring to California Code of Regulations regarding statewide pathogen reduction requirements.
- *Portable Chipping and Grinding Operation* – definition modified as meaning was inconsistent with current interpretation of portable. For more information regarding the meaning of “valid locations”, refer to *California Air Pollution Control Officers Association (CAPCOA) Explanation & Examples of Uses of PERP* dated March 12, 2014.¹
- *Publicly-Owned Small-Capacity Co-Composting Operation* – new definition added for clarity to implement requirements previously located in Exemption subdivision of Rule 1133.2; defined as owned or operated by a public entity and composting 5,000 tons per year or less of *Biosolids* and *Manure*, combined.
- *Rainy Day* – definition deleted as exemption that referred to this definition was deleted due to inconsistency with statewide regulations.
- *Recreational Facilities Composting* – definition deleted and consolidated with *Recreational Facility Composting*.
- *School Composting* – new definition added to implement new exemption to apply to composting performed at schools for educational purposes.
- *Solvita Maturity Index* – definition deleted and test method added to *Test Methods and Protocol* subdivision where needed.
- *Start Up* – definition deleted as all phase-in time periods for requirements for legacy facilities have elapsed and distinction between facility types is no longer necessary.
- *TMECC* – definition deleted and test method added to *Test Methods and Protocol* subdivision where needed.

¹ https://ww2.arb.ca.gov/sites/default/files/2018-11/capcoa_document_3-12-14.pdf

- *Uncomposted Greenwaste* – new definition added to implement direct land application requirements; refers to *Greenwaste* that has not undergone the *Pathogen Reduction Process*. As *Intermediate Material*, *Finished Compost*, and *Compost Overs* have all completed pathogen reduction, they are not considered *Uncomposted Greenwaste*.
- *Wet Weather Conditions* – definition deleted as exemption that referred to this definition was deleted for inconsistency with statewide regulations.
- *Windrow Composting Process* – new definition added for clarity to distinguish between composting using elongated piles mechanically turned, as opposed to the aerated static pile (ASP) composting process using an *Aeration System* (previously defined).
- *Woodwaste* – definition modified to reflect changes as a result of SB 1383 and to add clarity regarding sorting. Larger woody waste greater than 4 inches in diameter is typically large branches, stumps, and tree trunks, largely free of leaves and other green material with lower nitrogen content and lower potential to emit ammonia, thus is *Woodwaste* instead of *Greenwaste*.
- *Woodwaste Composting* – definition deleted as exemption that referred to this definition was deleted for inconsistency with statewide regulations.

PROPOSED AMENDED RULE 1133 (PAR 1133)

PAR 1133 TITLE

The title of PAR 1133 will be modified to “Emission Reductions from Direct Land Application” to more accurately reflect the intent of the rule, repurposed from its original intent as an information-gathering rule.

Subdivision (a) Purpose

The purpose of this rule is modified to identify that the rule is repurposed to establish requirements and prohibitions on organic material for direct land application, instead of information gathering.

Subdivision (b) Applicability

The types of facilities applicable to this rule are the same facilities that are subject to any of the following: PAR 1133.1, PAR 1133.2, or PAR 1133.3. This is consistent with the approach in existing Rule 1133, although expressed slightly differently.

Subdivision (c) Definitions

Definitions for the entire PAR 1133 Series are discussed above with Proposed Amended Rule 1133 Series Definitions.

Subdivision (d) Requirements

PAR 1133 moves the existing information-gathering requirements of subdivision (d) to the various operation-specific rules of PAR 1133 Series.

New requirements are added on the supply of uncomposted greenwaste. PAR 1133 restricts organic material suppliers to supply uncomposted greenwaste to only six categories of facilities: 1) Co-eComposting operations; 2) Composting operations; 3) Digestion operations; 4) Biomass power generation facilities; 5) Agricultural operations; and 6) Outside South Coast AQMD. Currently, organic material suppliers are not restricted by South Coast AQMD rules on to whom they supply and may provide uncomposted greenwaste to anyone, including those that may not have the ability to minimize greenwaste decomposition emissions. PAR 1133 limits the supply of

uncomposted greenwaste to only operations that can complete the aerobic composting or anaerobic digestion process (categories 1, 2, or 3), combust the greenwaste (category 4), properly apply the uncomposted greenwaste in a manner to minimize emissions (category 5), or remove from South Coast AQMD (category 6).

In addition, PAR 1133 further restricts the supply to agricultural operations only if the recipient informs supplier of their intent to use an acceptable direct land application technique: either 1) land incorporation by tilling, injecting, or plowing to depth of six (6) inches; or 2) cover uncomposted greenwaste with six (6) inches of finished compost or compost overs.

PAR 1133 acknowledges the LEA, enforcing the statewide regulations promulgated by CalRecycle, as the lead agency in the handling of solid waste and determining if land application at agricultural operations is conducted properly. PAR 1133 does not act as an administrative variance from LEA and CalRecycle requirements and organic material suppliers may not supply organic material unless otherwise allowed by the LEA.

Subdivision (e) Recordkeeping

PAR 1133 repurposes existing subdivision (e) *Registration Process* into *Recordkeeping* in order to demonstrate compliance with subdivision (d) *Requirements*. Records must be made to track the supply of uncomposted greenwaste, including recipient information, dates of supply, and quantity of material. Records must be maintained onsite for three (3) years and made available upon request.

Subdivision (f) Prohibitions

PAR 1133 repurposes existing subdivision (f) *Fees* into *Prohibitions* in order to restrict the supply of other organic waste materials with high potential to emit ammonia: 1) foodwaste; 2) biosolids; 3) manure; and 4) digestate. However, digestate may be supplied for direct land application if mitigation measures consistent with paragraph (d)(3) for uncomposted greenwaste are intended to be used. The existing requirement for chipping and grinding operations, co-composting operations, and composting operations to register with South Coast AQMD and submit a fee is eliminated.

Subdivision (g) Exemptions

PAR 1133 establishes a de minimus exemption amount of 100 tons of uncomposted greenwaste supplied, in place of the exemptions by facility type present in existing Rule 1133. Supply of 100 tons of uncomposted greenwaste for direct land application per year, as opposed to composting the uncomposted greenwaste, is expected to emit about one pound of VOC emissions per day and less than one pound of ammonia emissions per day, in keeping with South Coast AQMD guidance for de minimus sources.

PROPOSED AMENDED RULE 1133.1 (PAR 1133.1)

PAR 1133.1 TITLE

The title of PAR 1133.1 will be modified to “Chipping and Grinding Operations” for consistency with other rules in PAR 1133 Series to refer to an “operation” instead of an “activity”.

Subdivision (a) Purpose

The purpose of this rule is modified to use the defined term chipping and grinding operations, similar to PAR 1133.1 title.

Subdivision (b) Applicability

The applicability of PAR 1133.1 is clarified to be chipping and grinding operations not subject to another operation-specific rule within the PAR 1133 Series. However, chipping and grinding operations, if generating chipped and ground greenwaste, woodwaste, or foodwaste for uses other than composting or co-composting onsite would be subject to Rule 1133.1, even if located at facilities that contain co-composting operations subject to Rule 1133.2 or at facilities that contain composting operations subject to Rule 1133.3. An example is a facility that contains a composting operation and also a chipping and grinding operation that generates chipped and ground greenwaste for use at a different offsite composting operation. In that example, the facility would comply with Rule 1133.1 to take measures to prevent inadvertent decomposition from that chipping and grinding operation.

Subdivision (c) Definitions

Definitions for the entire PAR 1133 Series are discussed above with Proposed Amended Rule 1133 Series Definitions.

Subdivision (d) Requirements

PAR 1133.1 leaves existing requirements unchanged with minor changes to rule text for capitalization and style.

Subdivision (e) Recordkeeping

PAR 1133.1 places recordkeeping and document retention requirements in subdivision (e) that were formerly located in subdivision (d) *Requirements*. Former subdivision (e) *Moisture Content Measurement* contained procedures for moisture testing for an exemption and are deleted. The moisture content exemption pathway was inconsistent with statewide rules and is eliminated.

Subdivision (f) Reporting

PAR 1133.1 relocates the information-gathering requirements of Rule 1133 and places them in each of the operation-specific rules of the PAR 1133 Series. For chipping and grinding operations, the reporting requirements, formerly referred to as annual updates, are now located in subdivision (f) of PAR 1133.1. Forms for reporting will be updated and available at the South Coast AQMD website.

Subdivision (g) Exemptions

Formerly identified as subdivision (f), PAR 1133.1 modifies subdivision (g) *Exemptions* by lowering the de minimus exemption from 1,000 cubic yards of greenwaste (231 tons by calculation with default U.S. EPA conversion factors) to 100 tons of greenwaste per year. Chipping and grinding of 100 tons of greenwaste is expected to emit less than one pound of VOC emissions per day and less than one pound of ammonia emissions per day, in keeping with South Coast AQMD guidance for de minimus sources.

PAR 1133.1 also eliminates exemptions for palm chipping and grinding and chipped and ground curbside greenwaste held under 30% moisture content. These exemptions were inconsistent with statewide waste handling rules. PAR 1133.1 also eliminates exemptions for landfills and biomass power generation facilities that do not perform chipping and grinding of greenwaste onsite. As those facilities do not perform chipping and grinding onsite, they are not subject to PAR 1133.1 and do not require exemption.

PROPOSED AMENDED RULE 1133.2 (PAR 1133.2)**Subdivision (a) Purpose**

The purpose of the rule is unchanged with minor modifications for capitalization and style.

Subdivision (b) Applicability

The applicability of the rule is unchanged with minor modification for capitalization and style.

Subdivision (c) Definitions

Definitions for the entire PAR 1133 Series are discussed above with Proposed Amended Rule 1133 Series Definitions.

Subdivision (d) Requirements

PAR 1133.2 leaves existing requirements largely intact. Certain requirements for the active phase and curing phase of composting regarding time and testing, formerly located in subdivision (c) *Definitions*, are now in subdivision (d) *Requirements*. Active phase is complete either 22 days after mixing co-composting feedstock, when product achieves a Solvita Compost Maturity Index of 4.5 or greater, or after completing the pathogen reduction process. Curing phase is complete either 40 days after active phase is complete, when product achieves a Solvita Compost Maturity Index of 6.0 or greater, or a respiration rate under 10 mg O₂ per gram volatile solids as measured by direct respirometry. For enclosure testing, PAR 1133.2 also allows the use of colorimetric testing, such as Dräger tubes, or other equally effective methods approved by the Executive Officer to detect hydrocarbon or ammonia. PAR 1133.2 now clearly specifies daily enclosure testing and determination of background levels.

In addition, Rule 1133.2 formerly contained an alternative pathway to comply with the 80% control efficiency requirement for emission control systems for VOC and ammonia, respectively. This alternative path involved the use of a compliance plan per subdivision (e) and to demonstrate 80% control efficiency against baseline emission factors for co-composting (1.78 pounds of VOC emissions per ton throughput and 2.93 pounds ammonia emissions per ton throughput). PAR 1133.2 updates the alternative compliance pathway by eliminating the need for a compliance plan and instead requires demonstration of a mass emission rate of 0.35 pound VOC emissions per ton throughput and 0.58 pound ammonia emissions per ton throughput, which is 80% control efficiency against baseline emission factors for co-composting. Facilities may also comply by demonstrating 80% control efficiency for both VOC and ammonia against baseline emission factors or operation-specific emission factors, if approved by the Executive Officer.

Source testing requirements to demonstrate control efficiency or the mass emission rate are also updated by PAR 1133.2. PAR 1133.2 now requires source testing be performed within one (1) year of startup of the emission control system. After this initial performance source test, periodic source testing is still required every two (2) years, as in existing Rule 1133.2.

PAR 1133.2 also formalizes two additional compliance pathways, formerly located in subdivision (j) *Exemptions*. PAR 1133.2 now requires co-composting operations existing at the time of original rule adoption in 2003 with a design capacity of less than 35,000 tons throughput per year, formerly exempt from all controls, to comply with subdivision (d) or comply with windrow composting best management practices described in subdivision (e). PAR 1133.2 also now requires publicly-owned co-composting operations to comply with subdivision (d) or comply with an alternative pathway in subdivision (f), formerly located in Rule 1133.2 subdivision (j) *Exemptions*.

Subdivision (e) Existing Small-Capacity Co-Composting Operation Alternative

PAR 1133.2 eliminates the existing *Compliance Plan* requirements formerly located in subdivision (e) and repurposes the subdivision for windrow composting process best management practices, adopted in Rule 1133.3. See PAR 1133.3 subdivision (d) *Requirements* for a thorough explanation of the windrow composting process best management practices. Subdivision (e) is a compliance alternative for existing small-capacity co-composting operations instead of complying with subdivision (d) and enclosure and emission control system requirements.

Subdivision (f) Publicly-Owned Small-Capacity Co-Composting Operation Alternative

PAR 1133.2 relocates a compliance alternative for smaller municipal co-composting operations, formerly located in subdivision (j) *Exemptions*, into dedicated subdivision (f). Subdivision (f), formerly titled *Compliance Schedule*, contained compliance deadlines that are now all in the past and have been deleted. Subdivision (f) is a compliance alternative for publicly-owned small-capacity co-composting operations instead of complying with subdivision (d) and enclosure and emission control system requirements.

This compliance alternative has also been updated to allow either 1) demonstration of 80% control of VOC emissions and 80% control of ammonia emissions or 2) demonstration of 80% control of the baseline emission factors, by demonstration of a mass emission rate of no more than 0.35 pound VOC emissions per ton throughput and no more than 0.58 pound ammonia emissions per ton throughput. Facilities may also comply by demonstrating 80% control efficiency for both VOC and ammonia against baseline emission factors or operation-specific emission factors, if approved by the Executive Officer.

Subdivision (g) Test Methods and Protocol

Formerly titled *Testing and Protocol*, PAR 1133.2 modifies subdivision (g) by adding updated source testing expectations consistent with other recently adopted or amended rules. PAR 1133.2 requires a source test protocol to be submitted prior to source testing, to submit a new protocol if equipment is changed or if requested by the Executive Officer, to conduct source testing in accordance with the valid approved source test protocol, and to submit the source testing report within 60 days of sampling. PAR 1133.2 also updates the subdivision for style and clarity, adds references to test methods for Solvita Compost Maturity Index and direct oxygen respirometry, consistent with Rule 1133.3, and specifies how to measure background ammonia and hydrocarbon levels outside enclosures.

Subdivision (h) Recordkeeping

PAR 1133.2 updates the subdivision by listing records required to be maintained by co-composting operations and by expressing the record retention requirements in language consistent with the other rules within the PAR 1133 Series.

Subdivision (i) Reporting

PAR 1133.2 relocates the information-gathering requirements of Rule 1133 and places them in each of the operation-specific rules of PAR 1133 Series. For co-composting operations, the reporting requirements, formerly referred to as annual updates, are now located in subdivision (i) of PAR 1133.2. The requirements of existing Rule 1133.2 subdivision (i) *Plan Fees* are no longer appropriate as PAR 1133.2 deleted reference to compliance plans. Forms for reporting will be updated and available at the South Coast AQMD website.

Subdivision (j) Exemptions

PAR 1133.2 updates the exemptions of Rule 1133.2 by eliminating the exemption for existing small-capacity co-composting operations and relocating the requirements for publicly-owned co-composting operations to subdivision (f). PAR 1133.2 also lowers the existing de minimus throughput exemption from 1,000 tons of throughput per year to 100 tons of throughput per year. Using baseline emission factors for co-composting, exempt co-composting operations could emit as much as five pounds of VOC emissions per day and eight pounds of ammonia emission per day. By lowering the de minimus exemption limit by a factor of ten and calculated using baseline emission factors, exempt co-composting operations will emit less than one pound of VOC emissions per day and less than one pound of ammonia emissions per day, consistent with South Coast AQMD guidance for de minimus sources.

PAR 1133.2 adds an exemption from the requirements of subdivision (d) to perform the active phase of composting within an enclosure for the limited purpose of source testing to develop operation-specific baseline emission factors. The exemption necessitates a source test protocol be submitted and approved by the Executive Officer, in accordance with paragraph (g)(1) regarding source testing.

Attachment A - Guidelines for the Development of Source Test Protocols for VOC and Ammonia Emissions from Co-eComposting Operations

PAR 1133.2 updates Attachment A by refining minimum flux sample locations and piles tested and also standardizing rule language for capitalization, consistency, and clarity with the other rules in the PAR 1133 Series.

PROPOSED AMENDED RULE 1133.3 (PAR 1133.3)**PAR 1133.3 TITLE**

The title of PAR 1133.3 is modified to “Emission Reductions from Composting Operations” for clarity. Previously, the rule title referenced “greenwaste composting” and, as foodwaste composting is expected to increase as a result of increased compliance with SB 1383, the title change improves communication that the rule applies to composting of foodwaste as well.

Subdivision (a) Purpose

The purpose of the rule is unchanged with minor modifications for capitalization and style.

Subdivision (b) Applicability

PAR 1133.3 makes minor changes to the applicability of the rule, by specifying that the rule applies to all composting operations except those operations subject to Rule 1133.2. This is a change to improve clarity but is not expected to increase or decrease the number of operations subject to rule.

PAR 1133.3 also excludes from applicability a category of devices described as bioreactors, now defined in rule language, with a design capacity of less than 1,000 tons per calendar year. There is some literature² that these devices may emit VOC emissions at rates two orders of magnitude less than default composting emission factors, in the range of 0.033 pounds VOC per wet ton of feedstock. Staff was unable to detect ammonia emission factors for this category of devices. As

² <https://rex.libraries.wsu.edu/esploro/outputs/doctoral/MEASUREMENT-OF-VOLATILE-ORGANIC-COMPOUND-AND/99900898735001842>

ammonia emission factors were unknown, staff took a cautious approach and bioreactors with a design capacity of less than 1,000 tons per calendar are expected to emit much less than one pound of VOC per day, in the range of one-tenth of one pound per day. Future source testing data including ammonia emissions may support modifying this applicability limit. While PAR 1133.3 does not apply to this category of devices, bioreactors may be subject to air quality permitting.

Subdivision (c) Definitions

Definitions for the entire PAR 1133 Series are discussed above with Proposed Amended Rule 1133 Series Definitions.

Subdivision (d) Requirements

PAR 1133.3 leaves existing requirements largely intact. Certain requirements for the active phase and curing phase of composting regarding time and testing, formerly located in subdivision (c) *Definitions*, are now in subdivision (d) *Requirements*. Active phase is complete either 22 days after mixing composting feedstock, when product achieves a Solvita Compost Maturity Index of 4.5 or greater, or after completing the pathogen reduction process. Curing phase is complete either 40 days after active phase is complete, when product achieves a Solvita Compost Maturity Index of 6.0, or greater or a respiration rate under 10 mg O₂ per gram volatile solids as measured by direct respirometry.

PAR 1133.3 clarifies existing Rule 1133.3 language that an aeration system venting to an emission control system, known as aerated static pile (ASP) composting, is only required for composting operations that process more than 5,000 tons of foodwaste per year and only for piles with more than 10% foodwaste, by weight. At facilities that process less than 5,000 tons of foodwaste per year, the ASP composting process or the windrow composting process may be used. At facilities that process more than 5,000 tons of foodwaste per year, any pile with less than 10% foodwaste, by weight, may be composted with the windrow composting process, without an aeration system.

PAR 1133.3 clarifies windrow composting best management practices (BMPs) language. For the windrow composting process, BMPs include:

- 1) Cover each active phase pile within 24 hours with finished compost or compost overs so that the top of the pile cover is at least six (6) inches thick.
- 2) Ensure that prior to turning an active phase pile, the pile is sufficiently wet at a depth of three (3) inches by the Squeeze Ball Test.

Windrow composting BMPs language was modified to improve clarity and consistency. PAR 1133.3 also retains rule language that allows for alternatives to the squeeze ball test, such as moisture sensors, and alternatives to BMPs if able to demonstrate at least 40% control of VOC emissions and 20% control of ammonia emissions, consistent with expected performance of BMPs.

PAR 1133.3 updates aeration system requirements, by integrating the alternative compliance pathway as a mass emission limit for emission control systems. Rule 1133.3 formerly contained an alternative pathway to comply with the 80% control efficiency requirement for emission control systems for VOC and ammonia, respectively. This alternative path involved demonstrating 80% control efficiency against baseline emission factors for the active phase of composting (4.25 pounds of VOC emissions per ton throughput and 0.46 pound ammonia emissions per ton throughput). PAR 1133.3 updates the alternative compliance pathway by requiring demonstration of a mass emission rate of 0.85 pounds VOC emissions per ton throughput and 0.092 pounds

ammonia emissions per ton throughput, which is 80% control efficiency against baseline emission factors for the active phase of composting. Facilities may also comply by demonstrating 80% control efficiency for both VOC and ammonia against operation-specific emission factors, if approved by the Executive Officer.

Source testing requirements to demonstrate control efficiency or the mass emission rate are also updated by PAR 1133.3. PAR 1133.3 now requires source testing be performed within one (1) year of startup of the emission control system. After this initial performance source test, periodic source testing is still required every three (3) years, as in existing Rule 1133.3.

Subdivision (e) Test Methods and Protocol

PAR 1133.3 modifies subdivision (e) by adding updated source testing expectations consistent with other recently adopted or amended rules. PAR 1133.3 requires a source test protocol to be submitted prior to source testing, to submit a new protocol if equipment is changed or if requested by the Executive Officer, to conduct source testing in accordance with the valid approved source test protocol, and to submit the source testing report within 60 days of sampling. PAR 1133.3 also updates the subdivision for style and clarity.

Subdivision (f) Recordkeeping

PAR 1133.3 updates the subdivision by listing records required to be maintained by composting operations and by expressing the record retention requirements in language consistent with the other rules within the PAR 1133 Series.

Subdivision (g) Reporting

PAR 1133.3 relocates the information-gathering requirements of Rule 1133 and places them in each of the operation-specific rules of PAR 1133 Series. For composting operations, the reporting requirements, formerly referred to as annual updates, are now located in subdivision (g) of PAR 1133.3. Forms for reporting will be updated and available at the South Coast AQMD website.

Subdivision (h) Exemptions

Formerly organized as subdivision (g), PAR 1133.3 updates the exemptions of Rule 1133.3 by eliminating two non-essential exemptions: 1) Operations subject to Rule 1133.2 are now not subject to PAR 1133.3 by exclusion in subdivision (b) *Applicability*; and 2) Operations using aeration system or ASP composting are not subject to windrow composting BMPs per subdivision (d) *Requirements*.

PAR 1133.3 establishes a de minimus throughput exemption of 100 tons of throughput per year, consistent with the other rules of PAR 1133 Series. Using baseline emission factors for composting, exempt composting operations could emit as much as one pound of VOC emissions per day and less than one pound of ammonia emission per day, consistent with South Coast AQMD guidance for de minimus sources. PAR 1133.3 also establishes a school composting exemption, for composting at a public or private school for the purpose of education.

Attachment A - Guidelines for the Development of Source Test Protocols for VOC and Ammonia Emissions from Composting Operations

PAR 1133.3 updates Attachment A by refining minimum flux sample locations and piles tested and also standardizing rule language for capitalization, consistency, and clarity with the other rules in the PAR 1133 Series.

CHAPTER 4: IMPACT ASSESSMENTS

INTRODUCTION

EMISSION REDUCTIONS

COSTS AND COST-EFFECTIVENESS

INCREMENTAL COST-EFFECTIVENESS

SOCIOECONOMIC IMPACT ASSESSMENT

CALIFORNIA ENVIRONMENTAL QUALITY ACT

DRAFT FINDINGS UNDER HEALTH & SAFETY CODE SECTION 40727

COMPARATIVE ANALYSIS

INTRODUCTION

Impact assessments were conducted as part of PAR 1133 Series rule development to assess the environmental and socioeconomic implications. These impact assessments include emission reduction calculations, cost-effectiveness and incremental cost-effectiveness analyses, a socioeconomic impact assessment, and a California Environmental Quality Act (CEQA) analysis. Staff will prepare draft findings and a comparative analysis pursuant to Health and Safety Code Sections 40727 and 40727.2, respectively.

EMISSION REDUCTIONS

PAR 1133 achieves VOC and ammonia emission reductions largely through two strategies: 1) restricting the supply of uncomposted greenwaste only to certain facilities and, in some cases, only if using certain mitigation measures; and 2) requiring smaller legacy co-composting operations to use best management practices.

Quantification of both VOC and ammonia emissions from direct land application of uncomposted greenwaste has not been studied directly. As mentioned earlier, CAPCOA is studying VOC and ammonia emission factors for the compostable waste industry and is preparing to publish updated emission factors for those processes in the near future. Recent source testing of direct land application has emphasized greenhouse gas emissions. Additionally, nitrogenous compounds other than ammonia have been studied. Several older source tests have been performed over the past quarter century at composting facilities where stockpile operations have also been studied. The emission data from stockpile operations are expected to more accurately model the emission profile of direct land application than composting operations as stockpiling will not have careful pile construction or moisture monitoring that composting operations exhibit. For reference, the default South Coast AQMD uncontrolled composting emission factors are 4.67 pounds VOC and 0.66 pounds ammonia per ton of throughput.

After a review of source test reports, five results were discovered that present both VOC and ammonia emission factors for greenwaste stockpile operations. The longest timeframe published in these source test reports was 90 days. One result is excluded as an outlier: according to the source test report, the stockpile also contained winery waste and the resulting VOC and ammonia data differs by one-half to two orders of magnitude, respectively. Also presented are default stockpile emission factors. SJVAPCD has published¹ in their Compost Emission Factor Report, revised March 21, 2023, VOC and ammonia emission factors for organic material stockpile. The results of those source tests and default emission factors, normalized across a 90-day time period, are presented below in Table 4-1 and Table 4-2, respectively:

¹ <https://ww2.valleyair.org/media/hdsoobtp/criteria-compost-emission-factors-report-final-voc-nh3-3-21-23.pdf>

Table 4-1 VOC Emission Factors from Source Testing and Default Factor			
Source	VOC Emissions (lbs/ton)	Timeframe (days)	Emission Factor (lbs/ton/90 days)
Zamora Facility	11.34	90	11.34
Vacaville Facility	2.95	7	37.93
Colton Facility (winter)	0.909	9	9.09
Colton Facility (fall)	2.793	21	11.97
Average of source test results			17.58
SJVAPCD stockpile emission factor	0.2	1	18.0

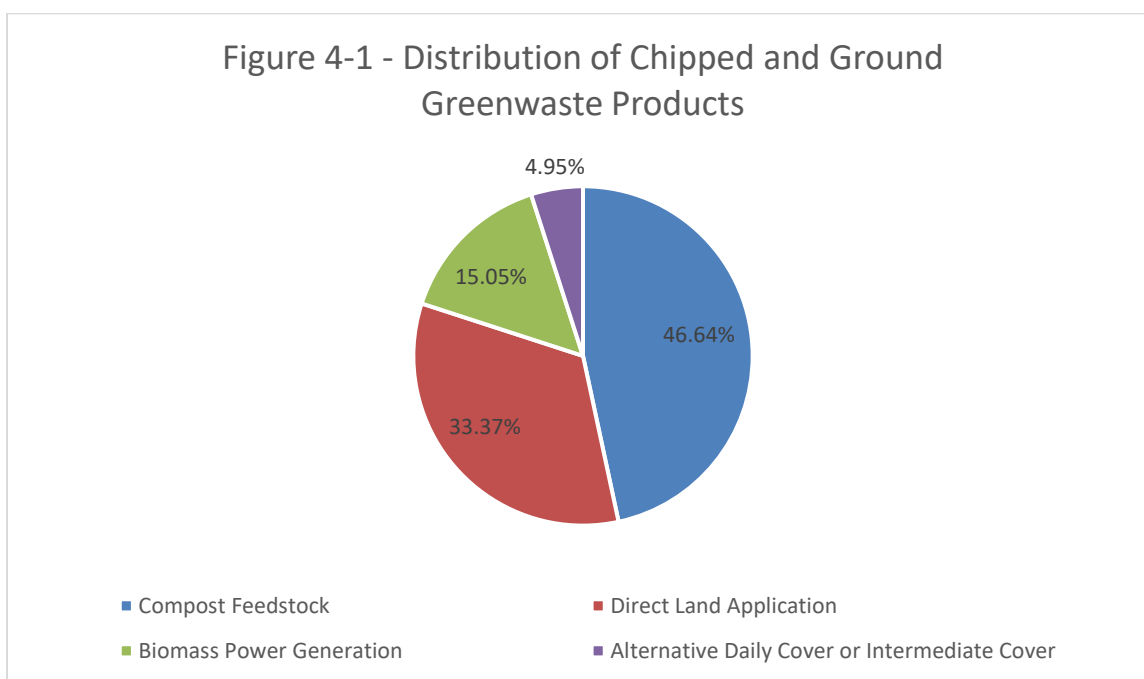
Table 4-2 Ammonia Emission Factors from Source Testing and Default Factor			
Source	Ammonia Emissions (lbs/ton)	Timeframe (days)	Emission Factor (lbs/ton/90 days)
Zamora Facility	1.64	90	1.64
Vacaville Facility	0.07	7	0.90
Colton Facility (winter)	0.063	9	0.63
Colton Facility (fall)	0.693	21	2.97
Average of source test results			1.54
SJVAPCD stockpile emission factor	0.02	1	1.8

For the purpose of quantifying emissions associated with direct land application over one year, the emission factors of 17.58 pounds VOC and 1.54 pounds ammonia per ton of throughput, respectively, will be used. Although not studied over an entire year, these stockpile emission

factors normalized across a 90-day time period represent the most accurate representation of VOC and ammonia emissions associated with direct land application. These emission factors are consistent with the default SJVAPCD stockpile emission factors, extrapolated across 90 days. These emission factors are also consistent with the South Coast AQMD default uncontrolled composting emission factors, considering direct land application is not in favorable biological conditions, unlike composting, and certain organisms that consume VOC and ammonia are not expected to be active in a direct land application setting.

Next, staff reviewed Rule 1133 Annual Updates submitted to South Coast AQMD. Of the 98 facilities detected subject to Rule 1133 Annual Updates, 44 facilities submitted at least one Rule 1133 Annual Update over the past 12 years. Almost all of the 98 facilities are also included in the CalRecycle SWIS database and have facility profiles with acreage and periodic inspection reports including facility activity. Using submitted data and reported acreage, staff developed a conversion factor to calculate projected chipping and grinding activity from acreage and projected composting activity from acreage. Using these methods, staff developed an estimate of the total amount of chipping and grinding of greenwaste at 2,460,000 tons per year.

Staff also reviewed each facility's most recently submitted Rule 1133 Annual Updates to determine the distribution of the products of greenwaste chipping and grinding. Based on those reports, the products of greenwaste chipping and grinding are distributed as shown in Figure 4-1:



Based on these data, staff concluded that 33.37% of chipped and ground greenwaste is used for direct land application, or approximately 820,800 tons.

After discussions with operators and experts and after reviewing a 2019 CalRecycle study regarding the compostable waste industry produced by Integrated Waste Management Consulting,

LLC, titled *SB 1383 Infrastructure and Market Analysis*², staff believes that approximately 82% of chipping and ground greenwaste for land application has either undergone the pathogen reduction process including testing, has completed at least the active phase of composting and may be marketed as colored woody landcover, screened landcover, or other products, or is applied by land incorporation such as tilling. The remaining 18%, identified in the study as “Mulch for direct land application”, or 147,800 tons, is the focus of the direct land application restrictions.

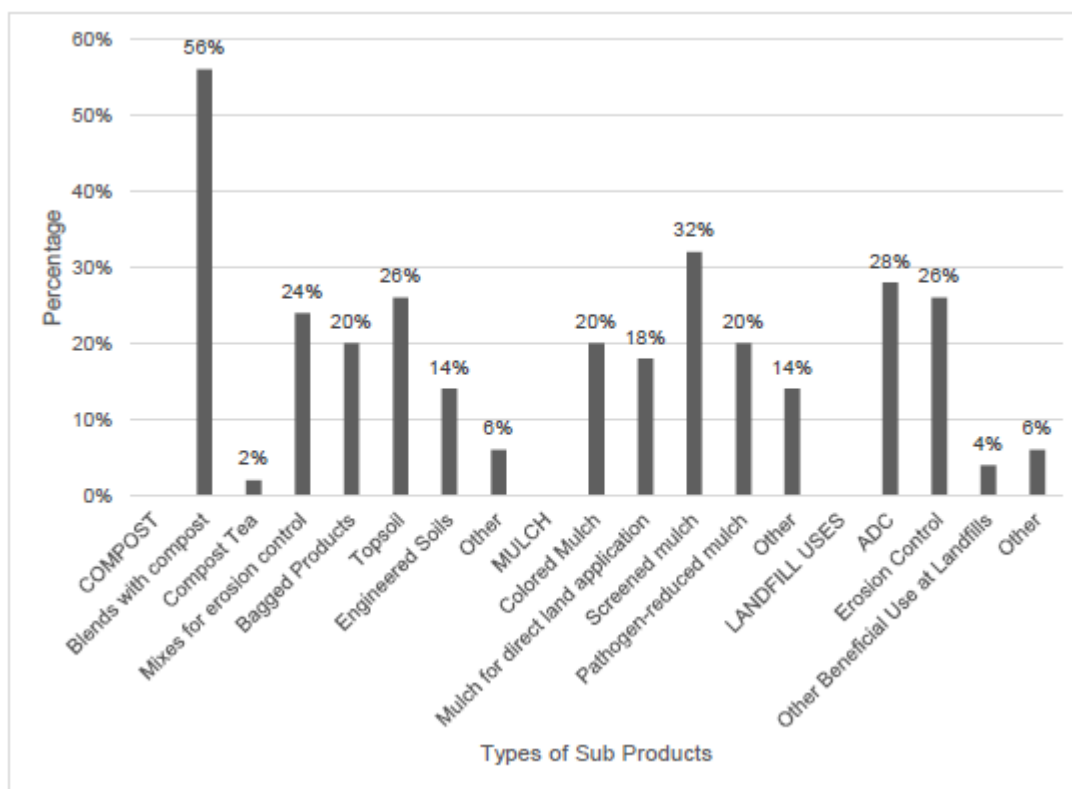


Figure 4-2 – From 2019 CalRecycle study: Types of Sub-Products Manufactured

PAR 1133 proposed two acceptable direct land application techniques: 1) land incorporation by tilling, injecting, or plowing; or 2) cover uncomposted greenwaste with finished compost or compost overs. Land incorporation of uncomposted greenwaste was the focus of a 2015 CalRecycle research study, conducted by the University of California, Davis, titled *Research to Evaluate Environmental Impacts of Direct Land Application of Uncomposted Green and Woody Wastes on Air and Water Quality*.³

² <https://www2.calrecycle.ca.gov/Publications/Details/1652>

³ <https://www2.calrecycle.ca.gov/Publications/Details/1531>

The 2015 study found that tilling uncomposted greenwaste to a depth of six (6) inches reduces VOC and nitrogenous compound emissions to near background levels, according to Figure 4-3.

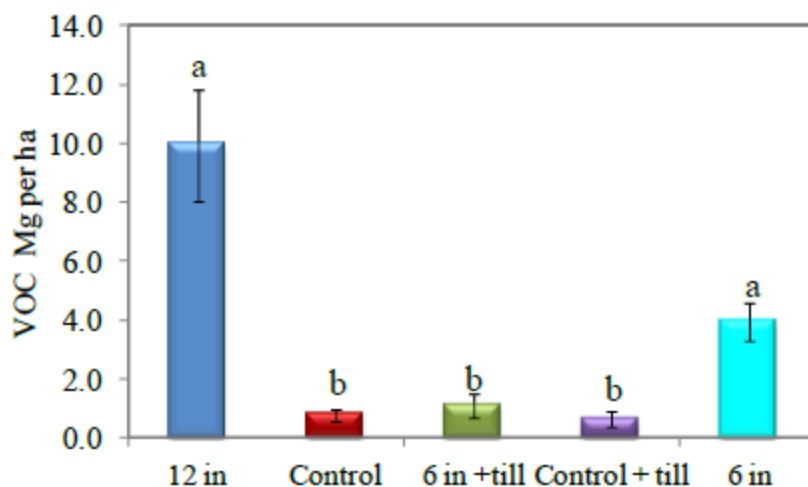


Figure 4-3 – From 2015 CalRecycle study: Mean cumulative VOC fluxes from the one-year experiment

For VOC, applying six (6) inches of uncomposted greenwaste resulted in approximately 4.0 Mg VOC per hectare, or about 1.8 tons VOC per acre. If the uncomposted greenwaste is tilled, VOC emissions are 0.8 Mg VOC per hectare, or 0.36 tons VOC per acre. Background VOC emissions from tilled soil is approximately 0.4 Mg VOC per hectare, or 0.18 tons VOC per acre. Thus, tilling uncomposted greenwaste into soil is expected to reduce the uncomposted greenwaste contribution to VOC emissions from 3.2 Mg per hectare to 0.4 Mg per hectare, a reduction of approximately 90%.

While the 2015 study did not include ammonia, it did include a different volatile nitrogenous compound, N_2O , and the control of N_2O will be applied to ammonia, as shown in Figure 4-4.

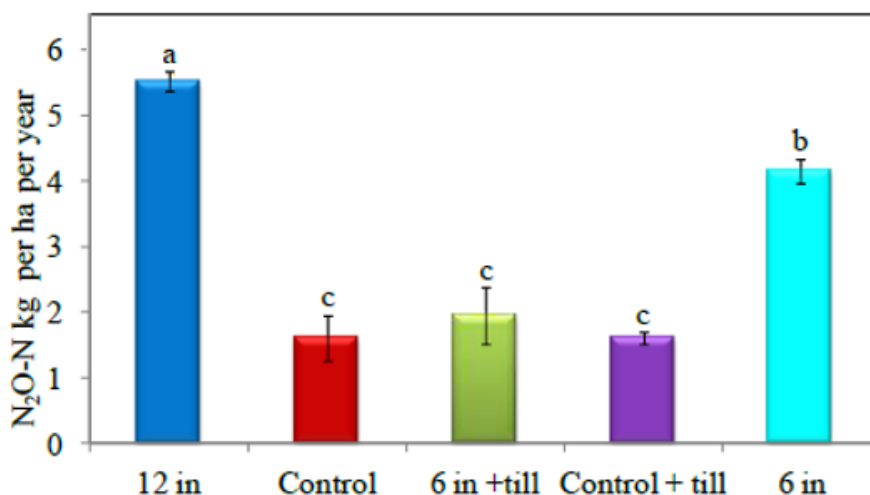


Figure 4-4 – Mean cumulative N_2O fluxes for the one-year field experiment

For N₂O, tilling reduced emissions from 4.0 Mg per hectare to 2.0 Mg per hectare. Background N₂O emissions were 1.6 Mg per hectare. The contribution of the uncomposted greenwaste was reduced from 2.4 Mg per hectare to 0.4 Mg per hectare, or approximately 80% control. Assuming tilling to a depth of six (6) inches reduces VOC emissions by 90% and ammonia emissions by 80%, the emission factors for uncomposted greenwaste after land incorporation are 1.76 pounds VOC and 0.31 pounds ammonia per ton of uncomposted greenwaste, respectively.

During the 2011 Rule 1133.3 rulemaking process, staff found that applying a six (6) inch cover of finished compost or compost overs creates a “pseudo-biofilter” on windrow composting piles and reduces VOC and ammonia emissions by 40% and 20%, respectively. Assuming these same emission reductions yields emission factors for uncomposted greenwaste, covered with six (6) inches of finished compost or compost overs after direct land application, of 10.55 pounds VOC and 1.23 pounds ammonia per ton of uncomposted greenwaste, respectively.

Table 4-3 and Table 4-4 shows the estimated emission reductions for VOC and ammonia, respectively, associated with restrictions on supply of uncomposted greenwaste for agricultural operation direct land application, assuming 50% of uncomposted greenwaste is incorporated into land and 50% is covered with finished compost or compost overs.

Table 4-3 VOC Emission Reductions from Direct Land Application Restrictions			
Land Application Technique	Throughput (tons)	VOC Emission Factor (lbs/ton)	VOC Emissions (tons per year)
<i>Uncontrolled</i>	<i>147,800</i>	<i>17.58</i>	<i>1,299.2</i>
Land Incorporation	73,900	1.76	65.0
Compost Cover	73,900	10.55	389.7
Emission Reductions (land incorporation and compost cover emissions versus uncontrolled land application emissions)			844.5

Table 4-4 Ammonia Emission Reductions from Direct Land Application Restrictions			
Land Application Technique	Throughput (tons)	Ammonia Emission Factor (lbs/ton)	Ammonia Emission (tons per year)
<i>Uncontrolled</i>	82,080	1.54	133.8
Land Incorporation	41,040	0.31	11.4
Compost Cover	41,040	1.23	45.5
Emission Reductions (land incorporation and compost cover emissions versus uncontrolled land application emissions)			56.9

Combined, restrictions on the supply of uncomposted greenwaste used for direct land application and requiring legacy co-composting operations to use best management practices is expected to reduce VOC and ammonia emissions in the South Coast AQMD. For a detailed analysis of the projected VOC and ammonia emission reductions associated with best management practices for smaller legacy co-composting operations, please refer to Chapter 2. Table 4-5 and Table 4-6 show the combined VOC and ammonia emissions associated with the PAR 1133 Series.

Table 4-5 VOC Emission Reductions from PAR 1133 Series		
Proposed Requirement	VOC Emission Reductions (tons per year)	VOC Emission Reductions (tons per day)
Restricting supply of uncomposted greenwaste (PAR 1133)	844.5	2.31
Best management practices for smaller legacy co-composters (PAR 1133.2)	12.4	0.034
Overall	856.9	2.34

Table 4-6 Ammonia Emission Reductions from PAR 1133 Series		
Proposed Requirement	Ammonia Emission Reductions (tons per year)	Ammonia Emission Reductions (tons per day)
Restricting supply of uncomposted greenwaste (PAR 1133)	56.9	0.16
Best management practices for smaller legacy co-composters (PAR 1133.2)	10.3	0.028
Overall	67.2	0.19

PAR 1133 Series total VOC emission reductions are 2.34 tons per day and total ammonia emission reductions are 0.19 tons per day.

COSTS AND COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires a cost-effectiveness analysis when establishing BARCT requirements. The cost-effectiveness of a control is measured in terms of the control cost in dollars per ton of air pollutant reduced. The costs for the control technology include purchasing, installation, operation, maintenance, and permitting. Emission reductions were calculated for each requirement and based on estimated baseline emissions. The 2022 AQMP established a cost-effectiveness threshold of \$36,000 per ton of VOC reduced. After adjusting for inflation, the cost-effectiveness threshold is \$41,400 per ton of VOC reduced (2024 U.S. Dollars). A cost-effectiveness that is greater than the threshold of \$41,400 per ton of VOC reduced requires additional analysis and a hearing before the Governing Board on costs.

The cost-effectiveness is estimated based on the present value of the retrofit cost, which was calculated according to the capital cost (initial one-time equipment and installation costs) plus the annual operating cost (recurring expenses over the useful life of the control equipment multiplied by a present worth factor). Capital costs are one-time costs that cover the components required to assemble a project. Annual costs are any recurring costs required to operate equipment. Costs for this proposal were obtained from available literature, vendors, and facilities.

Costs associated with PAR 1133 restrictions on supply of uncomposted greenwaste are largely administrative, for recordkeeping to document compliance. Statewide CalRecycle regulations regarding land application already require that no additional uncomposted greenwaste may be delivered until the previous application has been tilled into the soil. Sites that do not till uncomposted greenwaste into soil within 30 days are considered landfill disposal sites and require permitting as such. This requirement applies to sites receiving more than 4,040 cubic yards of uncomposted greenwaste. Staff estimates that 86 of the 98 facilities subject to PAR 1133 Series provide uncomposted greenwaste for use offsite. The estimated quantity of chipped and ground greenwaste is 2,460,000 tons per year. Staff estimates that approximately 50% of this chipped and ground greenwaste is used onsite of the facility where it was processed while the other 50% is transferred offsite. Waste transfer trucks vary in size, but assuming a transfer truck capacity of 25 tons per load, currently in South Coast AQMD, 49,200 transfers by truck of uncomposted

greenwaste occur each year from the estimated 86 facilities providing uncomposted greenwaste offsite.

With 49,200 truck transfers occurring over 250 operating days per calendar year, approximately 200 truck transfers occur each operating day. For the 86 facilities providing uncomposted greenwaste offsite, that is an average of three truck transfers per day. To document these transfers, staff assumes approximately 0.25 hours of labor per operating day per facility. At a labor rate of \$25 per hour, the estimated cost of compliance with PAR 1133 recordkeeping requirements across South Coast AQMD is \$134,400 per year.

Details regarding costs and cost-effectiveness determinations associated with best management practices for smaller legacy co-composting operations are included in Chapter 2. The overall cost-effectiveness of the proposed amended rule is \$400 per ton of VOC reduced. The cost-effectiveness for each proposed requirement and the overall cost-effectiveness is summarized in Table 4-7 and Table 4-8.

Table 4-7 Summary of VOC Cost-Effectiveness			
Proposed Requirement	Annualized Cost	Annual VOC Reductions (tons per year)	Cost-Effectiveness (\$/ton VOC)
Restricting supply of uncomposted greenwaste (PAR 1133)	\$134,400	844.5	\$160
Best management practices for smaller legacy co-composters (PAR 1133.2)	\$60,700	12.4	\$4,900
Overall	\$195,100	856.9	\$230

Table 4-8 Summary of Ammonia Cost-Effectiveness			
Proposed Requirement	Annualized Cost	Annual Ammonia Reductions (tons per year)	Cost-Effectiveness (\$/ton ammonia)
Restricting supply of uncomposted greenwaste (PAR 1133)	\$134,400	56.9	\$2,400
Best management practices for smaller legacy co-composters (PAR 1133.2)	\$60,700	10.3	\$5,900
Overall	\$195,100	67.2	\$2,900

INCREMENTAL COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for BARCT rules or emission reduction strategies when there is more than one control option which would achieve the emission reduction objective of the proposed amendments, relative to ozone, CO, SO_x, NO_x, and their precursors. Since volatile organic compounds are precursors to ozone, an incremental cost-effectiveness analysis is required for controls proposed to limit VOC emissions. Incremental cost-effectiveness is the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control options as compared to the next less expensive control option.

Incremental cost-effectiveness is calculated as following:

$$\text{Incremental Cost} \cdot \text{Effectiveness} = \frac{\text{Cost of Option 2} - \text{Cost of Option 1}}{\text{Benefit of Option 2} - \text{Benefit of Option 1}}$$

Details regarding costs and incremental cost-effectiveness determinations are included in Chapter 2. The incremental cost-effectiveness for each next more stringent proposed requirement is summarized in Table 4-9 and Table 4-10 below.

Table 4-9 Summary of VOC Incremental Cost-Effectiveness			
Next More Stringent Proposed Requirement	Incremental Annualized Cost	Incremental Annual VOC Emission Reductions (tons per year)	Incremental Cost-Effectiveness (\$/ton VOC)
Enclosure Vented to Emission Control System	\$1,715,0000	12.5	\$138,000

Table 4-10 Summary of Ammonia Incremental Cost-Effectiveness			
Next More Stringent Proposed Requirement	Incremental Annualized Cost	Incremental Annual Ammonia Reductions (tons per year)	Incremental Cost-Effectiveness (\$/ton ammonia)
Enclosure Vented to Emission Control System	\$1,715,000	30.7	\$56,000

SOCIOECONOMIC IMPACT ASSESSMENT

A Draft Socioeconomic Impact Assessment, included in the Draft Staff Report as Appendix A, has been prepared and released for public review and comment on August 1, 2025.⁴ at least 30 days prior to the South Coast AQMD Governing Board Hearing for the PAR 1133 Series, which is scheduled for The Final Socioeconomic Impact Assessment, included in the Final Staff Report as Appendix A, is available in the September 5, 2025 Governing Board Package(subject to change).

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project (PAR 1133 Series) is exempt from CEQA pursuant to CEQA Guidelines Sections 15061(b)(3) and 15308. Further, there is no substantial evidence that the exceptions to the categorical exemptions, as set forth in CEQA Guidelines Section 15300.2, apply to the proposed project. A Notice of Exemption has will been prepared pursuant to CEQA Guidelines Section 15062. If the proposed project is approved, the Notice of Exemption will be filed for posting with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties, and with the State Clearinghouse of the Governor's Office of Land Use and Climate Innovation.

DRAFT FINDINGS UNDER HEALTH & SAFETY CODE SECTION 40727

Requirements to Make Findings

Health and Safety Code Section 40727 requires that the Governing Board make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report. In order to determine compliance with Health and Safety Code Section 40727, Health and Safety Code Section 40727.2 requires a written analysis comparing the proposed amended rules with existing regulations, if the rules meet certain requirements.

Necessity

A need exists to amend PAR 1133 Series to implement Best Control Measure-10 (BCM-10) from the South Coast Air Basin Attainment Plan for the 2012 Annual PM_{2.5} Standard (PM_{2.5} Plan) to further reduce VOC and ammonia emissions.

Authority

The South Coast AQMD obtains its authority to adopt, amend, or repeal rules and regulations pursuant to Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, 40920.6, and 41508.

Clarity

PAR 1133 Series is written or displayed so that its meaning can be easily understood by the persons directly affected by them.

⁴ South Coast AQMD, PAR 1133 Series Draft Staff Report, including Socioeconomic Assessment, August 1, 2025, <https://www.aqmd.gov/docs/default-source/rule-book/proposed-rules/1133-series/draft-staff-report-par-1133-series.pdf>

Consistency

PAR 1133 Series is in harmony with and not in conflict with or contradictory to existing statutes, court decisions, or state or federal regulations.

Non-Duplication

PAR 1133 Series will not impose the same requirements as any existing state or federal regulations. The proposed amended rules are necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

Reference

In amending these rules, the following statutes which the South Coast AQMD hereby implements, interprets or makes specific are referenced: Health and Safety Code Sections 39002, 40001, 40406, 40702, 40440(a), and 40725 through 40728.5.

COMPARATIVE ANALYSIS

Under Health and Safety Code Section 40727.2, the South Coast AQMD is required to perform a comparative written analysis when adopting, amending, or repealing a rule or regulation. The comparative analysis is relative to existing federal requirements, existing or proposed South Coast AQMD rules and air pollution control requirements and guidelines which are applicable to supply of organic material, chipping and grinding operations, co-composting operations, and composting operations.

Jurisdiction	South Coast AQMD	State of California	United States
Regulation	PAR 1133 – Emission Reductions from Direct Land Application	No comparable regulation detected	No comparable regulation detected
Applicability	<ul style="list-style-type: none"> • Chipping and grinding operations • Co-eComposting operations • Composting operations 	Not applicable	Not applicable
Requirements	<ul style="list-style-type: none"> • Supply uncomposted greenwaste only if allowed by Local Enforcement Agency • May supply uncomposted greenwaste to: <ul style="list-style-type: none"> ▸ Co-eComposting operations ▸ Composting operations ▸ Digestion operations ▸ Biomass power generation facilities ▸ Agricultural operations ▸ Outside South Coast AQMD • If supplying uncomposted greenwaste to agricultural operations, recipient must intend to: <ul style="list-style-type: none"> ▸ Till, inject, or plow uncomposted greenwaste, or ▸ Cover with finished compost or compost overs 	Not applicable	Not applicable
Recordkeeping	3-year retention	Not applicable	Not applicable
Prohibitions	May not supply: <ul style="list-style-type: none"> • Foodwaste • Biosolids • Manure • Digestate, unless recipient intends to: <ul style="list-style-type: none"> ▸ Till, inject, or plow digestate, or ▸ Cover with finished compost or compost overs 	Not applicable	Not applicable

Jurisdiction	South Coast AQMD
Regulation	PAR 1133.1 – Chipping and Grinding Operations
Finding	In accordance with Health and Safety Code 40727.2(g), the amended rule does not impose a new emission limit or standard, make an existing emission limit or standard more stringent, or impose new or more stringent monitoring, reporting, or recordkeeping requirements.

Jurisdiction	South Coast AQMD	State of California	United States
Regulation	PAR 1133.2 – Emission Reductions from Co-eComposting Operations	California Code of Regulations, Title 14, Chapter 3.1 – Compostable Materials Handling Operations and Facilities Regulatory Requirements	Code of Federal Regulations, Title 40, Part 503 – Standards for the Use or Disposal of Sewage Sludge
Applicability	Co-eComposting operations	Composting Facilities (all) (e.g. biosolids, digestate, food material, mixed material)	Any person who prepares sewage sludge
Requirements	<ul style="list-style-type: none"> • Conduct active phase composting within enclosure • Conduct active phase for 22 days, achieve Compost Maturity Index (CMI) of 4.5, or statewide pathogen reduction process • Conduct curing phase for 40 days, achieving CMI 6.0, or achieving respiration rate • Vent enclosure and aeration system to emission control system achieving 80% control for VOC and ammonia or mass emission rate equivalent • Source test emission control system every 2 years 	<ul style="list-style-type: none"> • Pathogen reduction process by conducting active phase for 15 days for windrow composting and for 3 days for aerated static pile composting 	<ul style="list-style-type: none"> • Processes To Significantly Reduce Pathogens (PSRP), acceptable for Class B compost • Processes to Further Reduce Pathogens (PFRP), acceptable for Class A compost, including: <ul style="list-style-type: none"> • Conduct active phase for 15 days for windrow composting and for 3 days for aerated static pile composting

Jurisdiction	South Coast AQMD	State of California	United States
Regulation (continued)	PAR 1133.2 – Emission Reductions from Co-composting Operations	California Code of Regulations, Title 14, Chapter 3.1 – Compostable Materials Handling Operations and Facilities Regulatory Requirements	Code of Federal Regulations, Title 40, Part 503 – Standards for the Use or Disposal of Sewage Sludge
Existing Small-Capacity Co-composting Operation Alternative	In lieu of composting within enclosure, windrow composting best management practices: <ul style="list-style-type: none"> • Cover top of active phase pile with 6 inches of finished compost or compost overs • Ensure active piles are sufficiently wet prior to turning using squeeze ball test and applying additional water 	Not applicable	Not applicable
Publicly-Owned Small-Capacity Co-composting Alternative	In lieu of composting within enclosure, conduct active and curing phases using aeration system vented to emission control system achieving 80% control for VOC and ammonia or mass emission rate equivalent	Not applicable	Not applicable
Recordkeeping	5-year retention	5-year retention	5-year retention
Reporting	Annual report	Not required	Not required

Jurisdiction	South Coast AQMD
Regulation	PAR 1133.3 – Emission Reductions from Composting Operations
Finding	In accordance with Health and Safety Code 40727.2(g), the amended rule does not impose a new emission limit or standard, make an existing emission limit or standard more stringent, or impose new or more stringent monitoring, reporting, or recordkeeping requirements.

APPENDIX A: FINAL SOCIOECONOMIC IMPACT ASSESSMENT

INTRODUCTION

LEGISLATIVE MANDATES

AFFECTED FACILITIES AND INDUSTRIES

SMALL BUSINESS ANALYSIS

COMPLIANCE COSTS

MACROECONOMIC IMPACTS ON THE REGION

INTRODUCTION

On March 17, 1989, the South Coast AQMD Governing Board adopted a resolution which requires an analysis of the economic impacts associated with adopting and amending rules and regulations. In addition, Health and Safety Code Sections 40440.8 and 40728.5 require a socioeconomic impact assessment for proposed and amended rules resulting in significant impacts to air quality or emission limitations. This Socioeconomic Impact Assessment has been prepared in accordance with Health and Safety Code and South Coast AQMD Governing Board requirements. The type of industries or businesses affected, and the range of probable costs, are addressed in this chapter. Additional information and analysis on the availability and cost-effectiveness of other technologies considered for the BARCT assessment, discussion of potential emission reductions, and the necessity of amending the rule are included elsewhere in this report.

The PAR 1133 Series aims to reduce emissions of VOC and ammonia from composting operations and minimize inadvertent decomposition during chipping and grinding operations. It targets emission reductions from the direct land application of uncomposted greenwaste and will introduce composting best management practices for previously uncontrolled existing co-composting operations. These amendments would fulfill the Most Stringent Measures (MSM) requirements outlined in the federal Clean Air Act (CAA) and the 2024 PM2.5 Plan. The proposed amended rules are also estimated to reduce 2.34 tons per day of VOC emissions and 0.19 ton per day of ammonia emissions. The PAR 1133 Series applies to chipping and grinding operations, co-composting of biosolids and manure, and composting of greenwaste, food waste, and other compostable materials. Roughly 98 facilities within the South Coast AQMD jurisdiction will be affected by the PAR 1133 Series.

LEGISLATIVE MANDATES

The legal mandates directly related to the socioeconomic impact assessment of the PAR 1133 Series include South Coast AQMD Governing Board resolutions and various sections of the Health and Safety Code.

South Coast AQMD Governing Board Resolution

On March 17, 1989, the South Coast AQMD Governing Board adopted a resolution that requires an analysis of the economic impacts associated with adopting and amending rules and regulations that considers all of the following elements:

- Affected industries;
- Range of probable costs;
- Cost-effectiveness of control alternatives; and
- Public health benefits.

Health and Safety Code Requirements

The state legislature adopted legislation which reinforces and expands the South Coast AQMD Governing Board resolution requiring socioeconomic impact assessments for rule development projects. Health and Safety Code Section 40440.8 requires a socioeconomic impact assessment for

any proposed rule, rule amendment, or rule repeal which "will significantly affect air quality or emissions limitations."

To satisfy the requirements in Health and Safety Code Section 40440.8, the scope of the socioeconomic impact assessment should include all of the following information:

- Type of affected industries;
- Impact on employment and the regional economy;
- Range of probable costs, including those to industry;
- Availability and cost-effectiveness of alternatives to the rule;
- Emission reduction potential; and
- Necessity of adopting, amending, or repealing the rule in order to attain state and federal ambient air quality standards.

However, job impact analyses are not conducted for projects with annual costs below one million U.S. dollars, as the modeling tool is unable to accurately assess macroeconomic effects of minimal-scale policy shocks.

Health and Safety Code Section 40728.5 requires the South Coast AQMD Governing Board to: 1) actively consider the socioeconomic impacts of regulations; 2) make a good faith effort to minimize adverse socioeconomic impacts; and 3) include small business impacts. To satisfy the requirements in Health and Safety Code Section 40728.5, the socioeconomic impact assessment should include the following information:

- Type of industries or business affected, including small businesses; and
- Range of probable costs, including costs to industry or business, including small business.

Finally, Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for a proposed rule or amendment which imposes Best Available Retrofit Control Technology (BARCT) or "all feasible measures" requirements relating to emissions of ozone, CO, SO_x, NO_x, VOC, and their precursors. Analyses of cost-effectiveness and incremental cost-effectiveness analysis were conducted for the PAR 1133 Series which and can be found in Chapters 2 and 4 of this report.

AFFECTED FACILITIES AND INDUSTRIES

The PAR 1133 Series would apply to approximately 98 facilities within the South Coast AQMD jurisdiction classified under various industries per the North American Industry Classification System (NAICS) with 46 facilities in the sector of Administrative and Support and Waste Management and Remediation Services (NAICS 56). In terms of geographical distribution, 30 of the 98 affected facilities are located in Los Angeles County, 26 in Riverside County, 22 in San Bernardino County, and 20 in Orange County.

SMALL BUSINESS ANALYSIS

The South Coast AQMD defines a "small business" in Rule 102 for purposes of fees as one which employs 10 or fewer persons and which earns less than \$500,000 in gross annual receipts. The

South Coast AQMD also defines “small business” for the purpose of qualifying for access to services from the South Coast AQMD’s Small Business Assistance Office (SBAO) as a business with an annual receipt of \$5 million or less, or with 100 or fewer employees. In addition to the South Coast AQMD’s definition of a small business, the United States (U.S.) Small Business Administration and the federal 1990 Clean Air Act Amendments (1990 CAAA) each have their own definition of a small business.

The 1990 CAAA classifies a business as a “small business stationary source” if it: 1) employs 100 or fewer employees; 2) does not emit more than 10 tons per year of either VOC or NOx; and 3) is a small business as defined by the U.S. Small Business Administration (SBA). Based on firm revenue and employee count, the U.S. SBA definition of a small business varies by six-digit NAICS codes.¹ For example, a facility with a NAICS code of 562920, is considered a small business if it has an annual revenue of \$25 million or less.

South Coast AQMD relies mostly on Dun and Bradstreet data to conduct small business analyses for private companies. In cases where the Dun and Bradstreet data are unavailable or unreliable, other external data sources such as Manta, Hoover, LinkedIn, and company website data will be used. The determination of data reliability is based on data quality confidence codes in the Dun and Bradstreet data as well as staff’s discretion. Revenue and employee data for publicly owned companies are gathered from Securities and Exchange Commission (SEC) filings. Since subsidiaries under the same parent company are interest-dependent, the revenue and employee data of a facility’s parent company will be used for the determination of its small business status.

Employment and revenue data from the 2024 Dun and Bradstreet database as well as other external sources are available for 93 of the 98 affected facilities. However, 50 facilities do not have VOC or NOx emission data to determine whether they would qualify as a small business under the 1990 CAAA definition. Note that although the employment and revenue data for some facilities are unknown or missing, the current data used for this small business analysis represent the most thorough and accurate information obtainable as of the date of this ~~draft~~ Final Socioeconomic Impact Assessment. The number of affected facilities classified as small businesses under each definition is shown in Table 1.

Table 1
Number of Small Businesses Under Various Definitions

Small Business Definitions	Number of Facilities
South Coast AQMD Rule 102	0
South Coast AQMD Small Business Assistance Office	72
U.S. Small Business Administration	73
1990 CAAA	13

¹ U.S. Small Business Administration, 2023 Small Business Size Standards, <https://www.sba.gov/document/support-table-size-standards>, accessed July 11, 2025.

COMPLIANCE COSTS

Although the PAR 1133 Series is applicable to approximately 98 facilities in the South Coast AQMD region, only 86 facilities are expected to incur compliance costs due to the implementation of the PAR 1133 Series. The remaining 12 facilities are only subject to administrative changes with negligible costs. Of the 86 facilities expected to incur compliance costs, 85 facilities will be subject to the recordkeeping requirements of PAR 1133 only, while only one facility will be subject to both the recordkeeping requirements of PAR 1133 and the best management practices of PAR 1133.2. No new equipment purchases are expected for the implementation of the PAR 1133 Series. The recurring costs associated with the PAR 1133 Series will be analyzed over a 15-year period from 2025 through 2039.² All the costs presented in this Socioeconomic Impact Assessment are expressed in 2024 dollars. The assumptions for the cost estimation are outlined in the following section.

Cost Assumptions

Recordkeeping

There are 86 facilities in the South Coast AQMD jurisdiction which supply uncomposted greenwaste offsite and are required to maintain daily records starting in 2025. The analysis assumed 250 operating days per calendar year and 15 minutes per day with an hourly wage rate of \$25. With 86 facilities subject to the recordkeeping requirements, the annual cost for this requirement is estimated to be \$134,375.

Best Management Practices

Only one facility will be required to apply best management practices to their co-composting activities starting in 2025. The best management practices include covering and watering the piles of composted waste. The facility is expected to have a compost throughput of 35,000 tons per year and the cost of the best management practice is estimated to be \$1.73 per ton. Thus, the annual cost for this facility to implement the best management practices is estimated to be \$60,500.

Annual Average Compliance Costs

The total present value of the compliance costs of implementing the PAR 1133 Series is estimated to be \$2,729,672 and \$2,253,942 at a 1% and 4% discount rate, respectively. Since the affected facilities are not expected to purchase any new equipment, the annual average compliance costs only account for recurring costs associated with recordkeeping and implementing best management practices. The average annual compliance costs of implementing the PAR 1133 Series is estimated to be \$194,925 regardless of the period and the real interest rates used in the analysis. Table 2 presents both the present value and annual average cost of implementing the PAR 1133 Series.

² Note that the annual costs will be the same regardless of analysis period since there would be no capital costs and the starting years for recordkeeping and best management practice will be the same.

**Table 2: Total Present Value and Average Annual of Estimated Costs
for the PAR 1133 Series**

Cost Categories	Present Value (2025)		Annual Average Costs of the PAR 1133 Series (2025-2039)
	1% Discount Rate	4% Discount Rate	
Capital Costs*			
-	-	-	-
Recurring Costs			
Recordkeeping	\$1,881,748	\$1,553,795	\$134,375
Best Management Practices	\$847,924	\$700,147	\$60,550
Total	\$2,729,672	\$2,253,942	\$194,925

*No capital costs are expected because facilities are not anticipated to purchase any new equipment

MACROECONOMIC IMPACTS ON THE REGIONAL ECONOMY

Regional Economic Models, Inc. (REMI) developed the Policy Insight Plus Model (PI+ v3), which is a tool that South Coast AQMD typically uses to assess the impacts of rule development projects on the job market, prices, and other macroeconomic variables in the region when the average annual compliance cost is greater than one million current U.S. dollars.³ However, when the average annual compliance cost of a project is less than one million, the model cannot reliably determine the macroeconomic impacts, because resultant impacts from the project would be too small relative to the baseline economic forecast.

Since the average annual compliance cost of the PAR 1133 Series is estimated to be \$194,925, which is less than the \$1 million threshold, a macroeconomic impact analysis was not conducted for the PAR 1133 Series.

³ Regional Economic Modeling Inc. (REMI). Policy Insight® for the South Coast Area (70-sector model). Version 3. 2023.

APPENDIX B: RESPONSES TO COMMENTS

PUBLIC WORKSHOP COMMENTS

COMMENT LETTERS (4)

City of Los Angeles, Solid Resources Processing & Construction Division

Inland Empire Regional Composting Authority

Orange County, Waste & Recycling

City of Bakersfield Public Works, Solid Waste Division

Public Workshop Comments**Public Workshop Commentor #1 – David Rothbart, Clean Water SoCal**

The commentor expressed the following:

- 1-A) PAR 1133.2 requires enclosure for the active phase of co-composting and doesn't allow other technologies. The commentor would prefer the entire rule to be less prescriptive and instead have an emission reduction requirement.
- 1-B) PAR 1133.2 now requires triplicate samples for Solvita Compost Maturity Index and oxygen uptake rate and commentor asked why that was necessary.

Staff response to Commentor #1

- 1-A) In light of the U.S. EPA sanction clock on South Coast AQMD, staff felt reevaluation of the entire rule regulatory structure was not possible. CAPCOA is currently working on revised baseline emission factors. Reevaluation is more appropriate after CAPCOA has completed its review of baseline emission factors.
- 1-B) Rule 1133.3 already requires triplicate samples for both of those test methods and staff is seeking to standardize and harmonize test methods, definitions, and other elements across the PAR 1133 Series.

Public Workshop Commentor #2 – John Furlong, Yorke Engineering

The commentor expressed the following:

- 2-A) Does digestate meet the definition of an intermediate material under PAR 1133.

Staff response to Commentor #2

- 2-A) The definition of intermediate material will be updated to reflect that digestate, if the feedstock was exclusively greenwaste, can be considered an intermediate material if it has completed the pathogen reduction process.

Public Workshop Commentor #3 – Casey Corliss, Orange County Waste & Recycling

The commentor expressed the following:

- 3-A) Composting is an essential public service and South Coast AQMD rules should reflect that.

Staff response to Commentor #3

- 3-A) Designation of composting as an essential public service would fall under Regulation XIII – New Source Review and emission offsets, not under the PAR 1133 Series.

Public Workshop Commentor #4 – Neil Edgar, California Compost Coalition

The commentor expressed the following:

- 4-A) CalRecycle’s statewide regulation requires 3 years records retention. The commentor recommends consistency for PAR 1133 with the statewide regulation.
- 4-B) Is the estimate of quantities of direct land application of uncomposted greenwaste just for South Coast AQMD or does it include outlining areas.
- 4-C) Statewide, greenwaste is an atypical feedstock for digestion and the commentor has concerns regarding the volatility of digestate and aerobic in-vessel finishing of digestate.

Staff response to Commentor #4

- 4-A) PAR 1133 will be updated with retention of records for 3 years.
- 4-B) The estimate is for application within South Coast AQMD. The estimate is based on reporting under Rule 1133, but the current form used to report does not distinguish between use within South Coast AQMD or an outlining area. Staff is committed to updating the reporting forms used in the PAR 1133 Series.
- 4-C) While not common statewide, staff is aware of a newer greenwaste digestion operation within South Coast AQMD. This rulemaking is not meant to limit that facility’s digestion operation or this emerging technology.

Public Workshop Commentor #5 – Don Nguyen, Orange County Sanitation District

The commentor expressed the following:

- 53-A) Are publicly owned treatment works (POTWs) subject to the prohibition of PAR 1133, restricting direct land application of biosolids.

Staff response to Commentor #5

- 53-A) POTWs, unless they had co-located operations subject to the PAR 1133 Series, such as a PAR 1133.1 chipping and grinding operation, a PAR 1133.2 co-composting operation, or a PAR 1133.3 composting operation, would not be subject to the prohibition of supplying biosolids for direct land application.

Public Workshop Commentor #1 – Mr. Rothbart

The commentor additionally expressed the following:

- 1-C) For detection of ammonia outside of enclosures, PAR 1133.2 requires portable ammonia analyzers. Dräger tubes are just as effective and should be allowed, as well as other equally effective methods.
- 1-D) The commentor supported Commentor #3’s request to amend Regulation XIII to identify composting as an essential public service and requested a schedule for amendment.

Staff response to Commentor #1

- 1-C) PAR 1133.2 will be updated to allow use of colorimetric testing, such as Dräger tubes, or other equally effective methods.
- 1-D) Staff noted Regulation XIII has been identified for future amendment and is forecasted as “Tentative 2026 Calendar” in the most recent Rule and Control Measure Forecast Report at the time of preparation of this Staff Report.

Public Workshop Commentor #6 – Matthew Cotton, Integrated Waste Management Consulting, LLC

The commentor expressed the following:

- 6-A) The commentor supports Commentor 1’s request to identify composting as an essential public service and Commentor 3’s request to amend Regulation XIII.
- 6-B) The estimate of the direct last application ratio between uncomposted greenwaste versus pathogen-reduced material is not accurate, based on 2019 report prepared by the commentor for CalRecycle, based on statewide surveys of greenwaste facilities.

Staff response to Commentor #6

- 6-A) Please see response 3-A.
- 6-B) The Draft Staff Report will be updated to reflect the findings for the 2019 CalRecycle report prepared by the commentor.

Comment Letter #1 – City of Los Angeles, Solid Resources Processing & Construction Division

Areio Soltani

From: Thania Flores Soto <thania.floressoto@lacity.org>
Sent: Tuesday, July 22, 2025 12:00 PM
To: George Kasikarin
Cc: Areio Soltani; Miguel Zermenio; James Greenfield; Michael Kaufman; Andres Covarrubias; Arpa Bahariance; David Thompson; Megan Lee
Subject: [EXTERNAL] Re: SCAQMD 1133 Series Amendments

Thank you so much Mr. Kasikarin. For transparency and collaboration I will share some of our questions in this thread.

Hi Mr. Areio Soltani,

I have been attending the working group meetings on behalf of LA Sanitation and Environment (LASAN). LASAN has three facilities operated and maintained by Solid Resources Processing and Construction Division (SRPCD) which are stated below;

- Harbor Mulching Facility (Harbor) - Mulching Operation
- The Lopez Canyon Environmental Center (LCEC) - Windrow Composting Operation of Greenwaste, Woodwaste, and Manure
- Griffith Park Compost Facility (GPCF) - Windrow with ASP Composting Operation of Greenwaste, Biosolids, and Manure

I have some questions and comments about the draft proposed amendments and would appreciate your response and input.

Proposed Amended Rule 1133 Emissions Reductions From Direct Land Application

Comment
1-1)

1. PAR 1133-3 section (c) Definitions
 - a. (c)(14) MANURE definition only describes manure from livestock of domesticated animals. At GPCF we compost the LA Zoo manure, this is not a defined feedstock in the proposed language amendments for any of the 1133 rules.

Comment
1-2)

2. PAR 1133-4 section (d) Requirements
 - a. Requirements are applicable to Uncomposted Greenwaste, not Uncomposted Woodwaste which is what LASAN uses for "chip and ship". Uncomposted Woodwaste is not a defined term in regulations.
 - b. (d)(2) parks, CalTrans, airports or other government departments or jurisdictions are left out.

Proposed Amended Rule 1133.2 Emissions Reductions From Co-Composting Operations

Comment
1-3)

1. PAR 1133.2 - 1 section (c) Definitions
 - a. (c)(17) CO-COMPOST OPERATION describes any facility in operation post 2003 with any Biosolids or 20% or more Manure by volume. How did these guidelines develop to calculate 20%+ Manure ?

Comment
1-4)

2. PAR 1133.2 - 2 section (c) Definitions
 - a. (c)(13) EXISTING SMALL-CAPACITY CO-COMPOST OPERATION has limited feedstock to 35,000 tons per year containing no more than 20% biosolids by volume. In the existing Rule 1133.2 there are no limitations to the facilities grandfathered into the

rule. How did AQMD come to the conclusion that pre-existing facilities prior to 2003 needed to be limited to 35,000 tons and 20% or less of Biosolids by volume?

Comment
1-5)

3. PAR 1133.2 - 7 Section (e) Existing Small- Capacity Operation Alternative
- a. Do sections (e)(4) and (e)(5) dictate that material has been completely composted in 62 days if basing off operating days? Testing can be expensive if Solvita tests are done constantly, is LASAN able to prove its process within a shorter period of time and be allowed to follow strict approved operating guidelines not stated in the proposed rules? Meaning a proved process through an approved SOP by AQMD/LEA.

Comment
1-6)

4. PAR 1133.2 - 12 Section (e) Existing Small- Capacity Operation Alternative
- a. At the moment source testing is completed every 3 years for GPCF and not required for LCEC, proposed changes on rule does not have a schedule for EXISTING SMALL-CAPACITY CO-COMPOST OPERATION. How is the schedule determined under a permitted facility? Based on Rule 1133.3 section (d)(3)(B) testing is required every 3 years for ASP only. Do these rule modifications change anything for LASAN? Does a facility have to abide by 1133.2 and 1133.3? If so, it's contradicting in the applicability language.

Proposed Amended Rule 1133.3 Emissions Reductions From Composting Operations

Comment
1-7)

1. PAR 1133.3 - 2 section (c) Definitions
- a. Definition (c) (9) EXISTING GREENWASTE COMPOSTING OPERATIONS has been removed, meaning all compost facilities not subject to Rule 1133.2 must abide by the requirements. Modified to read as (c)(9) COMPOST OPERATION, this definition does not limit design capacity of throughput nor percent type by feedstock. How does one determine if a facility must abide by 1133.2 or 1133.3 if they are not composting biosolids or composting a small quantity of MANURE? Is it based solely on year of operation?

Comment
1-8)

2. PAR 1133.3 -4 section (d) Requirements
- a. Does section (d)(1)(c) dictate that material has been completely composted in 62 days if basing off days in rule? Testing can be expensive if Solvita tests are done constantly, is LASAN able to prove its process within a shorter period of time and be allowed to follow strict approved operating guidelines not stated in the proposed rules? Meaning a proved process through an approved SOP by AQMD/LEA.

Comment
1-9)

3. PAR 1133.3 -5 section (d)(2) Windrow Composting Best Management Practices
- a. For AER what are the baseline emission factors in Windrow Composting? Currently LASAN AER for LCEC are the following; 1.78 lbs VOC/ton and 2.93 lbs Ammonia/ton. Section (d)(2)(D) is for an alternate to the mitigation measures stated in section (d)(2)(A), (d)(2)(B), and (d)(2)(C), which cap emissions at 2.97 lbs VOC/ton and 0.57 lbs Ammonia/ton based on an approved protocol, these factors are not AER baselines.

Comment
1-10)

4. PAR 1133.3 -7 section (d)(3) Aeration System Vented to Emission Control System
- a. Causing confusion since LASAN's GPCF follows these guidelines which are not stated in Rule 1133.2, and Rule 1133.3 is only applicable if the operator is not subject to Rule 1133.2.

Thank you in advance.

The City may have additional comments or feedback to the Rules and Staff Report, is the deadline still July 23?

Best Regards,

Thania Flores
Environmental Engineering Associate II
LA Sanitation and Environment
Solid Resources Processing & Construction Division (SRPCD)

Staff Responses to Comment Letter #1

- 1-1) The definition of manure throughout the PAR 1133 Series has been updated to also reflect waste produced from zoological operations.
- 1-2) The primary purpose of PAR 1133 is to reduce ammonia emissions from direct land application. Decomposition of woodwaste, because of its low nitrogen content, is not believed to be a significant source of ammonia emissions. Thus, PAR 1133 does not establish requirements or prohibitions on woodwaste for direct land application.

Regarding applicability, PAR 1133 applies to operations subject to Rule 1133.1, Rule 1133.2, or Rule 1133.3. Parks, CalTrans facilities, airports, or other government departments or jurisdictions may be subject to PAR 1133 if they operate chipping and grinding operations, co-composting operations, or composting operations.

- 1-3) The threshold of more than 20% manure to be considered co-composting was established during the adoption of Rule 1133.2 in 2003. According to the 2003 Staff Report, a stakeholder requested the preliminary draft rule language to be changed to allow “small amounts of manure” to be composted without being considered co-composting operations.
- 1-4) The definition of an existing small-capacity co-composting operation is based on an exemption established during the adoption of Rule 1133.2 in 2003. According to the minutes of the January 2003 Governing Board meeting, the exemption was added via errata sheet and the basis of the exemption is not elaborated in the Staff Report or other documents. After evaluation, PAR 1133.2 now places limitations and controls on this category of co-composting operations, requiring use of best management practices including covering piles with finished compost or compost covers and piles sufficiently wet prior to turning.
- 1-5) Solvita testing to demonstrate Compost Maturity Index is not required; it is one compliance path including number of days or, for curing phase, measurement of oxygen uptake. Staff has added a third compliance path for active phase: completion of the pathogen reduction process as outlined in Title 14, Section 17868.3 of the California Code of Regulations.
- 1-6) Operations meeting the definition of a co-composting operation, composting any amount of biosolids or more than 20% manure, must comply with PAR 1133.2 requiring source testing every two years. Other composting operations must comply with PAR 1133.3 and, if source testing is required, must test every three years. In cases when permit conditions do not agree with rule requirements, the more stringent of the two shall prevail.
- 1-7) Applicability of PAR 1133.2 or PAR 1133.3 is determined by recordkeeping regarding quantities of biosolids or manure composting feedstock.
- 1-8) See Response 1-5.

- 1-9) For guidance regarding Annual Emissions Reporting (AER) for composting operations, refer to *Guidelines for Calculating Emissions from Greenwaste Composting and Co-Composting Operations*¹, revised February 2023.
- 1-10) Based on a review of records, the referenced co-composting operation meets the definition of a publicly-owned small-capacity co-composting operation and may select the Publicly-Owned Small-Capacity Co-Composting Operation Alternative in subdivision (f) of PAR 1133.2. PAR 1133.3 is not applicable for this co-composting operation.

¹ <https://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/greenwaste-and-composting.pdf>

Comment Letter #2 – Inland Empire Regional Composting Authority

12645 6th Street, Rancho Cucamonga, CA 91739
PO Box 2470 Chino Hills, CA 91709
Phone: (909) 993-1500 Fax: (909) 993-1510

Quality Products for Healthy Soil

July 23, 2025

South Coast Air Quality Management District
Planning, Rule Development & Implementation
21865 Copley Dr
Diamond Bar, CA 91765

Subject: Comments on Proposed Amended Rule 1133.2 – Emission Reductions from Co-Composting Operations

Dear Rule 1133 Series Rule Team,

On behalf of Inland Empire Regional Composting Authority (IERCA), I am submitting the enclosed comments regarding SCAQMD's Proposed Amended Rule 1133.2 – Emission Reductions from Co-Composting Operations. We appreciate the opportunity to provide input on this important regulatory proposal.

IERCA is committed to supporting air quality improvements and sustainable biosolids management. We respectfully request the District consider our feedback in the finalization of the rule. Should you have any questions or require clarification, we welcome the opportunity to engage further.

Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Arin Boughan", written over a horizontal line.

Arin Boughan
Manager of Composting Authority

Enclosure: FINAL PDRL PAR1133.2 with comments final.pdf

Jon Blickenstaff
Chairman

Paul Hofer
Vice Chairman

Shivaji Deshmukh
Director

Margaret Finlay
Director

Robert Ferrante
Director

Jasmin A. Hall
Director

Comment 2-1:

- Enclosure shall not exceed two (2) percent^{2%} of the surface area of the Enclosure's four (4) walls, floor, and ceiling.
- (C)(iii) The Enclosure may be opened for brief time periods, not to exceed a total of 30 minutes per day for purposes of access or maintenance. These time periods do not need to be included in the face velocity determination or as an opening for the two (2) percent criteria.
- (D)(iv) No measurable increase over background levels of ammonia or hydrocarbons outside the Enclosure shall occur at any Enclosure opening including any opening that occurs briefly for access or maintenance. A portable ammonia or hydrocarbon analyzer shall be used for these measurements. The portable ammonia analyzer shall be operated per manufacturer's instructions and calibrated with certified zero and ten (10) parts per million ammonia standards. The portable hydrocarbon analyzer shall be a flame ionization detector operated per manufacturer's instructions and calibrated with certified zero and ten (10) parts per million methane standards. The owner or operator shall monitor each Enclosure opening at least daily and record monitoring result.

PAR 1133.2 - 4



Pcambias

Jul 16

Propose generalizing the specification, as there are currently no legitimate manufacturers producing an analyzer that meets the specified requirements. Alternatively, consider allowing the following language:

"A portable ammonia or hydrocarbon analyzer shall be used for these measurements. The portable ammonia analyzer and the portable hydrocarbon analyzer shall be approved by the South Coast AQMD's Executive Officer, and shall be operated per manufacturer's instructions."

Comment 2-2:

Proposed Amended Rule 1133.2 (cont.)

(Adopted January 10, 2002)(Amended TBD)

- (2) Conduct the Active Phase until meeting at least one of the following criteria:
- (A) For a minimum of 22 consecutive calendar days, beginning when Organic Waste Material is mixed together for composting.
 - (B) The Active Phase Pile has a Compost Maturity Index of 4.5 or greater as measured by the Solvita Maturity Test in accordance with subparagraph (g)(4)(A).
- (3)(B) Conduct the Curing Phase using an aeration system vented to an emission control system that operates under negative pressure for no less than 90 percent of its blower(s) operating cycle and until meeting at least one of the following criteria:
- (A) For a minimum of 40 consecutive calendar days after the end of the Active Phase.
 - (B) The Curing Phase Pile has a Compost Maturity Index of 6.0 or greater as measured by the Solvita Maturity Test in accordance with subparagraph (g)(4)(A).
 - (C) The Curing Phase Pile respiration rate is below ten (10) milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry in accordance with subparagraph (g)(4)(B).
- (4)(C) Vent the exhaust from the Enclosure and the aeration system to an emissions control system designed and operated that either:
- (A) Meets with a Control Efficiency equal to or greater than 80 percent, by weight, for VOC emissions and equal to or greater than 80 percent by



Pcambias

Jul 16

Recommend referencing CalRecycle requirements, as they may change in the future. If the requirements are not aligned, compost facility owners and operators may face challenges in complying with both CalRecycle and SCAQMD regulations. It is also suggested to combine sections (d)(2) and (d)(3) into a single, consolidated section for clarity and consistency:

"All composting operations subject to this rule shall conduct both the active phase and the curing phase of composting in a manner that is consistent with the applicable requirements established by the California Department of Resources Recycling and Recovery (CalRecycle)."

Comment 2-3:

- (i) Reporting Plan Fees
- The owner or operator of a Co-composting Operation shall submit to the Executive Officer annually, no later than July 1st of each calendar year, a report summarizing the Co-

PAR 1133.2 - 13



Pcambias

Jul 16

Propose an outline of the requested information or include an example of the report form. This will avoid any confusion on what is expected in the report.

Staff Responses to Comment Letter #2

- 2-1) PAR 1133.2 has been updated to allow the use of colorimetric testing, such as Dräger tubes, or other equally effective methods approved by the Executive Officer to detect hydrocarbon or ammonia.
- 2-2) PAR 1133.2 has been updated to align with CalRecycle requirements by providing a third compliance path to identify the end of the active phase of composting: completion of the pathogen reduction process as outlined in Title 14, Section 17868.3 of the California Code of Regulations.

Staff has retained the requirements of the active phase and the curing phase as distinct paragraphs as these are distinct processes and have differing control requirements in PAR 1133.2: enclosure required for the active phase versus no enclosure required for the curing phase.

- 2-3) The existing Rule 1133 reporting form is available on the South Coast AQMD website² and owners and operators should continue to use this published form for reporting. Staff will update the existing reporting form prior to 2026, before the next reporting cycle.

² <https://www.aqmd.gov/home/rules-compliance/compliance/compliance-notice/forms-by-rule>

Comment Letter #3 – Orange County, Waste & Recycling

Thomas D. Koutroulis, Director
601 N. Ross Street, Fifth Floor
Santa Ana, CA 92701

www.oclandfills.com
Telephone: (714) 834-4000
Fax: (714) 834-4183

July 22, 2025

South Coast Air Quality Management District
Attn: Areio Soltani
21865 East Copley Drive
Diamond Bar, California 91765

Subject: Comments on Proposed Amendments to Rule 1133 and 1302

Dear Mr. Soltani and the Rule 1133 Series Team,

Thank you for the opportunity to comment on the above-mentioned proposed rule amendments. As you may be aware, Orange County Waste & Recycling (OCWR) operates one of the nation's leading integrated solid waste management systems, including three compost greeneries that serve 3.2 million residents and businesses across 34 cities and unincorporated areas. Currently, OCWR has 62 permit applications pending with the South Coast Air Quality Management District (AQMD), 21 of which directly relate to composting operations.

As you know, Senate Bill (SB) 1383 mandates a 75% diversion of organic waste from landfills by 2025. This requirement is not discretionary, it is an essential component of the state's solid waste infrastructure to reduce greenhouse gas emissions. Diverting organics from landfills reduces emissions of federally regulated criteria pollutants and ozone precursors associated with landfill gas, directly supporting AQMD's mission to improve air quality within the Basin.

Organic waste processing facilities, such as compost operations, serve a function comparable to municipal wastewater treatment plants: they manage biological waste streams with significant public health and environmental implications. Many of these facilities are publicly owned or operated, which aligns with the intent of AQMD Rule 1302's prioritization framework and advances regional air quality objectives.

We appreciate AQMD's work to modernize the Rule 1133 series and recognize the complexities involved in balancing emissions control with infrastructure needs. To ensure these amendments achieve both air quality and organics diversion goals, we respectfully offer the following recommendations:

1. Amend Rule 1302 to Designate Organic Waste Processing as an Essential Public Service

Rule 1302 already classifies landfill gas control or processing equipment as an Essential Public Service. AQMD staff has acknowledged that composting equipment is "an integral part of the

Comment
3-1)

Page | 1 of 3

landfill operation.” Expanding the Essential Public Service designation to include organic processing facilities would yield the following benefits:

- OCWR could install Covered Aerated Static Pile (CASP) systems without incurring millions of dollars in Emission Reduction Credit (ERC) costs. The CASP provides multiple environmental benefits over traditional windrow composting such as reducing emissions and significant water conservation. Currently, air permits are not required for traditional windrow composting, hence no ERCs are needed, and emissions are higher.
- Local jurisdictions would be better positioned to meet SB 1383 diversion mandates without impeding financial impacts. The development of advanced organic waste processing facilities is needed to build the infrastructure required to meet the goals of SB 1383. There is not sufficient capacity using traditional windrow composting to meet current state laws. The enhanced production technologies, such as CASP, must be incorporated to achieve the 75% diversion mandate. Local district can aid compliance by defining organic waste processing facilities as an Essential Public Service.

We respectfully request that Rule 1302 be amended in conjunction with the Rule 1100 series being brought forward to the September 2025 Governing Board Meeting. We further request the addition of the following rule language:

Rule 1302(m) ESSENTIAL PUBLIC SERVICE includes:

- (1) sewage treatment facilities, which are publicly owned or operated, and consistent with an approved regional growth plan;*
- (2) prisons;*
- (3) police facilities;*
- (4) fire-fighting facilities;*
- (5) schools;*
- (6) hospitals;*
- (7) construction and operation of landfills, landfill gas processing facilities, and/or organic waste processing facilities;*
- (8) water delivery operations; and,*
- (9) public transit.*

Comment
3-2)

2. Ensure Transparent and Defensible Emission Factors in Rule 1133.3

AQMD has indicated that emissions factors for Rule 1133.3 should be “conservative.” However, the current VOC factor appears to be based on limited data from a single facility referenced in a 2002 Technology Assessment.

To support sound permitting decisions and stakeholder confidence, the County requests the following:

- A full citation for the current VOC emission factor, including sample size, methodology, and measurement protocols.
- A description of any updates, validations, or peer reviews conducted since 2002.

- Publication of a range of emission factors (minimum, average, and maximum) to allow for site-specific emissions testing where appropriate.

A more transparent and data-driven approach to emissions factors will enhance confidence, reduce permit delays, and encourage investment in emissions-reducing technologies.

Thank you again for the opportunity to provide comments during this rule amendment process. OCWR is happy to collaborate with AQMD staff to refine these rule amendments. We appreciate your commitment to public health and environmental protection and look forward to working together to ensure that local organic waste processing infrastructure evolves in an environmentally beneficial manner.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tom Koutroulis", is written over a horizontal line.

Tom Koutroulis
Director
Orange County Waste & Recycling

Staff Responses to Comment Letter #3

- 3-1) Staff appreciates the feedback regarding amending Rule 1302. These comments are outside of the scope of this PAR 1133 Series rulemaking. When Regulation XIII is opened for amendment, this request would be considered at that time.
- 3-2) Staff agrees that emission factors and their bases should be transparent and data-driven. The existing baseline emission factors in the Rule 1133 Series are supported by the 2003 Staff Report for Rule 1133.2 and the 2011 Staff Report for Rule 1133.3, approved by the South Coast AQMD Governing Board after a public process that included a Public Workshop and Public Hearing. Two other key factors are worth noting: 1) CAPCOA, a group South Coast AQMD is a member, is currently studying baseline emission factors and has not completed their statewide review; and 2) South Coast AQMD has been placed under a sanction clock to implement MSM with respect to PM_{2.5}, including amending the Rule 1133 Series. Because of this ongoing work and limited time, staff has decided to leave the existing baseline emission factors in place, but will amend the Rule 1133 Series again after CAPCOA has completed their review and South Coast AQMD has implemented MSM to retire the sanction clock.

Comment Letter #4 – City of Bakersfield Public Works, Solid Waste Division

4104 Truxtun Ave, Bakersfield, CA 93309 / P 661.326.3136

7/23/2025

Areio Soltani
Planning, Rule Development and Implementation
South Coast Air Quality Management District (SCAQMD)
21865 Copley Drive
Diamond Bar, CA 91765

Re: Proposed Amended Rule 1133

Dear Areio:

The City of Bakersfield appreciates the opportunity to comment on SCAQMD's proposed amended rule (PAR) 1133 series. Although the City does not operate with SCAQMD jurisdiction, there is a long tradition of emission control rules being exchanged between California air districts. Ideas and requirements developed in this rulemaking are likely to be adopted by San Joaquin Valley Air Pollution Control District, at which point they would affect City operations. Therefore, the City considers itself a stakeholder to the PAR 1133 rulemaking despite the jurisdictional difference.

The City of Bakersfield Public Works Division operates the Mt. Vernon Organics, Recycling and Composting Facility which operates under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD) under facility ID S-2843. The facility is a consolidated organic waste recycling and composting operation serving the entire City of Bakersfield and much of the remainder of Kern County; in 2024 it processed 32,830 tons of woodchips for direct land application without further processing. The City wishes to express concerns relative to SCAQMD's June 20, 2025 rule drafts. The City has detailed its concerns and recommendations below. These concerns generally root from a lack of precision in the proposed definitions of "greenwaste" and "woodwaste" that risk entangling traditional woodwaste handling operations in proposed requirements that do not appear to be intended to include them.

Comment
4-1)

Concerns with Definitions

"Woodwaste"

With the current proposed rulemaking, PAR 1133(c) defines Woodwaste as:

"Lumber, and the woody material portion of mixed demolition wasted and mixed construction wastes. Large woody materials, such as tree trimmings, branches, tree trunks, stumps, and limbs exceeding two (2) inches in any dimension may be classified as Woodwaste instead of Greenwaste, if they are free of leaves, berries, pine needles, and other non-woody materials."

This definition is flawed because the "free of" clause would mean any incidental inclusion of greenery would classify the stream as Greenwaste. In the waste and recycling industries, reality is that there is no such thing as a pure waste stream. The current wording implies that a tree could be

stripped of most branches, leaves, or needles, then the trunk and major limbs ground in a chipper, and the whole stream could be defined as greenwaste due to the incidental inclusion of a few leaves, berries, or pine needles that would not be consequential to the overall mass. Great care needs to be put into this definition, as defining that mass of waste as greenwaste would trigger Pathogen Reduction requirements on a waste stream that is principally woodwaste and would not traditionally have been composted.

There are a variety of generalized and facility-specific reasons composting of woodwaste would be a negative to the entire state's ability to comply with SB 1383 organic waste recycling requirements in general, as well as the specific operations of the Bakersfield facility:

1. Incremental composting would result in large increases in VOC and NH3 emissions
2. Woodwaste itself is largely incompatible with composting, as composting requires a balance in nitrogenous (herbaceous, aka "green") and carbonaceous (woody, aka "brown") wastes. In the absence of an appropriate balance, pathogen reduction will not be achieved. At many waste handling operations, an appropriate balance of green waste may not be available to balance a large influx of incremental woodwaste composting.
3. Disrupt the operation of wood waste recycling operations by transforming them into composting operations, requiring large increases in utilization of space, labor, diesel-powered mobile equipment operating hours, and water
4. The above resource utilization changes impose large operating cost burdens on organics recyclers, including municipal operations
5. Requiring pathogen reduction of wood chip production operations changes their product from mulch to compost, which is a completely different end product.

An overly restrictive definition of woodwaste will be impracticable to implement in practice and negate the rulemaking's intent to achieve net emissions reduction. Incremental composting of greenwaste can achieve emission reductions; incremental composting of woodwaste will cause net emission increases. And imposing excessive sorting burdens on the industry will cause costs that discourage collection and use of organic waste, which will cause it to be abandoned in place in an unmanaged state that will also be a net emissions increase.

Further, use of a 2" diameter cutoff for the difference between woodwaste and greenwaste is unworkable. Once a tree trunk has been processed through a wood chipper, there will be no pieces larger than 2". But such a wood chipping process does not transform the tree trunk from woody material into herbaceous material primed for rapid decay. Therefore, the dimensions of the woody material cannot be determinative for woodwaste versus greenwaste; the rule needs to define that split in a manner that is intrinsic to the material itself.

In contrast SJVAPCD Rule 4566 defines Wood Material as

"untreated lumber and the woody-material portion of mixed-demolition wasted and mixed-construction wastes. Wood material also includes over, and the woody material portion of trees. Wood material or wood material chips to which other organic material has been added are not considered to be wood material."

And to clarify, it also defines Overs as

"the oversized woody materials that have been through pathogen reduction, do not decompose in a typical composting cycle, and are screened out of finished product at the end of composting."

According to the SJVAPCD definition, only wood material which has other green material added to it is not considered wood material. This, however, would not include leaves, pine needles, berries, etc. which could be included in wood material as an incidental inclusion. By this definition if a facility were to receive tree trimmings which included leaves it would still be considered wood material. This wording implies a greater allowance for incidental impurities in the material stream and has proven workable in practice.

Additionally, per SJVAPCD Rule 4566 Section 4.1.3 Wood Material is exempt from all requirements of the rule assuming the operator ensures the material is not mixed with other organic materials and maintains records required by Section 6.3.1. It is unclear what benefit is incurred by having PAR 1133.1 be applicable to a woodwaste chipping operation that does not process greenwaste.

Recommendation: The proposed woodwaste definition needs to be modified to allow for incidental greenwaste content based on real-world levels of material separation, and do so in a manner that cannot be negated or changed merely by chipping woodwaste into smaller particles. Further, PAR 1133.1 should include a full exemption for operations that process only woodwaste; this will eliminate the unnecessary burden of keeping records of greenwaste throughputs that are constantly zero.

Comment
4-2)

"Active Phase"

SCAQMD PAR 1133 defines Active Phase as:

"...the portion of the composting process characterized by rapid decomposition and biological instability, generating temperatures of at least 122 degrees Fahrenheit. The Active Phase includes the Pathogen Reduction process".

Recommendation: SCAQMD change the required minimum temperature of 122 degrees Fahrenheit to 131 degrees Fahrenheit to maintain consistency with state regulations in 14 CCR, Division 7 Section 17868.3 – Pathogen Reduction.

Comment
4-3)

Potential Implications of Over-Broad Definition of Woodwaste

Were the 6/20/2025 definition to carry over and later be interpreted strictly, the infeasibility of sorting wood waste streams to perfectly exclude incidental greenwaste would risk causing all woodwaste to be composted. The incremental composting volume would have major implications for solid waste systems throughout SCAQMD jurisdiction. The following sections use City of Bakersfield data as illustrative of the concern.

Emissions Increases

As previously mentioned, the current proposed definition of Woodwaste is concerning in that it has the potential to require composting of many traditional wood waste streams that are otherwise not composted. The incremental composting volumes potentially triggered by this rulemaking have the potential to completely negate the emissions reductions envisioned through additional regulation of greenwaste handling. Based on the 6/20/2025 proposed definition, using the City's facility as an example, there would be an increase in annual facility emissions for the reasons listed below:

- Windrow Emissions
 - Increases in PM emissions from additional material handling

- Increase in VOC and NH₃ emissions from incremental composting of wood wastes that contain incidental greenwaste. **The emissions increases that would result from a requirement for the City to compost all wood waste it normally processes and distributes as wood chips are estimated at 70 tons per year of VOC and 24 tons per year of NH₃.**
- Equipment Emissions
 - CAT 950 Loader
 - Increase in VOC, NO_x, PM, and CO emissions from additional equipment run hours to compost wood waste
 - SCARAB Windrow Turner
 - Increase in VOC, NO_x, PM, and CO emissions from additional equipment run hours to compost wood waste
 - Water Truck
 - Increase in VOC, NO_x, PM, and CO emissions from additional equipment run hours to compost wood waste

An estimate of emissions increased due to incremental composting of Woodwaste requirements is shown in **Appendix A**.

Recommendation: Modify PAR 1133 definition of Woodwaste to ensure the intended greenwaste emission reductions are not negated by emission increases from incremental composting of wood chips that were not historically composted.

Comment
4-4)

Increased Operating Costs and Non-Air Impacts

The City has multiple concerns in terms of increased operating costs at its own facility associated the potential need to compost woodwastes due to imperfect separation of green and wood components. New costs and other impacts associated with a potential need to compost the City's entire wood waste stream are summarized below, with a more detailed analysis provided in **Appendix B**.

- Facility Expansion
 - Incremental woodwaste composting would require procurement of additional land for composting space requirements
 - This would require approximately:
 - 49 additional acres
 - Estimated cost of \$10,000 per acre
 - Total expansion cost of ~ \$486,000
- Employee Wages
 - Facility expansion would require hiring additional employees to perform composting on wood waste stream
 - The total annual salary (including City-paid benefits) of each employee has an estimated value of:
 - Service Maintenance Worker
 - \$87,092
 - Solid Waste Equipment Operator
 - \$102,561
 - Facility Worker
 - \$80,374
- Incremental Equipment Operating Costs

- CAT 950 Loader (8 hours/day, including fuel)
 - \$295 per day
- SCARAB Windrow Turner (5 hours/day, including fuel)
 - \$437 per day
- F-250 Pickup (8 hours/day, including fuel)
 - \$54 per day
- Kenworth Water Truck (8 hours/day, including fuel)
 - \$114 per day
 - Requires a minimum of 10,000 gallons of water/turn
 - 5 turns minimum to achieve pathogen reduction
 - 600 tons per windrow
 - Water cost \$18.72 per 10,000 gallons
- Total Costs
 - \$928,831/year for all incremental windrows composting wood waste
- Incremental Water Consumption
 - $\frac{10,000 \text{ gal}}{\text{turn-windrow}} \times \frac{5 \text{ turns}}{15 \text{ days}} \times \frac{365 \text{ days}}{1 \text{ year}} \times 55 \text{ New Windrows} = 66,916,667 \frac{\text{gal}}{\text{year}}$
- Feasibility Concern
 - If impure woodwaste streams are defined as greenwaste, and greenwaste is subject to a requirement to start composting within 3 days of receipt, there a feasibility conflict develops between Best Available Control Technology requirements and the requirement to start composting within 3 days. If a municipal program is to live within a 3 day window, they need to start at least two new windrows per week, every week of the year, so that an active composting is always starting within a few days. However, BACT requires aerated static pile composting, which is not suited to starting small piles frequently due to the fixed length of ASP and the capital needed to build out individual ASP rows.

Recommendation: The proposed woodwaste definition needs to be modified to allow for incidental greenwaste content based on real-world levels of material separation, and do so in a manner that cannot be negated or changed merely by chipping woodwaste into smaller particles. Without this allowance Pathogen Reduction requirements make it financially infeasible for a facility with operations that process Woodwaste only as demonstrated above.

CEQA Implications

The typical CEQA exemption for District rulemaking is dependent on rulemakings only causing emission reductions, without emission increases. Causing incremental composting of wood wastes is a significant environmental harm that in our eyes would require CEQA review.

Furthermore, this proposed rulemaking has direct socioeconomic effects which could indirectly lead to avoidable environmental degradation. Due to the implications of the rule surrounding Woodwaste it would not be cost effective for a facility to expand its operation to fulfill Pathogen Reduction requirements, especially a facility which was not previously further processing Woodwaste post chipping and grinding. This may result in the facility reducing the amount of total waste which it can accept leading to disruption in waste streams and composted material distribution.


Comment
4-5)

Conclusion

The City of Bakersfield urges PAR 1133 authors to carefully consider the practical implications of any alteration of the prevailing division between industry interpretation of green waste and wood waste. The recommendations to the concerns identified would require minimal reconsideration but will prove to have a great impact on all facilities which are subject to the Rule.

The City appreciates consideration of all its comments and recommendations and is happy to discuss further with SCAQMD for any necessary clarification.

Sincerely,

A handwritten signature in black ink that reads "James Leonard". The script is cursive and fluid.

James Leonard
Director of Operations
City of Bakersfield Public Works – Solid Waste Division

Cc: Brian Friday – City of Bakersfield Public Works, Solid Waste Division
Wes Younger, Aaron Jones – Trinity Consultants

Appendix A. Emissions Increases

Appendix A

1. Annual Emissions Increase by Unit

Unit	VOC	NOx	PM	CO	NH3
CAT C7.1 Tier 4 Final (2017) - Diesel	0.16	0.33	0.02	2.90	-
John Deere 18.0L 700hp	0.73	1.54	0.08	13.49	-
Cummins ISX12N	0.42	0.88	0.04	7.71	-
22. Windrow Emissions	70.09	-	0.01	-	23.64
Total	71.40	2.75	0.14	24.10	23.64

Appendix A

2. CAT 950 Loader

CAT C7.1 Tier 4 Final (2017) - Diesel	
225	kW
2.5	hrs (per windrow)

3. Non-Road Compression Ignition 130<kW<225

NMHC (g/kW-hr)	NMHC+NOx (g/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)	CO (g/kW-hr)
0.19	-	0.4	0.02	3.5

4. Emissions per Windrow (lbs)

NMHC	NMHC+NOx	NOx	PM	CO
0.24	-	0.50	0.02	4.34

5. Total Emissions (tons per 15 day period)

NMHC	NMHC+NOx	NOx	PM	CO
0.01	-	0.01	0.00	0.12

6. Total Emissions (tons per year)

NMHC	NMHC+NOx	NOx	PM	CO
0.16	-	0.33	0.02	2.90

Appendix A

7. SCARAB Windrow Turner

John Deere 18.0L 700hp
522.39 kW
5 hrs (per windrow)

8. Non-Road Compression Ignition 450<kW<560

NMHC (g/kW-hr)	NMHC+NOx (g/kW- hr)	NOx (g/kW-hr)	PM (g/kW- hr)	CO (g/kW hr)
0.19	-	0.4	0.02	3.5

9. Emissions per Windrow (lbs)

NMHC	NMHC+NOx	NOx	PM	CO
1.09	-	2.30	0.12	20.15

10. Total Emissions (tons per 15 day period)

NMHC	NMHC+NOx	NOx	PM	CO
0.03	-	0.06	0.00	0.55

11. Total Emissions (tons per year)

NMHC	NMHC+NOx	NOx	PM	CO
0.73	-	1.54	0.08	13.49

Appendix A

12. Peterbilt Water Truck

Cummins ISX12N
298.5075 kW
5 hrs (per windrow)

13. Non-Road Compression Ignition 225<kW<450

NMHC (g/kW-hr)	NMHC+NOx (g/kW- hr)	NOx (g/kW-hr)	PM (g/kW- hr)	CO (g/kW- hr)
0.19	-	0.4	0.02	3.5

14. Emissions per Windrow (lbs)

NMHC	NMHC+NOx	NOx	PM	CO
0.63	-	1.32	0.07	11.52

15. Total Emissions (tons per 15 day period)

NMHC	NMHC+NOx	NOx	PM	CO
0.02	-	0.04	0.00	0.32

16. Total Emissions (tons per year)

NMHC	NMHC+NOx	NOx	PM	CO
0.42	-	0.88	0.04	7.71

Appendix A

17. Windrow Dimensions

Windrow Dimensions					
L	900.00	ft	300.00	yd	
W	24.00	ft	8.00	yd	
H	10.00	ft	3.33	yd	
Volume (per windrow)	72,000.00	ft ³	2,666.67	yd ³	
Volume (total)	3,960,000.00	ft ³	146,666.67	yd ³	

18. Tonnage per Windrow

0.225	ton/yd ³
600	tons per windrow

19. 2024 Outbound Woodchip Totals

1. Land application without further processing (tonnage subject to pathogen reduction per year)	32,830.00	Tons
2. Woodchips processed further (non-land application)	18,614.00	Tons
3. Total Tons (based on truck scale weights; excludes small cubic yard sales)	52,493.00	Tons
4. Sum of 1 and 2	51,444.00	Tons
5. Small Cubic Yard Sales (Difference of 3 and 4)	1,049.00	Tons

20. New Acreage Required

New Windrows Required	55	Windrows
Windrows Spacing (All Sides)	9	ft
Required Length	918	ft
Required Width	42	ft
Area Required (Each Windrow)	38,556.00	ft ²
Area Required (Total Windrows)	2,120,580.00	ft ²
	48.68	Acres

21. Windrow Emission Factors

PM10 (lb/ton)	VOC (lb/ton)	NH3 (lb/ton)
0.00033	4.27	1.44

22. Windrow Emissions

PM10 (tons/yr)	VOC (tons/yr)	NH3 (tons/yr)
0.01	70.09	23.64

Notes:

Assumes 32,830 tons from material subject to Pathogen Reduction

Appendix B. Cost Increases

Appendix B

1. Service Maintenance Worker

Salary	\$49,148.74
Blue Shield HMO Access + 2 party	\$13,629.62
Group Life \$30K	\$54.22
PPO Vision 2 Party	\$54.08
UC PPO 2 Party	\$782.34
Workers Comp	6,983.00
Medicare	\$712.66
Per/Misc Emp	\$15,727.60
Total	\$87,092.26

3. Facility Worker

Salary	\$44,114.72
Blue Shield HMO Access + 2 party	\$13,629.62
Group Life \$30K	\$54.22
PPO Vision 2 Party	\$54.08
UC PPO 2 Party	\$782.34
Workers Comp	6,983.00
Medicare	\$639.66
Per/Misc Emp	\$14,116.71
Total	\$80,374.35

2. Solid Waste Equipment Operator

Salary	\$60,740.16
Blue Shield HMO Access + 2 party	\$13,629.62
Group Life \$30K	\$54.22
PPO Vision 2 Party	\$54.08
UC PPO 2 Party	\$782.34
Workers Comp	6,983.00
Medicare	\$880.73
Per/Misc Emp	\$19,436.85
Total	\$102,561.00

Appendix B

4. New Acreage Required

New Windrows Required	55.00	Windrows
Windrows Spacing (All Sides)	9.00	ft
Required Length	918.00	ft
Required Width	42.00	ft
Area Required (Each Windrow)	38,556.00	ft ²
Area Required (Total Windrows)	2,120,580.00	ft ²
	48.68	Acres
Cost per acre ~ \$10,000		
Total Cost ~ \$486,816.23		

Appendix B

5. Equipment Operating Cost Summary

Equipment	Cost/Day (\$)	Required Units/15 Day Period	Actual Cost/Day of Operation (\$)
CAT 950 Loader ^{1,3}	295.00	2.50	92.19
SCARAB Windrow Turner ^{2,3}	437.00	5.00	437.00
F250 Pickup ^{1,3}	54.00	-	-
Kenworth Water Truck ^{1,3}	114.00	5.00	71.25
> 10,000 Gallons of Water (Per windrow per turn) ^{3,4,5,6}	18.72	5.00	93.58
Cost Per Windrow - 15 Day Period	-	-	694.02
Cost Per Windrow - Year	-	-	16,887.83
Total Cost Per Year	-	-	928,830.62

1. Based on 8 hours/day average

2. Based on 5 hours/day average

3. Minimum required hours/15 day period

4. Minimum required application of 10,000 gallons of water/15 day period

5. \$1.40 per 100 cubic ft/month

6. 1 Cubic ft = 7.48 gallons

Staff Responses to Comment Letter #4

- 4-1) Staff has updated the definitions of greenwaste and woodwaste by removing the “free of” clause to ensure incidental inclusion of greenery does not classify woodwaste as greenwaste.

Regarding the 2” diameter cutoff, staff has also updated these definitions to use a 4” diameter cutoff. According to CalRecycle publication #500-94-017, updated April 2011³: “However, the size of the processing equipment does limit how large a piece of wood a processor can accept. A small chipper can usually handle pieces up to four inches in diameter and of various lengths. Large tub grinders may handle up to eight inches in diameter and six feet long.” This assertion is consistent with staff site visits to greenwaste processing facilities with some pre-chipped and ground material arriving while larger branches, stumps, and tree trunks arriving intact or cut into segments.

A 4” diameter cutoff also aligns with statewide waste characterization material types⁴: type “Prunings and Trimmings” is described as:

Prunings and Trimmings means woody plant material up to 4 inches in diameter from any public or private landscape. Examples include prunings, shrubs, and small branches with branch diameters that do not exceed 4 inches. This type does not include stumps, tree trunks, branches exceeding 4 inches in diameter, or material from agricultural sources.

Type “Branches and Stumps” is described as:

Branches and Stumps means woody plant material, branches, and stumps that exceed 4 inches in diameter, from any public or private landscape.

Thus, a chipping and grinding operation, if it chose, could select arriving branches, stumps, and tree trunks, and characterize those as woodwaste from its arriving pre-chipped and ground material or other prunings and trimmings, defined as greenwaste. As the average human hand has a width of 4”, characterization could be performed simultaneously with sorting. Alternatively, chipping and grinding operations also may process incoming large branches, stumps, and tree trunks with prunings, trimmings, and greens and characterize all as greenwaste.

Regarding woodwaste chipping and grinding operations, these types of operations are exempt from requirements of PAR 1133.1 except for recordkeeping, in order to demonstrate that they are indeed a woodwaste chipping and grinding operation.

- 4-2) See Response 2-2 regarding pathogen reduction process pathway.

³ <https://www2.calrecycle.ca.gov/Publications/Details/268>

⁴ <https://www2.calrecycle.ca.gov/WasteCharacterization/MaterialType>

- 4-3) See Response 4-1 regarding incidental greenery in woodwaste.

Regarding potential impacts on the City of Bakersfield Mt. Vernon Organics, Recycling and Composting Facility if the San Joaquin Valley Air Pollution Control District were to adopt rules similar to the PAR 1133 Series, the comment letter states: “As previously mentioned, the current proposed definition of Woodwaste is concerning in that it has the potential to require composting of many traditional wood waste streams that are otherwise not composted.” This is inaccurate. The PAR 1133 Series does not require any greenwaste (or woodwaste characterized as greenwaste) to be composted. PAR 1133 requires uncomposted greenwaste, if supplied to agricultural operations for direct land application, be supplied to recipients who intend to either: 1) incorporate into land via tilling, injecting, or plowing to a depth of six inches; or 2) cover with at least six inches finished compost or compost overs. These requirements are consistent with the California Code of Regulations, Title 14, Division 7, Chapter 3.1, Section 17862.4 Land Application Requirements that require land incorporation of compostable material and/or digestate within 30 days or be considered a disposal site.

- 4-4) See Response 4-3.

- 4-5) The comment requests that South Coast AQMD conduct a CEQA analysis to account for “incremental composting of wood wastes” that may occur as a result of implementing the PAR 1133 Series. The comment also claims that the PAR 1133 Series will have “direct socioeconomic effects which could indirectly lead to avoidable environmental degradation.”

However, as explained in Response 4-3, the PAR 1133 Series does not require any greenwaste (or woodwaste characterized as greenwaste) to be composted which means that no incremental composting will occur. Response 4-3 also lists the requirements for uncomposted greenwaste in the event it is supplied to agricultural operations for direct land application. A CEQA review was conducted for the PAR 1133 Series, which is designed to achieve VOC and ammonia emission reductions, and the analysis concluded that the affected facilities will be able to utilize best management practices when composting, chipping, and grinding, without having to make physical modifications that would cause adverse environmental impacts. Thus, the PAR 1133 Series qualifies for an exemption from CEQA.

Relative to the claim that the proposed project will have direct socioeconomic effects that could indirectly lead to environmental degradation, a Socioeconomic Impact Assessment has been conducted which is included in Appendix A of this Staff Report. None of the socioeconomic impacts identified, however, will lead to environmental degradation because the PAR 1133 Series does not require any organic waste material to complete the pathogen reduction process. PAR 1133 describes intermediate material, greenwaste that has completed the pathogen reduction process, as one of several pathways for greenwaste, as well as composting, co-composting, digestion, biomass power generation, direct land application with restrictions consistent with CalRecycle statewide regulations, or transport outside South Coast AQMD.

Further, as set forth in CEQA Guidelines Section 15131, economic or social information may be included in a CEQA analysis or may be presented in whatever form the agency desires. South Coast AQMD practice is to address the economic effects of proposed projects in the Socioeconomic Impact Assessment, and not in the CEQA analysis, because economic effects typically do not cause environmental impacts. Further, pursuant to CEQA Guidelines Section 15131(a), the economic or social effects of a project shall not be treated as significant effects on the environment. A CEQA document may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes. [CEQA Guidelines Section 15131(a)] Public Resources Code Sections 21100 and 21151 also state that significant effects are limited to physical conditions. No direct or indirect economic or social effects that could cause physical impacts to the environment were identified as a result of implementing the PAR 1133 Series.

ATTACHMENT K



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SUBJECT: NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

PROJECT TITLE: PROPOSED AMENDED RULE 1133 – EMISSION REDUCTIONS FROM DIRECT LAND APPLICATION; PROPOSED AMENDED RULE 1133.1 – CHIPPING AND GRINDING OPERATIONS; PROPOSED AMENDED RULE 1133.2 – EMISSION REDUCTIONS FROM CO-COMPOSTING OPERATIONS; AND PROPOSED AMENDED RULE 1133.3 – EMISSION REDUCTIONS FROM COMPOSTING OPERATIONS

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the South Coast Air Quality Management District (South Coast AQMD), as Lead Agency, has prepared a Notice of Exemption pursuant to CEQA Guidelines Section 15062 – Notice of Exemption for the project identified above.

If the proposed project is approved, the Notice of Exemption will be filed for posting with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino Counties. The Notice of Exemption will also be electronically filed with the State Clearinghouse of the Governor's Office of Land Use and Climate Innovation for posting on their CEQAnet Web Portal which may be accessed via the following weblink: <https://ceqanet.opr.ca.gov/search/recent>. In addition, the Notice of Exemption will be electronically posted on the South Coast AQMD's webpage which can be accessed via the following weblink: <http://www.aqmd.gov/nav/about/public-notices/ceqa-notices/notices-of-exemption/noe---year-2025>.

**NOTICE OF EXEMPTION FROM THE
CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)**

To: County Clerks for the Counties of Los Angeles, Orange, Riverside and San Bernardino; and Governor's Office of Land Use and Climate Innovation – State Clearinghouse

From: South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Project Title: Proposed Amended Rule 1133 – Emission Reductions from Direct Land Application (PAR 1133); Proposed Amended Rule 1133.1 – Chipping and Grinding Operations (PAR 1133.1); Proposed Amended Rule 1133.2 – Emission Reductions from Co-Composting Operations (PAR 1133.2); and Proposed Amended Rule 1133.3 – Emission Reductions from Composting Operations (PAR 1133.3)

Project Location: The proposed project is located within the South Coast Air Quality Management District's (South Coast AQMD) jurisdiction, which includes the four-county South Coast Air Basin (all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties), and the Riverside County portion of the Salton Sea Air Basin and the non-Palo Verde, Riverside County portion of the Mojave Desert Air Basin.

Description of Nature, Purpose, and Beneficiaries of Project: PAR 1133, PAR 1133.1, PAR 1133.2, and PAR 1133.3 are designed to implement Best Control Measure-10 (BCM-10) from the South Coast Air Basin Attainment Plan for the 2012 Annual PM_{2.5} Standard to further reduce emissions of volatile organic compounds (VOC) and ammonia from chipping and grinding operations, co-composting operations, and composting operations by regulating the supply of uncomposted greenwaste for direct land application. PAR 1133 establishes restrictions and prohibitions on suppliers of uncomposted greenwaste for direct land application unless uncomposted greenwaste is applied in a manner to minimize VOC and ammonia emissions. PAR 1133.1, PAR 1133.2, and PAR 1133.3 contain the information gathering elements formerly located within Rule 1133 to enable PAR 1133 to implement BCM-10. Additionally, PAR 1133.2 will introduce composting best management practices for previously uncontrolled existing co-composting operations. Implementation of the proposed project will benefit public health and ambient air quality by reducing VOC emissions by 2.34 tons per day and reducing ammonia emissions by 0.19 ton per day from approximately 98 facilities.

Public Agency Approving Project:
South Coast Air Quality Management District

Agency Carrying Out Project:
South Coast Air Quality Management District

Exempt Status:

CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption

CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment

Reasons why project is exempt: South Coast AQMD, as Lead Agency, has reviewed the proposed project pursuant to: 1) CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA. The proposed project, PAR 1133, PAR 1133.1, PAR 1133.2, and PAR 1133.3, will achieve emission reductions of VOC and ammonia through requiring facilities to follow the best management practices when conducting composting, chipping, and grinding activities, which can be accomplished without physical modifications; thus, it can be seen with certainty that implementing the proposed project would not cause a significant adverse effect on the environment. Therefore, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption. The proposed project is also categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment, because PAR 1133, PAR 1133.1, PAR 1133.2, and PAR 1133.3 are intended to further protect or enhance the environment by improving public health and air quality through anticipated emission reductions of VOC and ammonia. Further, there is no substantial evidence indicating that any of the exceptions to the categorical exemption set forth in CEQA Guidelines Section 15300.2 – Exceptions, apply to the proposed project.

NOTICE OF EXEMPTION FROM CEQA (concluded)

Date When Proposed Project Will Be Considered for Approval (subject to change):

South Coast AQMD Governing Board Public Hearing: September 5, 2025

CEQA Contact Person:

Zoya Banan, Ph.D.

Phone Number:

(909) 396-2332

Email:

ZBanan@aqmd.gov

**PAR 1133, PAR 1133.1,
PAR 1133.2, and PAR 1133.3**

Phone Number:

(909) 396-3318

Email:

ASoltani2@aqmd.gov

Contact Person:

Areio Soltani

Date Received for Filing: _____ **Signature:** (Signed and Dated Upon Board Approval)
Kevin Ni
Program Supervisor, CEQA
Planning, Rule Development, and
Implementation

Proposed Amended Rule 223 – Requirements for Confined Animal Facilities

Proposed Amended Rule 445 – Wood-Burning Devices

Proposed Amended Rule 1133 Series

PAR 1133 – Emission Reductions from Direct Land Application

PAR 1133.1 – Chipping and Grinding Operations

PAR 1133.2 – Emission Reductions from Co-Composting Operations

PAR 1133.3 – Emission Reductions from Composting Operations

Proposed Amended Rule 1138 – Control of Emissions from Restaurant Operations

**GOVERNING BOARD MEETING
SEPTEMBER 5, 2025**



Background

The South Coast Air Basin is classified as “serious” nonattainment for the 2012 annual PM_{2.5} National Ambient Air Quality Standard (12 µg/m³)

2017

Attainment plan
submitted to
U.S. EPA

2020

U.S. EPA
requested
supplemental
attainment
demonstration
based on new
near-road data

2023

Submitted plan
withdrawn to
avoid potential
disapproval

Early 2024

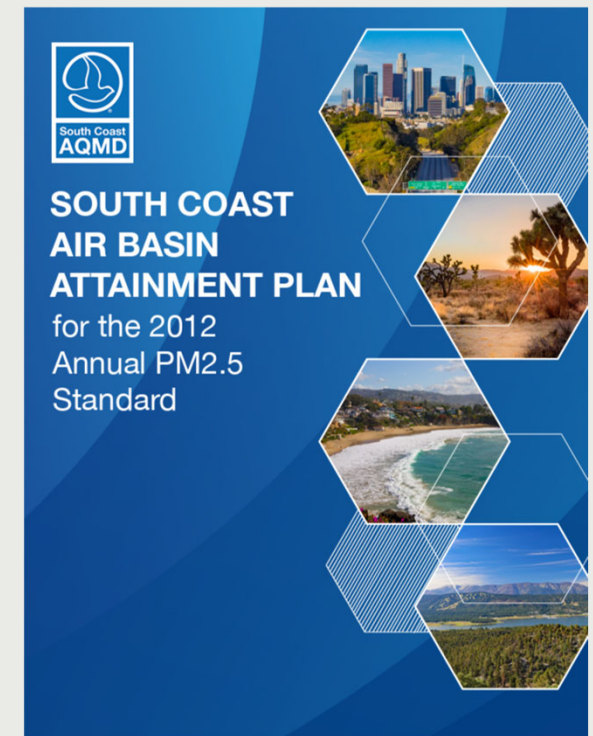
A finding of
failure to submit
an attainment
plan started a
sanction clock

June 2024

Governing Board
approved the
PM_{2.5} Attainment
Plan that includes
an attainment
date extension
request

PM2.5 Attainment Plan Control Measures

- As a “serious” nonattainment area, South Coast Air Basin’s attainment date is 2025
- 2024 PM2.5 Plan included an attainment date extension request (5-year extension from 2025 to 2030)
- Clean Air Act requires an area seeking an attainment date extension to demonstrate that its rules are at least as stringent as those in any other air districts or states (i.e., Most Stringent Measures)



Amending Rules to Incorporate MSM

- 2024 PM2.5 Plan relies on emissions reductions from previous AQMPs and committed to amending four rule amendments as MSMs



Rule 223 – Requirements for Confined Animal Facilities



Rule 445 – Wood-Burning Devices



Rule 1133 Series – Composting and Related Operations



Rule 1138 – Control of Emissions From Restaurant Operations

Clean Air Act Requirements

- Based on the previous U.S. EPA finding, the South Coast Air Basin had a sanction clock that was supposed to expire August 29, 2025
 - Sanctions may result in more stringent emission offset requirements for permitting new or modified equipment that have emission increases and the loss of federal highway funding
 - Current emission offset ratio of 1.2 to 1 may increase to 2 to 1 (i.e. two pounds of emission offsets would be required for every one pound of emission increase)
- Sanction clock is tied to adoption of the four rules to address Most Stringent Measures (MSM)
 - Must be adopted by September 2025



Proposed Amended Rule 223: Requirements for Confined Animal Facilities

Rule 223 Background

- Rule 223 requires Large Confined Animal Facilities (LCAF) to obtain a permit and implement mitigation measures
 - Facilities choose from a menu of mitigation measures
- Most Stringent Measures requires that South Coast AQMD rules to be at least as stringent as those adopted by other air districts or states
 - 2024 PM2.5 Plan identified other air districts (San Joaquin Valley and Imperial County) with more stringent applicability thresholds



Proposed Rule 223 Amendments

- PAR 223 will lower applicability thresholds of a large confined animal facility for dairy, chicken, and duck farms
- By January 1, 2027, a large confined animal facility shall either:
 - Submit permit application and emission mitigation plan; **or**
 - Submit notice of intent to cease operations or be below the threshold by 2029
- By January 1, 2029, a large confined animal facility shall have a permit to operate and implement mitigation measures

Livestock category	Existing Threshold	Proposed Threshold
Dairy	1,000	500
Chicken	650,000	400,000*
Duck	650,000	400,000*

* No impacted poultry farms identified by lowering applicability thresholds

Emission Reductions and Cost-Effectiveness

- PAR 223 will impact up to 12 dairy farms
 - Seven dairy farms in San Bernardino County and five dairy farms in Riverside County
 - No chicken or duck facilities impacted
- Emission reductions of 0.17 ton per day of ammonia by 2029
- Minimal costs as many facilities are currently implementing mitigation measures
 - Costs per facility include an initial permit fee and plan submittal fee (\$3,500) and annual renewal (\$550)
 - For small businesses, 50% reduction in initial fees apply
- Cost effectiveness of \$170 per ton of ammonia reduced

Socioeconomic Impact Assessment and CEQA

Socioeconomic Impact Assessment

- For the 12 affected dairy farms in total, estimated annual PAR 223 compliance cost from 2026 to 2035 ranges from \$11,450 to \$12,166*

California Environmental Quality Act (CEQA)

- No significant adverse environmental impacts are expected
- A Notice of Exemption has been prepared

**Using a real interest rate of 1% and 4%, respectively*

Proposed Amended Rule 445: Wood-Burning Devices

Rule 445 Background

- Rule 445 reduces PM2.5 emissions by establishing requirements for residential wood burning
- Existing key requirements include:
 - Prohibition of wood burning on No-Burn days during wood-burning season (beginning of November to end of February) and when daily PM2.5 air quality is forecasted to reach high levels
 - Prohibition of wood-burning device installation in developments built after March 9, 2009



Proposed Amendments

Lowering the curtailment threshold

- Other air districts have lower curtailment thresholds
- Propose to lower PM2.5 curtailment threshold from 29 to 25 $\mu\text{g}/\text{m}^3$ (micrograms per cubic meter)
 - Would increase No-Burn days ~10 days per year

Removal of low-income exemption

- Other air districts do not exempt low-income households from curtailment requirements
- Propose to remove low-income exemption
 - Would not affect qualification for other exemptions

Current Curtailment Exemptions

Ceremonial fires
exempt under Rule 444

Geographical location
 $\geq 3,000$ feet above
mean sea level

No natural gas service
within 150 feet

Sole Source of Heat



Low-Income
Household

Proposed Amendments (con't)

Limited allowance of device replacement

- Existing rule prohibits installations of wood-burning devices in new developments
- Propose to provide limited allowance for devices destroyed or damaged from natural disasters
 - Replacement allowed only for existing wood-burning devices
 - Natural disasters defined in Rule 118
 - Still subject to curtailment events



Emission Reductions and Cost-Effectiveness

- Lowering the curtailment threshold from 29 to 25 $\mu\text{g}/\text{m}^3$ will result in an estimated 0.25 ton per day of PM_{2.5} emission reductions
- No emission reductions are quantified for removal of low-income exemption due to uncertainty
- There are minimal to no cost impacts anticipated because:
 - Wood burning is mostly for ambiance and aesthetic purposes for non-exempted households
 - No change-out requirements for wood-burning devices

Socioeconomic Impact Assessment and CEQA

Socioeconomic Impact Assessment

- Minimal socioeconomic impacts expected because:
 - No restriction on sale of firewood during curtailment events
 - More cost-effective alternatives to burning wood for heating are available regardless of whether a No-Burn day has been issued

California Environmental Quality Act (CEQA)

- No significant adverse environmental impacts are expected
- A Notice of Exemption has been prepared

Proposed Amended Rule 1133 Series

PAR 1133: Emission Reductions from Direct Land Application

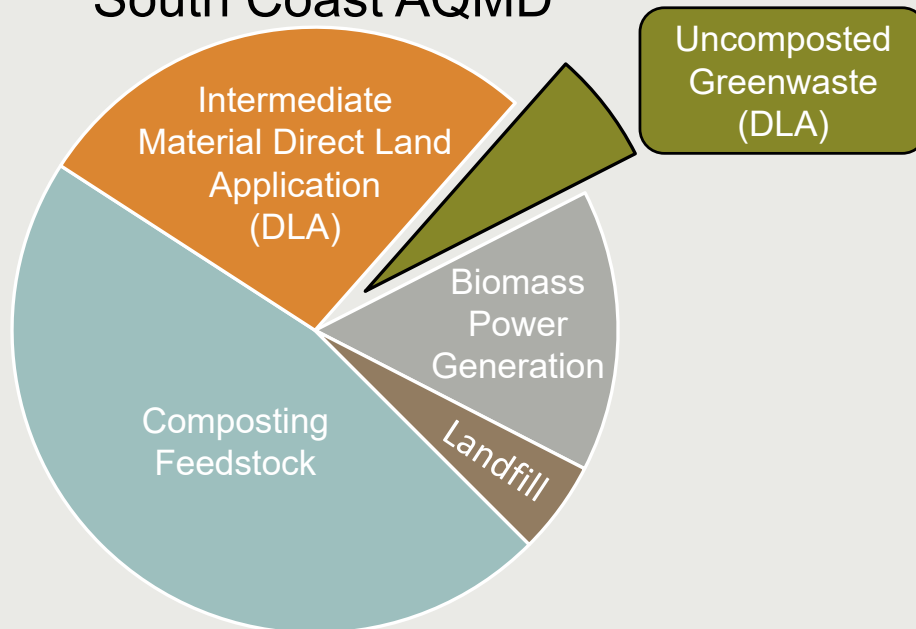
PAR 1133.1: Chipping and Grinding Operations

PAR 1133.2: Emission Reductions from Co-Composting
Operations

PAR 1133.3: Emission Reductions from Composting Operations

PAR 1133 Series Background

Distribution of Greenwaste in South Coast AQMD



2,460,000 tons greenwaste produced annually

- Greenwaste is tree, plant, and lawn trimmings from gardening or agriculture
 - Source of VOC and ammonia emissions
- Rule series applies to 98 facilities conducting greenwaste chipping and grinding, co-composting, and composting
- 147,700 tons, or 6% of total green waste, is uncomposted and direct land applied (DLA) for agriculture

MSM Amendment (PAR 1133)

Requirement

Direct Land Application Restriction

- Requires *suppliers* of uncomposted greenwaste for DLA to restrict supply to only agricultural operations that either:
 - **Option 1:** Till, inject, or plow 6" deep
 - **Option 2:** Cover with 6" finished compost
- Applies to estimated 86 supplying facilities

Enforcement Mechanism

Recordkeeping

- Documentation kept onsite of supplier for 3 years

Applications Exempt from Direct Land Application Restriction

Composting Operations

Co-composting Operations

Anaerobic Digestion

Biomass Power Generation

Application Outside of South Coast AQMD

Other Key Amendments

Best Management Practices (BMPs)



- One small co-composter operating since 2003 currently exempt from BMPs
- PAR 1133.2 requires BMPs of finished compost cover and piles sufficiently wet for all co-composting operations

Administrative Changes



- Eliminates registration process and fees
- Simplifies and moves reporting process to operation-specific rules

Rule Language Changes



- Clarifies and harmonizes definitions across rules
- Improves readability with updated rule titles, purposes, and applicability, and reorganization

Emission Reductions and Cost-Effectiveness



	Tons/day		Cost-Effectiveness	
	VOC	Ammonia	(cost per ton VOC)	(cost per ton ammonia)
Baseline Emissions	3.65	0.45	N/A	N/A
Reductions from DLA Restrictions	2.31	0.16	\$160	\$2,400
Reductions from BMPs	0.03	0.03	\$4,900	\$5,900
Overall Reductions	2.34	0.19	\$230	\$2,900

Impact Assessment

Socioeconomic Impact Assessment

- 86 facilities subject to recordkeeping requirements in PAR 1133
 - Annual cost estimated to be \$130,000
- One facility subject to composting BMPs
 - Annual cost estimated to be \$60,000
- No costs expected for PAR 1133.1 and PAR 1133.3

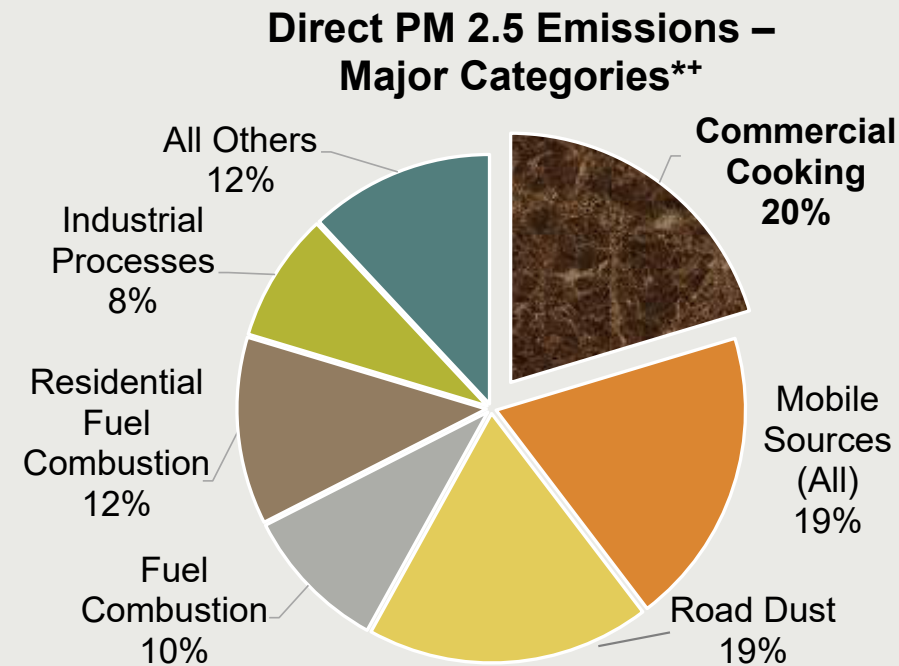
California Environmental Quality Act (CEQA)

- No physical modifications or significant adverse environmental impacts are expected
- A Notice of Exemption has been prepared

Proposed Amended Rule 1138: Control of Emissions from Restaurant Operations

PAR 1138 Background

- Commercial cooking accounts for 20% of directly emitted PM_{2.5} in South Coast Air Basin
- Rule 1138 was adopted in November 1997 to reduce emissions from chain-driven charbroilers
- PAR 1138 focuses on limited amendments to be consistent with regulations in other geographic areas



* 2024 PM 2.5 Plan, Table 3-3: Summary of Emissions by Major Source Category: 2018 Base Year in PM 2.5 Plan, Pg 61:
<https://www.aqmd.gov/docs/default-source/clean-air-plans/pm2.5-plans/final-pm2.5-plan/2012-annual-pm2-5-plan.pdf>

+ Direct PM_{2.5} emissions contribute about one third of total ambient PM_{2.5}, with the rest coming from reactions with SO_x, NO_x, VOC, and ammonia

Existing Rule 1138 Requirements

- Requires **chain-driven charbroilers** to operate with certified emissions control device
 - ~1,240 units subject to Rule 1138*
- Exempts units with <875 pounds of meat cooked per week
- Does not apply to other commercial cooking equipment

Chain-Driven Charbroilers



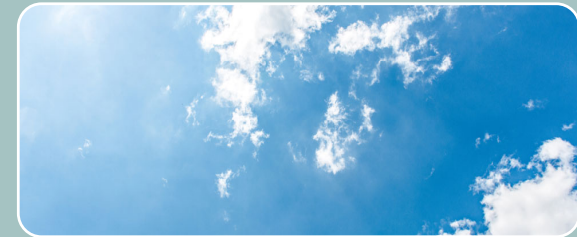
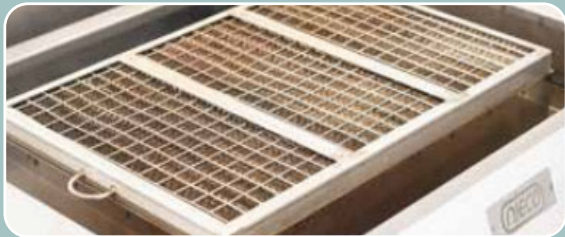
- *Equipped with mechanical chains moving food through as they cook*
- *Most often seen at high-volume chain restaurants and fast-food franchises*

Proposed Amendments

	Current Rule 1138	PAR 1138
Exemption Thresholds for Meat Cooked	<875 pounds per week	<u>One Year After Rule Adoption</u> <400 pounds per week OR <10,800 pounds per 12-months with <875 pounds per week

- One-year grace period to file updated information per separate Rule 222 requirements
- Other minor administrative amendments removing outdated language

Cost-Effectiveness & Emission Reductions



Cost and Cost-Effectiveness

- ~\$1,900 per charbroiler*
- Nominal O&M costs
- Cost-effectiveness of \$1,363 per ton of PM reduced

**Units purchased after 1997 are likely already in compliance*

Emission Reductions

- ~0.05 tpd PM
- ~0.02 tpd VOC

Impact Assessment

Socioeconomic Impact Assessment

- Average annual cost from 2026-2035 estimated to be \$28,403–\$32,210 in 2024 dollars using a real interest rate of 1% and 4%, respectively
 - Up to 143 affected facilities
 - Since annual cost is less than \$1M, an analysis of job impacts was not conducted

California Environmental Quality Act (CEQA)

- No significant adverse environmental impacts are expected
- A Notice of Exemption has been prepared

Staff Recommendation

PAR 223

PAR 445

PAR 1133

PAR 1133.1

PAR 1133.2

PAR 1133.3

PAR 1138

Adopt the Resolution:

- ☐ Determining the rules are exempt from requirements of CEQA
- ☐ Amending the rules
- ☐ Directing staff to submit the rules for inclusion in the State Implementation Plan

