BOARD MEETING DATE: June 5, 2026 AGENDA NO. 32

PROPOSAL: Determine That Proposed Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste, Proposed Amended Rule 401 – Visible Emissions, Proposed Amended Rule 404 – Particulate Matter - Concentration, Proposed Amended Rule 405 – Solid Particulate Matter - Weight, Proposed Amended Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II, and Proposed Amended Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II, Are Exempt from CEQA; and Adopt Rule 444.1 and Amend Rules 401, 404, 405, 219, and 222

SYNOPSIS: Proposed Rule 444.1 will establish requirements for air curtain incinerators (ACIs) and prescribed fire vehicles used to reduce vegetative waste and will help reduce PM emissions from forestry and agricultural waste management practices. Proposed Amended Rules 401, 404, and 405 will include an exemption for ACIs and prescribed fire vehicles to allow the use of these technologies in South Coast AQMD jurisdiction provided certain criteria are met. Proposed Amended Rule 219 will exempt some ACIs and prescribed fire vehicles, not subject to Title V, from permitting requirements. Proposed Amended Rule 222 will require ACIs and prescribed fire vehicles, exempt from permitting in Proposed Amended Rule 219, to be registered.

COMMITTEE: Stationary Source, April 17, 2026, Reviewed

RECOMMENDED ACTIONS:
Adopt the attached Resolution:

1. Determining that Proposed Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste, Proposed Amended Rule 401 – Visible Emissions, Proposed Amended Rule 404 – Particulate Matter - Concentration, Proposed Amended Rule 405 – Solid Particulate Matter - Weight, Proposed Amended Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II, and Proposed Amended Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II, are exempt from the requirements of the California Environmental Quality Act; and

2. Adopting Rule 444.1 and Amending Rules 401, 404, 405, 219, and 222.

Wayne Nastri
Executive Officer

SLR:MK:MM:IS:NR

Background

Implementing fuel reduction strategies is important for effective wildfire prevention and PM reduction. Currently, the majority of forestry and agricultural waste is disposed of through open burning or left in place as a source of fuel for wildfires, both of which are highly emissive and generate elevated levels of PM. South Coast AQMD staff received interest from local government agencies in operating alternative vegetative fuel reduction technologies for wildfire prevention.

Providing a pathway for the use of alternative vegetative fuel reduction technologies, such as air curtain incinerators (ACIs) and prescribed fire vehicles, will help reduce PM emissions from forestry and agricultural waste management operations. ACIs operate by forcefully projecting a curtain of air across an open chamber or open pit in which vegetative waste is burned to promote a more complete and contained combustion process compared to open burning. Prescribed fire vehicles similarly result in more complete combustion when burning grasses and low-growth brush to create fuel breaks near structures and along highways.

Currently, ACIs and prescribed fire vehicles cannot operate within South Coast AQMD because operation would be in conflict with the PM emissions limits in Rule 404 − Particulate Matter - Concentration and Rule 405 – Solid Particulate Matter – Weight, and the visible emissions requirements in Rule 401 – Visible Emissions. Proposed Rule 444.1 (PR 444.1), Proposed Amended Rule 401 (PAR 401), Proposed Amended Rule 404 (PAR 404), Proposed Amended Rule 405 (PAR 405), Proposed Amended Rule (PAR 219), and Proposed Amended Rule 222 (PAR 222) will provide a pathway for the use of ACIs and prescribed fire vehicles and aid in wildfire prevention and PM reduction.

The proposed rules are consistent with concerns from the AB 617 Eastern Coachella Valley (ECV) Community Emission Reduction Plan (CERP), which discusses pursuing funding opportunities for equipment or services to be used as alternatives to agricultural open burning. Rule development for PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 were not identified as a course of action within the ECV CERP; however, the proposed rules address open burning and will reduce PM emissions from agricultural waste disposal operations by allowing government agencies and their

contractors to partner with agricultural operations to use ACIs and prescribed fire vehicles as alternatives to open burning.

Proposed Rule and Amendments

PR 444.1 establishes requirements for ACIs and prescribed fire vehicles used to reduce vegetative waste and will help reduce PM emissions from forestry and agricultural waste management practices. PR 444.1 applies to owners and operators of ACIs and prescribed fire vehicles. PR 444.1 requires that only vegetative waste be burned in an ACI or prescribed fire vehicle and allows only government agencies and their contractors to operate these technologies. PR 444.1 establishes requirements for best management practices, recordkeeping, and obtaining a burn authorization from the South Coast AQMD. PR 444.1 prohibits burning of controlled substances and operation of an ACI within 300 feet of a sensitive receptor. PR 444.1 does not restrict use of ACIs or prescribed fire vehicles on days when South Coast AQMD issues a "No Burn Day" due to anticipated elevated levels of particulate matter. PR 444.1 also allows the Executive Officer to conduct source tests to help better estimate emissions.

PAR 401, PAR 404, and PAR 405 include an exemption for ACIs and prescribed fire vehicles to allow the use of these technologies, which are regulated under PR 444.1. PAR 401, PAR 404, and PAR 405 exempt ACIs and prescribed fire vehicles subject to PR 444.1 from opacity limits, PM concentration limits, and solid PM limits, respectively. The proposed amendments are necessary to help fire protection and forestry management agencies dispose of vegetative fuels to mitigate fire risk.

PAR 222 will require ACIs, prescribed fire vehicles, and their associated air pollution control equipment, exempt from permit requirements in PAR 219, to be registered with the South Coast AQMD. PAR 219 will exempt ACIs, prescribed fire vehicles, and associated air pollution control equipment from permitting requirements with the South Coast AQMD provided they are operated by government agencies and/or their contractors, not subject to Regulation XXX – Title V Permits, and exclusively burn vegetative waste.

Public Process

PR 444.1, PAR 404, PAR 405, PAR 401, PAR 219, and PAR 222 were developed through a public process. Two Working Group meetings were held on August 20, 2025, and January 7, 2026. The Working Group Meetings included representatives from public agencies, consultants, manufacturers, environmental and community representatives, and other interested parties. A Public Workshop was held on March 25, 2026, to present the proposed rule language to stakeholders and to solicit comment. Staff also held individual meetings with stakeholders and conducted multiple site visits as part of this rulemaking process.

Emission Reductions
Implementation of PR 444.1, PAR 404, PAR 405, PAR 401, PAR 219, and PAR 222 will reduce PM emissions compared to open burning. Source tests of ACIs from other public agencies demonstrate a 60 to 90 percent+ reduction in PM compared to open burning. Both ACIs and prescribed fire vehicles increase air flow to promote a more complete combustion process, which results in fewer PM emissions. More robust emission data is necessary to better quantify emission reductions from PR 444.1.

Key Issues
Throughout the rulemaking process, staff worked with stakeholders to resolve key issues. One remaining key issue is the PR 444.1 requirement which limits operation of ACIs and prescribed fire vehicles to government agencies and their contractors. A stakeholder requested that qualified private entities be allowed to use prescribed fire vehicles without having to partner with a government agency and operate under an established contract.

Although private entities may have interest and/or qualifications to operate prescribed fire vehicles, South Coast AQMD is an air quality agency with the goal of reducing emissions; additional information must be collected and assessed (e.g., source test emission data and modeling) before allowing private operators to use prescribed fire vehicles. At this time there is limited emission data available for prescribed fire vehicles. PR 444.1 will enable South Coast AQMD to collect the necessary emission data from government agencies and their contractors. Allowing the use of ACIs and prescribed fire vehicles is novel to the South Coast AQMD jurisdiction and emission impacts must be carefully considered. Currently, open burning is primarily conducted by forestry and agricultural management operations. When compared to baseline open burning emissions, expanding the operators allowed to use ACIs and prescribed fire vehicles in South Coast AQMD jurisdiction could potentially increase emissions. Once source test data is collected, staff plans to conduct additional modeling to evaluate how private operators, who in many cases cannot currently conduct open burning, would impact air quality. Modeling will help determine if wider use of these technologies would increase emissions in South Coast AQMD jurisdiction and affect PM attainment status for the South Coast Air Basin. Furthermore, staff must consider feedback from fire professionals on best management practices before allowing private use in a future rule amendment.

California Environmental Quality Act (CEQA)
Pursuant to CEQA Guidelines Sections 15002(k) and 15061, the proposed project (PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222) consists of actions necessary to prevent or mitigate wildfire-related emergency conditions which are statutorily exempt from CEQA pursuant to CEQA Guidelines Section 15269(c). A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062 and is included as Attachment M 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

PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 establish requirements and exemptions regarding the use of ACIs and prescribed fire vehicles by government agencies and their contractors. Since the use of ACIs and prescribed fire vehicles is optional and is not required, there would be no compliance costs. As such, a Socioeconomic Impact Assessment was conducted based on the operation and maintenance expenses of registering and operating (e.g., registration fees and diesel fuel) all four of the ACIs currently owned by public agencies within South Coast AQMD jurisdiction. Estimates of the total present value of the amortized costs for the analysis period from 2026 to 2035 resulted in $339,376 and $299,262 at one and four percent discount rates, respectively. In addition, the total average annual cost of potentially operating the four ACIs over this same period was estimated at $35,477 regardless of the real interest rate. The Final Socioeconomic Impact Assessment is available in the Final Staff Report, which is included as Attachment L of this Board Letter.

AQMP and Legal Mandate

The Health and Safety Code requires the South Coast AQMD to adopt an AQMP to meet state and federal ambient air quality standards in the South Coast Air Basin. In addition, the Health and Safety Code requires the South Coast AQMD to adopt rules and regulations that carry out the objectives of the AQMP. PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 are not part of an AQMP control measure but are needed to partially implement Best Control Measure 20: Application of All Feasible Measures (BCM-20) from the 2024 South Coast Air Basin Attainment Plan for the 2012 Annual PM2.5 Standard (PM2.5 Plan). BCM-20 seeks to reduce criteria pollutant emissions, including PM, and will be partially implemented by allowing and regulating the use of alternative, lower emitting vegetative fuel reduction technologies when compared to the open burning of forestry and agricultural waste.

Implementation and Resource Impacts

Existing staff resources are adequate to implement the proposed rules.

Attachments

A. Summary of Proposal
B. Key Issues and Responses
C. Rule Development Process
D. Key Contacts List
E. Resolution
F. Proposed Rule 444.1

G. Proposed Amended Rule 401
H. Proposed Amended Rule 404
I. Proposed Amended Rule 405
J. Proposed Amended Rule 219
K. Proposed Amended Rule 222
L. Final Staff Report, with Final Socioeconomic Impact Assessment Included
M. Notice of Exemption from CEQA
N. Board Presentation

ATTACHMENT A

SUMMARY OF PROPOSAL

Proposed Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste
Proposed Amended Rule 401 – Visible Emissions
Proposed Amended Rule 404 – Particulate Matter - Concentration
Proposed Amended Rule 405 – Solid Particulate Matter - Weight
Proposed Amended Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II
Proposed Amended Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II

Proposed Rule 444.1

Applicability

- Applies to owners and operators of ACIs and prescribed fire vehicles

Requirements

- Only vegetative waste can be burned in an ACI or prescribed fire vehicle
- Only government agencies and their contractors can operate ACIs and prescribed fire vehicles
- Best management practices
  - Limited to operating when wind speed is below 20 mph
  - Use torches or flares to conduct a cold start of an ACI
  - Maintain vegetative waste below level of air curtain
  - Ensure air curtain is operated continuously according to manufacturer's recommended airflow setting
  - Use U.S. EPA Tier 4 engine to power air curtain
  - Ash accumulation and handling provisions
- Obtaining burn authorization (does not restrict use on No Burn Days)
- Federal ACI monitoring requirements in 40 CFR Part 60 are incorporated by reference
- Perform maintenance per manufacturer's recommendations

Prohibitions

- Prohibits the burning of controlled substances in an ACI or prescribed fire vehicle
- Prohibits operation of an ACI within 300 feet of a sensitive receptor

Source Testing

- Allows Executive Officer to conduct source tests within 6 months of initial request

Recordkeeping • ACI visible emissions records • Daily operation logs • Maintenance logs • Government contract records, if applicable
<u>Proposed Amended Rule 401</u> • Exempts ACIs and prescribed fire vehicles from opacity limits
<u>Proposed Amended Rule 404</u> • Exempts ACIs and prescribed fire vehicles from PM concentration limits
<u>Proposed Amended Rule 405</u> • Exempts ACIs and prescribed fire vehicles from solid PM limits
<u>Proposed Amended Rule 219</u> • Exempts ACIs, prescribed fire vehicles, and associated air pollution control equipment from permitting if: o Operated by government agencies and/or their contractors o Only burning vegetative waste o Not subject to Title V permitting requirements
<u>Proposed Amended Rule 222</u> • Requires registration for ACIs, prescribed fire vehicles, and their associated air pollution control equipment if exempt from permitting in Rule 219

ATTACHMENT B

KEY ISSUES AND RESPONSES

Proposed Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste
Proposed Amended Rule 401 – Visible Emissions
Proposed Amended Rule 404 – Particulate Matter - Concentration
Proposed Amended Rule 405 – Solid Particulate Matter - Weight
Proposed Amended Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II
Proposed Amended Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II

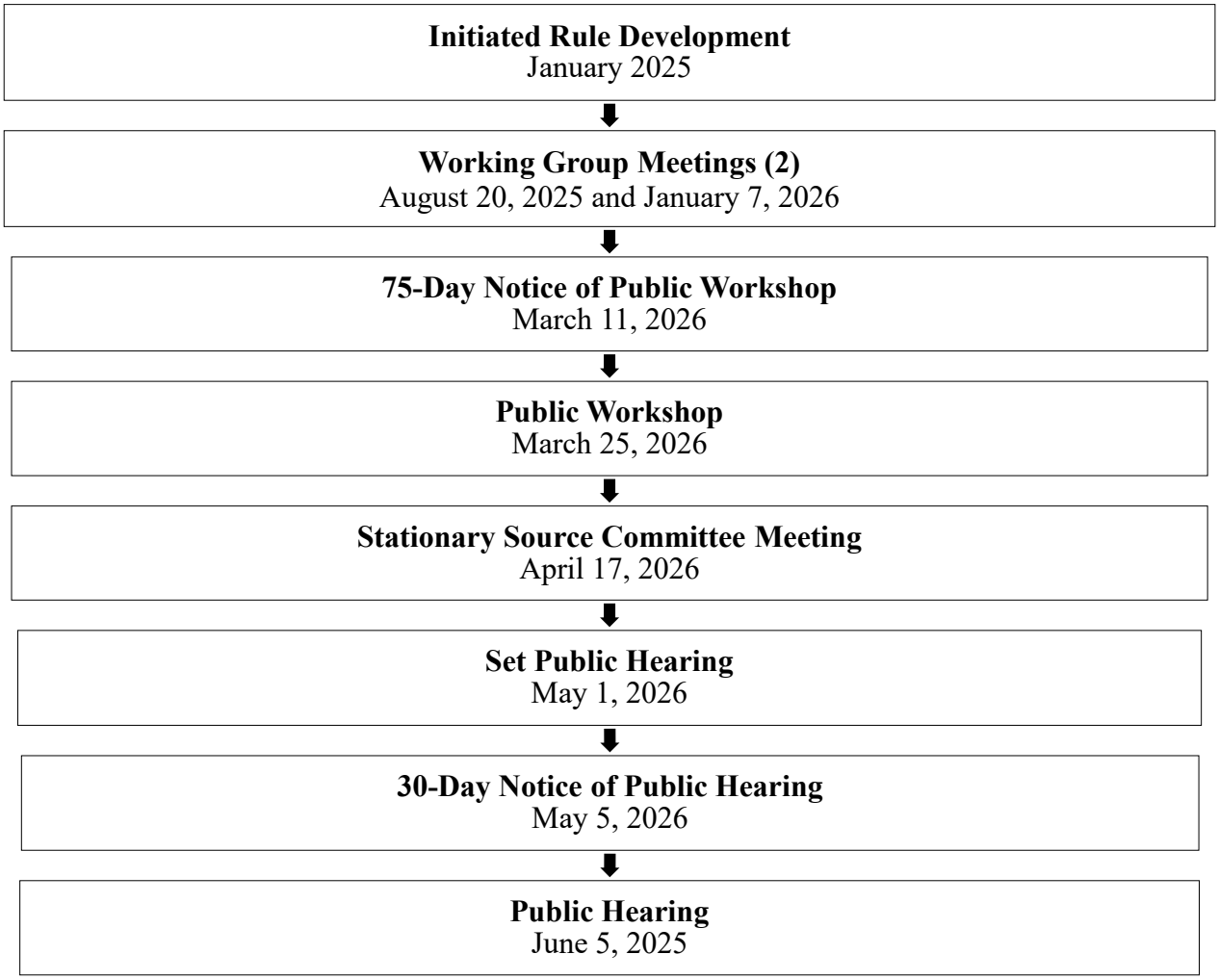
Throughout the rulemaking process, staff worked with stakeholders to resolve key issues. One remaining key issue is a stakeholder request to allow qualified private entities to use prescribed fire vehicles without having to partner with a government agency and operate under an established contract.

Currently, under Rule 444 – Open Burning, conducting open burning of vegetative waste is restricted to primarily public agencies and agricultural management operations. When compared to the emission baseline of open burning, expanding private operator use of ACIs and prescribed fire vehicles in South Coast AQMD jurisdiction could potentially increase emissions. At this time, there is only preliminary emission data available for prescribed fire vehicles. Staff needs to conduct source tests and additional modeling to determine if wider use of these technologies would increase emissions and affect PM attainment status in South Coast AQMD jurisdiction. This rule development will allow limited use of prescribed fire vehicles in South Coast AQMD jurisdiction as more emission data is gathered. Staff can then evaluate the emission impacts of amending PR 444.1 to consider allowing more widespread use by private entities. Furthermore, staff needs to consider feedback from fire professionals on best management practices before allowing private use in a future rule amendment.

ATTACHMENT C

RULE DEVELOPMENT PROCESS

Proposed Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste
Proposed Amended Rule 401 – Visible Emissions
Proposed Amended Rule 404 – Particulate Matter - Concentration
Proposed Amended Rule 405 – Solid Particulate Matter - Weight
Proposed Amended Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II
Proposed Amended Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II



Seventeen (17) months spent in rule development
Two (2) Working Group Meetings
One (1) Public Workshop
One (1) Stationary Source Committee Meeting

ATTACHMENT D

KEY CONTACTS LIST

Proposed Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste
Proposed Amended Rule 401 – Visible Emissions
Proposed Amended Rule 404 – Particulate Matter - Concentration
Proposed Amended Rule 405 – Solid Particulate Matter - Weight
Proposed Amended Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II
Proposed Amended Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II

- Air Burners, Inc.
- Bejac Corporation
- BurnBot, Inc.
- California Department of Forestry and Fire Protection
- Center for Environmental Research & Technology of University of California, Riverside
- Fowler Brothers Farming
- Los Angeles County Fire Department
- Los Angeles Department of Water and Power
- Tesoro Refining & Marketing Company LLC
- Tigercat International Inc.
- University of California Agriculture and Natural Resources
- University of California Berkeley Disaster Lab
- United States Forest Service

ATTACHMENT E

RESOLUTION NO. 26-_____

A Resolution of the Governing Board of the South Coast Air Quality Management District (South Coast AQMD) determining that Proposed Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste, Proposed Amended Rule 401 – Visible Emissions, Proposed Amended Rule 404 – Particulate Matter - Concentration, Proposed Amended Rule 405 – Solid Particulate Matter - Weight, Proposed Amended Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II, and Proposed Amended Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II, are exempt from the requirements of the California Environmental Quality Act (CEQA).

A Resolution of the South Coast AQMD Governing Board adopting Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste and amending Rule 401 – Visible Emissions, Rule 404 – Particulate Matter - Concentration, Rule 405 – Solid Particulate Matter - Weight, Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II, and Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II.

WHEREAS, the South Coast AQMD Governing Board finds and determines that Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 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 the proposed project pursuant to such program (South Coast AQMD Rule 110); and

WHEREAS, the South Coast AQMD Governing Board finds and determines 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 Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 are exempt from CEQA; and

WHEREAS, the South Coast AQMD Governing Board finds and determines that Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 seek to reduce and manage vegetative fuel loads of forestry and agricultural waste in order to prevent wildfires and protect public safety by allowing the

use of optional air curtain incinerators and prescribed fire vehicle technology, which have fewer emissions of particulate matter than what would occur by conducting open burning. Thus, Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 consist of actions necessary to prevent or mitigate wildfire-related emergency conditions which are statutorily exempt from CEQA pursuant to CEQA Guidelines Section 15269(c) – Emergency Projects: Specific actions necessary to prevent or mitigate an emergency; 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, Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 and supporting documentation, including but not limited to, the Notice of Exemption and the 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 proposed 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 (Section 30.5(4)(D)(i) of the Administrative Code), that the modifications to the proposed project since the Notice of Public Hearing was published are clarifications that meet the same air quality objective and are not so substantial as to significantly affect the meaning of the proposed project within the meaning of Health and Safety Code Section 40726 because the changes to Proposed Rule 444.1 subdivision (i) and paragraph (j)(3) are made to spell out numbers and: (a) the changes to do not impact emission reductions, (b) the changes do not affect the number or types 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 Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 will not be submitted 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 adopt Rule 444.1 and amend Rule 401, Rule 404, Rule 405, Rule 219, and Rule 222 to partially implement Best Control Measure 20 from the 2024 PM2.5 Plan and to partially address objectives in the Eastern Coachella Valley Community Emission Reduction Plan; 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 Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 will alleviate, namely to reduce particulate matter emissions by establishing requirements for and allowing the use of air curtain incinerators and prescribed fire vehicles to reduce vegetative waste; 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, 40000, 40001, 40440, 40702, 40725 through 40728, and 41508; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 are written and displayed so that their meaning can be easily understood by persons directly affected by them; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 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 Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 do not impose the same requirements as any existing state or federal regulations, and the proposed project is necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD; and

WHEREAS, the South Coast AQMD Governing Board, in adopting Rule 444.1 and amending Rule 401, Rule 404, Rule 405, Rule 219, and Rule 222, reference the following statutes which the South Coast AQMD hereby implements, interprets or makes specific: Health and Safety Code Sections 39002, 40001, 40406, 40702, 40440, 40725 through 40728.5; 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 Rule 444.1,

Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 is included in the Final Staff Report; and

WHEREAS, the South Coast AQMD Governing Board finds that analyses for cost-effectiveness and incremental cost-effectiveness consistent with the Health and Safety Code Section 40920.6 are not required because Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 do not include new Best Available Retrofit Control Technology requirements nor a feasible measure pursuant to Health and Safety Code Section 40914; and

WHEREAS, the South Coast AQMD Governing Board has determined that the Final Socioeconomic Impact Assessment, which is included in the Final Staff Report for Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 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, which is included in the Final Staff Report for Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 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 only Proposed Rule 444.1 and Proposed Amended Rule 222 will result in increased costs for the owners and operators that choose to operate air curtain incinerators and/or prescribed fire vehicles, and such costs are considered to be reasonable, with a total annualized cost as specified in the Final Socioeconomic Impact Assessment, which is included in the Final Staff Report; and

WHEREAS, the South Coast AQMD Governing Board has actively considered the Final Socioeconomic Impact Assessment, which is included in the Final Staff Report for Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 and has made a good faith effort to minimize such adverse impacts; and

WHEREAS, the South Coast AQMD staff conducted a public workshop on March 25, 2026, regarding Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222; 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 state and federal law; and

WHEREAS, the South Coast AQMD specifies the Planning and Rules Manager of Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 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 Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 are statutorily exempt from CEQA pursuant to CEQA Guidelines Section 15269(c) – Emergency Projects: Specific actions necessary to prevent or mitigate an emergency. This information was 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 Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222; and

BE IT FURTHER RESOLVED, that the South Coast AQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Rule 444.1, Proposed Amended Rule 401, Proposed Amended Rule 404, Proposed Amended Rule 405, Proposed Amended Rule 219, and Proposed Amended Rule 222 as set forth in the attached, and incorporated herein by reference.

_____ _____

Date: Faye Thomas, Clerk of the Board

ATTACHMENT F

(Adopted TBD)

PROPOSED RULE 444.1 PARTICULATE MATTER EMISSION REDUCTIONS FROM FORESTRY AND AGRICULTURAL WASTE

(***RULE INDEX TO BE ADDED AFTER ADOPTION)***

(a) Purpose

The purpose of this rule is to reduce particulate matter emissions from forestry and Agricultural Waste management practices and establish requirements for equipment used to reduce Vegetative Waste.

(b) Applicability

The provisions of this rule shall apply to owners and operators of Air Curtain Incinerators and Prescribed Fire Vehicles.

(c) Definitions

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

(1) AGRICULTURAL OPERATIONS means any business occurring on a ranch or farm directly related to:

(A) Growing of crops; or

(B) Conducting agricultural research or instruction by an educational institution.

(2) AGRICULTURAL WASTE means unwanted or unsalable plant materials produced wholly from Agricultural Operations. Agricultural Wastes do not include items such as metal, wire, plastic, rubber, ornamental or landscape vegetation, chemically treated wood including chemically treated grape stakes, shop wastes, construction and demolition material, material containing asbestos, garbage, oil filters, tires, tar paper, pesticide and fertilizer containers, broken boxes, pallets, sweat boxes, packaging material, packing boxes or any other material produced in the packaging or processing of agricultural products. Orchard or vineyard waste or any other material, generated as a result of land use conversion to nonagricultural purposes is not Agricultural Waste.

(3) AIR CURTAIN INCINERATOR means an incinerator, carbonizer, or mechanized burner that operates by forcefully projecting a curtain of air across

an open, integrated combustion chamber or open pit or trench in which combustion occurs.

(4) BURN AUTHORIZATION NUMBER means the number that is assigned to a burn project upon being granted approval by the Executive Officer.

(5) CONTRACTOR means a person or company who performs a service for a separate entity under a valid and current contract. Contractor includes government grant recipients.

(6) CONTROLLED SUBSTANCE means any drug, substance, or immediate precursor which is listed in Schedules I through V of the Uniform Controlled Substances Act, codified in the California Health and Safety Code Division 10.

(7) PRESCRIBED FIRE VEHICLE means a mobile machine designed for wildfire prevention by performing mechanized controlled burns of low-growth vegetation to create fuel breaks.

(8) SCHOOL means any public or private school, including juvenile detention facilities with classrooms, used for the education of more than 12 children at the school in kindergarten through grade 12. School also means an Early Learning and Developmental Program by the U.S. Department of Education or any state or local early learning and development programs such as preschools, Early Head Start, Head Start, First Five, and Child Development Centers. A School does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property.

(9) SENSITIVE RECEPTOR means any residence including private homes, condominiums, apartments, and living quarters; Schools as defined in paragraph (c)(8); daycare centers; and health care facilities such as hospitals or retirement and nursing homes. Sensitive Receptor includes long-term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

(10) VEGETATIVE WASTE means Wood Waste, Yard Waste, and Agricultural Waste.

(11) WOOD WASTE means untreated wood and untreated wood products, including tree stumps (whole or chipped), trees, and tree limbs (whole or chipped). Wood Waste does not include grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands, construction, renovation, or demolition wastes.

(12) YARD WASTE means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. Yard Waste comes from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard Waste does include construction, renovation, and demolition wastes.

(d) General Requirements

(1) An owner or operator shall burn solely Vegetative Waste in an Air Curtain Incinerator or Prescribed Fire Vehicle.

(2) An Air Curtain Incinerator or Prescribed Fire Vehicle shall be operated solely by government agencies or their Contractors.

(3) An owner or operator of an Air Curtain Incinerator or Prescribed Fire Vehicle shall ensure the equipment is properly maintained and kept in good operating condition at all times to minimize emissions of air contaminants into the atmosphere.

(4) An owner or operator shall not operate an Air Curtain Incinerator or Prescribed Fire Vehicle to burn Vegetative Waste when wind speeds reach 20 mph or more.

(5) An owner or operator of an Air Curtain Incinerator or Prescribed Fire Vehicle shall handle, store, and dispose of any ash removed or generated from equipment in a manner minimizing visible emissions in the atmosphere.

(6) An owner or operator of an Air Curtain Incinerator or Prescribed Fire Vehicle shall obtain a Burn Authorization Number from the Executive Officer for each day and for each location of operation.

(A) The owner or operator shall request the Burn Authorization Number by 4:00 pm on the day prior to the burn.

(e) Air Curtain Incinerator Operating Requirements

(1) An owner or operator of an Air Curtain Incinerator shall comply with the following when conducting a cold start:

(A) Use a propane torch, drip torch, or flare to ignite the material inside the combustion chamber; and

(B) Not use accelerants, including but not limited to gasoline, diesel fuel, kerosene, and turpentine.

(2) An owner or operator shall ensure any internal combustion engine used to power the air curtain in an Air Curtain Incinerator meets U.S. EPA Tier 4 emission standards.

(3) An owner or operator of an Air Curtain Incinerator shall ensure sulfur content of any diesel fuel consumed meets California Air Resources Board standards in Title 13 CCR Section 2281.

(4) An owner or operator of an Air Curtain Incinerator shall load Vegetative Waste such that it remains below the manufacturer's maximum loading capacity and below the level of the air curtain.

(5) An owner or operator shall monitor the Air Curtain Incinerator at all times when materials are actively burning or flames are visible inside the combustion chamber.

(6) An owner or operator of an Air Curtain Incinerator shall ensure the air curtain is operated continuously according to the manufacturer's recommended airflow setting until there are no visible flames and the waste is burned to completion.

(7) An owner or operator of an Air Curtain Incinerator shall not allow ashes to accumulate to greater than 1/3 the depth of the combustion chamber, or to a level that impedes combustion, whichever occurs first.

(f) Air Curtain Incinerator Monitoring Requirements

An owner or operator of an Air Curtain Incinerator shall comply with all applicable federal opacity requirements in 40 CFR Part 60.

(g) Prohibitions

(1) An owner or operator shall not use an Air Curtain Incinerator or Prescribed Fire Vehicle to burn a Controlled Substance.

(2) An owner or operator shall not operate an Air Curtain Incinerator within 300 feet of a Sensitive Receptor.

(h) Maintenance Requirements

(1) An owner or operator of an Air Curtain Incinerator or Prescribed Fire Vehicle shall perform maintenance per the manufacturer's recommendations as specified in the operating and maintenance manual.

(2) An owner or operator of an Air Curtain Incinerator or Prescribed Fire Vehicle shall keep a copy of the manufacturer's operating and maintenance manual and make it available to the Executive Officer within 48 hours of request.

(i) Source Testing

An owner or operator of an Air Curtain Incinerator or Prescribed Fire Vehicle shall provide access and allow the Executive Officer to conduct a source test within ~~6~~six months of the initial request from the Executive Officer.

(j) Recordkeeping

An owner or operator of an Air Curtain Incinerator or Prescribed Fire Vehicle shall keep records to demonstrate compliance with the provisions of this rule, and all records and information recorded pursuant to this subdivision shall be made available to the Executive Officer upon request.

(1) An owner or operator of an Air Curtain Incinerator shall keep visible emissions records pursuant to subdivision (f) and maintain records for a minimum of five years.

(2) An owner or operator of an Air Curtain Incinerator or Prescribed Fire Vehicle shall maintain records for a minimum of five years and keep a daily log with the following information for each new location the equipment is operated:

(A) Date and total hours of operation;

(B) Name of owner or operator and physical address or legal description of location of each operation;

(C) Type(s) of materials burned;

(D) Quantity (tons) of materials burned; and

(E) Engine fuel type.

(3) An owner or operator of an Air Curtain Incinerator or Prescribed Fire Vehicle shall keep a keep a maintenance log and maintain records for a minimum of ~~5~~five years.

(4) An owner or operator of an Air Curtain Incinerator or Prescribed Fire Vehicle shall keep a copy of the contract with the government agency for which they are performing a service, if applicable.

ATTACHMENT G

(Adopted February 4, 1977)(Amended April 1, 1977)(Amended August 4, 1978)
(Amended September 7, 1979)(Amended February 1, 1980)(Amended July 11, 1980)
(Amended October 15, 1982)(Amended March 2, 1984)(Amended February 5, 1988)
(Amended April 7, 1989)(Amended September 11, 1998)
(Amended November 9, 2001)(Amended TBD)

PROPOSED AMENDED RULE 401. VISIBLE EMISSIONS

(a) Definitions

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

(1) KEROSENE FUEL is petroleum distillate fuel meeting diesel grade 1-D per ASTM D975-78, fuel oil grade No. 1 per ASTM D396-79, or kerosene by conventional commercial specifications.

(2) AN APPROVED SMOKE-REDUCING FUEL ADDITIVE is as approved by the Executive Officer.

(3) A SYNTHETIC ENGINE LUBRICATING OIL is as approved by the Executive Officer.

(b) Requirements

(1) A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(A) As dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(B) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (b)(1)(A) of this rule.

(2) Not withstanding the provisions of paragraph (b)(1) of this rule, a person shall not discharge into the atmosphere from a commercial charbroiler, excluding those operating with control equipment and those which are chain-driven, or equipment for melting, heating, or holding asphalt or coal tar pitch for on-site roof construction or repair; any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(A) As dark or darker in shade as that designated No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(B) Of such an opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (b)(2)(A) of this rule.

(3) Notwithstanding the provisions of paragraph (b)(1) of this rule, a person shall not discharge into the atmosphere from any diesel pile-driving hammer, operating exclusively using kerosene fuel, containing approved smoke-reducing fuel additives, as the sole fuel, and using only synthetic engine lubrication oil, or other method deemed technologically and economically feasible by the Executive Officer, any air contaminant for a period or periods aggregating more than four minutes during the driving of a single pile which is:

(A) As dark or darker in shade as that designated No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(B) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (b)(3)(A) of this rule.

(c) Exemptions

(1) The provisions of this rule shall not apply to the following operations:

(A) Asphalt pavement heater operations;

(B) Abrasive blasting operations;

(C) The use of visible emission generating equipment in training sessions conducted by governmental agencies necessary for certifying persons to evaluate visible emissions for compliance with this rule and with the California Health and Safety Code, Section 41704 (l).

(D) Visible emissions from ships which perform emergency boiler shutdowns, tests required by governmental agencies or maneuvers for safety purposes;

(E) Agricultural operations.

(2) The provisions of paragraph (b)(2) shall not apply to a commercial charbroiler, as described in paragraph (b)(2), on or after November 9, 2005, and thereafter the provisions of paragraph (b)(1) shall apply to such equipment.

(3) The provisions of this rule shall not apply to air curtain incinerators and prescribed fire vehicles subject to Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste.

ATTACHMENT H

(Adopted May 7, 1976)(Amended October 5, 1979)
(Amended February 7, 1986) (Amended TBD)

PROPOSED AMENDED RULE 404. PARTICULATE MATTER - CONCENTRATION

(a) A person shall not discharge into the atmosphere from any source, particulate matter in excess of the concentration at standard conditions, shown in Table 404(a). Where the volume discharged is between figures listed in the Table, the exact concentration permitted to be discharged shall be determined by linear interpolation.

The provisions of this subsection shall not apply to any equipment completed and put into service before July 1, 1976 in the Palo Verde and Joshua Tree areas.

Before July 1, 1983, liquid sulfur compounds shall not be included as particulate matter discharged from petroleum coke calciners.

(b) A person shall not discharge into the atmosphere from any source, particulate matter in excess of 450 milligrams per cubic meter (0.196 grain per cubic foot) in discharged gas calculated as dry gas at standard conditions.

The provisions of this subsection shall apply only to any equipment completed and put into service before July 1, 1976 in the Palo Verde and Joshua Tree areas.

(c) The provisions of this rule shall not apply to emissions resulting from the combustion of liquid or gaseous fuels in steam generators or gas turbines.

(d) For the purposes of this rule, emissions shall be averaged over one complete cycle of operation or one hour, whichever is the lesser time period.

(e) The provisions of this rule shall not apply to the use of equipment which complies with the emission limits specified in Rule 1112.1.

(f) The provisions of this rule shall not apply to air curtain incinerators and prescribed fire vehicles subject to Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste.

TABLE 404(a)

Volume Discharged Calculated as Dry Gas At Standard Conditions		Maximum Concentration of Particulate Matter[2] Allowed in Discharged Gas Calculated as Dry Gas at Standard Conditions		Volume Discharged Calculated as Dry Gas At Standard Conditions		Maximum Concentration of Particulate Matter Allowed in Discharged Gas Calculated as Dry Gas at Standard Conditions	
Cubic meters Per Minute	Cubic feet Per Minute	Milligrams per Cubic Meter	Grains per Cubic Foot	Cubic meters Per Minute	Cubic feet Per Minute	Milligrams per Cubic Meter	Grains per Cubic Foot
25 or less	883 or less	450	0.196	900	31780	118	0.0515
30	1059	420	.183	1000	35310	113	.0493
35	1236	397	.173	1100	38850	109	.0476
40	1413	377	.165	1200	42380	106	.0463
45	1589	361	.158	1300	45910	102	.0445
50	1766	347	.152	1400	49440	100	.0437
60	2119	324	.141	1500	52970	97	.0424
70	2472	306	.134	1750	61800	92	.0402
80	2825	291	.127	2000	70630	87	.0380
90	3178	279	.122	2250	79460	83	.0362
100	3531	267	.117	2500	88290	80	.0349
125	4414	246	.107	3000	105900	75	.0327
150	5297	230	.100	4000	141300	67	.0293
175	6180	217	.0947	5000	176600	62	.0271
200	7063	206	.0900	6000	211900	58	.0253
250	8829	190	.0830	8000	282500	52	.0227
300	10590	177	.0773	10000	353100	48	.0210
350	12360	167	.0730	15000	529700	41	.0179
400	14130	159	.0694	20000	706300	37	.0162
450	15890	152	.0664	25000	882900	34	.0148
500	17660	146	.0637	30000	1059000	32	.0140
600	21190	137	.0598	40000	1413000	28	.0122
700	24720	129	.0563	50000	1766000	26	.0114
800	28250	123	.0537	70000 or more	2472000 or more	23	.0100

ATTACHMENT I

(Adopted May 7, 1976)(Amended February 7, 1986)
(Amended TBD)

PROPOSED AMENDED RULE 405. SOLID PARTICULATE MATTER - WEIGHT

(a) A person shall not discharge into the atmosphere from any source, solid particulate matter including lead and lead compounds in excess of the rate shown in Table 405(a).

Where the process weight per hour is between figures listed in the table, the exact weight of permitted discharge shall be determined by linear interpolation.

The provisions of this subsection shall not apply to any equipment completed and put into service before July 1, 1976 in the Palo Verde and Joshua Tree areas.

(b) A person shall not discharge into the atmosphere in any one hour from any source, solid particulate matter including lead and lead compounds in excess of 0.23 kilogram (0.5 pound) per 907 kilograms (2000 pounds) of process weight.

For the purposes of this subsection only, process air shall be considered to be a material introduced into the process when calculating process weight.

The provisions of this subsection shall apply only to equipment completed and put into service before July 1, 1976 in the Palo Verde and Joshua Tree areas.

(c) For the purposes of this rule, emissions shall be averaged over one complete cycle of operation or one hour, whichever is the lesser time period.

(d) The provisions of this rule shall not apply to the use of equipment which complies with the emission limits specified in Rule 1112.1.

(e) The provisions of this rule shall not apply to air curtain incinerators and prescribed fire vehicles subject to Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste.

TABLE 405(a)

Process Weight Per Hour		Maximum Discharge Rate Allowed for Solid Particulate Matter (Aggregate Discharged From All Points of Process)		Process Weight Per Hour		Maximum Discharge Rate Allowed for Solid Particulate Matter (Aggregate Discharged From All points of Process)	
Kilograms Per Hour	Pounds Per Hour	Kilograms Per Hour	Pounds Per Hour	Kilograms Per Hour	Pounds Per Hour	Kilograms Per Hour	Pounds Per Hour
100 or less	220 or less	0.450	0.99	9000	19840	5.308	11.7
150	331	0.585	1.29	10000	22050	5.440	12.0
200	441	0.703	1.55	12500	27560	5.732	12.6
250	551	0.804	1.77	15000	33070	5.982	13.2
300	661	0.897	1.98	17500	38580	6.202	13.7
350	772	0.983	2.17	20000	44090	6.399	14.1
400	882	1.063	2.34	25000	55120	6.743	14.9
450	992	1.138	2.51	30000	66140	7.037	15.5
500	1102	1.209	2.67	35000	77160	7.296	16.1
600	1323	1.340	2.95	40000	88180	7.527	16.6
700	1543	1.461	3.22	45000	99210	7.738	17.1
800	1764	1.573	3.47	50000	110200	7.931	17.5
900	1984	1.678	3.70	60000	132300	8.277	18.2
1000	2205	1.777	3.92	70000	154300	8.582	18.9
1250	2756	2.003	4.42	80000	176400	8.854	19.5
1500	3307	2.206	4.86	90000	198400	9.102	20.1
1750	3858	2.392	5.27	100000	220500	9.329	20.6
2000	4409	2.563	5.65	125000	275600	9.830	21.7
2250	4960	2.723	6.00	150000	330700	10.26	22.6
2500	5512	2.874	6.34	175000	385800	10.64	23.5
2750	6063	3.016	6.65	200000	440900	10.97	24.2
3000	6614	3.151	6.95	225000	496000	11.28	24.9
3250	7165	3.280	7.23	250000	551200	11.56	25.5
3600	7716	3.404	7.50	275000	606300	11.82	26.1
4000	8818	3.637	8.02	300000	661400	12.07	26.6
4500	9921	3.855	8.50	325000	716500	12.30	27.1
5000	11020	4.059	8.95	350000	771600	12.51	27.6
6000	13230	4.434	9.78	400000	881800	12.91	28.5
7000	15430	4.775	10.5	450000	992100	13.27	29.3
8000	17640	5.089	11.2	500000 or more	1102000 or more	13.60	30.0

ATTACHMENT J

(Amended ~~April 7, 2023~~TBD)

PROPOSED AMENDED RULE 219 EQUIPMENT NOT REQUIRING A WRITTEN PERMIT PURSUANT TO REGULATION II

TABLE OF CONTENTS

(Adopted Jan. 9, 1976)(Amended Oct. 8, 1976)(Amended February 2, 1979)
(Amended Oct. 5, 1979)(Amended Sept. 4, 1981)(Amended June 3, 1988)
(Amended September 11, 1992)(Amended August 12, 1994)
(Amended December 13, 1996)(Amended September 11, 1998)
(Amended August 13, 1999)(Amended May 19, 2000)
(Amended November 17, 2000)(Amended July 11, 2003)
(Amended December 3, 2004)(Amended May 5, 2006)(Amended July 14, 2006)
(Amended June 1, 2007)(Amended May 3, 2013)
(Amended May 5, 2017)(Amended April 6, 2018)(Amended January 7, 2022)
(Amended April 7, 2023)(Amended TBD)

PROPOSED AMENDED RULE 219 EQUIPMENT NOT REQUIRING A WRITTEN PERMIT PURSUANT TO REGULATION II

(RULE INDEX TO BE ADDED AFTER ADOPTION)

(a) Purpose

The purpose of this rule is to identify equipment, processes, or operations that emit small amounts of air contaminants that shall not require written permits, unless such equipment, process or operation is subject to subdivision (e) – Exceptions. Certain equipment, processes, or operations that do not require written permits may be subject to Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II.

(b) Applicability

This rule applies to owners or operators of the equipment, processes, or operations listed in subdivision (d).

(c) Definitions

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

(1) AGRICULTURAL OPERATIONS means any business occurring on a ranch or farm directly related to:

(A) Growing of crops; or

(B) Conducting agricultural research or instruction by an educational institution.

(2) AGRICULTURAL WASTE means any unwanted or unsalable plant materials produced wholly from Agricultural Operations. Agricultural Wastes do not include items such as metal, wire, plastic, rubber, ornamental or landscape vegetation, chemically treated wood including chemically treated grape stakes, shop wastes, construction and

demolition material, material containing asbestos, garbage, oil filters, tires, tar paper, pesticide and fertilizer containers, broken boxes, pallets, sweat boxes, packaging material, packing boxes or any other material produced in the packaging or processing of agricultural products. Orchard or vineyard waste or any other material, generated as a result of land use conversion to nonagricultural purposes is not Agricultural Waste.

(3) AIR CURTAIN INCINERATOR means an incinerator, carbonizer, or mechanized burner that operates by forcefully projecting a curtain of air across an open, integrated combustion chamber or open pit or trench in which combustion occurs.

~~(1)~~(4) COMMUNITY LEASE UNITS - Facilities used for multiple-well units (three or more wells), whether for a group of wells at one location or for separate wells on adjoining leases.

(5) CONTRACTOR means a person or company who performs a service for a separate entity under a valid and current contract. Contractor includes government grant recipients.

~~(2)~~(6) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = weight of volatile compounds, in grams
W_w = weight of water, in grams
W_{es} = weight of exempt compounds, in grams
V_m = volume of material, in liters

~~(3)~~(7) GRAMS OF VOC PER LITER OF REGULATED PRODUCT, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and product solids, and can be calculated by the following equation:

$$\text{Grams of VOC per liter of regulated product, less water and less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_s = weight of volatile compounds, in grams

W_w = weight of water, in grams
W_{es} = weight of exempt compounds, in grams
V_m = volume of material, in liters
V_w = volume of water, in liters
V_{es} = volume of exempt compounds, in liters

(8) PRESCRIBED FIRE VEHICLE means a mobile machine designed for wildfire prevention by performing mechanized controlled burns of low-growth vegetation to create fuel breaks.

~~(4)~~(9) PRIMARY RECOVERY - Crude oil or natural gas production from "free- flow" wells or from well units where only water, Produced Gas or purchased quality gas is injected to repressurize the production zone.

~~(5)~~(10) PRODUCED GAS – Organic compounds that are both gaseous at standard temperature and pressure and are associated with the production, gathering, separation or processing of crude oil.

~~(6)~~(11) PURCHASED QUALITY NATURAL GAS – Natural gas that meets the quality and specification of natural gas supplied by the local gas utility.

~~(7)~~(12) SHIPPING TANKS – Fixed roof tanks, which operate essentially as "run down" tanks for separated crude oil where the holding time is 72 hours or less.

(13) WOOD WASTE means untreated wood and untreated wood products, including tree stumps (whole or chipped), trees, and tree limbs (whole or chipped). Wood Waste does not include grass, grass clippings, bushes, shrubs, and clipping from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands, construction, renovation, or demolition wastes.

(14) YARD WASTE means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. Yard Waste comes from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard Waste does include construction, renovation, and demolition wastes.

(d) The following equipment, processes, or operations do not require a written permit:

(1) Mobile Equipment

This paragraph does not apply to air contaminant emitting equipment that are mounted and operated on motor vehicles, marine vessels, mobile

hazardous material treatment systems, or mobile day tankers.

(d) (1) (A) Motor vehicle or vehicle as defined by the California Vehicle Code as it exists on April 7, 2023.

(B) Marine vessel as defined by Health and Safety Code Section 39037.1 as it exists on April 7, 2023.

(C) A motor vehicle or a marine vessel that uses one internal combustion engine to propel the motor vehicle or marine vessel, and the same engine to operate other equipment mounted on the motor vehicle or marine vessel.

(D) Equipment that is mounted on a vehicle, motor vehicle or marine vessel if such equipment does not emit air contaminants.

(E) Asphalt pavement heaters (which are any mobile equipment used for the purposes of road maintenance and new road construction). Rule 222 may be applicable.

(F) Mobile day tankers that only carry fuel oil with an organic vapor pressure of 5 mm Hg (0.1 psi) absolute or less at 21.1 °C (70 °F).

(2) Combustion and Heat Transfer Equipment

(A) Internal combustion engines that:

(i) Have a manufacturer's rating of 50 brake horsepower or less; or

(ii) Are used exclusively for electrical generation at remote two- way radio transmission towers where no utility, electricity or natural gas is available within a half mile radius and:

(A) Have a manufacturer's rating of 100 brake horsepower or less; and

(B) Are fired exclusively on diesel #2 fuel, compressed natural gas (CNG), liquefied petroleum gas (LPG), or any combination thereof.

Rule 222 may be applicable to internal combustion engines exempt pursuant to clause (d)(2)(A)(ii).

(B) Stationary gas turbine engines including micro-turbines, with a rated maximum heat input capacity of 3,500,000 British thermal units (Btu) per hour or less, provided that:

(d) (2) (B) (i) The cumulative power output of all such engines at a facility is less than two megawatts; and

(ii) The engines were certified at the time of manufacture with the California Air Resources Board or were in operation prior to May 3, 2013.

Rule 222 may be applicable.

(C) Boilers, process heaters, or any combustion equipment with a rated maximum heat input capacity of 2,000,000 Btu per hour (gross) or less and are equipped to be heated exclusively with natural gas, methanol, liquefied petroleum gas, or any combination thereof. Rule 222 may be applicable for boilers, steam generators, or process heaters with rated heat input capacities from 1,000,000 up to and including 2,000,000 Btu per hour. This exemption does not apply to:

(i) Internal combustion engines;

(ii) Turbines; or

(iii) Boilers, process heaters, or any combustion equipment whenever there are emissions other than products of fuel combustion, except for food ovens with a rated maximum heat input capacity of 2,000,000 Btu/hour or less, that are fired exclusively on natural gas and where the process VOC emissions are less than one pound per day. Rule 222 may be applicable.

(D) Diesel fueled boilers with a rated maximum heat input capacity of 2,000,000 Btu per hour or less, are fueled exclusively with diesel #2 fuel, and are located more than 4,000 feet above sea level or more than 15 miles offshore from the mainland, and where the maximum Oxides of Nitrogen (NOx) emission output of the equipment is less than one pound per day and uses less than 50 gallons of fuel per day, and have been in operation prior to May 3, 2013. This exemption does not apply whenever there are emissions other than products of combustion. Rule 222 may be applicable.

(E) Portable diesel fueled heaters, with a rated maximum heat input capacity of 250,000 Btu per hour or less, and that are equipped with burner(s) designed to fire exclusively on diesel fuel only. Rule 222 may be applicable.

(d) (2) (F) Power pressure washers and hot water or steam washers and cleaners, that are equipped with a heater or burner that is designed to be fired on diesel fuel, has a rated maximum heat input capacity of 550,000 Btu per hour or less, is equipped with non-resettable chronometer, and the maximum NOx emission output of the equipment is less than one pound per day and uses no more than 50 gallons of fuel per day. This exemption does not apply to internal combustion engines or turbines. Rule 222 may be applicable.

(G) Fuel cells, which produce electricity in an electro-chemical reaction and use phosphoric acid, molten carbonate, proton exchange membrane, or solid oxide technologies; and associated heating equipment, provided the heating equipment:

(i) Does not use a combustion source; or

(ii) Is fueled exclusively with natural gas, methanol, liquefied petroleum gas, or any combination thereof, including heaters that have a rated maximum heat input capacity of greater than 2,000,000 Btu per hour, provided that the supplemental heat used is 90,000 therms per year or less. Rule 222 may be applicable.

(H) Test cells and test stands used for testing burners or internal combustion engines provided that the equipment uses less than 800 gallons of diesel fuel and 3,500 gallons of gasoline fuel per year, or uses other fuels with equivalent or less emissions.

(I) Internal combustion engines used exclusively for training at educational institutions.

(J) Portable combustion equipment, pursuant to paragraph (d)(18) – Registered Equipment.

(3) Structures and Equipment - General

(A) Structural changes which cannot change the quality, nature or quantity of air contaminant emissions.

(B) Repairs or maintenance not involving structural changes to any equipment for which a permit has been granted.

(C) Replacement of identical equipment, as defined in Rule 301 - Permitting and Associated Fees, at a facility that is not a federal major source, as defined in 40 CFR 51.165 or 52.21 as these

regulations exist on April 7, 2023, where a permit to operate had previously been granted for such equipment, except seals for external or internal floating roof storage tanks.

(d) (3) (D) Routine maintenance, repair or replacement of a part of any equipment at a facility that is a federal major source, as defined in 40 CFR 51.165 or 52.21 as these regulations exist on April 7, 2023, where a permit to operate had previously been issued for such equipment, based on U.S. EPA guidance in determining routine maintenance, repair, or replacement.

(E) Replacement of floating roof tank seals provided that the replacement seal is of a type and model which the Executive Officer has determined is capable of complying with the requirements of Rule 463 – Organic Liquid Storage.

(F) Equipment utilized exclusively in connection with any structure which is designed for and used exclusively as a dwelling for not more than four families, and where such equipment is used by the owner or occupant of such a dwelling.

(G) Laboratory testing and quality control testing equipment used exclusively for chemical and physical analysis, and the control equipment used to exclusively vent such equipment. Laboratory testing equipment does not include engine test stands or test cells unless such equipment is also exempt pursuant to subparagraph (d)(2)(H).

(H) Non-production bench scale research equipment, and the control equipment used to exclusively vent such equipment.

(I) Vacuum-producing devices used in laboratory operations or in connection with other equipment not requiring a written permit.

(J) Vacuum-cleaning systems used exclusively for industrial, commercial, or residential housekeeping purposes.

(K) Hoods, stacks, or ventilators.

(L) Passive and intermittently operated active venting systems used at and around residential structures to prevent the accumulation of naturally occurring methane and associated gases in enclosed spaces.

(M) Sub-slab ventilation systems including associated air pollution control equipment with an aggregate flow rate of less than 200

standard cubic feet per minute (scfm) where vacuum suction pits do not penetrate more than 18 inches below the bottom of the slab, provided the inlet total organic compounds concentration does not exceed 15 ppmv, measured as hexane, and provided the ventilation system is connected to air pollution control equipment consisting of a carbon adsorber sized to handle at least 200 scfm, or equivalent air pollution control.

(d) (4) Utility Equipment - General

(A) Comfort air conditioning or ventilating systems which are not designed or used to remove air contaminants generated by, or released from, specific equipment units, provided such systems are also exempt pursuant to subparagraphs (d)(2)(C) or (d)(2)(D).

(B) Refrigeration units except those used as or in conjunction with air pollution control equipment.

(C) Water cooling towers and water cooling ponds that are not used for evaporative cooling of process water or used for evaporative cooling of water from barometric jets or from barometric condensers, and in which no chromium compounds are contained, including:

(i) Cooling towers used for comfort cooling; and

(ii) Industrial cooling towers located in a chemical plant, refinery or other industrial facility. Rule 222 may be applicable.

(D) Equipment used exclusively to generate ozone and associated ozone destruction equipment for the treatment of cooling tower water or for water treatment processes.

(E) Equipment used exclusively for steam cleaning provided such equipment is also exempt pursuant to subparagraphs (d)(2)(C) or (d)(2)(D).

(F) Equipment used exclusively for space heating provided such equipment is also exempt pursuant to subparagraphs (d)(2)(C) or (d)(2)(D).

(G) Equipment used exclusively to compress or hold Purchased Quality Natural Gas, provided any internal combustion engine is also exempt pursuant to subparagraph (d)(2)(A).

(d) (4) (H) Emergency ventilation systems used exclusively to scrub ammonia from refrigeration systems during process upsets or equipment breakdowns.

(I) Emergency ventilation systems used exclusively to contain and control emissions resulting from the failure of a compressed gas storage system.

(J) Passive carbon adsorbers, with a maximum vessel capacity of no more than 120 gallons, without mechanical ventilation, and used exclusively for odor control at wastewater treatment plants, food waste slurry storage tanks, or sewer collection systems, including sanitary sewers, manholes, and pump stations.

(K) Refrigerant recovery and/or recycling units. This exemption does not include refrigerant reclaiming facilities.

(L) Carbon arc lighting equipment provided such equipment is also exempt pursuant to subparagraph (d)(2)(A).

(M) Gas-insulated equipment with a voltage of 245 kilovolts or less, used in electrical power generation, transmission and distribution operations, that use a VOC-containing gas as an insulating medium and is manufactured to have a maximum leak rate of less than one percent per year under normal operating conditions.

(5) Glass, Ceramic, Metallurgical Processing, and Fabrication Equipment

(A) Crucible-type or pot-type furnaces with a capacity of less than 7,400 cubic centimeters (452 cubic inches) of any molten metal, and the control equipment used to exclusively vent the furnace.

(B) Crucible furnaces, pot furnaces, or induction furnaces with a capacity of 450 kilograms (992 pounds) or less each, and the control equipment used to exclusively vent the furnaces, where:

(i) No sweating or distilling is conducted;

(ii) The furnaces are also exempt pursuant to subparagraph (d)(2)(C); and

(iii) Only the following materials are poured or held in a molten state, and these materials do not contain alloying elements of arsenic, beryllium, cadmium, chromium and/or lead:

(A) Aluminum or any alloy containing over 50 percent aluminum;

(d) (5) (B) (iii) (B) Magnesium or any alloy containing over 50 percent magnesium;

(C) Tin or any alloy containing over 50 percent tin;

(D) Zinc or any alloy containing over 50 percent zinc;

(E) Copper or any alloy containing over 50 percent copper;

(F) Precious metals; and

(G) Ceramic materials, including glass and porcelain.

(C) Molds used for the casting of metals and the control equipment used to exclusively vent the equipment.

(D) Inspection equipment used exclusively for metal, plastic, glass, or ceramic products and the control equipment used to exclusively vent such equipment.

(E) Ovens used exclusively for curing potting materials or castings made with epoxy resins, provided such ovens are also exempt pursuant to subparagraph (d)(2)(C).

(F) Hand-held or automatic brazing and soldering equipment, and the control equipment used to exclusively vent such equipment, provided that the equipment uses one quart per day or less or 22 quarts per calendar month or less of material containing VOC. This exemption does not include hot oil, hot air, or vapor phase solder leveling equipment, and associated control equipment.

(G) Brazing ovens where no VOC (except flux) are present in the materials processed in the ovens, provided such ovens are also exempt pursuant to subparagraph (d)(2)(C).

(H) Welding equipment, oxygen gaseous fuel-cutting equipment, hand-held plasma-arc cutting equipment, hand-held laser cutting equipment, laser etching or engraving equipment and associated air pollution control equipment. This exemption does not include cutting equipment described in this paragraph that is used to cut stainless steel, or alloys containing 0.1 percent by weight or more of chromium, nickel, cadmium or lead, unless the equipment is used exclusively for maintenance or repair operations. In addition this exemption does not include laser cutting, etching and engraving equipment that are rated at more than 400 watts.

(d) (5) (I) Sintering equipment used exclusively for the sintering of metal (excluding lead) or glass where no coke or limestone is used, and the control equipment used to exclusively vent such equipment, provided such equipment is also exempt pursuant to subparagraph (d)(2)(C).

(J) Mold forming equipment for foundry sand to which no heat is applied, and where no volatile organic materials are used in the process, and the control equipment used to exclusively vent such equipment.

(K) Metal forming equipment or equipment used for heating metals for forging, rolling, pressing, or drawing of metals provided that any lubricants used contain 50 Grams of VOC Per Liter of Material or less, or a VOC composite partial pressure of 20 mm Hg or less at 20 ^{o}C (68 ^{o}F), and the control equipment used to exclusively vent the equipment, provided such metal forming equipment or equipment used for heating metals are also exempt pursuant to subparagraph (d)(2)(C) or (d)(2)(D).

(L) Heat treatment equipment and associated water quench tanks used exclusively for heat treating glass or metals (provided no VOC materials are present), or equipment used exclusively for case hardening, carburizing, cyaniding, nitriding, carbonitriding, siliconizing or diffusion treating of metal objects, provided any combustion equipment involved is also exempt pursuant to subparagraph (d)(2)(C) or (d)(2)(D).

(M) Ladles used in pouring molten metals.

(N) Tumblers used for the cleaning or deburring of solid materials, and the associated air pollution control equipment.

(O) Die casting machines. This exemption does not apply to die casting machines used for copper base alloys, with an integral furnace having a capacity of more than 450 kg (992 lbs.), or die casting machines using a furnace not exempt pursuant to subparagraph (d)(2)(C).

(P) Furnaces or ovens used for the curing or drying of porcelain enameling or vitreous enameling, provided such furnaces or ovens are also exempt pursuant to subparagraph (d)(2)(C).

(d) (5) (Q) Wax burnout kilns where the total internal volume is less than 0.2 cubic meter (7.0 cubic feet) or kilns used exclusively for firing ceramic ware, and the control equipment used to exclusively vent the equipment, provided such kilns are also exempt pursuant to subparagraph (d)(2)(C).

(R) Shell-core and shell-mold manufacturing machines.

(S) Furnaces used exclusively for melting titanium materials in a closed evacuated chamber where no sweating or distilling is conducted, provided such furnaces are also exempt pursuant to subparagraph (d)(2)(C).

(T) Vacuum metallizing chambers which are electrically heated or heated with equipment that is also exempt pursuant to subparagraphs (d)(2)(C) or (d)(2)(D), and the control equipment used to exclusively vent such equipment, provided the control equipment is equipped with a mist eliminator or the vacuum pump used with control equipment demonstrates operation with no visible emissions from the vacuum exhaust.

(U) Notwithstanding the exemptions in subparagraph (d)(5)(L), equipment existing as of May 5, 2017 that qualifies for the exemption in subparagraph (d)(5)(L), that is an integral part of an operation requiring a written permit shall continue to be exempt, provided the equipment is identified, described in detail and submitted for inclusion into the permit equipment description with any associated application for Permit to Construct or Permit to Operate. Equipment described in this subparagraph includes, but is not limited to, quench tanks that are part of a heat treating operation.

(6) Abrasive Blasting Equipment

(A) Blast cleaning cabinets in which a suspension of abrasive in water is used and the control equipment used to exclusively vent such equipment.

(B) Manually operated abrasive blast cabinets, vented to a dust filter with at least 90 percent overall control efficiency (capture and collection efficiency) where the total internal volume of the blast section is 1.5 cubic meters (53 cubic feet) or less, and the dust filter venting such equipment.

(d) (6) (C) Enclosed equipment used exclusively for shot blast removal of flashing from rubber and plastics at sub-zero temperatures and the control equipment used to exclusively vent such equipment.

(D) Shot peening operations using a flywheel, and the control equipment used to exclusively vent such equipment.

(E) Portable sand/water blaster equipment and associated internal combustion engine provided the water in the mixture is maintained at 66 percent or more by volume during operation of such equipment, provided the internal combustion engine is also exempt pursuant to subparagraph (d)(2)(A).

(7) Mechanical Equipment

(A) Equipment used exclusively for buffing (except tire buffers), polishing, carving, mechanical cutting, drilling, machining, pressing, routing, sanding, stamping, surface grinding or turning provided that any lubricants, coolants, or cutting oils used contain 50 Grams of VOC Per Liter of Material or less or a VOC composite partial pressure of 20 mm Hg or less at 20 ºC (68 ºF), and the control equipment used to exclusively vent such equipment. This exemption does not include asphalt pavement grinders or portable asphalt recycling equipment.

(B) Equipment used exclusively for shredding wood, or extruding, handling, or storing wood chips, sawdust, or wood shavings and the control equipment used exclusively to vent such equipment, provided the source of the wood does not include wood that is painted, or treated for exterior exposure, or wood that is comingled with other construction and demolition materials. This exemption does not include:

(i) Internal combustion engines over 50 brake horsepower that are used to supply power to the equipment in subparagraph (d)(7)(B); or

(ii) The shredding, extruding, handling or storage of any organic waste material generated from gardening, agricultural, or landscaping activities including, but not limited to, leaves, grass clippings, tree and shrub trimmings and plant remains.

(d) (7) (C) Equipment used exclusively to mill or grind, coatings or molding compounds, where all materials charged are in paste form.

(D) Equipment used for separation or segregation of plastic materials intended for recycling, provided there is no mechanical cutting, shredding or grinding, and where no odors are emitted.

(8) Printing and Reproduction Equipment

(A) Graphic arts operations including printing, coating and/or laminating equipment, and associated dryers and curing equipment, and the associated air pollution control equipment, provided such dryers and curing equipment are also exempt pursuant to subparagraph (d)(2)(C), and the air pollution control equipment is not required for source specific rule compliance, and provided that:

(i) The uncontrolled VOC emissions from such equipment (including clean-up) are three pounds per day or less or 66 pounds per calendar month or less;

(ii) The total quantity of plastisol type inks, coatings and adhesives and associated VOC containing solvents (including clean-up) used is six gallons per day or less or 132 gallons per calendar month or less;

(iii) The total quantity of UV/EB/LED (non-solvent based and non-waterborne) inks, coatings, and adhesives, fountain solutions (excluding water) and associated VOC containing solvents (including clean-up) used is six gallons per day or less, or 132 gallons per calendar month or less;

(iv) The total quantity of inks, coatings and adhesives not specified in clauses (d)(8)(A)(ii) or (d)(8)(A)(iii) above, fountain solutions (excluding water) and associated VOC containing solvents (including clean-up) used is two gallons per day or less or 44 gallons per calendar month or less; or

(v) All inks, coatings and adhesives, fountain solutions, and associated VOC containing solvents (excluding cleanup solvents) contain 50 Grams of VOC Per Liter of Material or less and all cleanup solvents contain 25 Grams of VOC Per Liter of Material or less, and the total quantity of VOC

emissions do not exceed one ton per calendar year. Rule 222 may be applicable.

If a combination of the inks, coatings, and adhesives identified in clauses (d)(8)(A)(ii), (d)(8)(A)(iii), and/or (d)(8)(A)(iv) are used in any equipment, this exemption is only applicable if the operations meet the criteria specified in clauses (d)(8)(A)(i) or (d)(8)(A)(v), or the total usage of inks, coatings, adhesives, fountain solutions (excluding water) and associated VOC containing solvents (including cleanup) meets the most stringent applicable limit in clauses (d)(8)(A)(ii), (d)(8)(A)(iii), or (d)(8)(A)(iv). For exemptions based on usage, solvent based UV and waterborne UV materials are subject to the usage limits in clause (d)(8)(A)(iv).

(d) (8) (B) Photographic process equipment by which an image is reproduced upon material sensitized by radiant energy and the control equipment exclusively venting such equipment, excluding wet gate printing utilizing perchloroethylene, and its associated control equipment.

(C) Lithographic printing equipment which uses laser printing.

(D) Printing equipment used exclusively for training and non-production at educational institutions.

(E) Flexographic plate making and associated processing equipment.

(F) Corona treating equipment and the associated air pollution control equipment used for surface treatment in printing, laminating and coating operations.

(G) Hand application of materials used in printing operations including but not limited to the use of squeegees, screens, stamps, stencils, any hand tools, and the associated air pollution control equipment used to exclusively vent the hand application of materials in printing operations, unless such air pollution control equipment is required for source specific rule compliance.

(H) The addition of UV/EB/LED curing technology, or other curing or drying technology, to an existing permitted graphics arts equipment or operation if:

(i) The equipment remains consistent with the description in the existing Permit to Operate, excluding the addition of curing

or drying equipment operated exclusively using electrical power;

(d) (8) (H) (ii) The equipment complies with the conditions specified in the existing Permit to Operate;

(iii) There is no physical change to the configuration of the existing air pollution control equipment associated with the equipment or operation;

(iv) There is no physical change to the configuration of an existing permanent total enclosure associated with the equipment or operation;

(v) All inks, coatings, solvents, or other materials associated with the technology do not contain any toxic air contaminants pursuant to Rule 1401 – New Source Review of Toxic Air Contaminants, as listed on the Safety Data Sheet, except as allowed under the existing Permit to Operate; and

(vi) All inks, coatings and adhesives, fountain solutions, and VOC containing solvents associated with the technology (excluding cleanup solvents) contain 50 Grams of VOC Per Liter of Material or less and all cleanup solvents associated with the technology contain 25 Grams of VOC Per Liter of Material or less.

(9) Pharmaceuticals, Cosmetics, and Food Processing and Preparation Equipment

(A) Smokehouses for preparing food in which the maximum horizontal inside cross-sectional area does not exceed two square meters (21.5 square feet) and control equipment exclusively venting the equipment.

(B) Smokehouses exclusively using liquid smoke, and which are completely enclosed with no vents to either a control device or the atmosphere.

(C) Confection cookers where products are edible and intended for human consumption, provided such equipment is also exempt pursuant to subparagraph (d)(2)(C).

(d) (9) (D) Grinding, blending, or packaging equipment used exclusively for tea, cocoa, roasted coffee, flavor, fragrance extraction, dried flowers, or spices, provided that the facility uses less than one gallon per day or 22 gallons per month of VOC containing solvents, and the control equipment used to exclusively vent such equipment.

(E) Equipment used in eating establishments for the purpose of preparing food for human consumption. Rule 222 may apply to commercial charbroilers and associated air pollution control equipment at eating establishments.

(F) Equipment used to convey or process materials in bakeries, or used to produce noodles, macaroni, pasta, food mixes, and drink mixes where the products are edible and intended for human consumption and the control equipment used exclusively to vent such equipment, provided that the facility uses less than one gallon per day or 22 gallons per month of VOC containing solvents and the equipment is also exempt pursuant to subparagraphs (d)(2)(C) or (d)(2)(D).
This exemption does not include storage bins located outside buildings.

(G) Cooking kettles where the entire product in the kettle is edible and intended for human consumption. This exemption does not include deep frying equipment used in facilities other than eating establishments.

(H) Coffee roasting equipment with a maximum batch capacity of 15 kilograms or less, and the control equipment used exclusively to vent the equipment.

(I) Equipment used exclusively for tableting, or packaging vitamins, or coating vitamins, herbs, or dietary supplements and the control equipment used exclusively to vent such equipment, provided that the equipment uses waterborne solutions that contain 25 Grams of VOC Per Liter of Material or less, or the facility uses less than one gallon per day or 22 gallons per month of VOC containing solvents.

(J) Equipment used exclusively for tableting or packaging pharmaceuticals and cosmetics, or coating pharmaceutical tablets and the control equipment used exclusively to vent such equipment, provided that the equipment uses waterborne solutions that contain 25 Grams of VOC Per Liter of Material or less, or the facility uses

less than one gallon per day or 22 gallons per month of VOC containing solvents.

(d) (9) (K) Modified atmosphere food packaging equipment using mixture of gases of that contain no more than 0.4 percent carbon monoxide by volume.

(L) Charbroilers, barbecue grills, and other underfired grills fired on solid or gaseous fuels used in residential units, provided the equipment is only used by the owner or occupant of such dwelling for non-commercial purposes.

(M) Equipment used to brew beer for human consumption at breweries that produce less than 1,000,000 gallons of beer per calendar year and associated cleaning equipment, provided all equipment used in the manufacturing operation is also exempt pursuant to subparagraphs (d)(2)(C), and the cleaning equipment is also exempt pursuant to paragraph (d)(15). This exemption does not apply to boilers.

(N) Equipment used to manufacture dehydrated meat for human or pet consumption, provided:

(i) The dehydrating oven is either electric or has a maximum rated heat input capacity of 2,000,000 Btu/hour or less and is fired exclusively on natural gas;

(ii) The operating temperature for the dehydrating oven is less than 190 degrees Fahrenheit; and

(iii) The non-combustion VOC and particulate matter (PM) emissions, including emissions from materials used for cleaning, are each one pound per day or less.

(O) Food ovens with a rated maximum heat input capacity of 325,000 Btu/hour or less, that are fired exclusively on natural gas. This exemption does not apply to food ovens used to bake uncooked yeast-containing products.

(10) Plastics, Composite, and Rubber Processing Equipment

(A) Presses or molds used for curing, post curing, or forming composite products and plastic products where no VOC or chlorinated blowing agent is present, and the control equipment is used exclusively to vent these presses or molds.

(d) (10) (B) Presses or molds with a ram diameter of less than or equal to 26 inches used for curing or forming rubber products and composite rubber products, excluding those operating above 400 °F.

(C) Ovens used exclusively for the forming of plastics or composite products, where no foam forming or expanding process is involved, provided such ovens are also exempt pursuant to subparagraph (d)(2)(C).

(D) Equipment used exclusively for softening or annealing plastics, provided such equipment is also exempt pursuant to subparagraphs (d)(2)(C) or (d)(2)(D). This exemption does not include equipment used for recycling of expanded polystyrene.

(E) Extrusion equipment used exclusively for extruding rubber products or plastics where no organic plasticizer is present, or for pelletizing polystyrene foam scrap. This exemption does not apply to equipment used to extrude or to pelletize acrylics, polyvinyl chloride, polystyrene, and their copolymers.

(F) Injection or blow molding equipment for rubber or plastics where no blowing agent is used, or where only compressed air, water or carbon dioxide is used as a blowing agent, and control equipment used to exclusively vent such equipment.

(G) Mixers, roll mills and calendars for rubber or plastics where no material in powder form is added and no VOC containing solvents, diluents or thinners are used.

(H) Ovens used exclusively for the curing of vinyl plastisols by the closed-mold curing process, provided such ovens are also exempt pursuant to subparagraph (d)(2)(C).

(I) Equipment used exclusively for conveying and storing plastic materials, provided they are not in powder form and the control equipment used exclusively to vent the equipment.

(J) Hot wire cutting of expanded polystyrene foam and woven polyester film.

(K) Photocurable stereolithography equipment and associated post curing equipment.

(L) Laser sintering equipment used exclusively for the sintering of nylon or plastic powders and the control equipment used exclusively

to vent such equipment, provided such equipment is also exempt pursuant to subparagraph (d)(2)(C).

(d) (10) (M) Roller to roller coating systems that create three-dimensional images provided:

(i) The VOC emissions from such equipment (including cleanup) are three pounds per day or less or 66 pounds per calendar month or less;

(ii) The coatings contain 25 Grams of VOC Per Liter of Material or less provided that the coating used on such equipment is 12 gallons per day or less or 264 gallons per calendar month or less; or

(iii) The coatings contain 50 Grams of VOC Per Liter of Material or less, and all cleanup solvents used contain 25 Grams of VOC Per Liter of Material or less, and the total quantity of VOC emissions do not exceed one ton per calendar year. Rule 222 may be applicable.

(11) Mixing, Blending, and Packaging Equipment

(A) Batch mixers, which have a maximum capacity of 55 gallons or less (7.35 cubic feet) and the control equipment used exclusively to vent the equipment, and the associated filling equipment.

(B) Equipment used exclusively for mixing and blending materials, and the associated filling equipment, provided no VOC containing solvents are used and no materials in powder form are added.

(C) Equipment used exclusively for mixing and blending materials to make water emulsions of asphalt, grease, oils, or waxes where no materials in powder or fiber form are added.

(D) Equipment used to blend, grind, mix, or thin liquids to which powders may be added, with a capacity of 950 liters (251 gallons) or less, where no supplemental heat is added and no ingredient charged (excluding water) exceeds 135 ^{o}F and the control equipment used exclusively to vent the equipment.

(E) Cosmetics filling stations where the filling equipment is hard piped to the cosmetics mixer and the holding tank feeding the filling equipment provided the mixer and holding tank are also exempt under this rule.

(d) (11) (F) Concrete mixers, with a rated working capacity of one cubic yard or less and the control equipment used exclusively to vent the equipment.

(G) Equipment used exclusively for packaging lubricants or greases.

(H) Equipment used exclusively for packaging sodium hypochlorite-based household cleaning or sodium hypochlorite-based pool products and the control equipment used exclusively to vent the equipment.

(I) Foam packaging equipment using 20 gallons per day or less or 440 gallons per calendar month or less of liquid foam material or containing 50 Grams of VOC Per Liter of Material or less.

(12) Coating and Adhesive Process/Equipment

(A) Equipment used exclusively for coating objects with oils, melted waxes or greases which contain no VOC containing materials, including diluents or thinners.

(B) Equipment used exclusively for coating objects by dipping in waxes or natural and synthetic resins which contain no VOC containing materials including, diluents or thinners.

(C) Batch ovens with 1.5 cubic meters (53 cubic feet) or less internal volume where no melting occurs, provided such equipment is also exempt pursuant to subparagraph (d)(2)(C). This exemption does not include ovens used to cure vinyl plastisols or debond brake shoes.

(D) Ovens used exclusively to cure 30 pounds per day or less or 660 pounds per calendar month or less of powder coatings, provided that such equipment is also exempt pursuant to subparagraph (d)(2)(C).

(E) Spray coating equipment operated within control enclosures.

(F) Coating or adhesive application or laminating equipment such as air, airless, air-assisted airless, high volume low pressure (HVLP), air brushes, electrostatic spray equipment, roller coaters, dip coaters, vacuum coaters, flow coaters and spray machines provided that:

(i) The VOC emissions from such equipment (including clean-up) are three pounds per day or less or 66 pounds per calendar month or less;

(d) (12) (F) (ii) The total quantity of UV/EB/LED (non-solvent based and non-waterborne) coatings, adhesives and associated VOC containing solvents (including clean-up) used in such operations is six gallons per day or less or 132 gallons per calendar month or less;

(iii) The total quantity of organic solvent based coatings and adhesives and associated VOC containing solvents (including clean-up) used in such equipment is one gallon per day or less or 22 gallons per calendar month or less;

(iv) The total quantity of water reducible or waterborne coatings and adhesives and associated VOC containing solvents (including clean-up) used in such equipment is three gallons per day or less or 66 gallons per calendar month or less;

(v) The total quantity of polyester resin and gel coat type materials and associated VOC containing solvents (including clean-up) used in such equipment is one gallon per day or less or 22 gallons per calendar month or less; or

(vi) All coatings, adhesives, polyester resin and gel coat type materials and associated VOC containing solvents (excluding cleanup solvents) contain 50 Grams of VOC Per Liter of Material or less and all cleanup solvents contain 25 Grams of VOC Per Liter of Material or less, and the total quantity of VOC emissions do not exceed one ton per calendar year. Rule 222 may be applicable.

If combination of the coatings, adhesives and polyester resin and gel coat type materials identified in clauses (d)(12)(F)(ii), (d)(12)(F)(iii), (d)(12)(F)(iv), and/or (d)(12)(F)(v) are used in any equipment, this exemption is only applicable if the operations meet the criteria specified in clauses (d)(12)(F)(i) or (d)(12)(F)(vi), or the total usage of coatings, adhesives, polyester resin and gel coat type materials and associated VOC containing solvents (including cleanup) meets the most stringent applicable limit in clauses (d)(12)(F)(ii), (d)(12)(F)(iii), (d)(12)(F)(iv), or (d)(12)(F)(v). For exemptions based on usage, solvent-based UV and waterborne UV materials are subject to the usage limits in clauses (d)(12)(F)(iii) and (d)(12)(F)(iv), respectively.

(d) (12) (G) Spray coating and associated drying equipment and control enclosures, used exclusively for educational purposes in educational institutions.

(H) Control enclosures with an internal volume of 27 cubic feet or less, provided that aerosol cans, air brushes, or hand applications are used exclusively.

(I) Portable coating equipment and pavement stripers used exclusively for the application of architectural coatings, and associated internal combustion engines provided such equipment is also exempt pursuant to paragraph (d)(1) or subparagraph (d)(2)(A), and provided no supplemental heat is added during pavement striping operations.

(J) Hand application of resins, adhesives, dyes, and coatings using devices such as brushes, daubers, rollers, and trowels.

(K) Drying equipment such as flash-off ovens, drying ovens, or curing ovens associated with coating or adhesive application, or laminating equipment provided the drying equipment is also exempt pursuant to subparagraph (d)(2)(C), and provided that:

(i) The total quantity of VOC emissions from all coating and/or adhesive application, and laminating equipment that the drying equipment serves is three pounds per day or less or 66 pounds per calendar month or less;

(ii) The total quantity of UV/EB/LED (non-solvent based and non-waterborne) coatings and adhesives, and associated VOC containing solvents (including clean-up) used in all coating and/or adhesive application, and laminating equipment that the drying equipment serves is six gallons per day or less or 132 gallons per calendar month or less;

(iii) The total quantity of solvent based coatings and adhesives and associated VOC containing solvents (including clean-up) used in all coating and/or adhesive application, and laminating equipment that the drying equipment serves is one gallon per day or less or 22 gallons per calendar month or less;

(iv) The total quantity of water reducible or waterborne coating and adhesives and associated VOC containing solvents

(including clean-up) used in all coating and/or adhesive application, and laminating equipment that the drying equipment serves is three gallons per day or less or 66 gallons per calendar month or less;

(v) The total quantity of polyester resin and gel coat type materials and associated VOC containing solvents (including clean-up) used in all coating, adhesive application, and laminating equipment that the drying equipment serves is one gallon per day or less or 22 gallons per calendar month or less; or

(vi) All coatings, adhesives, polyester resin and gel coat type materials and associated VOC containing solvents (excluding cleanup solvents) contain 50 Grams of VOC Per Liter of Material or less and all cleanup solvents contain 25 Grams of VOC Per Liter of Material or less, and the total quantity of VOC emissions do not exceed one ton per calendar year. Rule 222 may be applicable.

If a combination of the coatings, adhesives and polyester resin and gel coat type materials identified in clauses (d)(12)(K)(ii), (d)(12)(K)(iii), (d)(12)(K)(iv), and/or (d)(12)(K)(v) are used in any equipment, this exemption is only applicable if the operations meet the criteria specified in clauses (d)(12)(K)(i) or (d)(12)(K)(vi), or the total usage of coatings, adhesives, polyester resin and gel coat type materials and associated VOC containing solvents (including cleanup) meets the most stringent applicable limit in clauses (d)(12)(K)(ii), (d)(12)(K)(iii), (d)(12)(K)(iv), or (d)(12)(K)(v) . For exemptions based on usage, solvent-based UV and waterborne UV materials are subject to the usage limits in clauses (d)(12)(K)(iii) and (d)(12)(K)(iv), respectively.

(L) The addition of UV/EB/LED curing technology, or other curing or drying technology, to an existing permitted coating equipment or operation if:

(i) The equipment remains consistent with the description in the existing Permit to Operate, excluding the addition of curing or drying equipment operated exclusively using electrical power;

(ii) The equipment complies with the conditions specified in the existing Permit to Operate;

(iii) There is no physical change to the configuration of the existing air pollution control equipment associated with the equipment or operation;

(iv) There is no physical change to the configuration of an existing permanent total enclosure associated with the equipment or operation;

(v) All coatings, solvents, or other materials associated with the technology do not contain any toxic air contaminants pursuant to Rule 1401, as listed on the Safety Data Sheet, except as allowed under the existing Permit to Operate; and

(vi) All coatings, solvents, or other materials associated with the technology (excluding cleanup solvents) contain 50 Grams of VOC Per Liter of Material or less and all cleanup solvents associated with the technology contain 25 Grams of VOC Per Liter of Material or less.

(13) Storage and Transfer Equipment

(A) Equipment used exclusively for the storage and transfer of fresh, commercial or purer grades of:

(i) Sulfuric acid or phosphoric acid with an acid strength of 99 percent or less, by weight;

(ii) Nitric acid with an acid strength of 70 percent or less, by weight; or

(iii) Water based solutions of salts or sodium hydroxide.

(B) Equipment used exclusively for the storage and/or transfer of liquefied gases, not including:

(i) LPG with a capacity of greater than 10,000 pounds;

(ii) Hydrogen fluoride with a capacity of greater than 100 pounds; or

(iii) Anhydrous ammonia with a capacity of greater than 500 pounds.

(C) Equipment used exclusively for the transfer of less than 75,700 liters (20,000 gallons) per day of unheated VOC containing materials, with an initial boiling point of 150 ^{o}C (302 ^{o}F) or greater, or with an

organic vapor pressure of five mm Hg (0.1 psi) absolute or less at 21.1 ºC (70 ºF).

(d) (13) (D) Equipment used exclusively for the storage and/or dispensing of unheated VOC containing materials with an initial boiling point of 150 ºC (302 ºF) or greater, or with an organic vapor pressure of five mm Hg (0.1 psi) absolute or less at 21.1 ºC (70 ºF). This exemption does not include liquid fuel storage greater than 160,400 liters (40,000 gallons).

(E) Equipment used exclusively for transferring VOC containing liquids, materials containing VOCs, or compressed gases into containers with a capacity of less than 225 liters (60 gallons). This exemption does not include equipment used for transferring more than 4,000 liters (1,057 gallons) of materials per day with a vapor pressure greater than 25.8 mm Hg (0.5 psia) at operating conditions.

(F) Equipment used exclusively for the storage and transfer of liquid soaps, liquid detergents, vegetable oils, fatty acids, fatty esters, fatty alcohols, waxes and wax emulsions.

(G) Equipment used exclusively for the storage and transfer of refined lubricating or hydraulic oils and the control equipment used exclusively to vent such equipment.

(H) Equipment used exclusively for the storage and transfer of crankcase drainage oil and the control equipment used exclusively to vent such equipment.

(I) Equipment used exclusively for VOC containing liquid storage or transfer to and from such storage, with a holding capacity of less than 950 liters (251 gallons); or equipment used exclusively for the storage of odorants for natural gas, propane, or oil with a holding capacity of less than 950 liters (251 gallons) and associated transfer and control equipment used exclusively for such equipment. Rule 222 may be applicable for equipment used exclusively for the storage of odorants. This exemption does not include asphalt. In addition, this exemption does not apply to a group of more than one VOC-containing liquid or odorant tank where a single product is stored, where the combined storage capacity of all tanks exceeds 950 liters (251 gallons), and where the tanks are mounted on a shared mobile platform and stored at a facility.

(d) (13) (J) A retail mobile fueler with a cumulative storage capacity less than or equal to 10 gallons of gasoline, excluding one individual portable fuel container with a capacity up to 6.6 gallons of gasoline.

(K) A non-retail mobile fueler with a cumulative storage capacity less than or equal to 120 gallons of gasoline, excluding one individual portable fuel container with a capacity up to 6.6 gallons of gasoline.

(L) Equipment used exclusively for the storage and transfer of "top white" (i.e., Fancy) or cosmetic grade tallow or edible animal fats intended for human consumption and of sufficient quality to be certifiable for United States markets.

(M) Equipment, including tar pots (or tar kettles), used exclusively for the storage, holding, melting and transfer of asphalt or coal tar pitch with a maximum holding capacity of less than 600 liters (159 gallons); or equipment, including tar pots (or tar kettles), used exclusively for the storage, holding, melting and transfer of asphalt or coal tar pitch with a maximum holding capacity of no more than 3,785 liters (1,000 gallons), if such equipment is equipped with burner(s) designed to fire exclusively on liquefied petroleum gases. Rule 222 may be applicable.

(N) Pumps used exclusively for pipeline transfer of liquids.

(O) Equipment used exclusively for the unheated underground storage of organic liquids with a vapor pressure of 77.5 mm Hg (1.5 psi) absolute or less at actual storage conditions with a capacity of 23,000 liters (6,077 gallons) or less, and equipment used exclusively for the transfer to or from such storage of organic liquids.

(P) Equipment used exclusively for the storage and/or transfer of an asphalt-water emulsion heated to 150 ^{o}F or less.

(Q) Liquid fuel storage tanks piped exclusively to emergency internal combustion engine-generators, turbines or pump drivers.

(R) Bins used for temporary storage and transport of material with a capacity of 2,080 liters (550 gallons) or less.

(S) Equipment used for material storage where no venting occurs during filling or normal use.

(T) Equipment used exclusively for storage, blending, and/or transfer of water emulsion intermediates and products, including latex, with a

VOC content of five percent by volume or less, or a VOC composite partial pressure of five mm Hg (0.1 psi) or less at 20 ºC (68 ºF).

(d) (13) (U) Equipment used exclusively for storage and/or transfer of sodium hypochlorite solution.

(V) Equipment used exclusively for the storage of VOC containing materials which are stored at a temperature at least 130 ºC (234 ºF) below its initial boiling point, or have an organic vapor pressure of five mm Hg (0.1 psia) absolute or less at the actual storage temperature. If the stored material is heated, the owner or operator shall install and maintain a device to measure the temperature of the stored VOC containing material to qualify for this exemption. This exemption does not include liquid fuel storage greater than 160,400 liters (40,000 gallons), asphalt storage, or coal tar pitch storage.

(W) Stationary equipment used exclusively to store and/or transfer organic compounds that do not contain VOCs.

(X) Unheated equipment including the associated control equipment used exclusively for the storage and transfer of fluorosilicic acid at a concentration of 30 percent or less by weight and a vapor pressure of 24 mm Hg or less at 77 ºF (25 ºC). The hydrofluoric acid concentration within the fluorosilicic acid solution shall not exceed one percent by weight.

(Y) Equipment, including asphalt day tankers, used exclusively for storing, holding, melting, and transferring asphalt or coal tar pitch, that is mounted on a motor vehicle with a maximum holding capacity:

(i) Less than 600 liters (159 gallons) [Rule 222 may be applicable]; or

(ii) Less than or equal to 18,925 liters (5,000 gallons), provided the equipment in subparagraph (d)(13)(Y) is equipped with burner(s) designed to fire exclusively on liquefied petroleum gases only [Rule 222 may be applicable].

(Z) Tanks for aqueous urea solutions with a capacity of 6,500 gallons or less. This exemption does not include tanks used for blending powdered urea and water. Rule 222 may be applicable.

(AA) Replacement of a pole float used to control emissions from slotted guidepoles in floating roof storage tanks with a pole sleeve or a pole

sleeve in combination with a flexible enclosure system. The exceptions provided in paragraph (e)(1) do not apply to equipment utilizing this provision for replacing equipment. In addition, this provision does not exempt such equipment from complying with any requirements or regulations listed in paragraph (e)(1), as those requirements may separately apply to the equipment.

(d) (14) Natural Gas and Crude Oil Production Equipment

(A) Well heads and well pumps. Rule 222 may be applicable.

(B) Crude oil and natural gas pipeline transfer pumps. Rule 222 may be applicable to natural gas pipeline transfer pumps.

(C) Gas, hydraulic, or pneumatic repressurizing equipment. Rule 222 may be applicable to natural gas repressurizing equipment.

(D) Equipment used exclusively as water boilers, water or hydrocarbon heaters, and/or closed heat transfer systems excluding steam generators used for oilfield steam injection, that:

(i) Have a maximum heat input rate of 2,000,000 Btu per hour or less; and

(ii) Are fired exclusively with Purchased Quality Natural Gas, liquefied petroleum gas, Produced Gas which contains less than 10 ppm hydrogen sulfide, or any combination thereof.

(E) The following equipment used exclusively for Primary Recovery, and not associated with Community Lease Units:

(i) Gas separators and boots;

(ii) Initial receiving, gas dehydrating, storage, washing and Shipping Tanks with an individual capacity of 34,069 liters (9,000 gallons) or less;

(iii) Crude oil tank truck loading facilities (does not include a loading rack), and gas recovery systems exclusively serving tanks exempted under clause (d)(14)(E)(ii); or

(iv) Produced Gas dehydrating equipment.

(F) Gravity-type oil/water separators with a total air/liquid interfacial area of less than 45 square feet, separating oil with a specific gravity of 0.8251 or higher (40.0 API or lower).

(15) Cleaning

The exemptions in paragraph (d)(15) do not include any equipment or operations regulated under Rule 1122 – Solvent Degreasers using solvents that are greater than five percent by weight, or 0.01 percent by weight for non-Rule 1122 equipment or operations, of perchloroethylene, methylene chloride, carbon tetrachloride, chloroform, 1,1,1-trichloroethane, trichloroethylene, or any combination thereof, with either a capacity of more than 7.6 liters (two gallons) or designed as a solvent cleaning and drying machine regardless of size. In addition, the exemptions specified in this subdivision apply only if the equipment is also exempt pursuant to subparagraphs (d)(2)(C) or (d)(2)(D) of this rule.

(d) (15) (A) The following solvent cleaning equipment and associated waste storage tanks, used exclusively to store the solutions drained from this equipment:

(i) Unheated batch, provided:

(A) The volume of the solvent reservoir is one gallon or less; or

(B) The VOC emissions from the equipment are not more than three pounds per day or 66 pounds per calendar month.

(ii) Devices used for cleaning of equipment used for the application of inks, adhesives, and coatings provided:

(A) The volume of the device's solvent reservoir is five (5) gallons or less; or

(B) The VOC emissions from the equipment are not more than three pounds per day or 66 pounds per calendar month.

(iii) Remote reservoir cleaners with a maximum sink opening area of seven square feet or less, provided the solvent from the sink-like area immediately drains into an enclosed solvent container while the parts are being cleaned.

(B) Vapor degreasers with an air/vapor interface surface area of one square foot or less, provided such degreasers have an organic solvent loss of three gallons per day or less excluding water or 66 gallons per calendar month or less excluding water.

(C) Cleaning equipment using materials with a VOC content of 25 Grams of VOC Per Liter of Material or less, and associated dryers

exclusively serving these cleaners, provided such equipment is also exempt pursuant to subparagraphs (d)(2)(C) or (d)(2)(D). This exemption does not include equipment used for cleaning diesel particulate filters (DPFs) or associated control equipment used exclusively to vent equipment used for cleaning DPFs.

(d) (15) (D) Hand application of solvents for cleaning purposes including, but not limited to, the use of rags, daubers, swabs, and squeeze bottles, and the associated air pollution control equipment used exclusively to vent such operations, unless the air pollution control equipment is required for source specific rule compliance.

(16) Miscellaneous Process Equipment

(A) Equipment, including dryers used exclusively for dyeing, stripping, or bleaching of textiles and the control equipment used exclusively to vent the equipment, provided:

(i) No VOC containing materials, including diluents or thinners, are used, and

(ii) The equipment is also exempt pursuant to subparagraphs (d)(2)(C) or (d)(2)(D).

(B) Equipment used exclusively for bonding lining to brake shoes and the control equipment used exclusively to vent such equipment, provided no VOC containing materials are used.

(C) Equipment used exclusively to liquefy or separate oxygen, nitrogen, or the rare gases from air, provided such equipment is also exempt pursuant to subparagraphs (d)(2)(A), (d)(2)(B), (d)(2)(C), or (d)(2)(D).

(D) Equipment used exclusively for surface preparation, including, but not limited to, paint stripping, pickling, desmutting, de-scaling, passivation, and/or deoxidation, and any water and associated rinse tanks and waste storage tanks used exclusively to store the solutions drained from the equipment, that exclusively uses any one or combination of the materials in clauses (d)(16)(D)(i) through (d)(16)(D)(viii). This exemption does not include any rectified, air sparged or heated tank that contains chromium, nickel, lead or cadmium. This exemption also does not include chemical milling or circuit board etching using ammonia-based etchants.

(d) (16) (D) (i) Organic materials containing 50 grams or less of VOC per liter of material;

(ii) Formic acid, acetic acid, boric acid, citric acid, phosphoric acid, and sulfuric acids;

(iii) Hydrochloric acid in concentrations of 12 percent by weight or less;

(iv) Alkaline oxidizing agents;

(v) Hydrogen peroxide;

(vi) Salt solutions, except for air sparged, heated or rectified processes with salt solutions containing hexavalent chromium, chromates, dichromates, nickel, cadmium, or lead;

(vii) Sodium hydroxide, provided the process is not sparged or rectified; or

(viii) Nitric acid, hydrochloric acid, or hydrofluoric acid, provided that the equipment in which it is used has an open surface area of one square foot or less, is unheated, and produces no visible emissions.

(E) Equipment used exclusively for the plating, stripping, or anodizing of metals as described in clauses (d)(16)(E)(i) through (d)(16)(E)(vii). This exemption does not include any rectified, air sparged or heated tank that contains chromium, nickel, lead or cadmium.

(i) Electrolytic plating exclusively of brass, bronze, copper, iron, tin, zinc, and precious metals;

(ii) Electroless nickel plating, provided that the process is not air sparged or heated, and no electrolytic reverse plating occurs;

(iii) Electrolytic stripping of brass, bronze, copper, iron, tin, zinc, and/or precious metals, provided no chromic, hydrochloric, nitric or sulfuric acid is used;

(iv) Non-electrolytic stripping of metals, provided the stripping solution is not sparged and does not contain nitric acid;

(v) Anodizing exclusively using sulfuric acid and/or boric acid with a total bath concentration of 20 percent acids or less by weight and using 10,000 amp-hours per day or less of electricity;

(vi) Anodizing exclusively using phosphoric acid with a bath concentration of 15 percent or less phosphoric acid by weight and using 20,000 amp-hours per day or less of electricity; or

(vii) Water and associated rinse tanks, and waste storage tanks used exclusively to store the solutions drained from equipment used for the plating, stripping, or anodizing of metals.

(F) Closed loop solvent recovery systems used for recovery of waste solvent generated on-site using a refrigerated or liquid-cooled condenser, or an air-cooled condenser with a solvent reservoir capacity of less than 10 gallons.

(G) Equipment used exclusively for manufacturing soap or detergent bars, including mixing tanks, roll mills, plodders, cutters, wrappers, where no heating, drying or chemical reactions occur.

(H) Inert gas generators, provided such equipment is also exempt pursuant to subparagraphs (d)(2)(C) or (d)(2)(D).

(I) Hammermills used exclusively to process aluminum and/or tin cans, and the control equipment used exclusively to vent such equipment.

(J) Paper shredding, and carpet and paper shearing, fabric brushing and sueding as well as associated conveying systems, baling equipment, and the control equipment used exclusively to vent such equipment. This exemption does not include carpet and fabric recycling operations.

(K) Chemical vapor type sterilization equipment where no ethylene oxide is used, and with a chamber volume of two cubic feet or less, used by healthcare facilities and the control equipment used exclusively to vent the equipment. This exemption does not include equipment used for incineration.

(L) Hot melt adhesive equipment.

(M) Pyrotechnic equipment, special effects or fireworks paraphernalia equipment used for entertainment purposes, provided such equipment is also exempt pursuant to paragraph (d)(2).

(N) Ammunition or explosive testing equipment.

(O) Fire extinguishing equipment using halons.

(d) (16) (P) Industrial wastewater treatment equipment which only conducts pH adjustment, precipitation, gravity separation and/or filtration of the wastewater, including equipment used for reducing hexavalent chromium and/or destroying cyanide compounds. This exemption does not include treatment processes where VOCs and/or toxic materials are emitted, or where the inlet concentration of cyanide salts through the wastewater treatment process prior to pH adjustment exceeds 200 mg/liter.

(Q) Rental equipment operated by a lessee and which is not located more than 12 consecutive months at any one facility in the South Coast AQMD provided the owner of the equipment has a permit to operate issued by the South Coast AQMD and that the lessee complies with the terms and conditions of the permit to operate.

(R) Industrial wastewater evaporators treating water generated from on-site processes only, where no VOCs and/or toxic materials are emitted, provided the equipment is also exempt pursuant to subparagraphs (d)(2)(C) or (d)(2)(D).

(S) Foam application equipment using two-component polyurethane foam and the control equipment used exclusively to vent this equipment provided the blowing agent does not contain VOCs, chlorofluorocarbons, or methylene chloride.

(T) Toner refilling and the associated control equipment.

(U) Evaporators used at dry cleaning facilities to dispose of separator wastewater and the control equipment used exclusively to vent the equipment.

(V) Equipment used to recycle aerosol cans by puncturing the can in an enclosed system which is vented through an activated carbon filter. This exemption shall only apply to aerosol recycling systems where the aerosol can to be recycled was used as part of the operation at the facility or a facility under common ownership.

(W) Notwithstanding the exemptions in paragraph (d)(16), equipment existing as of May 5, 2017 that is subject to the aforementioned exemptions and that is an integral part of an operation requiring a written permit shall continue to be exempt, provided the equipment is identified, described in detail, and submitted for inclusion into the permit equipment description with any associated application for

Permit to Construct or Permit to Operate. Equipment described in this paragraph includes, but is not limited to, rinse tanks, dye tanks and seal tanks that are part of a metal finishing operation, including but not limited to, plating, anodizing, and surface preparation.

(d) (16) (X) Negative air machines and associated HEPA filtration systems that are primarily used to remove asbestos-laden air from isolated work areas at residential or commercial abatement projects, where the air is passed to the HEPA filtration system. Rule 222 may be applicable.

(17) Agricultural Sources

(A) Notwithstanding the exemption under this paragraph, any internal combustion engines, or gasoline transfer and dispensing equipment purchased or modified after July 7, 2006 that are not exempt pursuant to subparagraphs (d)(2)(A), (d)(2)(H), and (d)(13)(I) of this rule shall be subject to permit requirements. Rule 222 may be applicable.

(B) Emergency internal combustion engines at agricultural sources. Rule 222 may be applicable.

(C) Agricultural permit units at agricultural sources not subject to Title V with actual emissions less than the amounts listed in Table 1 below or based on the amounts representing one-half of any applicable emissions threshold for a major source in the applicable planning area in South Coast AQMD, whichever is lower.

Table 1*

(Tons/Year)

Pollutant	South Coast Air Basin	Riverside County Portion of Salton Sea Air Basin	Riverside County Portion of Mojave Desert Air Basin
VOC	5.0	5.0	50.0
NOx	5.0	5.0	50.0
SOx	35.0	35.0	50.0
CO	25.0	50.0	50.0
PM10	35.0	35.0	50.0
PM2.5	35.0	50.0	50.0
Single Hazardous Air Pollutant	5.0	5.0	5.0
Combination Hazardous Air Pollutants	12.5	12.5	12.5

* Emissions of fugitive dust and emissions from soil amendments and fertilizers at agricultural sources are not to be counted when evaluating emissions for purposes of this paragraph.

Rule 222 may be applicable to internal combustion engines.

(d) (17) (D) Orchard wind machines powered by an internal combustion engine with a manufacturer's rating greater than 50 brake horsepower provided the engine is operated no more than 30 hours per calendar year.

(E) Orchard heaters approved by the California Air Resources Board to produce no more than one gram per minute of unconsumed solid carbonaceous material.

(F) Air Curtain Incinerators, Prescribed Fire Vehicles, and associated air pollution control equipment operated by government agencies and/or their Contractors and not subject to Regulation XXX – Title V Permits that exclusively burn Agricultural Waste, Wood Waste, and Yard Waste. Rule 222 may be applicable.

(18) Registered Equipment

(A) Any portable equipment, including any turbines qualified as military tactical support equipment under Health and Safety Code Section 41754 registered in accordance with the Statewide Portable Equipment Registration Program (PERP) adopted pursuant to California Health and Safety Code Sections 41750 *et seq* as they

exist on April 7, 2023.

(B) PERP registered engines used in the Outer Continental Shelf(OCS) as defined in 40 CFR, Part 55 as it exists on April 7, 2023 [Rule 222 may be applicable], provided that:

(i) The owner or operator notifies the Executive Officer;

(ii) The equipment shall not reside at one location for more than 12 consecutive months; and

(iii) Notwithstanding the exemption applicability under Health and Safety Code Section 2451, as it exists on April 7, 2023, of the Statewide Portable Equipment Registration Program (PERP) for engines operating in the OCS, any owner or operator using this permit exemption shall comply with PERP and with California Air Resources Board-issued registration requirements.

(C) PERP registered equipment operated at a RECLAIM Facility shall be classified as a Major Source, Large Source or Process Units in accordance with Rule 2011 – Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SOx) Emissions subdivisions (c) and (d) for SOx emissions and Rule 2012 – Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NOx) Emissions subdivisions (c), (d), and (e) for NOx emissions for purposes of determining the applicable requirements for Monitoring, Reporting and Recordkeeping (MRR). Use of RECLAIM MRR Protocols for Rule 219 equipment as specified in Rule 2011 (Rule 2011 Protocol, Appendix A, Chapter 3, Subsection F) and Rule 2012 (Rule 2012 Protocol, Appendix A, Chapter 4, Subsection F) is only allowed if the registered PERP equipment also qualifies for an exemption from permit requirements under a separate provision of this rule.

(e) Exceptions

Notwithstanding equipment identified in subdivision (d) of this rule, written permits are required pursuant to the provisions of paragraphs (e)(1), (e)(2), and (e)(4):

(1) Equipment, process materials or air contaminants subject to:

(A) Regulation IX – Standards of Performance for New Stationary Sources (NSPS), except for internal combustion engines with a manufacturer's rating of 50 brake horsepower or less;

(B) Regulation X – National Emission Standards for Hazardous Air Pollutants (NESHAP - 40 CFR 61), except for internal combustion engines with a manufacturer's rating of 50 brake horsepower or less; or

(e) (C) Emission limitation requirements of either the state Air Toxic Control Measure (ATCM) or NESHAP - 40 CFR 63.

(2) When the Executive Officer has determined that the provisions in subparagraphs (e)(2)(A) through (e)(2)(C) apply and written notification has been given to the owner or operator of the equipment, the equipment shall thereafter be subject to Rules 201 and 203 for non-RECLAIM sources, Rule 2006 for RECLAIM sources, and/or Regulation XXX – Title V Permits for facilities subject to Title V permitting requirements:

(A) The risk from uncontrolled emissions will be greater than identified in subparagraph (d)(1)(A), or paragraphs (d)(2) or (d)(3) in Rule 1401;

(B) The equipment may not operate in compliance with all applicable South Coast AQMD rules and regulations, including but not limited to Rule 402 – Nuisance; or

(C) The equipment or the air pollution control system venting the equipment has been modified, operated, or maintained in a manner that:

(i) Is inconsistent with the applicable exemption under any provisions of this rule; or

(ii) Results in otherwise preventable excess emissions that have been detected or observed by the Executive Officer.

(3) If the Executive Officer determines the information to evaluate health risk is inadequate, or if additional information or review is required, upon written notification from the Executive Officer, the owner or operator shall, within 60 days of the written notification, submit (a) complete permit application(s) to demonstrate the equipment operates below the risk thresholds in subparagraph (e)(2)(A).

(4) Equipment or control equipment subject to permitting requirements pursuant to Regulation XIV - Toxics and Other Non-criteria Pollutants.

(f) Recordkeeping

(1) Any owner or operator claiming an exemption under any provision of this rule shall maintain documentation and/or calculations sufficient to demonstrate that the stated exemption provision, parameter, requirement or

limitation applies. Documentation may include, as applicable, but not be limited to:

(f) (1) (A) VOC-containing material throughput and emissions;

(B) VOC content of each VOC-containing material, including:

(i) The Grams of VOC Per Liter of Regulated Product, Less Water and Exempt Compounds; and

(ii) The Grams of VOC Per Liter of Material, including water and exempt compounds;

(C) Hours of operation;

(D) Materials used or processed;

(E) Fuel type and usage;

(F) Throughput;

(G) Operating parameters;

(H) Manufacturer specifications;

(I) Rating plate; and

(J) Safety Data Sheets.

(2) All documentation and/or records pursuant to paragraph (f)(1) shall be maintained onsite for three years and made available to the Executive Officer upon request.

(g) Test Methods

(1) All test methods used to verify the percentages, concentrations, vapor pressures, etc., shall be approved test methods as contained in South Coast AQMD's Test Method Manual or any methods approved by the Executive Officer, the California Air Resources Board, and the United States Environmental Protection Agency (U.S. EPA).

(2) In the absence of an approved method as identified in paragraph (g)(1), an owner or operator claiming an exemption using the VOC emission limits in subparagraphs (d)(8)(A), (d)(10)(M), (d)(12)(F), or (d)(12)(K) shall use VOC calculation procedures acceptable to the Executive Officer based on U.S. EPA guidance, including, but not limited to, calculation procedures using product formulation data.

(h) Compliance Dates

(1) The owner or operator of equipment previously not requiring a permit pursuant to Rule 219 shall comply with Rule 203 within one year from the

date Rule 219 is amended to remove the exemption unless compliance is required before this time by written notification by the Executive Officer. Effective on or after July 11, 2003 for purpose of Rule 301(e), emissions from equipment that has been removed from an exemption shall be considered "permitted" beginning January 1 or July 1, whichever is sooner, after Rule 219 is amended to remove the exemption, even if an application has not been submitted to obtain a permit.

(h) (2) Notwithstanding paragraph (h)(1), effective July 5, 2017, an owner or operator submitting an application for Permit to Construct or Permit to Operate pursuant to Rules 201 or 203 shall comply with subparagraphs (d)(5)(U) and (d)(16)(W).

ATTACHMENT K

(Adopted September 11, 1998)(Amended May 19, 2000)(Amended March 5, 2004)
(Amended December 5, 2008)(Amended May 3, 2013)(Amended May 5, 2017)
(Amended April 7, 2023)(Amended TBD)

PROPOSED AMENDED RULE 222 FILING REQUIREMENTS FOR SPECIFIC EMISSION SOURCES NOT REQUIRING A WRITTEN PERMIT PURSUANT TO REGULATION II

(a) Purpose

The purpose of this rule is to provide an alternative to written permits. This rule requires owners or operators of specified emission sources to submit information regarding the source, including, but not limited to:

(1) A description of the source;

(2) Data necessary to estimate emissions from the source; and

(3) Information to determine whether the emission source is operating in compliance with applicable South Coast AQMD, state and federal rules and regulations.

(b) Applicability

(1) This rule applies to owners or operators of the emission sources listed in Table I and the equipment, processes, and operations listed in paragraph (b)(2). Owners or operators authorized to operate emission sources pursuant to this rule shall operate those emissions sources in compliance with any and all operating conditions imposed by the South Coast AQMD.

TABLE I

EMISSION SOURCE	EFFECTIVE DATE
Boilers or Steam Generators & Process Heaters with a rated heat input capacity from 1,000,000 up to and including 2,000,000 Btu/hr and produce less than one pound of NOx emissions per day, excluding equipment subject to Regulation XX – Regional Clean Air Incentives Market (RECLAIM), exempt from a written permit pursuant to Rule 219 (d)(2)(C).	1/1/2001
Commercial Charbroilers and associated air pollution control equipment, exempt from a written permit pursuant to Rule 219 (d)(9)(E).	1/1/1999
Negative Air Machines (Asbestos), exempt from a written permit pursuant to Rule 219 (d)(16)(X).	1/1/1999
Natural gas and crude oil production equipment, including: well heads and well pumps; natural gas pipeline transfer pumps; oil production well groups; and natural gas repressurizing equipment, exempt from a written permit pursuant to Rule 219 (d)(14)(A), (d)(14)(B), or (d)(14)(C).	5/5/2017
Printing and related coating and/or laminating equipment and associated dryers and curing equipment exempt from a written permit pursuant to Rule 219 (d)(8)(A)(v).	5/5/2017
Roller to roller coating systems that create 3-dimensional images, exempt from a written permit pursuant to Rule 219 (d)(10)(M)(iii).	12/5/2008
Coating or adhesive application, or laminating equipment exempt from a written permit pursuant to Rule 219 (d)(12)(F)(vi).	5/5/2017
Drying equipment such as flash-off ovens, drying ovens, or curing ovens associated with coating or adhesive application, or laminating equipment exempt from a written permit pursuant to Rule 219 (d)(12)(K)(vi).	5/5/2017
Agricultural Diesel-Fueled Engines rated greater than 50 brake horsepower used in Agricultural Operations exempt from a written permit pursuant to Rule 219 (d)(17)(A), (d)(17)(B), or (d)(17)(C) and subject to CARB Airborne Toxic Control Measure (ATCM).	12/5/2008
Gasoline storage tanks and dispensing equipment with capacity greater than or equal to 251 gallons, and installed on or before July 7, 2006 at agricultural operations, exempt from a written permit pursuant to Rule 219 (d)(17)(A).	12/5/2008

EMISSION SOURCE	EFFECTIVE DATE
Asphalt Day Tankers, with a maximum holding capacity equal to or greater than 600 liters (159 gallons) but no more than 18,925 liters (5,000 gallons) and are equipped with a demister and burner(s) designed to fire exclusively on liquefied petroleum gases, exempt from a written permit pursuant to Rule 219 (d)(13)(Y).	5/3/2013
Asphalt Pavement Heaters (which are any mobile equipment used for the purposes of road maintenance and new road construction), exempt from a written permit pursuant to Rule 219 (d)(1)(E).	5/3/2013
Diesel Fueled Boilers that have a rated maximum heat input capacity of 2,000,000 Btu per hour or less, are fueled exclusively with diesel #2 fuel, use less than 50 gallons of fuel per day, are located more than 4,000 feet above sea level or more than 15 miles offshore from the mainland, and where the maximum NOx emission output of the equipment is less than one pound per day, and have been in operation prior to May 3, 2013, exempt from a written permit pursuant to Rule 219 (d)(2)(D).	5/3/2013
Food Ovens with a rated maximum heat input capacity of 2,000,000 Btu per hour or less, fired exclusively on natural gas, and where the process VOC emissions are less than one pound per day, exempt from a written permit pursuant to Rule 219 (d)(2)(C).	5/5/2017
Fuel Cells, which produce electricity in an electrochemical reaction and use phosphoric acid, molten carbonate, proton exchange membrane, or solid oxide technologies; and associated heating equipment provided the heating equipment is fueled exclusively with natural gas, methanol, liquefied petroleum gas, or any combination thereof, that have a rated maximum heat input capacity of greater than 2,000,000 Btu per hour, provided that the supplemental heat used is 90,000 therms per year or less, exempt from a written permit pursuant to Rule 219 (d)(2)(G)(ii).	5/5/2017
Internal combustion engines used exclusively for electrical generation at remote two-way radio transmission towers where no utility, electricity or natural gas is available within a half mile radius, have a manufacturer's rating of 100 brake horsepower or less, and are fired exclusively on diesel #2 fuel, compressed natural gas (CNG) or liquefied petroleum gas (LPG), or any combination thereof, exempt from a written permit pursuant to Rule 219 (d)(2)(A)(ii).	5/5/2017

EMISSION SOURCE	EFFECTIVE DATE
Micro-Turbines, with a rated maximum heat input capacity of 3,500,000 Btu per hour or less, provided that the cumulative power output of all such engines at a facility is less than two megawatts, and that the engines are certified at the time of manufacture with the state of California or were in operation prior to May 3, 2013, exempt from a written permit pursuant to Rule 219 (d)(2)(B).	5/3/2013
Portable Diesel Fueled Heaters used for space heating, with a rated maximum heat input capacity of 250,000 Btu per hour or less and are equipped with burner(s) designed to fire exclusively on diesel #2 fuel, exempt from a written permit pursuant to Rule 219 (d)(2)(D).	5/3/2013
Power Pressure Washers and Hot Water or Steam Washers and Cleaners, that are equipped with a heater or burner that is designed to be fired on diesel fuel, have a rated maximum heat input capacity of 550,000 Btu per hour or less, are equipped with a non-resettable chronometer, use no more than 50 gallons of fuel per day, and the maximum NOx emission output is less than one pound per day, exempt from a written permit pursuant to Rule 219 (d)(2)(F).	5/3/2013
Storage of odorants for natural gas, propane, or oil with a holding capacity of less than 950 liters (251 gallons) and associated transfer and control equipment, exempt from a written permit pursuant to Rule 219(d)(13)(I).	5/3/2013
Tar Pots or Tar Kettles, with a maximum holding capacity equal to or greater than 600 liters (159 gallons) but no more than 3,785 liters (1,000 gallons) and are equipped with burner(s) designed to fire exclusively on liquefied petroleum gases, exempt from a written permit pursuant to Rule 219 (d)(13)(M).	5/3/2013
Industrial water cooling towers located in a chemical plant, refinery or other industrial facility, that are not used for evaporative cooling of process water or not used for evaporative cooling of water from barometric jets or from barometric condensers and in which no chromium compounds are contained, exempt from a written permit pursuant to Rule 219 (d)(4)(C)(ii).	5/5/2017
Storage of aqueous urea solutions, exempt from a written permit pursuant to Rule 219 (d)(13)(Z).	5/5/2017
Engines registered under the statewide Portable Equipment Registration Program (PERP) used in the Outer Continental Shelf (OCS), exempt from a written permit pursuant to Rule 219 (d)(18)(B).	5/5/2017

EMISSION SOURCE	EFFECTIVE DATE
Air Curtain Incinerators, Prescribed Fire Vehicles, and associated air pollution control equipment, exempt from a written permit pursuant to Rule 219 (d)(17)(F).	*[Date of Adoption]*

If a determination is made that the source cannot operate in compliance with applicable rules and regulations, a permit shall be required pursuant to Rule 203.

(b) (2) This rule applies to owners or operators of the following emission sources in subparagraphs (b)(2)(A) through (b)(2)(C) that are located at a single facility, which does not hold a written permit for any other emission sources and emits 4.0 tons or more of VOCs in any calendar year, or emitted 4.0 tons or more of VOCs in the Fiscal Year July 1, 2006 – June 30, 2007:

(A) Printing operations individually exempted from written permits pursuant to Rule 219 (d)(8)(A) and (d)(8)(G);

(B) Coating or adhesive application or laminating equipment and devices individually exempted from written permits pursuant to Rule 219 (d)(12)(F) and (d)(12)(J); and

(C) Hand application of VOC-containing materials operations individually exempted from written permits pursuant to Rule 219 (d)(15)(D).

(c) Definitions

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

(1) AGRICULTURAL OPERATIONS means the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. Agricultural operations do not include activities involving the processing or distribution of crops or fowl or animals.

(2) AGRICULTURAL DIESEL-FUELED ENGINE is a stationary or portable engine used for agricultural operations. For the purpose of this rule, a portable engine owned by the agricultural source owner is considered to be part of the agricultural stationary source. An engine used in the processing or distribution of crops or fowl or animals is not an agricultural engine.

(3) AIR CURTAIN INCINERATOR means an incinerator, carbonizer, or mechanized burner that operates by forcefully projecting a curtain of air

across an open, integrated combustion chamber or open pit or trench in which combustion occurs.

~~(3)~~(4) APPROVED OPERATING PARAMETERS mean a set of operating requirements the equipment must operate under to comply with the requirements of any applicable federal, state, or South Coast AQMD rules.

~~(4)~~(5) ASPHALT DAY TANKER is a storage tank mounted on a motor vehicle and is used exclusively for the storage, holding, melting, and transfer of asphalt or coal tar pitch with a maximum holding capacity equal to or greater than 600 liters (159 gallons) but no more than 18,925 liters (5,000 gallons), is equipped with a demister and burner(s) designed to fire exclusively on liquefied petroleum gases.

~~(5)~~(6) ASPHALT PAVEMENT HEATER is any mobile equipment used to heat asphalt or coal tar pitch for purposes of road maintenance or new road construction.

~~(6)~~(7) BOILER OR STEAM GENERATOR means any combustion equipment that is fired with or is designed to be fired with natural gas, used to produce steam or to heat water, and that is not used exclusively to produce electricity for sale. Boiler or Steam Generator does not include any waste heat recovery boiler that is used to recover sensible heat from the exhaust of a combustion turbine or any unfired waste heat recovery boiler that is used to recover sensible heat from the exhaust of any combustion equipment.

~~(7)~~(8) BTU means British thermal unit or units.

~~(8)~~(9) CHARBROILER means a cooking device composed of a grated grill or skewer and a heat source. The heat source is either entirely or partly located beneath the food being cooked. Fuels for the heat source include, but are not limited to, electricity, natural gas, liquefied petroleum gas, charcoal, or wood.

~~(9)~~(10) DIESEL FUELED BOILER is any boiler that has a rated maximum heat input capacity of 2,000,000 Btu per hour or less, is fired exclusively with diesel #2 fuel, uses less than 50 gallons of fuel per day, is located more than 4,000 feet above sea level or more than 15 miles offshore from the mainland, and where the maximum NOx emission output of the equipment is less than one pound per day, and has been in operation prior to May 3, 2013.

~~(10)~~(11)EMISSION SOURCE (SOURCE) means any equipment, processes, or operations, which emits air pollutants for which ambient air quality

standards have been adopted, or which emits their precursor pollutants.

~~(11)~~(12) FACILITY is any emission source or group of emission sources or other VOC-emitting activities, which are located on one or more contiguous properties within the South Coast AQMD, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in 40 CFR Section 55.2 as it exists on April 7, 2023. Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility.

~~(12)~~(13)FOOD OVEN is any equipment used exclusively for food preparation, has a rated maximum heat input capacity of 2,000,000 Btu per hour or less, and is exclusively fired on natural gas and where the process VOC emissions are less than one pound per day.

~~(13)~~(14)FUEL CELL is any equipment which produces electricity in an electrochemical reaction, uses phosphoric acid, molten carbonate, proton exchange membrane, or solid oxide technologies; and associated heating equipment that has a rated maximum heat input capacity of greater than 2,000,000 Btu per hour provided that the supplemental heat used is 90,000 therms per year or less.

~~(14)~~(15)HEAT INPUT means the higher heating value of the fuel to the unit measured as Btu/hr.

~~(15)~~(16)HEPA means High Efficiency Particulate Air filter which is capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 micrometer in diameter or larger.

~~(16)~~(17)INTERNAL COMBUSTION ENGINE is any spark or compression ignited reciprocating internal combustion engine used exclusively for electrical generation at remote two-way radio transmission towers where no utility, electricity or natural gas is available within a half mile radius, has a manufacturer's rating of 100 brake horsepower or less, and is fired exclusively on diesel #2 fuel, compressed natural gas (CNG), or liquefied petroleum gas (LPG).

~~(17)~~(18)INDUSTRIAL COOLING TOWER means a cooling tower located at a chemical plant, refinery or other industrial facility that is not used for comfort cooling.

~~(18)~~(19)ISOLATED WORK AREA means the immediate enclosed containment

area in which the asbestos abatement activity takes place.

~~(19)~~(20)MICRO-TURBINE is a stationary gas turbine engine, with a rated maximum heat input capacity of 3,500,000 Btu per hour or less, provided that the cumulative power output of all such engines at a facility is less than two megawatts, and that the engines are certified at the time of manufacture with the state of California or were in operation prior to May 3, 2013.

(c) ~~(20)~~(21) NEGATIVE AIR MACHINE (ASBESTOS) means a machine or contrivance whose primary use is to remove asbestos emissions from residential or commercial abatement projects by passing asbestos containing air from an isolated work area by means of negative air pressure to a HEPA filtration system.

~~(21)~~(22)OIL PRODUCTION WELL GROUP is no more than four well pumps located at a facility subject to Rule 1148.1 – Oil and Gas Production Wells at which crude petroleum production and handling are conducted, as defined in the Standard Industrial Classification Manual as Industry No. 1311, Crude Petroleum and Natural Gas as it exists on April 7, 2023.

~~(22)~~(23)PORTABLE DIESEL FUELED HEATER is any combustion equipment which transfers heat from the combustion process for space heating and is designed to be fired exclusively with diesel #2 fuel and has a rated maximum heat input capacity of 250,000 Btu per hour or less.

~~(23)~~(24)POWER PRESSURE WASHER AND HOT WATER OR STEAM WASHER AND CLEANER is any equipment equipped with a heater or burner that is designed to be fired on diesel fuel, has a rated maximum heat input capacity of 550,000 Btu per hour or less, is equipped with a non-resettable chronometer, uses no more than 50 gallons of fuel per day, and has a maximum NOx emission output of less than one pound per day.

(25) PRESCRIBED FIRE VEHICLE means a mobile machine designed for wildfire prevention by performing mechanized controlled burns of low-growth vegetation to create fuel breaks.

~~(24)~~(26)PROCESS HEATER means any combustion equipment fired with or designed to be fired with natural gas and which transfers heat from combustion gases to water or process streams. Process Heater does not include any kiln or oven used for annealing, drying, curing, baking, cooking, calcining, or vitrifying; or any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment.

~~(25)~~(27)RATED HEAT INPUT CAPACITY means the gross rated heat input

specified on the nameplate of the combustion device.

~~(26)~~(28)REPRESSURIZING EQUIPMENT means combustion-based equipment used for processing natural gas for reinjection for reservoir repressurization, or used during enhanced recovery methods such as water flooding, steam flooding, or CO_2 flooding to increase reservoir pressure.

~~(27)~~(29)STORAGE OF ODORANTS FOR NATURAL GAS, PROPANE, OR OIL is equipment used exclusively for the storage of odorants for natural gas, propane, or oil odorant storage, with a holding capacity of less than 950 liters (251 gallons) and associated transfer and control equipment.

~~(28)~~(30)STORAGE OF AQUEOUS UREA SOLUTIONS is equipment used exclusively to store aqueous solutions of urea [$CO(NH_2)_2$] with a holding capacity of 6,500 gallons or less.

~~(29)~~(31)TAR POT (also known as a tar kettle) is any mobile equipment used exclusively for the storage, holding, melting, and transfer of asphalt or coal tar pitch and has a maximum holding capacity greater than 600 liters (159 gallons) but no more than 3,785 liters (1,000 gallons) and is equipped with burner(s) that fire exclusively on liquefied petroleum gases.

~~(30)~~(32)WELL CELLAR is a lined or unlined containment surrounding one or more oil wells, allowing access to the wellhead components for servicing and/or installation of blowout prevention equipment.

~~(31)~~(33)WELLHEAD is an assembly of valves mounted to the casing head of an oil well through which a well is produced. The wellhead is connected to an oil production line and in some cases to a gas casing.

~~(32)~~(34)WELL PUMP is a pump used to bring crude oil from the subsurface to surface. A well pump is connected to a well head and can be located in or above a well cellar.

(d) Requirements

(1) Owners or operators of sources subject to this rule shall:

(A) Comply with all applicable South Coast AQMD, state, and federal rules and regulations;

(B) Comply with all operating conditions as specified by the South Coast AQMD on a new emission source or equipment filing;

(C) Submit applicable information for each emission source described in this rule to the South Coast AQMD, in a format determined by

the Executive Officer, which shall provide a description of the source and shall include all associated air pollution control equipment, any and all pertinent data as necessary to estimate emissions from the source, and a determination that the emission source or equipment meets all compliance requirements with applicable rules and regulations. For an owner or operator of a emission source subject to paragraph (b)(2), a single, consolidated filing covering all of the categories of equipment, processes, or operations listed in subparagraphs (b)(2)(A) through (b)(2)(C) is required. For change of location or change of owner or operator, a new emission source filing shall be required prior to operation of the emission source or equipment. This information shall include, if applicable, but not be limited to:

(d) (1) (C) (i) Hours of operation;

(ii) Materials used or processed;

(iii) Fuel usage;

(iv) Throughput; and

(v) Operating parameters;

(D) Maintain and make available to the Executive Officer upon request, records to provide operation data and any updated information on the emission sources or equipment, applicable to this rule, including, but not limited to:

(i) Hours of operation;

(ii) Materials used or processed;

(iii) Fuel usage;

(iv) Throughput; and

(v) Operating parameters;

(E) Pay all required fees pursuant to Rule 301;

(F) Maintain a copy on-site of the filing receipt for all emission sources and equipment applicable to this rule for the life of the emission sources or equipment and make available to the Executive Officer upon request;

(G) Maintain records sufficient to verify the description of the emission sources or equipment, subject to this rule, all data necessary to estimate output of emissions sources, and records used to

demonstrate compliance with operating conditions and with all other applicable rules and regulations. Documents to demonstrate compliance with a daily emission limit for food ovens may be based on the calendar monthly emissions divided by 30. The records shall be maintained for three years and made available to the Executive Officer upon request;

(d) (1) (H) Not remove any air pollution control equipment associated with applicable emission sources described in this rule unless it can be demonstrated that the replacement air pollution control equipment will reduce emissions at equal to or greater efficiency than the prior unit, and such replacement air pollution control equipment is first approved in writing by the Executive Officer; and

(I) For facilities subject to paragraph (b)(2), report associated VOC emissions from all of the categories of equipment, processes or operations listed in subparagraphs (b)(2)(A) through (b)(2)(C) under the Annual Emissions Reporting program, pursuant to Rule 301.

(2) Owners or operators of agricultural sources subject to this rule shall comply with the registration requirements in the CARB ATCM for stationary diesel-fueled agricultural engines rated at greater than 50 brake horsepower pursuant to California Code of Regulations, Title 17, Sections 93115.3(a) and 93115.8(c), as they exist on April 7, 2023.

(3) Failure to comply with the provisions set forth in paragraph (d)(1) shall constitute a violation of this rule.

(e) Compliance Dates

(1) A person shall not install, alter, replace, operate, or use any emission source subject to this rule, initially installed on or after the effective date in Table I, without first complying with the requirements in subparagraphs (d)(1)(A), (B), (C), (E) and (H).

(2) The owner or operator of an emission source installed prior to the effective date in Table I and not currently possessing a valid Permit to Operate or open application for a Permit to Operate, shall comply with the requirements of subdivision (d) within six months of the effective date in Table I, or when an emission source becomes subject to the provisions of this rule.

(3) The owner or operator of an emission source installed prior to the effective date in Table I and possessing a valid Permit to Operate or open application

for a Permit to Operate will be notified by the Executive Officer of the transfer of the Permit to Operate or open application to the filing system and shall comply with the requirements of subdivision (d) within 60 days of notification.

(4) Failure to comply with the provisions set forth in paragraphs (b)(1), (e)(1), (e)(2), or (e)(3) shall constitute a violation of this rule.

(f) Exemptions

The provisions of this rule shall not apply to:

(1) Emission sources utilized exclusively in connection with any structure that is designed for and used exclusively as a dwelling for not more than four families, and where such equipment is used by the owner or occupant of such a dwelling; or

(2) Emission sources with a Permit to Operate issued by South Coast AQMD.

ATTACHMENT L

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Staff Report

Proposed Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste
Proposed Amended Rule 401 – Visible Emissions
Proposed Amended Rule 404 – Particulate Matter - Concentration
Proposed Amended Rule 405 – Solid Particulate Matter - Weight
Proposed Amended Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II
Proposed Amended Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II

June 2026

Deputy Executive Officer
Planning, Rule Development, and Implementation
Sarah L. Rees, Ph.D.

Assistant Deputy Executive Officer
Planning, Rule Development, and Implementation
Michael Krause

Planning and Rules Manager
Planning, Rule Development, and Implementation
Michael Morris

Author: Niyati Rami – Air Quality Specialist

Contributors:

Jason Aspell	–	Deputy Executive Officer	Kevin Ni	–	Program Supervisor
Kamal Brenner	–	Supervising AQ Inspector	Alejandro Nieto Mora	–	Air Quality Engineer II
Marc Carreras Sospedra	–	Program Supervisor	David Ono	–	Sr. AQ Engineering Manager
David De Boer	–	Sr. Enforcement Manager	Valerie Quezada	–	Air Quality Specialist
Scott Epstein	–	Planning & Rules Manager	Barbara Radlein	–	Planning and Rules Manager
Cui Ge	–	Air Quality Specialist	Angela Shibata	–	Sr. AQ Engineering Manager
George Illes	–	Sr. AQ Engineering Manager	Sina Taghvaee, Ph.D.	–	Air Quality Specialist
Sang-Mi Lee	–	Planning & Rules Manager	Ryan Thomas	–	Sr. AQ Engineer
Shannon Lee	–	Sr. AQ Engineering Manager	Tony Tian	–	Program Supervisor
Tony Liu	–	Air Quality Engineer II	Bill Welch	–	Source Testing Manager
Jonathan Zhong Liu	–	Air Quality Specialist	Jillian Wong	–	Assistant Deputy Executive Officer
Bradley McClung	–	AQ Analysis & Compliance Supervisor	Victor Yip	–	Assistant Deputy Executive Officer

Reviewed By: Erika Chavez – Principal Deputy District Counsel
Isabelle Shine – Program Supervisor

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

GOVERNING BOARD

Chair: MICHAEL A. CACCIOTTI
Councilmember, South Pasadena
Cities of Los Angeles County/Eastern Region

Vice Chair: LARRY MCCALLON
Councilmember, Highland
Cities of San Bernardino County

MEMBERS:

VANESSA DELGADO
Senator (Ret.)
Senate Rules Committee Appointee

CURT HAGMAN
Supervisor, Fourth District
County of San Bernardino

PATRICIA LOCK DAWSON
Mayor, Riverside
Cities of Riverside County Representative

HOLLY J. MITCHELL
Supervisor, Second District
County of Los Angeles

ADRIN NAZARIAN
Councilmember, Second District
City of Los Angeles Representative

JANET NGUYEN
Supervisor, First District
County of Orange

BRENDA OLMOS
Mayor, City of Paramount
Cities of Los Angeles County/Western Region

VERONICA PADILLA-CAMPOS
Speaker of the Assembly Appointee

V. MANUEL PEREZ
Supervisor, Fourth District
County of Riverside

CARLOS RODRIGUEZ
Mayor, Yorba Linda
Cities of Orange County

CEDRIC JAMIE RUTLAND, MD, FCCP
Governor's Appointee

EXECUTIVE OFFICER:

WAYNE NASTRI

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Implementing fuel reduction strategies is important for effective wildfire prevention and particulate matter (PM) reduction. Currently, the majority of forestry and agricultural waste is disposed of through open burning or left in place as a source of fuel for wildfires. Both of which are highly emissive and generate elevated levels of PM and other pollutants. Providing a pathway for the use of alternative vegetative fuel reduction strategies and/or technologies, such as air curtain incinerators (ACIs) and prescribed fire vehicles, will help reduce PM emissions from forestry and agricultural waste management operations.

South Coast AQMD staff received interest from local government agencies to operate vegetative fuel reduction technologies for wildfire prevention. Currently, ACIs and prescribed fire vehicles are not operated within South Coast AQMD, as they have not demonstrated compliance with PM limits in Rule 404 − Particulate Matter - Concentration (Rule 404) and Rule 405 – Solid Particulate Matter - Weight (Rule 405). Additionally, ACIs and prescribed fire vehicles have not demonstrated compliance with visible emissions requirements in Rule 401 – Visible Emissions (Rule 401).

Proposed Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste (PR 444.1) will establish requirements for ACIs and prescribed fire vehicles used to reduce vegetative waste and will help reduce PM emissions from forestry and agricultural waste management practices. Proposed Amended Rule 401 – Visible Emissions (PAR 401), Proposed Amended Rule 404 – Particulate Matter - Concentration (PAR 404), and Proposed Amended Rule 405 – Solid Particulate Matter - Weight (PAR 405) will include an exemption for ACIs and prescribed fire vehicles to allow the use of these technologies regulated under PR 444.1. Proposed Amended Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II (PAR 219) will exempt some ACIs and prescribed fire vehicles not subject to Regulation XXX – Title V Permits from South Coast AQMD permitting requirements. Proposed Amended Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II (PAR 222) will require ACIs and prescribed fire vehicles exempt from permitting to be registered with the South Coast AQMD.

The proposed rules are needed to partially implement Best Control Measure 20: Application of All Feasible Measures (BCM-20) from the 2024 South Coast Air Basin Attainment Plan for the 2012 Annual PM2.5 Standard (PM2.5 Plan) and allow for partial implementation of objectives in Chapter 5e of the Eastern Coachella Valley (ECV) Community Emission Reduction Plan (CERP).

As part of this rule development effort, a technology assessment was conducted for vegetative fuel reduction technologies. Due to limited or unavailable emission data for the technologies reviewed, staff conducted a partial BARCT assessment. Although more robust emission data is necessary to establish an emission limit in PR 444.1, PM emissions will be reduced by an estimated 60 to 90% compared to open burning. PR 444.1 will not require the use of ACIs or prescribed fire vehicles and therefore, there will be no additional costs to adopting PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222.

PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 were developed through a public process. Two Working Group meetings were held on August 20, 2025, and January 7, 2026. A Public Workshop was held on March 25, 2026.

CHAPTER 1: BACKGROUND

INTRODUCTION

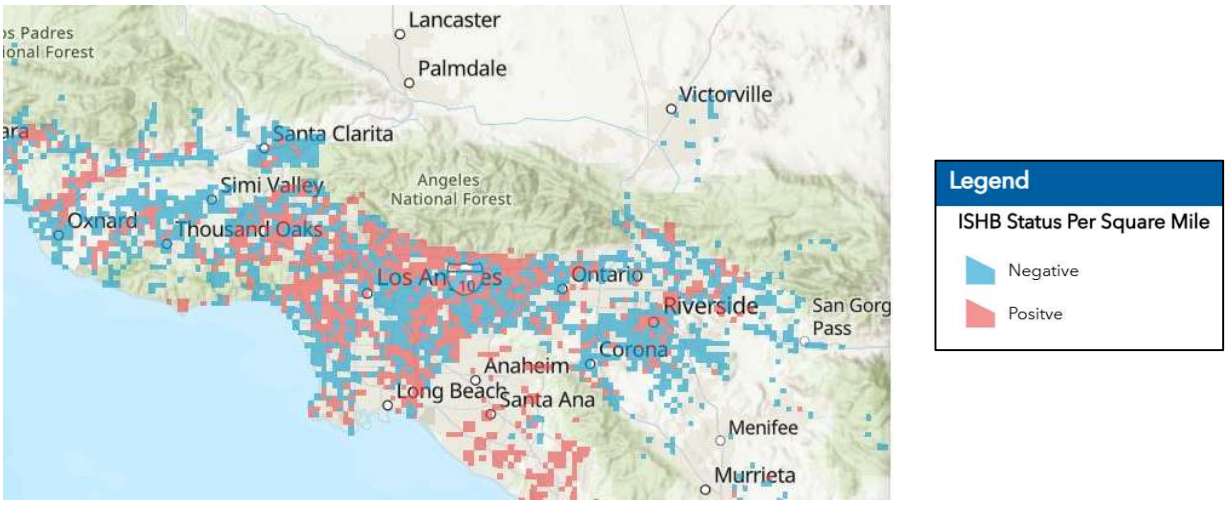
The purpose of PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 is to reduce PM emissions from forestry and agricultural waste and to provide a pathway for ACIs and prescribed fire vehicles to be used for wildfire prevention. The proposed rules are needed to partially implement BCM-20 from the PM2.5 Plan and allow for partial implementation of objectives in Chapter 5e of the ECV CERP[1].

BACKGROUND

Dead trees and dry vegetation act as fuel, increasing the likelihood of wildfires. About 243 million trees died in California between 2010 and 2024. Droughts exacerbated by climate change result in negative impacts to forests.[2] Drought-stressed trees are more vulnerable to diseases and pests, such as bark beetles, which can lead to tree mortality. Bark beetles are tiny insects that live underneath tree bark. They damage trees by tunneling into the bark and creating channels called galleries, where they reproduce. California hosts over 200 species of bark beetles, of which twenty are invasive, non-native species, including invasive shot hole borers (ISHB).[3] ISHB introduce a fungus that causes a disease called Fusarium dieback (FD) that further weakens the tree by disrupting the flow of water and nutrients.[4] The disease can cause wilted/brown leaves, branch dieback, tree decline, and death. ISHB-FD is present in all four counties within South Coast AQMD.[5] Figure 1-1 indicates areas in red where ISHB-FD was found by either visual assessment of the trees or through screen traps. Presence of ISHB-FD was not found in areas of the map indicated in blue. Invasive beetles exacerbated by drought conditions have killed millions of trees in Southern California and continue to be an ongoing threat to our urban and natural forests.

[1] ECV CERP, https://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/eastern-coachella-valley/final-cerp/final-cerp-july-2021.pdf?sfvrsn=ae03ae61_9
[2] https://oehha.ca.gov/climate-change/epic-2022/impacts-vegetation-and-wildlife/forest-tree-mortality
[3] https://ipm.ucanr.edu/PMG/PESTNOTES/pn7421.html
[4] https://ucanr.edu/site/invasive-shothole-borers/pest-overview
[5] https://ucanr.edu/site/invasive-shothole-borers/ishb-fd-distribution-california

Figure 1-1: ISHB Distribution in South Coast AQMD[6]



In 2003, a prolonged drought and bark beetle infestation affected trees across more than 150,000 acres in South Coast AQMD jurisdiction. The affected trees presented a wildfire risk to homes in San Bernardino and Riverside Counties, particularly impacting the communities of Lake Arrowhead and Idyllwild. Both counties declared fire emergencies and a task force was formed. The task force included the United States Forest Service (USFS), the California Department of Forestry, now known as California Department of Forestry and Fire Protection (CAL FIRE), county governments, and elected officials and other representatives of the affected communities. During that time, usable lumber was able to be trucked to a sawmill, but small branches and unmarketable wood waste needed an alternative disposal method. The task force approached South Coast AQMD staff to request use of ACIs to burn an estimated 500,000 tons of wood. As a result, the South Coast AQMD Governing Board authorized the issuance of open burn permits to USFS to operate eight ACIs in San Bernardino and Riverside Counties for a two year period. These permits would allow wood waste from felled trees to be burned in the ACIs and help abate the fire hazard. The permit was ultimately not utilized by the USFS. Presently, drought and invasive beetles continue to cause tree mortality. Strategic measures are needed to prevent the spread of destructive beetle infestations.

Dry, dense vegetation and strong Santa Ana winds led to a series of wildfires on January 7, 2025 that burned over 38,000 acres and destroyed more than 16,000 structures including homes and businesses in Los Angeles County.[7] As more residents, homes, and infrastructure are located near forests and other natural areas, known as the wildland-urban interface (WUI), the more vulnerable these communities are to wildfires.

Currently, the majority of forestry and agricultural waste is disposed of through open burning or left in place as a source of fuel for wildfires. Both of which are highly emissive due to uncontrolled combustion that generates elevated levels of PM and other pollutants. ACIs and prescribed fire vehicles are fuel reduction technologies that can reduce PM2.5 compared to the emissions

[6] https://ucanr.edu/site/invasive-shothole-borers/ishb-fd-distribution-california
[7] https://www.news.caloes.ca.gov/a-year-after-the-la-fires-pacific-palisades-and-altadena-communities-recover/

generated from open burning. ACIs and prescribed fire vehicles still emit high levels of PM but are an estimated 60% to 90% cleaner alternative to open burning. These technologies help reduce smoke and air pollution, provide faster burn rates, and result in greater control over combustion conditions.[8] In addition, these technologies can be operated closer to WUI areas due to burning being more contained in ACIs and prescribed fire vehicles and thus presenting a lower wildfire risk compared to open burning. Allowing the use of vegetative fuel reduction technologies, such as ACIs and prescribed fire vehicles, mitigates wildfire risk. Chapter 2 of the staff report contains more details related to emissions and alternative technologies to open burning.

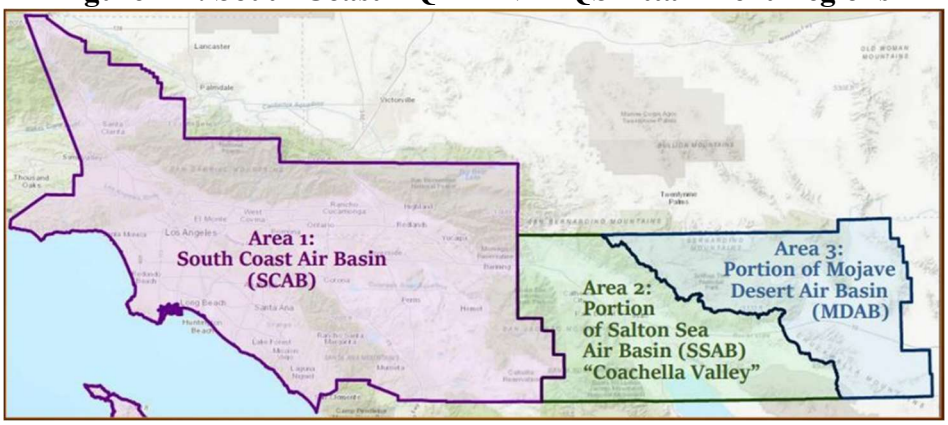
Federal Clean Air Act Requirements

The South Coast Air Basin has some of the highest levels of PM in the nation.[9] The United States Environmental Protection Agency (U.S. EPA) establishes National Ambient Air Quality Standards (NAAQS) for six criteria pollutants, including PM. PM is divided into two categories based on the size of the particles. PM10 are inhalable particles with diameters that are 10 micrometers (µm) or less and PM2.5 are called fine inhalable particles with diameters that are 2.5 µm or less.[10] 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. The Federal Clean Air Act requires U.S. EPA to designate areas as either in attainment by meeting the applicable standard or in nonattainment by failing to meet the applicable standard.[11] South Coast AQMD has three NAAQS attainment regions, consisting of the South Coast Air Basin, the Riverside County portions of the Salton Sea Air Basin (Coachella Valley), and the Mojave Desert Air Basin.

On December 14, 2012, the U.S. EPA lowered the primary annual standard for PM2.5 to 12 micrograms per cubic meter (µg/m^3). The Clean Air Act classifies areas as in nonattainment for the PM2.5 standards based on the levels of PM2.5 in the attainment region. Nonattainment areas that fail to meet the PM2.5 standards are designated as either "moderate" or "serious". The U.S. EPA requires areas that do not meet a NAAQS to develop and implement an emission reduction strategy to meet the standard. On December 9, 2020, U.S. EPA designated the South Coast Air Basin as a "serious" nonattainment area for the 2012 annual PM2.5 Standard, with an attainment date of December 31, 2025. South Coast AQMD is still awaiting determination of attainment for the 2012 annual PM2.5 standard.[12]

[8] https://www.fs.usda.gov/t-d/pubs/html/05511303/05511303.html
[9] https://www.aqmd.gov/docs/default-source/clean-air-plans/pm2.5-plans/final-pm2.5-plan/chapter-1---introduction.pdf?sfvrsn=c7518a61_10
[10] https://www.epa.gov/pm-pollution/particulate-matter-pm-basics
[11] https://www.epa.gov/ozone-designations/learn-about-ozone-designations#process
[12] https://www.aqmd.gov/home/air-quality/air-quality-management-plans/other-state-implementation-plan-(sip)-revisions/2012-annual-pm2-5-plan

Figure 1-2: South Coast AQMD NAAQS Attainment Regions



South Coast Air Basin Attainment Plan for the 2012 Annual PM2.5 Standard

The PM2.5 Plan was adopted by the South Coast AQMD Governing Board on June 7, 2024. The PM2.5 plan included a request for a 5-year extension to demonstrate attainment of the 2012 annual PM2.5 standard by December 31, 2030. Under the Clean Act Section 188(e), the extension was requested due to unforeseen challenges such as increased emissions in the goods movement sector during the COVID-19 pandemic, unfavorable meteorology, wildfires, and the addition of near-road monitors. The PM2.5 Plan contains BCM-20, which seeks to reduce direct PM2.5 emissions from combustion and non-combustion sources. PR 444.1, PAR 401, PAR 404, and PAR 405 will partially implement BCM-20 in the 2012 PM2.5 Plan, by allowing and regulating the use of alternative, lower emitting vegetative fuel reduction technologies when compared to the open burning of forestry and agricultural waste.[13]

Community Emissions Reductions Plan - Eastern Coachella Valley

In 2017, California Assembly Bill 617 (AB 617) was signed into law to develop a program to address local air pollution in disproportionately impacted communities. AB 617 directs California Air Resources Board (CARB) and local air districts, including South Coast AQMD, to enact measures to obtain more focused monitoring and emission reductions in environmental justice communities. In 2018, CARB designated ten AB 617 communities statewide, including three within South Coast AQMD. In 2019, CARB designated two additional AB 617 communities within South Coast AQMD, including the ECV. Local air districts are responsible for developing and implementing CERPs and Community Air Monitoring Plans (CAMPs) in partnership with residents and stakeholders. The CAMP includes actions to enhance the understanding of air pollution in the community and to support effective implementation of the CERP. The CERP is developed to achieve air pollution emission and exposure reductions and address the respective community's primary air quality concerns.

The ECV community is located in Riverside County and includes the city of Coachella and the unincorporated areas of Indio, Thermal, Oasis, Mecca, and North Shore. The main sources of air

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

pollution affecting the community include fugitive dust from construction activities, unpaved roads and parking lots; and agricultural activities, including pesticide application and agricultural burning. During development of the ECV CERP[14], community members expressed concern about the health effects from open burning and about the air quality impacts from open burning near schools, childcare centers, homes, and impacts to farmworkers. Community members also expressed interest in exploring alternatives to open burning. Examples of alternatives to traditional open burning include composting, using heavy-duty equipment (e.g. chipper or grinder), or using an ACI. Chapter 5e Table 2 in the ECV CERP, discusses pursuing funding opportunities for equipment or services to be used as alternatives to agricultural open burning. Rule development for PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 was not identified as a course of action within the ECV CERP; however, this rule development can help reduce PM emissions from agricultural waste disposal operations by allowing the use of alternatives to traditional open burning, i.e., ACIs and prescribed fire vehicles. At this time, PR 444.1 allows only government agencies and their contractors to operate ACIs and prescribed fire vehicles. Government agencies may partner with communities or agricultural operations to burn vegetative waste, including agricultural waste.

REGULATORY HISTORY

Rule 404 and Rule 405 established PM emission limits applicable to any source, including ACIs and prescribed fire vehicles. Rules 404 and 405 were both adopted in May 1976. Rule 404 was amended in 1979 and 1986, while Rule 405 was amended once in 1986. Prior to the formation of South Coast AQMD in 1977, each of the four counties – Los Angeles, Orange, Riverside, and San Bernardino – had their own air pollution control district (APCD). Rule 404 was first amended in October 1979 due to concern from U.S. EPA that Rule 404 was less stringent than the respective county APCD rules it replaced because liquid sulfur compounds were excluded from PM emission limits. Rule 1119 – Petroleum Coke Calcinating Operations - Oxides of Sulfur was adopted in March 1979, which required coke calciners to reduce SO_2 emissions by 80 percent and ensure compliance with Rule 404. As a result, Rule 404 was amended to remove the exemption for liquid sulfur compounds discharged from petroleum coke calcining operations. Rules 404 and 405 were last amended in February 1986 alongside the adoption of Rule 1112.1. Rule 1112.1 establishes limits for particulate emissions from cement kilns and clinker coolers; consequently, Rules 404 and 405 were amended to include an exemption for equipment which complies with the emission limits specified in Rule 1112.1.

Rule 401 regulates visible emissions from any source, including ACIs and prescribed fire vehicles. Rule 401 was adopted in February 1977 and subsequently amended eleven times to provide exemptions for various types of equipment or operations. The rule was last amended in November 2001 to extend the less stringent state visibility standard for four additional years for specific under-fired charbroilers, excluding chain-driven charbroilers and those with control equipment, to allow for cost-effective control technology to be identified.

[14] https://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/eastern-coachella-valley/final-cerp/final-cerp-july-2021.pdf?sfvrsn=ae03ae61_9

Rule 219 exempts specific equipment, processes, or operations from South Coast AQMD permitting requirements. The rule has been amended 22 times to address specific types of equipment. Rule 219 was last amended in April 2023 to include enhanced recordkeeping, clarify equipment replacement requirements at federal major sources, and update emission thresholds for non-Title V agricultural sources.

Rule 222 requires owners or operators to register specified equipment by submitting information regarding the source, including information to determine whether the equipment is operating in compliance with applicable District, state, and federal rules and regulations. In addition to an initial filing fee, affected equipment are subject to annual renewal fees. Rule 222 was adopted in September 1998 and has subsequently been amended six times. Rule 222 was last amended in April 2023 to update existing references to Rule 219 provisions, including exemptions for residential dwelling units of no more than four families and for small food ovens.

AFFECTED FACILITIES AND EQUIPMENT

Currently, ACIs and prescribed fire vehicles are not operated within South Coast AQMD's jurisdiction, as they have not demonstrated compliance with the PM limits in Rule 404 and 405, nor the visible emissions requirements in Rule 401. The types of facilities expected to operate ACIs and prescribed fire vehicles include government agencies that specialize in forest protection, fire protection, and transportation; as well as agricultural operations. Staff is aware of four ACIs owned and/or operated by government agencies that will be used within South Coast AQMD jurisdiction after rule adoption; all four ACIs are equipped with engines rated less than 50 horsepower (HP). However, staff anticipates the number of ACIs and prescribed fire vehicles used by government agencies and their contractors to increase in the future.

PUBLIC PROCESS

The development of PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 was conducted through a public process. Two Working Group meetings were held on August 20, 2025 and January 7, 2026. The Working Group is composed of representatives from public agencies, consultants, manufacturers, environmental and community representatives, and other interested parties. The purpose of the Working Group meetings is to discuss details of proposed rules and to listen to concerns with the objective to build consensus and resolve key issues. Additionally, a Public Workshop was held on March 25, 2026. The purpose of the Public Workshop was to present the proposed rule language to stakeholders and to solicit comment. Staff also conducted multiple site visits as part of this rulemaking process.

CHAPTER 2: BARCT ASSESSMENT

INTRODUCTION

Best Available Retrofit Control Technology (BARCT) is defined in the California 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". The purpose of a BARCT assessment is to identify any potential emission reductions from specific equipment or industries and establish an emission limit that is consistent with state law.

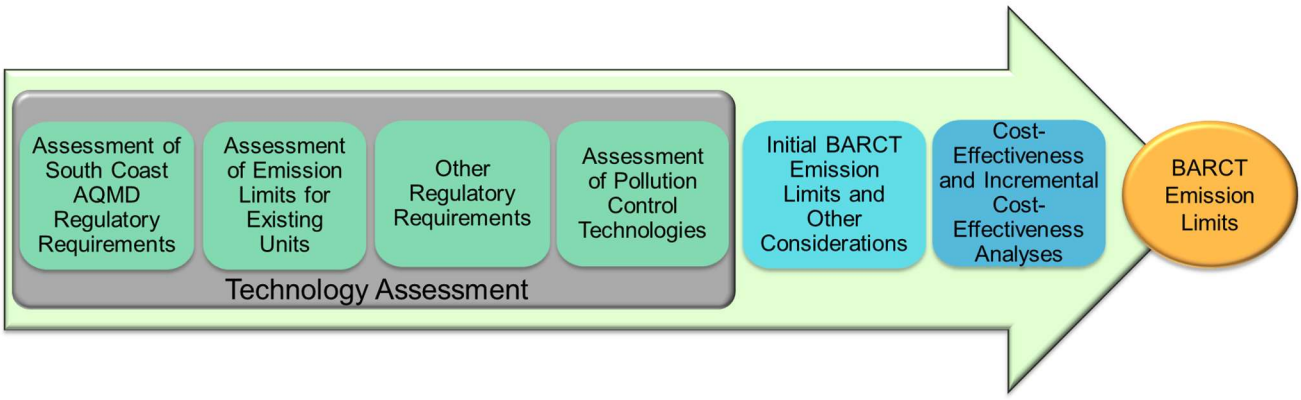
Initially, staff planned on conducting a full BARCT assessment as part of this rule development and establishing BARCT emission limits for PM in PR 444.1. Due to limited or unavailable data for the technologies reviewed as part of the technology assessment, an initial BARCT emission limit could not be determined. The partial BARCT assessment for development of PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 includes an assessment of South Coast AQMD regulatory requirements, an assessment of emission limits for existing vegetative fuel reduction technologies, an analysis of rules and regulations of other air pollution control agencies, and an overview of potential vegetative fuel reduction technologies.

BARCT ANALYSIS APPROACH

The BARCT analysis approach follows a series of steps conducted for each equipment category.

The steps for BARCT analysis consist of:

- 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 Limits



Assessment of South Coast AQMD Regulatory Requirements

As part of the BARCT assessment, staff reviewed existing South Coast AQMD regulatory requirements which reduce PM emissions from forestry and agricultural waste management operations. Forestry and agricultural waste is primarily disposed of through open burning. Rule 444 regulates open burning activities by specifying conditions and requirements for open burning but does not establish PM emission limits. Rule 444 defines open burning combustion/open detonation as "outside of a combustion chamber". However, ACIs and prescribed fire vehicles, include a combustion chamber and therefore, do not meet the definition of open burning.

Figure 2-1- Example of Pile Burning

Rule 444 allows open burning to dispose of forestry and agricultural waste. Prescribed burning, agricultural burning, and fire hazard removal are some of the open burning activities subject to Rule 444. Prescribed burning is planned open burning conducted by a public agency, and the two main types are broadcast burning and pile burning. Broadcast burning is controlled burning of brush and understory vegetation that is confined to a predetermined area. Pile burning is controlled burning of debris, such as brush, in a consolidated pile. Pile burning is a common practice to dispose of forestry and agricultural waste within South Coast AQMD.

Open burning is not subject to Rule 404 and Rule 405, as open burning is not considered to be a point source of emissions, which involves equipment typically requiring a permit to operate. Rule 404 and Rule 405 apply to any source (i.e., equipment), including ACIs and prescribed fire vehicles. Rule 404 limits the grain loading of PM in a cubic foot of air that is discharged to the atmosphere. Rule 405 limits the amount of PM that may be discharged into the atmosphere from an operation based upon the weight of material processed. Open burning is also not subject to Rule 401. Rule 401 applies to vegetative fuel reduction technologies, including ACIs and prescribed fire vehicles and limits visible emissions from any single source of emission. Rule 401 specifies an opacity limit no darker than number one on the Ringelmann Chart, representing 20% opacity, for a period aggregating more than three minutes in any one hour.

Rule 1133.1 − Chipping and Grinding Operations (Rule 1133.1) applies to owners and operators of chipping and grinding operations and is meant to prevent inadvertent decomposition during such operations. Rule 1133.1 applies to chipped and ground woodwaste, greenwaste, and foodwaste used for purposes other than composting (Rule 1133.3 – Emission Reductions from Composting Operations) or co-compositing (Rule 1133.2 – Emission Reductions from Co-Composting Operations). Chipping and grinding can be used as a method to process forestry and agricultural wase and is considered to be a vegetative fuel reduction technology.

Assessment of Emissions Limits for Existing Units

The majority of forestry and agricultural waste is disposed of through open burning. South Coast AQMD rules do not have established emission limits for open burning or vegetative fuel reduction technologies; Rule 1133.1 does not contain emission limits. However, South Coast AQMD permits for chipping and grinding have varying emission limits for process emissions and engines associated with the respective equipment.

Other Regulatory Requirements

As part of the BARCT assessment, staff reviewed other California air district regulations and found that the following include emission limits in permits rather than rules for vegetative fuel reduction technologies: Bay Area Air Quality Management District, San Luis Obispo County Air Pollution Control District, Monterey Bay Air Resources District, North Coast Unified Air Quality Management District, and San Diego County Air Pollution Control District. San Joaquin Valley Air Pollution Control District includes ACI emission limits in Rule 2280 – Portable Equipment Registration (Rule 2280) as well as in their permits.

Table 2-1: Rule 2280 Emission Limits for Air Curtain Burn Box[15]

Pollutant	Emission Limit (lb/ton)*
PM10	1.3
NOx	1
SOx	0.1
CO	2.6
VOC	0.9

*(in pounds per ton of agricultural waste material)

U.S. EPA formerly required Title V permits for all ACIs due to high levels of PM emissions. On April 17, 2024, U.S. EPA removed Title V requirements for ACIs that burn less than 35 tons per day and only burn wood waste, clean lumber, yard waste, or a combination of the three. In most cases, burning agricultural waste in an ACI requires a Title V permit. U.S. EPA 40 Code of Federal Regulations (CFR) Part 60 Subpart EEEE establishes performance standards for other solid waste incineration (OSWI) units, which includes ACIs, pyrolysis, and gasification units. Subpart EEEE contains emission limitations, operating limitations, compliance requirements, and recordkeeping and reporting requirements.

[15] https://www.valleyair.org/media/d14hbnox/rule-2280.pdf

ACIs that burn only wood waste, clean lumber, and yard waste are subject only to requirements in 40 CFR Part 60, Sections 60.2970 through 60.2973, rather than all the requirements in Subpart EEEE. ACIs that burn only those three materials are subject to an opacity limitation of 35% (6 minute average) during the 30 minute start-up period and an opacity limitation of 10% (6 minute average) thereafter using U.S. EPA Method 9. Sections 60.2970 through 60.2973 also include recordkeeping and reporting requirements for ACIs. Table 2-2 applies to OWSI units that burn materials other than wood waste, clean lumber, and yard waste, including ACIs that burn non-woody agricultural waste.

Table 2-2: PM Emission Limitations for OSWI Units in 40 CFR Part 60 Subpart EEEE[16]

Unit Type	PM Emission Limit	Averaging Time	EPA Method
OSWI units that commenced construction on or before August 31, 2020	0.013 grains per dry standard cubic foot (dscf)	Using 3-run average (1 hour minimum sample time per run)	Method 5 or 29 of Appendix A
OSWI units with capacities >10 tons/day that commenced construction after August 31, 2020 or commenced reconstruction or modification on or after December 29, 2025	0.013 grains per dscf		
OSWI Units With Capacities ≤10 tons/day that commenced construction after August 31, 2020 or commenced reconstruction or modification on or after December 29, 2025	210 milligrams per dry standard cubic meter		

U.S. EPA 40 CFR Part 60 Subpart CCCC[17] establishes performance standards for commercial and industrial solid waste incineration (CISWI) units, which includes ACIs, pyrolysis, and gasification units. Subpart CCCC contains emission limitations, operating limitations, compliance requirements, and recordkeeping and reporting requirements. ACIs that burn only wood waste, clean lumber, and yard waste are subject only to requirements in 40 CFR Part 60, Sections 60.2242 and 60.2245 through 60.2260, rather than all the requirements in Subpart CCCC. ACIs that burn only those three materials are subject to an opacity limitation of 35% (average of three 1-hour blocks consisting of ten 6-minute average opacity values) during the 30 minute start-up period and an opacity limitation of 10% (average of three 1-hour blocks consisting of ten 6-minute average opacity values) thereafter using U.S. EPA Method 9. Section 60.2260 also includes recordkeeping and reporting requirements for ACIs.

[16] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-EEEE
[17] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-CCCC

Assessment of Pollution Control Technologies

As part of the BARCT assessment, staff conducted a technology assessment of different vegetative fuel reduction technologies. The technologies evaluated were chipping and grinding, gasification, pyrolysis systems, prescribed fire vehicles, and ACIs.

Figure 2-2 – Chipping and Grinding

Figure 2-3 – Gasification

Figure 2-4 – Pyrolysis System

Figure 2-5 – Prescribed Fire Vehicle

Figure 2-6 – Air Curtain Incinerator

Chipping and Grinding

Vegetative waste can be processed through chipping and grinding. Equipment used for chipping and grinding include wood chippers, tub grinders, or horizontal grinders. Chipping and grinding mechanically reduces the size of the waste material. Vegetative waste can be chipped and ground for use as land cover, a soil amendment, or feedstock. PM emissions are directly associated with chipping and grinding. There is also high fuel consumption associated with chipping and grinding and with transporting the waste from one site to another.[18]

Gasification Technology

Thermo-catalytic gasification technology can convert vegetative waste into a pipeline quality renewable gas called syngas. Converting vegetative waste into syngas helps divert material from landfills while producing fuel that can be used for electricity generation. Gasification is an

[18] https://climate.mit.edu/ask-mit/does-harvesting-wood-contribute-climate-change-even-if-wood-used-permanent-structures#:~:text=Yes:%20the%20tree%20waste%20left,impacts%20on%20land%2Dbased%20ecosystems

emerging technology that is not yet mature for widespread end-user application. Successful implementation of this technology relies on overcoming certain infrastructure challenges. Gasification requires substantial infrastructure from feedstock supply to energy generation and emission control. It also depends on a reliable supply chain and transportation network for continuous operation.[19] As an emerging technology not ready for widespread user application, there is currently no emission data available.

Pyrolysis Systems

Pyrolysis is a thermo-chemical process, where vegetative waste is heated in a low-oxygen environment to break down the waste. The benefit of this technology is the production of biochar, which sequesters carbon into a stable form preventing it from decomposing into atmospheric carbon dioxide. Biochar is also a beneficial soil amendment, improving soil health by retaining water and nutrients. In addition to emissions related to operation of this technology, there are emissions associated with transporting materials to the equipment site. This technology also requires supporting infrastructure such as access to water and electricity.[20] There are no permitted pyrolysis systems used for vegetative waste within South Coast AQMD and thus no related emission data is available.

Prescribed Fire Vehicle

Prescribed fire vehicles are used to burn grasses and low-growth brush and can be operated on relatively wet or dry grass. This technology is not intended for reducing tall or dense vegetation, shrubs, or tree waste. Prescribed fire vehicles use an array of high temperature, high oxygen torches to burn vegetation directly below the vehicle. They also use large fans to draw air in along the bottom of the burn chamber. The added oxygen inside the burn chamber produces cleaner combustion and less smoke than traditional open burning. The primary function of this technology is to support fire mitigation efforts by establishing fuel breaks. Prescribed fire vehicles can precisely burn areas at tree lines adjacent to homes and other properties and can be used along highways.[21] Prescribed fire vehicles are an emerging technology ~~and there is currently no available emission data.~~, so there is limited emission data available. Preliminary emission data shows an estimated 60% reduction in PM2.5 emissions compared to open burning.

Air Curtain Incinerators

ACIs can be used to burn vegetative waste and produce biochar depending on operating conditions. ACIs operate by projecting a high-velocity curtain of air across an open burn chamber, promoting cleaner combustion compared to open burning. The equipment is either above or below ground and can contain refractory walls and a floor. The high-velocity air curtain ensures a constant supply of oxygen to the fire, promoting a more complete combustion process.[22] Table 2-3 summarizes available emission data for ACIs, which shows significant variability. Despite the limited and

[19] https://www.sciencedirect.com/science/article/pii/S0196890424011543#:~:text=Gasification%20is%20an%20auspicious%20pathway,operational%20efficacy%20of%20the%20plant

[20] https://www.ars.usda.gov/northeast-area/wyndmoor-pa/eastern-regional-research-center/docs/biomass-pyrolysis-research-1/what-is-pyrolysis/

[21] https://burnbot.com/technology/#video

[22] https://www.fs.usda.gov/t-d/pubs/html/05511303/05511303.html

variable ACI emission data, source test results show burning vegetative waste in an ACI to be 60% to 90%+ cleaner than open pile burning.[23]

Similar to conventional ACIs, carbonizers use air curtain technology in association with a combustion chamber and therefore fall under the PR 444.1 definition of an ACI. However, they also have pyrolysis systems to convert vegetative waste into biochar. Some carbonizers contain a two-chamber pyrolysis system and also have an under air supply that can be adjusted by the operator to assist in pyrolysis of vegetative waste. Additionally, carbonizers use a continuous water quenching system to stop pyrolysis and increase the porosity and quantity of biochar.

Table 2-3: Emissions Test Results for ACIs[24]

Material	Year	PM10 (lb/ton)	CO (lb/ton)
Wood/cord wood	1968	13	-
Wood	2000	0.12	1.1
Forest vegetation	2002	1.1	2.6
Wood	2003	1.4	30
Wood	2003	0.13	0.61
Wood	2016	0.0064	4.2
Vegetative material	2016	7.7	6.9
Wood	2023	4.25	14.2

Initial BARCT Emission Limits and Other Considerations

As part of the BARCT assessment, staff examined emission data from various vegetative fuel reduction technologies. Emission data found was limited or unavailable for the technologies reviewed. Due to the limited emission data found during the technology assessment, only a partial BARCT assessment was conducted. Thus, staff determined that an initial BARCT emission limit could not be established. As a result, PR 444.1 will reduce PM emissions from forestry and agricultural waste management practices by establishing requirements for best management practices, monitoring, and recordkeeping.

[23] https://www.oregon.gov/deq/aq/cao/Documents/caoACIresultsSum.pdf

[24] https://www.valleyair.org/media/dpipwseq/criteria-air-incinerator-ef-determination-analysis.pdf

CHAPTER 3: SUMMARY OF PROPOSALS

INTRODUCTION

PR 444.1 establishes requirements for ACIs and prescribed fire vehicles used to reduce vegetative waste and reduces PM emissions from forestry and agricultural waste management practices. PAR 401, PAR 404, and PAR 405 will include an exemption for ACIs and prescribed fire vehicles regulated under PR 444.1 to allow their use in South Coast AQMD jurisdiction. PAR 219 will exempt ACIs and prescribed fire vehicles not subject to Title V from South Coast AQMD permitting requirements, but they will be required to be registered pursuant to PAR 222.

PROPOSED RULE 444.1 STRUCTURE

PR 444.1 will contain the following subdivisions:

a) Purpose
b) Applicability
c) Definitions
d) General Requirements
e) Air Curtain Incinerator Operating Requirements
f) Air Curtain Incinerator Monitoring Requirements
g) Prohibitions
h) Maintenance Requirements
i) Source Testing
j) Recordkeeping

PROPOSED RULE 444.1

Subdivision (a) ─ Purpose

The purpose of this rule is to establish requirements for ACIs and prescribed fire vehicles and to reduce PM emissions from forestry and agricultural waste management practices.

Subdivision (b) ─ Applicability

PR 444.1 applies to owners and operators of ACIs and prescribed fire vehicles. PR 444.1 contains a requirement which limits the use of ACIs and prescribed fire vehicles to solely government agencies and their contractors. Government contractors are only allowed to operate ACIs and prescribed fire vehicles when working on behalf of a government agency under a current and valid contract. This requirement is intended to prevent private use until a future PR 444.1 amendment is made. This will allow South Coast AQMD to work with government agencies to source test equipment, establish emission limits, and evaluate best management practices before allowing private use. Government agencies and their contractors may operate ACIs and prescribed fire vehicles on private property.

Subdivision (c) – Definitions

Definitions were added or modified from other South Coast AQMD rules and federal and state regulations to provide clarity for PR 444.1 requirements.

- *AGRICULTURAL OPERATIONS means any business occurring on a ranch or farm directly related to:*
  (A) Growing of crops; or
  (B) Conducting agricultural research or instruction by an educational institution.

This definition is from Rule 444 and modified to remove operations related to the raising of fowl or other animals for the primary purpose of making a profit or for a livelihood, which are not applicable to PR 444.1.

- *AGRICULTURAL WASTE means unwanted or unsalable plant materials produced wholly from Agricultural Operations. Agricultural Wastes do not include items such as metal, wire, plastic, rubber, ornamental or landscape vegetation, chemically treated wood including chemically treated grape stakes, shop wastes, construction and demolition material, material containing asbestos, garbage, oil filters, tires, tar paper, pesticide and fertilizer containers, broken boxes, pallets, sweat boxes, packaging material, packing boxes or any other material produced in the packaging or processing of agricultural products. Orchard or vineyard waste or any other material, generated as a result of land use conversion to nonagricultural purposes is not agricultural waste.*

This definition is from Rule 444 and modified to refer to waste from Agricultural Operations as defined in PR 444.1. The definition was also modified to specify that agricultural waste refers to only plant materials from agricultural operations and does not include items such as metal or wires that are used in agricultural operations such as metal wires used to support grape vines. Waste burned in ACIs and prescribed fire vehicles reach hotter temperatures compared to open burning. Metals burned in ACIs and prescribed fire vehicles can reach temperatures hot enough to release toxic heavy metals into the atmosphere. Grape stakes are commonly pressure-treated with preservatives such as chromated copper arsenate to prevent insect damage and decay, which can cause hazardous air pollutants when burned. An example of material that is not considered agricultural waste is food product that has left agricultural operations. Food scraps that are disposed of along with yard waste are not considered agricultural waste.

- *AIR CURTAIN INCINERATOR means an incinerator, carbonizer, or mechanized burner that operates by forcefully projecting a curtain of air across an open, integrated combustion chamber or open pit or trench in which combustion occurs.*

This definition is from 40 CFR Part 60 Subpart EEEE[25] and was modified to describe different terms or names for ACIs applicable to PR 444.1. ACIs can be above ground in a manufactured

[25] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-EEEE

steel container which acts as an open combustion chamber. ACIs may or may not have refractory walls and a floor. ACIs can also be below ground in an open pit or trench which serves as the open combustion chamber. The terms incinerator, carbonizer, and mechanized burner all refer to the same process of forcing a high-velocity curtain of air across an open combustion chamber used to burn vegetative waste. ACIs can produce ash, biochar, or sometimes both. The term carbonizer relates to the production of biochar. See Chapter 2 of the Staff Report for more details. Biochar can be produced by applying water to the combusted materials to extinguish burning before turning to ash. As stated in 40 CFR Part 60 Subpart EEEE, ACIs do not include conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.

- *BURN AUTHORIZATION NUMBER means the number that is assigned to a burn project upon being granted approval by the Executive Officer.*

This definition is from Rule 444. The request for a burn authorization number is the mechanism in which the Executive Officer is notified of planned burning. Under PR 444.1, a burn project refers to the burning of vegetative waste in an ACI or prescribed fire vehicle.

- *CONTRACTOR means a person or company who performs a service for a separate entity under a valid and current contract. Contractor includes government grant recipients.*

This definition was added to describe persons who have established a written contract with government agencies to operate ACIs and prescribed fire vehicles to reduce vegetative waste on their behalf. A contract is valid if it is legally enforceable agreement between two parties. A contract is current if it is active and presently in effect. A current and valid contract is a written agreement between both parties where there is an ongoing agreement for the operational period of the project.

- *CONTROLLED SUBSTANCE means any drug, substance, or immediate precursor which is listed in Schedules I through V of the Uniform Controlled Substances Act, codified in the California Health and Safety Code Division 10.*

This definition is from California Health and Safety Code Section 11007[26] and was added to describe types of vegetative waste prohibited to be burned under PR 444.1. The definition of agricultural waste includes unwanted or unsalable plants which can be inclusive of some controlled substances derived from plants either directly or through chemical processing such as cannabis, opium, and psilocybin mushrooms. The definition is modified from Section 11007 to include the schedule numbers and associated law pertaining to this definition.

- *PRESCRIBED FIRE VEHICLE means a mobile machine designed for wildfire prevention by performing mechanized controlled burns of low-growth vegetation to create fuel breaks.*

[26] https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=HSC&division=10.&title=&part=&chapter=1.&article=

This definition was added to describe a type of unit regulated by PR 444.1. This definition is intended to capture an emerging technology that consists of a remote-controlled, tractor sized vehicle that burns grasses and low-growth brush to create lines of burnt materials that act as fuel breaks to reduce wildfire risk. Prescribed fire vehicles are an emerging technology and are currently remote-controlled but may be operated manually in the future. See Chapter 2 of the Staff Report for more details.

- *SCHOOL means any public or private school, including juvenile detention facilities with classrooms, used for the education of more than 12 children at the school in kindergarten through grade 12. School also means an Early Learning and Developmental Program by the U.S. Department of Education or any state or local early learning and development programs such as preschools, Early Head Start, Head Start, First Five, and Child Development Centers. A School does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property.*

This definition is from Rule 1480 ─ Ambient Air Monitoring and Sampling of Metal Toxic Air Contaminants (Rule 1480). This definition was added to PR 444.1 to maintain consistency and reflects the definition of school included in other South Coast AQMD toxics rules specified in Regulation XIV – Toxics and Other Non-Criteria Pollutants.

- *SENSITIVE RECEPTOR means any residence including private homes, condominiums, apartments, and living quarters; Schools as defined in paragraph (c)(8); daycare centers; and health care facilities such as hospitals or retirement and nursing homes. Sensitive receptors include long-term care hospitals, hospices, prisons, and dormitories or similar live-in housing.*

This definition is from Rule 1480 and reflects the definition of sensitive receptor included in other South Coast AQMD toxics rules specified in Regulation XIV – Toxics and Other Non-Criteria Pollutants. This definition was added to describe the buildings or structures containing more vulnerable populations such as children, the elderly, and the sick.

- *VEGETATIVE WASTE means Wood Waste, Yard Waste, and Agricultural Waste.*

This definition was added to describe the types of waste that can be burned in ACI or prescribed fire vehicle. Vegetative waste can refer individually to either wood waste, yard waste, or agricultural waste. Vegetative waste can also mean any mixture of wood waste, yard waste, and agricultural waste.

- *WOOD WASTE means untreated wood and untreated wood products, including tree stumps (whole or chipped), trees, and tree limbs (whole or chipped). Wood Waste does not include grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands, construction, renovation, or demolition wastes.*

This definition is from 40 CFR Part 60 Subpart EEEE. Wood waste is a type of vegetative waste which is allowed to be burned pursuant to PR 444.1. This definition was streamlined to remove examples of treated wood and treated wood products that do not meet the definition of wood waste. This definition was modified from Subpart EEEE to remove bark, sawdust, chips, scraps, slabs, millings, and shavings from the definition of wood waste under PR 444.1. These smaller wood waste materials are not suitable to be used as the primary fuel in an ACI as their use can lead to improper combustion and cause more smoke. Chipped wood waste can however be mixed in with larger wood waste to burn more efficiently in an ACI. These materials are also not suitable to be used in a prescribed fire vehicle as this equipment is solely meant to be used on grasses and low-growth brush. Wood waste can refer to either untreated wood or untreated wood products, or it can refer to any mixture of these types of vegetative waste.

- *YARD WASTE means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. Yard Waste comes from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard Waste does include construction, renovation, and demolition wastes.*

This definition is from 40 CFR Part 60 Subpart EEEE. Yard waste is a type of vegetative waste, which is allowed to be burned pursuant to PR 444.1. Yard waste can refer to grass, grass clippings, bushes, shrubs, or clippings from bushes and shrubs. Yard waste includes living or standing grass, bushes, or shrubs. Yard waste can also mean any mixture of these types of vegetative waste. An example of yard waste includes public or private lands that may be burned by the operation of prescribed fire vehicles. The term yard waste is also from 40 CFR Part 60 Subpart EEEE and does not solely include waste from a yard, which is usually associated with a private residence. Any waste that meets the definition of yard waste in PR 444.1 can be burned in an ACI or prescribed fire vehicle even if the waste is not from a residential yard such as wild grasses or shrubs on public lands near highways.

Subdivision (d) – General Requirements

Vegetative Waste Burning – Paragraph (d)(1)

Paragraph (d)(1) requires that only vegetative waste be burned in ACI or prescribed fire vehicle. ACIs and prescribed fire vehicles are designed to reduce PM emissions from the burning of vegetative waste and are not equipped with air pollution control devices designed to reduce toxic air contaminants, hazardous air pollutants, or other emissions which could pose harm to public health (e.g. burning of controlled substances). Therefore, materials such as metals and treated wood must not to be burned in an ACI or prescribed fire vehicle pursuant to PR 444.1, as more robust emission control devices would be necessary to protect public health if burning these types of materials.

Government Agencies and their Contractors – Paragraph (d)(2)

PR 444.1 allows only government agencies and their contractors to operate ACIs and prescribed fire vehicles. This requirement is intended to prevent private use until a future PR 444.1 amendment is made. This will allow South Coast AQMD to work with government agencies to source test equipment, establish emission limits, and evaluate best management practices before

allowing private use. Government agencies may partner with communities or agricultural operations to burn vegetative waste to reduce fuels. Contractors are only allowed to operate ACIs and prescribed fire vehicles under a current and valid government contract.

Minimizing Emissions of Air Contaminants – Paragraph (d)(3)

Paragraph (d)(3) requires the owner or operator of an ACI or prescribed fire vehicle to minimize the amount of air contaminants released into the atmosphere. This includes maintaining the equipment properly and operating equipment in a manner that reduces air contaminants. This provision serves as a substitute for a common permit requirement to ensure equipment is properly maintained and kept in good operating condition at all times.

Wind Speed Requirements for ACIs and Prescribed Fire Vehicles – Paragraph (d)(4)

PR 444.1 requires that ACIs or prescribed fire vehicles burn vegetative waste only when wind speeds are less than 20 mph. This requirement is based on continuous wind speeds below 20 mph and is not based on average wind speed over a period of time. An owner or operator may demonstrate compliance with this requirement by using an anemometer to measure wind speed. Operating instructions for ACIs[27] and prescribed fire vehicles[28] both state that operation should not take place above this wind speed. Wind speeds higher than 20 mph can blow embers to nearby buildings or structures and increase wildfire risk.

Ash Removal Requirements – Paragraphs (d)(5)

Ash must be handled, stored, and disposed of properly to prevent emissions into the atmosphere. Strong winds have the potential to cause ash to become airborne. Ash contains PM and other pollutants that pose a risk to public health. Ash can be moved carefully using an ash rake, front-end loader, or excavator with a bucket and thumb. An example of improper handling of ash is using a leaf blower to remove ash from filters and allowing them to enter the atmosphere. After removal, ash can be disposed of by being mixed in with soil and used as a soil amendment.

Burn Authorization Number for ACIs and Prescribed Fire Vehicles – Paragraph (d)(6)

PR 444.1 requires a daily burn authorization from the Executive Officer for each burn operation at each location. A location is the physical address or legal description such as the coordinates in latitude and longitude. Any time the ACI is moved and there is a cold start to begin operation is considered a new location, including if the equipment is moved to a different part of the same forest. A cold start refers to any time the ACI is starting a new burning activity in which an ignition device is used. The burn authorization must be requested by phone by 4:00 pm on the day prior to burning. This provision is consistent with Rule 444, which requires an owner or operator to obtain a burn authorization number for each open burning event. This requirement will allow the Executive Officer to be notified when burning is taking place and will aid in potential compliance investigations.

[27] https://airburners.com/files/operating-manuals/charboss-3axels-v2025.pdf
[28] https://burnbot.com/wp-content/uploads/2025/07/2025_BurnBot_RX_Flyer_v01.pdf

Subdivision (e) – Air Curtain Incinerator Operating Requirements

Cold Start Requirements for ACIs – Subparagraphs (e)(1)(A) and (e)(1)(B)
When conducting a cold start of an ACI, the owner or operator must use a propane torch, drip torch, or flare as ignition devices to ignite material inside the combustion chamber. A combustion chamber refers to where combustion of waste occurs, including in an open pit or trench. These ignition devices will help the fire start safely and allow for more control over ignition. Accelerants such as gasoline, diesel fuel, kerosene, and turpentine must not be used to prevent the production of black smoke. A cold start refers to any time the ACI is starting a new burning activity in which an ignition device is used. A cold start does not mean the first time an ACI is ever operated; cold starts can occur multiple times throughout the equipment life of an ACI.

Engine and Fuel Requirements for ACIs – Paragraphs (e)(2) and (e)(3)
ACIs containing an internal combustion engine that is used to power the air curtain must meet U.S. EPA Tier 4 emission standards. Any diesel fuel used in an ACI must meet CARB diesel fuel standards.

Best Management Practices for ACIs – Paragraphs (e)(4) - (e)(7)
Vegetative waste loaded into the combustion chamber must remain below the level of the air curtain and below the manufacturer's maximum loading capacity to ensure proper combustion and to reduce PM emissions. A combustion chamber refers to where combustion occurs, including an open pit or trench. During operation, an ACI must be monitored continuously when there is active burning or when flames are visible to reduce wildfire risk. The high-velocity air curtain must remain in operation and continuously blow air inside the combustion chamber in accordance with the manufacturer's recommended airflow setting until all waste materials are burned and there are no visible flames present. Ash must be removed when it reaches 1/3 the height of the combustion chamber or when the accumulated ashes impede combustion, whichever occurs first. Ash removal at this height will help ensure the ACI is operating at maximum efficiency.

Subdivision (f) – Air Curtain Incinerator Monitoring Requirements

Monitoring Requirements for ACIs – Subdivision (f)
Currently, federal requirements for burning vegetative waste in an ACI are included in 40 CFR Part 60 Subpart CCCC and/or Subpart EEEE. The federal requirements for ACIs are proposed to be amended to consolidate requirements including those for monitoring. The opacity requirements included in 40 CFR Part 60 are incorporated by reference in PR 444.1, and the reference is intended to help owners and/or operators of ACIs identify the federal requirements for ACIs outside the requirements of PR 444.1. Carbonizers that burn clean cellulosic biomass[29] and produce biochar are not subject to Clean Air Act 129 standards.[30] These carbonizers may still be subject to other federal requirements in 40 CFR Part 60 including recordkeeping and reporting requirements.

[29] https://www.epa.gov/rcra/fact-sheet-clean-cellulosic-biomass-and-non-hazardous-secondary-materials-determinations#Biochar
[30] https://rcrapublic.epa.gov/files/14970.pdf

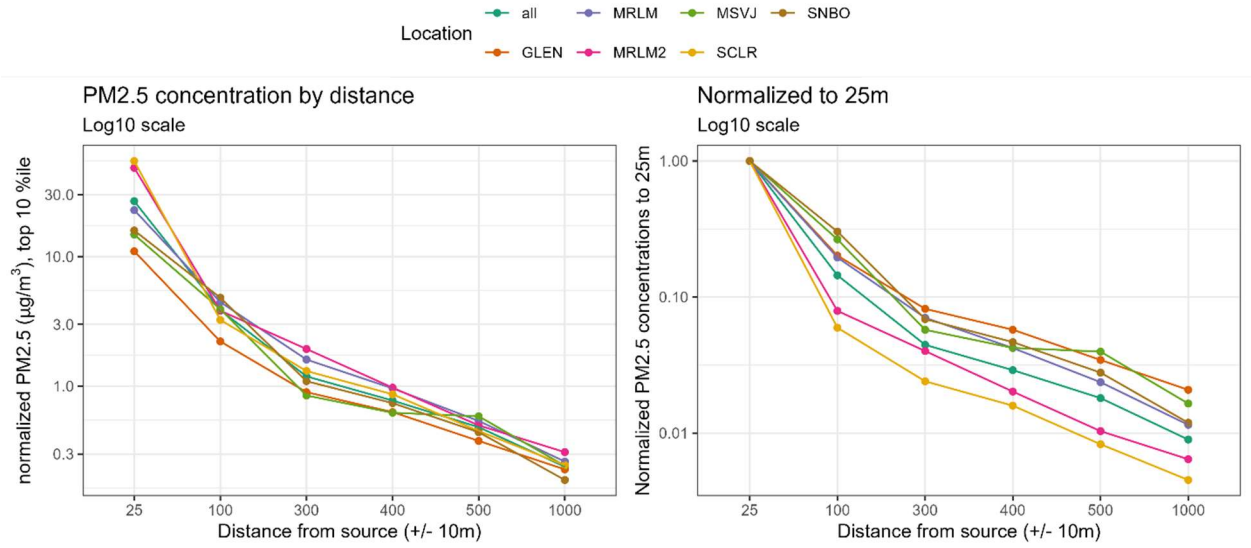
Owners and operators of ACIs or prescribed fire vehicles are responsible for complying with all applicable rules and regulations regardless of whether they are identified in PR 444.1.

Subdivision (g) ─ Prohibitions

Controlled Substances – Paragraphs (g)(1)
PR 444.1 prohibits owners or operators from burning controlled substances in an ACI or prescribed fire vehicle. Burning controlled substances in an ACI or prescribed fire vehicle can cause the release of air contaminants that pose a risk to public health. ACIs and prescribed fire vehicles do not contain add-on air pollution control devices that would prevent air pollutants from controlled substances from being emitted into the atmosphere.

Sensitive Receptors – Paragraphs (g)(2)
PR 444.1 prohibits the operation of an ACI closer than 300 feet from a sensitive receptor. The distance of 300 feet was established based on ACI operating manuals and modeling support. An ACI operating manual specified a minimum safe distance of 300 feet from structures, such as homes, which are included in the definition of sensitive receptors. This provision is intended to protect the health of vulnerable populations such as children, the elderly, and the sick at these locations. ACIs do not need to be operated near sensitive receptors to obtain vegetative fuel reduction benefits. South Coast AQMD staff also conducted modeling which supports the prohibition of operating an ACI within 300 feet of a sensitive receptor. Figure 4-1 shows that PM2.5 concentrations decrease by 70% at 100 meters (~328 feet) from an ACI.

Figure 3-1: PM Concentration Change with Distance from ACIs



Unlike ACIs, one of the primary purposes of prescribed fire vehicles is to burn vegetative waste near residences and structures to create fuel breaks and reduce wildfire risk near these properties. As a result, paragraph (g)(2) is not applicable to prescribed fire vehicles. However, as prescribed

fire vehicles are mobile and are intended to create fuel breaks, time spent at any one location is expected to be limited.

Subdivision (h) ─ Maintenance Requirements

Maintenance Requirements for ACIs and Prescribed Fire Vehicles – Paragraphs (h)(1) - (h)(2)
PR 444.1 requires an owner or operator of an ACI or prescribed fire vehicle to maintain the equipment as recommended by the manufacturer in the operating and maintenance manual for the equipment. The owner of operator of an ACI or prescribed fire vehicle must keep a copy of the manufacturer's operating and maintenance manual. The owner or operator must also provide a copy of manufacturer's operating and maintenance manual to the Executive Officer with 48 hours of it being requested.

Subdivision (i) ─ Source Testing

Source Testing for ACIs or Prescribed Fire Vehicles – Subdivision (i)
PR 444.1 requires the owner or operator of an ACI or prescribed fire vehicle to allow the Executive Officer to conduct a source test within six months of the initial request by the Executive Officer. The Executive Officer may conduct multiple source tests on an ACI or prescribed fire vehicle; the owner or operator of an ACI or prescribed fire vehicle is required to make the equipment available for source testing within 6 months of each initial request. The source test emission data gathered by the Executive Officer will inform future PR 444.1 amendments.

Subdivision (j) ─ Recordkeeping Requirements

Visible Emissions Records for ACIs and Prescribed Fire Vehicles – Paragraphs (j)(1)
PR 444.1 requires ACI visible emissions records to verify compliance with requirements pursuant to subdivision (f). Written ACI monitoring records must be kept for a minimum of five years and made available when requested by the Executive Officer.

Daily Operation Records for ACIs and Prescribed Fire Vehicles – Paragraph (j)(2)
PR 444.1 requires an owner or operator of an ACI or prescribed fire vehicle to maintain a daily operation log. Daily operation records must be kept for a minimum of five years and made available when requested by the Executive Officer.

Date and Total Hours of Operation for ACIs and Prescribed Fire Vehicles – Subparagraphs (j)(2)(A)
Contains recordkeeping requirements for the date of operation of an ACI or prescribed fire vehicle and the total hours of operation for each day. The hours of operation will provide the Executive Officer with information necessary to help calculate daily PM emissions and gather emissions data for a future PR 444.1 amendment.

Location of each ACI and Prescribed Fire Vehicle – Subparagraph (j)(2)(B)
Contains recordkeeping requirements for the location of operation as ACIs and prescribed fire vehicles can be moved from one location to another. PR 444.1 requires the physical address or

legal description such as the coordinates in latitude and longitude. Records for the location of each operation are required to determine compliance with paragraph (g)(2).

Records for Materials Burned in an ACI or Prescribed Fire Vehicle – Subparagraph (j)(2)(C) and (j)(2)(D)

Records for the type of materials burned in an ACI or prescribed fire vehicle is required for compliance verification with paragraph (d)(1). The description of the materials burned must be sufficient in detail to determine compliance with PR 444.1 (i.e. determine if the material is agricultural waste, wood waste, or yard waste). Records for the quantity in tons of materials burned will help provide emission data for the Executive Officer. The number of acres cleared of vegetative waste that will be burned in the equipment can be converted into tons of materials to determine compliance with this requirement.

Engine Fuel Type for ACIs and Prescribed Fire Vehicles – Subparagraph (j)(2)(E)

Engine fuel type records are required to demonstrate compliance with paragraph (e)(3).

Maintenance Log Records for ACIs and Prescribed Fire Vehicles – Paragraph (j)(3)

Maintenance logs are required to demonstrate compliance with paragraph (h)(1). Daily maintenance on equipment can include daily cleaning such as blowing out air filters or removing ash from inside the combustion chamber. Maintenance can also include checking oil levels and refilling the diesel tank. Maintenance records must be kept for a minimum of five years and made available when requested by the Executive Officer.

Government Contract Records for ACIs and Prescribed Fire Vehicles – Paragraph (j)(4)

Government contract records are required to demonstrate compliance with paragraph (d)(2). These records are only required if a government agency has hired a contractor to burn vegetative waste in an ACI or prescribed fire vehicle on their behalf. Government contract records must be made available when requested by the Executive Officer. The owner or operator must keep a copy of the contract for the entire life of the contract.

PROPOSED AMENDED RULE 401, PROPOSED AMENDED RULE 404, AND PROPOSED AMENDED RULE 405

PAR 401 paragraph (c)(3), PAR 404 subdivision (f), and PAR 405 subdivision (e) each add an exemption from the requirements in Rule 401, Rule 404, and Rule 405 for ACIs and prescribed fire vehicles subject to PR 444.1. The exemptions for ACIs and prescribed fire vehicles from PM limits in PAR 404 and PAR 405 and visible emissions requirements in PAR 401 will allow these technologies to be operated within South Coast AQMD's jurisdiction.

PROPOSED AMENDED RULE 219 AND PROPOSED AMENDED RULE 222

Operating an ACI or prescribed fire vehicle will require either a permit to operate or registration with the South Coast AQMD. PAR 219 will exempt ACIs, prescribed fire vehicles, and associated air pollution control equipment from permitting requirements with the South Coast AQMD provided they are: 1) operated by government agencies and/or their contractors; 2) not subject to

Title V permitting requirements; 3) burn exclusively wood waste, yard waste, and agricultural waste. Definitions for several terms are included in PAR 219; the definitions are consistent with PR 444.1 and have the same intent. Private entities not contracted by a government agency are not eligible. Burning 35 tons per day or more of wood waste, yard waste, or a mixture of these materials in an ACI currently requires a Title V permit and thus would not be eligible for exemption. Burning agricultural waste in an ACI currently requires a Title V permit and thus would not be eligible for exemption. The exemption does not apply to engines or other internal combustion equipment having a manufacturer's rating greater than 50 HP.

PAR 222 will require ACIs, prescribed fire vehicles, and their associated air pollution control equipment to be registered with the South Coast AQMD if they are exempt from permitting. Definitions for ACI and prescribed fire vehicle are included in PAR 222; the definitions are consistent with PR 444.1 and have the same intent. Registration requires owners or operators of specified emission sources to submit information regarding the source to determine whether the equipment is operating in compliance with applicable South Coast AQMD, state, and federal regulations. Rule 222 registration fees are specified in Rule 301 – Permitting and Associated Fees. There is an initial filing fee (currently $291.94) and an annual renewal fee of the same amount.

CHAPTER 4: IMPACT ASSESSMENTS

INTRODUCTION

Impact assessments were conducted as part of PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 rule development to assess the environmental and socioeconomic implications. These impact assessments include costs, emission reductions, socioeconomic impacts, and a California Environmental Quality Act (CEQA) analysis. Staff prepared draft findings and a comparative analysis pursuant to Health and Safety Code Sections 40727 and 40727.2, respectively.

EMISSION REDUCTIONS

The proposed amendments to PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 will reduce PM emissions compared to open burning. Source tests for ACIs demonstrate a 60% to 90%+ reduction in PM compared to open burning[31]. Preliminary emission data for prescribed fire vehicles indicate an estimated 60% reduction in PM compared to open burning. Both ACIs and prescribed fire vehicles increase air flow to promote a more complete combustion process, which results in fewer PM emissions. More robust emission data is necessary to establish emission limits and quantify emission reductions from PR 444.1.

COSTS

PR 444.1 will not require the use of ACIs or prescribed fire vehicles and therefore, there will be no additional costs to adopting PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222. However, opting to operate an ACI or prescribed fire vehicle will include some operational costs. Facilities that choose to operate ACIs or prescribed fire vehicles will be required to register the equipment pursuant to PAR 222. There is an initial registration filing fee (currently $291.94) and an annual renewal fee of the same amount. There are also fuel costs associated with operating ACIs and prescribed fire vehicles.

SOCIOECONOMIC IMPACT ASSESSMENT

On March 17, 1989, the South Coast Air Quality Management District (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. Thus, this Socioeconomic Impact Assessment has been prepared in accordance with Health and Safety Code and South Coast AQMD Governing Board requirements. Lastly, Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for a proposed rule or amendment which imposes BARCT or "all feasible measures" requirements relating to emissions of ozone, CO, SOx, NOx, VOC, and their precursors. Additional information and analysis on the availability and cost-effectiveness of other technologies considered for the BARCT assessment, discussion of

[31] https://www.oregon.gov/deq/aq/cao/Documents/caoACIresultsSum.pdf

potential emission reductions, and the necessity of amending the rule are included elsewhere in this report.

Introduction

PR 444.1 establishes requirements for ACIs and prescribed fire vehicles that may be used by government agencies to reduce vegetative waste. Amendments to PAR 401, PAR 404, and PAR 405 will create exemptions for ACIs and prescribed fire vehicles, allowing the use of these technologies in accordance with PR 444.1. Under PAR 219, ACIs, prescribed fire vehicles, and associated air pollution control equipment operated by government agencies and/or their contractors that are burning exclusively vegetative waste and are not subject to Title V will be exempt from South Coast AQMD permitting requirements. PAR 222 will require ACIs, prescribed fire vehicles, and associated air pollution control equipment exempt from permitting requirements to register with South Coast AQMD.

PR 444.1 does not mandate the use of ACIs or prescribed fire vehicles by government agencies; rather, it provides agencies with the option to operate these technologies. Therefore, a government agency would incur costs only if it elects to use an ACI and/or prescribed fire vehicle. In addition, PAR 222 requires agencies to register each ACI and/or prescribed fire vehicle and pay applicable registration fees if they choose to use the equipment. Implementation of PAR 219, PAR 401, PAR 404, and PAR 405 are not expected to result in any additional costs. Note that no compliance costs would occur because the use of ACIs and prescribed fire vehicles is optional. However, for informational purposes, a cost estimate was conducted for a scenario where the equipment is used by government agencies.

Legislative Mandates

The legal mandates directly related to the Socioeconomic Impact Assessment of PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 include South Coast AQMD Governing Board resolution and various sections of the Health and Safety Code, which are described in the following sections.

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 aforementioned 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.

The possible costs a government agency and/or their contractor may incur under PR 444.1 and PAR 222 are estimated to be minimal (e.g., less than one million U.S. dollars per year), which is less than the minimum threshold necessary for conducting macroeconomic modeling that would produce reliable employment impact estimates. Therefore, a job impact analysis for these proposed rules and amendments was not conducted.

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.

In addition, to satisfy the requirements in Health and Safety Code Section 40920.6, the scope of the analysis should include an incremental cost-effectiveness analysis for a proposed rule or amendment which imposes BARCT or “all feasible measures” requirements relating to emissions of ozone, CO, SOx, NOx, VOC, and their precursors. A partial BARCT assessment was conducted for PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222, which can be found in Chapter 2 of this report.

Affected Facilities and Industries

The types of facilities that will be allowed to use ACIs and prescribed fire vehicles will be government agencies and/or their contractors, such as those that specialize in forest protection, fire protection, transportation, and agricultural operations. Under the North American Industry Classification System (NAICS), these entities are classified within the Public Administration sector (NAICS 92). Currently, four ACIs and no prescribed fire vehicles owned by government agencies are expected to be operated throughout the South Coast AQMD jurisdiction after rule adoption. However, staff anticipates the number of ACIs and prescribed fire vehicles operating in the future to increase within the South Coast AQMD jurisdiction.

Small Business Analysis

Currently, only four ACIs are expected to operate within South Coast AQMD jurisdiction following rule adoption. PR 444.1 restricts operation of ACIs and prescribed fire vehicles to government agencies and their contractors. The government agencies that would operate ACIs and prescribed fire vehicles are not classified as small businesses based on various small business definitions.

Cost Estimate

Under PR 444.1, the use of ACIs and prescribed fire vehicles is optional, not required. Thus, there would be no compliance costs involved. Currently, staff is aware of four ACIs owned by public agencies within the South Coast AQMD jurisdiction. For informational purposes, a cost estimate was conducted which assumed that all four ACIs would be registered and operated in the region.[32]

Since the four ACIs within the South Coast AQMD jurisdiction have already been acquired by public agencies, no capital costs are included in this estimate. The only costs that were considered are operation and maintenance (O&M) expenses, which include additional diesel fuel and registration fees. Costs are projected over a 10-year period, from 2026 through 2035, based on the 10-year useful life of an ACI. All costs presented in this Socioeconomic Impact Assessment are in 2025 US dollars. The cost assumptions for each cost category are outlined in the following sections.

Cost Assumptions

Diesel Fuel:

Operation of one ACI will require diesel fuel at an assumed consumption rate of 1.1 gallons per hour (gal/hr). The ACI is anticipated to be used for 90 days per year (day/yr) at 12 hours per day (hr/day). The annual fuel consumption in terms of gallons per year (gal/yr) by one ACI is:

1.1 gal/hr x 12 hr/day x 90 days/yr = **1,188 gal/yr**

As of the date the analysis was conducted, the price of diesel is approximately $7.22 per gallon.[33] Therefore, the yearly anticipated diesel fuel cost to operate one ACI is estimated to be $8,577.36 (1,188 gal/yr x $7.22/gal). The total annual diesel fuel cost for all four ACIs is estimated to be $34,309.44.

Registration Fee:

Under PAR 222, if an agency chooses to use an ACI, each ACI is required to be registered and an annual registration fee of $291.94 will be required as set forth in Rule 301 paragraph (u)(1) - Fees

[32] Currently, staff is not aware of any prescribed fire vehicles within the South Coast AQMD jurisdiction; therefore, the costs related to their operation is not included in this analysis.

[33] Diesel fuel prices sourced from price presented on U.S. Energy Information Administration website for March 30, 2026, https://www.eia.gov/petroleum/gasdiesel/, accessed March 2026

for Non-permitted Emission Sources Subject to Rule 222.[34] The total annual registration fees for all four ACIs are estimated at $1,167.76.

Total Costs

The estimated costs for operating the four ACIs under PR 444.1 and PAR 222 are based on a 10-year analysis period from 2026 to 2035. Implementing PR 444.1 and PAR 222 will result in a total present value of $339,376 and $299,262 at a 1 percent and 4 percent discount rate, respectively and an average annual cost of $35,477 regardless of what real interest rate is used. Table 4-1 presents a summary of both the present value and annual average cost for each cost category of operating ACIs in accordance with PR 444.1 and PAR 222.

Table 4-1: Estimated Costs of Operating ACIs*

Cost Categories	Present Worth Value (2026)		Annual Average (2026-2035)
	1% Discount Rate	4% Discount Rate	
Registration Renewal Fee	$11,171	$9,850	$1,168
Diesel Fuel Costs for ACI	$328,205	$289,412	$34,309
Total	$339,376	$299,262	**$35,477**

*The estimated costs are related to PR 444.1 and PAR 222 while amendments to PAR 219, PAR 401, PAR 404, and PAR 405 are not expected to result in any additional costs.

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 ($1 MM).[35] However, when the average annual compliance cost of a project is less than $1 MM, the model cannot reliably forecast the macroeconomic impacts, because resultant impacts from the project would be too small relative to the baseline economic forecast.

Since the total average annual cost of PR 444.1 and PAR 222 is estimated to be $35,477, regardless of real interest rate used in the analysis, which is substantially less than the $1 MM threshold, a macroeconomic impact analysis was not conducted.

[34] South Coast AQMD Rule 301 – Permitting and Associated Fees, Fees for Non- permitted Emission Sources Subject to Rule 222 paragraph (u)(1), p. 57, https://www.aqmd.gov/docs/default-source/rule-book/reg-iii/rule-301.pdf, accessed March 2026.

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

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project (PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222) consists of actions necessary to prevent or mitigate wildfire-related emergency conditions which are statutorily exempt from CEQA requirements pursuant to CEQA Guidelines Section 15269(c). A Notice of Exemption ~~will be~~has been prepared pursuant to CEQA Guidelines Section 15062, and if the proposed project is approved, the Notice of Exemption will be filed 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 AND 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 rule with existing regulations, if the rule meets certain requirements.

Necessity

A need exists to amend PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 to partially implement BCM-20 from the 2024 PM2.5 Plan and to partially address objectives in the ECV CERP.

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, and 41508.

Clarity

PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 are written or displayed so that its meaning can be easily understood by the persons directly affected by them.

Consistency

PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 are in harmony with and not in conflict with or contradictory to existing statutes, court decisions, or state or federal regulations.

Non-Duplication

PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 will not impose the same requirements as any existing state or federal regulations. The proposed 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, 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 the source.

Table 4-2: Comparative Analysis

Rule Element	PR 444.1	PAR 401	PAR 404	PAR 405	PAR 219	PAR 222	40 CFR Part 60, Subpart EEEE	40 CFR Part 60, Subpart CCCC
Applicability	ACIs and prescribed fire vehicles operated by government agencies and their contractors	Any single source of emissions	Any single source of emissions	Any single source of emissions	Includes a list of equipment exempt from permitting, which is proposed to be amended to include ACIs, prescribed fire vehicles, and associated air pollution control equipment	Includes a list of equipment required to file for registration, which is proposed to be amended to include ACIs, prescribed fire vehicles, and associated air pollution control equipment	OSWI units with throughput less than 35 tons/day	• ACIs burning > 35 tons/day • Commercial and industrial solid waste incineration (CISWI) units
Requirements	• ACI best management practices • ACIs and prescribed fire vehicles can be operated only by government agencies and their contractors	• Limit of 20% opacity limit or No. 1 on Ringelmann Chart for a period greater than 3 minutes in any one hour	• Limits grain loading of PM in a cubic foot of air that is discharged to the atmosphere • Proposed exemption for ACIs	• Rule 405 limits the amount of PM discharged based upon the weight of material processed • Proposed exemption for ACIs	A written permit is not required for specified equipment and is proposed to be amended to include ACIs,	Filing for registration is required for specified equipment and is proposed to be amended to include ACIs, prescribed fire vehicles, and	• OSWI units with capacities >10 tons/day commenced after August 31, 2020 or commenced reconstruction or modification on or after December 29, 2025: PM emission limit of 0.013 grains/ dscf at 7% oxygen at	• Incinerators that commenced construction after June 4, 2010: PM (filterable) emission limit of 18 mg/dscm at 7% oxygen at dry standard conditions using Method 5 or 29 • Small, remote incinerators that

		• Proposed exemption for ACIs and prescribed fire vehicles subject to Rule 444.1	and prescribed fire vehicles subject to Rule 444.1	and prescribed fire vehicles subject to Rule 444.1	prescribed fire vehicles, and associated air pollution control equipment	associated air pollution	dry standard conditions using Method 5 or 29 • OSWI Units with Capacities ≤10 tons/day that commenced construction after August 31, 2020 or commenced reconstruction or modification on or after December 29, 2025: PM emission limit of 210 mg/dscm at 7% oxygen at dry standard conditions using Method 5 or 29	commenced after June 4, 2010: PM (filterable) emission limit of 270 mg/dscm at 7% oxygen at dry standard conditions using Method 5 or 29
Monitoring	Opacity requirements in 40 CFR Part 60	Same as above	None	None	None	None	Within 60 days after ACI reaches the charge rate at which it will operate, but no later than 180 days after its initial startup, ACIs must meet: • 10% opacity limit 6-minute average (observe over three 1-hour test runs, i.e., thirty 6-minute averages) using Method 9 of Appendix A • 30 minute startup period: 35%	Within 60 days after ACI reaches the charge rate at which it will operate, but no later than 180 days after its initial startup, ACIs must meet: 10% opacity limit 6-minute average (observe over three 1-hour test runs, i.e., ten 6-minute average opacity values) using Method 9 of Appendix A

							opacity limit (6-minute average) using Method 9 of Appendix A	• 30 minute startup period: 35% opacity limit (three 1-hour blocks consisting of ten 6-minute average opacity values) using Method 9 of Appendix A
Reporting	Burn Authorization Number request	None	None	None	None	None	• Initial opacity test records, annual opacity test records • Preconstruction report due prior to commencing construction, startup notification due prior to initial startup, initial test report due no later than 60 days following the initial performance test and annual test report no later than 12 months following the initial test report and subsequent reports no later than 12 months following previous report	• Notification of intent to construct ACI, planned initial startup date, types of materials planned to be burned in ACI, • Initial opacity test records, annual opacity test records, • Preconstruction report due prior to commencing construction • Startup notification due prior to initial startup • Initial test report due no later than 60 days following the initial performance test • Annual test report no later than 12 months

								following the initial test report and subsequent reports no later than 12 months following previous report
Recordkeeping	ACI visible emission records, daily operation logs and maintenance logs for prescribed fire vehicles and ACIs	None	None	None	Hours of operation, materials used or processed, fuel type and usage, throughput, operating parameters	Hours of operation, materials used or processed, fuel type, throughput, operating parameters	All records must be kept for a period of 5 years and available onsite in either paper copy	All records must be kept for a period of 5 years and available onsite in either paper copy or computer-readable format

APPENDIX A: RESPONSE TO PUBLIC COMMENTS

PUBLIC WORKSHOP COMMENTS
COMMENT LETTERS

Public Workshop Comments

Public Workshop Commenter #1: Edna Chavez Acosta – Los Angeles Department of Water and Power (LADWP)

The commenter requested clarity on whether the prohibition of operating an ACI within 1,000 feet from a sensitive receptor is for mostly secluded areas or if it applies to populated areas as well.

Staff Response to Public Workshop Commenter #1

PR 444.1 was updated to prohibit operation of an ACI within 300 feet of a sensitive receptor. The prohibition to operate an ACI within 300 feet of a sensitive receptor applies to all sensitive receptor locations, whether they are remote or located in a more populated area. This provision is intended to protect the health of vulnerable populations that are at a heightened risk of adverse health outcomes due to exposure to air pollution. The distance of 300 feet was established based on guidance from an ACI operating manuals, which specifies a minimum safe distance of 300 feet from structures and modeling support by South Coast AQMD staff, which shows a 70% reduction in PM2.5 concentrations at 100 meters (~328 feet) from an ACI.

Public Workshop Commenter #2: Michael Langella – Burnbot, Inc.

The commenter expressed the following:

2a) The commenter highlighted that initial emission data for prescribed fire vehicles shows significantly less PM 2.5 than open burning and the need to use prescribed fire vehicles to create a defensible line closer than 1,000 feet from energy infrastructure and homes in high fire-risk areas.

2b) The commenter also requested clarity on the PM data driving the prohibition to operate within 1,000 feet from a sensitive receptor.

Staff Response to Public Workshop Commenter #2

2a) PR 444.1 was updated to prohibit operation of an ACI within 300 feet of a sensitive receptor. The prohibition to operate an ACI within 300 feet from a sensitive receptor applies to only ACIs and does not apply to prescribed fire vehicles. One of the primary purposes of prescribed fire vehicles is to burn vegetative waste near residences and structures to create fuel breaks and reduce wildfire risk near these properties. As a result, PR 444.1 paragraph (g)(2) is not applicable to prescribed fire vehicles.

2b) See response to Public Workshop Commenter #1 and Public Workshop Comment 2a.

Public Workshop Commenter #3: Arun Raju – Center for Environmental Research and Technology (CE-CERT) at University of California, Riverside

The commenter asked the following:

3a) If this rule development has any impact on other technologies such as pyrolysis and gasification and if there are plans to consider those technologies as a potential solution for disposing of vegetative waste.

3b) If a private company would need to establish a contract directly with South Coast AQMD to operate an ACI or prescribed fire vehicle.

Staff Response to Public Workshop Commenter #3

3a) This rule development provides a pathway for ACIs and prescribed fire vehicles to be operated within South Coast AQMD jurisdiction and to establish requirements for their use. Although, pyrolysis and gasification technologies are not part of this rule development, these technologies are not prohibited from operating if they comply with other South Coast AQMD rules and regulations.

3b) Private companies may work with government agencies, such as forestry and fire protection agencies, to establish a contract to operate ACIs and prescribed fire vehicles.

Public Workshop Commenter #4: Deepak Patel – LADWP

The commenter asked if the requirement to burn solely vegetative waste could be added under the definition of an ACI in PR 444.1 paragraph (c)(3).

Staff Response to Public Workshop Commenter #4

Rule requirements are not typically included in definitions in South Coast AQMD rules. The provision to burn solely vegetative waste in an ACI or prescribed fire vehicle is specified in PR 444.1 paragraph (d)(1).

Public Workshop Commenter #5: Melissa Berube – Burnbot, Inc.

The commenter expressed the following:
5a) The commenter requested clarity on the reasoning behind the provision to allow only government agencies and their contractors to operate ACIs and prescribed fire vehicles and if there is any concern that this might slow down the assessment and testing of new technology.

5b) Clarity on whether there is a process to revisit this concept in a shorter time frame.

Staff Response to Public Workshop Commenter #5

5a) ACIs and prescribed fire vehicles are new technologies in South Coast AQMD jurisdiction and staff is cognizant of the risks from improper operation of this equipment. Given that this equipment is intended to reduce PM emissions and help reduce wildfire risk, South Coast AQMD is limiting the use of ACIs and prescribed fire vehicles to government agencies and their contractors at this

time. Staff envisions revisiting this requirement during a future rule amendment. This will allow South Coast AQMD to work with government agencies to source test equipment, establish emission limits, evaluate best management practices, and conduct additional air quality modeling before allowing private use. Government agencies may partner with communities or agricultural operations to burn vegetative waste to reduce fuels.

Currently, ACIs and prescribed fire vehicles cannot operate within South Coast AQMD because they have not demonstrated compliance with the requirements in Rules 401, 404, and 405. This rule development will not slow down the assessment and testing of ACIs but will remove the regulatory hurdles that prevent their operation and the associated ability to conduct emission testing within South Coast AQMD jurisdiction.

5b) Although staff plans to return for a subsequent amendment, South Coast AQMD cannot commit to a specific shorter timeframe due to information that must be collected and assessed prior to rule amendment. Staff needs to evaluate end-user operating techniques and conduct source testing to be confident in the determination of emission profiles for the purposes of establishing emission limits and air quality modeling. Allowing private use of ACIs and prescribed fire vehicles is a deviation from the current emission baseline for open burning; open burning is restricted to limited private operators (e.g., agricultural operations). Allowing private operators in general to use an ACI or prescribed fire vehicle will require more extensive air quality modeling to determine emission impacts of operation in South Coast AQMD jurisdiction.

Comment Letters

Comment Letter #1 – Tesoro Refining & Marketing Company LLC

Tesoro Refining & Marketing Company LLC
A subsidiary of Marathon Petroleum Corporation

Los Angeles Refinery
2350 E. 223rd Street
Carson, California 90810
310-816-8100

CONFIDENTIAL BUSINESS INFORMATION PROTECTION FROM DISCLOSURE UNDER CALIFORNIA PUBLIC RECORDS ACT REQUESTED

April 2, 2026

VIA Certified Mail and eMail
Return Receipt Requested

Mike Morris
Planning and Rules Manager
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Re: Proposed Amended Rule 401 – Visible Emissions

Dear Mr. Morris:

Tesoro Refining & Marketing Company LLC (Tesoro), a wholly owned subsidiary of Marathon Petroleum Corporation appreciates the opportunity to provide comments on the proposed amendments to South Coast Air Quality Management District (South Coast AQMD) Rule 401 – Visible Emissions (PAR 401). Tesoro respectfully requests that the amended rule includes a narrowly tailored exemption to allow short duration visible emissions associated with smoke-based leak testing of process heaters and boilers, and other combustion devices, under PAR 401(c)(1). This letter sets forth the basis for this request, as discussed below.

Background and Purpose of Request

Heaters, boilers, and other combustion devices that are shut down for maintenance or turnaround activities can be tested for leaks in order to identify areas requiring repair. These leaks typically occur around the walls of the combustion device, commonly referred to as the firebox. When the combustion device is in operation, such leaks provide an unintended source of air into the firebox, known as "tramp air". From an air quality perspective, tramp air infiltration contributes to inefficient combustion and can result in increased nitrogen oxides (NOx) emissions. Accordingly, testing the process heaters, boilers, and other combustion devices for tramp air leaks is a critical maintenance and diagnostic practice necessary to ensure safe, efficient, and environmentally optimized operation.

When the combustion device is out of service for maintenance, leak identification is performed using a smoke test, in which a smoke machine, smoke canister, or other visible emission-generating device introduces dense, non-toxic smoke into the firebox, ductwork, or heat-exchange sections of the equipment under slight positive pressure. Escaping smoke provides a clear visual indication of casing leaks, cracks, failed seals, warped doors, or other integrity deficiencies. During the smoke test, the exterior of the combustion device is monitored to identify locations where smoke is observed, and these leaks are subsequently repaired or sealed prior to returning the unit to service. Because smoke testing may

temporarily result in visible emissions that could exceed the opacity limits of Rule 401, the proposed amendment provides an exemption when such testing is performed. Following repair and return to service, the resulting reduced tramp air infiltration allows excess air levels to be optimized, which directionally improves NOx performance.

Conflict With Existing Rule 401 Requirements

Rule 401(b)(1)(A) currently prohibits the discharge of visible emissions exceeding Ringelmann No. 1 (i.e., >20 percent opacity) for an aggregate of more than three minutes in any one hour from any single source. While Tesoro fully supports the intent of Rule 401 to prevent sustained and avoidable visible emissions, smoke-based leak testing inherently relies on visible emissions to perform its diagnostic function. As a result, brief visible emissions at or above the Ringelmann No. 1 threshold may occur during testing, even though the activity is temporary, infrequent, and conducted solely for maintenance and emissions reduction purposes.

Without an explicit exemption, Rule 401 creates an unintended compliance barrier that may discourage facilities from conducting a best-practice diagnostic activity that ultimately reduces fuel consumption, improves NOx performance, and enhances operational safety.

Environmental and Operational Benefits

Allowing an exemption for limited smoke-based leak testing provides clear environmental and operational benefits, including:

- Improved heater and boiler efficiency through elimination of unintended air infiltration;
- Enhanced low-NOx combustion performance and emissions stability;
- Reduced likelihood of abnormal operating conditions or equipment damage; and
- Net long-term reductions in emissions relative to continued operation with undetected leaks.

Importantly, smoke leak testing is short-duration, controlled, and performed specifically to enable corrective actions that improve environmental performance.

Requested Amendment

Tesoro respectfully requests that South Coast AQMD include an explicit exemption in the amended Rule 401 (e.g., as a new subsection such as 401(c)(1)(F)) for smoke-based leak testing of heaters, boilers, and other combustion devices. Tesoro suggests that the exemption be narrowly defined to apply only to:

(c) Exemptions

(1) The provisions of this rule shall not apply to the following operations:

(F) The use of visible emission generating equipment, or equivalent methods approved by the Executive Officer, to conduct leak identification testing of combustion devices that are out of service for maintenance, during which such leak tests are performed to determine repair requirements.

Conclusion

Tesoro appreciates the opportunity to provide comments and additional information regarding PAR 401. Tesoro welcomes South Coast AQMD's response and feedback and looks forward to continued coordination on this matter. Please do not hesitate to contact me if you have any questions or would like to discuss these comments further.

Mr. Mike Morris
April 2, 2026
Page 3

Sincerely,

Robert Nguyen
Environmental Manager – Tesoro Los Angeles Refinery

ecc: *South Coast AQMD*
Michael Krause
Isabelle Shine
Niyati Rami

MPC
Jamie Bartolome
Jeff Montminy
Connie Chow
John Shao

Staff Response to Comment Letter #1

The main purpose of this rule development is to reduce PM emissions from forestry and agricultural waste management practices and help facilitate effective wildfire prevention by allowing the use of ACIs and prescribed fire vehicles within South Coast AQMD jurisdiction. Providing an exemption for smoke-based leak testing of combustion devices is outside the scope of this rule development. However, staff recognizes the value of conducting best-practice leak testing and plans to amend Rule 401 to address this issue.

Comment Letter #2 – Burnbot, Inc.

BURNBOT

April 8, 2026

BurnBot, Inc.
340 Shaw Road
South San Francisco, CA 94080

Niyati Rami
Planning, Rule Development, and Implementation
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Ms. Rami,

BurnBot, Inc. ("BurnBot") respectfully submits these comments on Proposed Rule 444.1 - Particulate Matter Emission Reductions from Forestry and Agricultural Waste.

BurnBot is a developer and operator of the RX2™ prescribed fire vehicle. We appreciate the District's efforts to establish a regulatory pathway for this tool as a lower-emission alternative to open burning. The rule's goals of reducing particulate matter emissions and mitigating wildfire risk are ones we strongly support.

We have significant concerns regarding the requirement in subdivision (d)(2), which limits the operation of prescribed fire vehicles exclusively to government agencies and their contractors (and by extension, the similar reference in the proposed addition to Table 1 in Rule 222). We also seek clarification regarding the source testing requirements as they apply to prescribed fire vehicles; the burn authorization number process and its relationship to open burning restrictions; and lastly, we offer comments on the definitions of the materials that prescribed fire vehicles like the RX2 machine are authorized to burn.

COMMENT REGARDING RESTRICTING OPERATIONS TO GOVERNMENT AGENCIES

We submit that the government-only restriction is overly broad, not adequately justified by the record before the District, and given current fire conditions forecasts, also mis-timed.

1. The Timing of this Rule and the Summer Fire Season

This rule is being finalized as Southern California heads into what is widely forecast to be an exceptionally hot and dry summer. Conditions that drive catastrophic wildfire risk — drought, heat, and accumulated vegetative fuel — are expected to be severe. This is precisely the moment when the District should be expanding access to effective, lower-emission fuel reduction tools. Limiting prescribed fire vehicle operation to government agencies facing bureaucratic, budgetary, and logistical constraints, means that large areas of fire-prone land may go untreated simply because a public contract or procurement process is delayed. The cost of that inaction, measured in lives, structures, and air quality, could far exceed any regulatory risk the District is trying to manage by excluding private organizations from hiring qualified operators.

2-1

2. Government Contracting Timelines Make the "Contractor" Pathway Effectively Unavailable This Fire Season

Even setting aside the question of whether private operators should be required to work through government agencies, the practical reality is that government procurement processes are notoriously slow. Formal contracting with a government agency typically involves competitive bidding, review periods, legal approvals, and administrative processing that can take many months. By the time a company could complete a government contracting process, the 2026 fire season will be well underway or over. If prescribed fire vehicles are to

burnbot.com Burnbot, INC. | 310 Shaw Road, Suite D | South San Francisco, CA 94080

BURNBOT

meaningfully contribute to fuel reduction this season, the contractor requirement should be eliminated in favor of a direct qualification-based registration pathway.

3. Government Agencies Are Not the Only Source of Funding for Vegetative Fuel Reduction

The restriction appears to assume that government agencies are the primary funders and drivers of vegetative fuel reduction efforts. In our experience, this is not the case. A substantial and growing share of wildfire prevention and fuel management funding flows through private land trusts, charitable foundations, private homeowner associations, and utilities — particularly investor-owned utilities with significant obligations to reduce wildfire risk along their transmission infrastructure and corridors. These entities are not government agencies, nor are they able to structure their work as a government contract. By limiting prescribed fire vehicle operation to government agencies and their contractors, the rule effectively excludes a broad class of well-funded, highly motivated, and directly impacted organizations who could meaningfully contribute to the District's vegetation fuel reduction goals.

4. Private Operators are Highly Qualified

The government-only restriction carries an implicit assumption that government agencies are inherently better qualified to safely operate prescribed fire vehicles than private entities. BurnBot engages highly qualified personnel including former wildland firefighters and burn boss-certified individuals, a recognized qualification for prescribed burn operations. These individuals bring professional training, field experience, and technical expertise that is directly relevant to the safe and effective operation of prescribed fire vehicles. The District's oversight goals of ensuring safe operation, gathering emissions data, and establishing best practices can be fully achieved through registration, burn authorization, recordkeeping, and source testing requirements applied equally to all operators, regardless of whether they are public or private.

2-1 Cont.

5. The Restriction Is Not Supported by Emissions Data

The District acknowledges in the Preliminary Draft Staff Report that prescribed fire vehicles are an emerging technology for which minimal emission data is currently available. The government-only restriction appears to be driven by a desire to gather source test data before allowing broader use. However, restricting private operation does not, by itself, generate the emissions data the District needs. Allowing qualified private operators like BurnBot to participate — subject to registration, recordkeeping, and testing requirements — would actually expand the pool of data available to the District and accelerate the development of meaningful emission limits.

6. Prescribed Fire Vehicles Serve a Different Purpose Than ACIs

The staff report recognizes an important distinction: unlike ACIs, one of the primary purposes of prescribed fire vehicles is to burn vegetative waste near residences and structures to create fuel breaks and reduce wildfire risk near these properties. Private landowners, homeowners associations, agricultural operators, and utilities have a direct and urgent need for exactly this kind of tool, often in areas where government capacity is limited or slow to respond. Excluding qualified private operators from deploying it creates an unnecessary barrier.

7. The Pathway to Private Use Is Undefined

The staff report states that the government-only restriction is intended to prevent private use "until a future PR 444.1 amendment is made." However, no timeline, criteria, or benchmarks are provided to guide when or under what conditions private use would be permitted. Without a defined pathway, this temporary restriction risks becoming a permanent one, leaving private operators like BurnBot indefinitely sidelined despite their qualifications and readiness to contribute.

COMMENT AND REQUEST FOR CLARIFICATION: BURN AUTHORIZATION NUMBER AND RELATIONSHIP TO OPEN BURNING RESTRICTIONS

burnbot.com Burnbot, INC. | 310 Shaw Road, Suite D | South San Francisco, CA 94080

BURNBOT

BurnBot also seeks clarification regarding the burn authorization number requirement in subdivision 444.1(d)(6), and its relationship to the District's existing burn day program and open burning restrictions under Rule 444. The burn authorization number mechanism is described in the staff report as being consistent with Rule 444, which governs open burning. This raises a significant and practical concern: does the requirement to obtain a daily burn authorization number under PR 444.1 effectively subject prescribed fire vehicle operations to the same burn day restrictions and "no burn day" limitations that apply to open burning under Rule 444 and California Air Resources Board (CARB) regulations?

Burn day restrictions are typically imposed on days when atmospheric conditions are unfavorable for dispersion of smoke and pollutants. If prescribed fire vehicle operations, which emit substantially less particulate than open burning, are subject to the same burn day restrictions as open burning, operators may find themselves unable to conduct fuel reduction work on the very days when that work is most needed.

Prescribed fire vehicles are fundamentally different from open burning in their combustion characteristics. The staff report acknowledges that these vehicles promote more complete combustion and produce significantly less smoke and PM than traditional open burning, and BurnBot recently conducted testing which illustrated that the emissions and PM produced by the RX2, are a fraction of that produced in a traditional open burn.

It would be incongruous and counterproductive to subject a technology that was both specifically developed as, and is proving to be, a cleaner alternative to open burning to the same operational restrictions as open burning itself.

BurnBot respectfully requests that the District clarify the following:

- Does obtaining a burn authorization number under PR 444.1 subject prescribed fire vehicle operators to the District's burn day program and "no burn day" restrictions applicable to open burning under Rule 444?
- If so, is the District prepared to establish a separate or modified burn day framework for prescribed fire vehicles that accounts for their substantially lower emissions profile and higher margin of fire control and safety compared to open burning?
- If prescribed fire vehicles are not subject to burn day restrictions, the rule should state this explicitly to avoid compliance uncertainty for operators.

The answers to these questions have significant practical implications for the utility and effectiveness of prescribed fire vehicles as a wildfire prevention tool, and we urge the District to address them clearly in the final rule or accompanying guidance.

2-2

REQUEST FOR CLARIFICATION: SOURCE TESTING REQUIREMENTS FOR PRESCRIBED FIRE VEHICLES

BurnBot supports the inclusion of source testing requirements and the District's goal of gathering emissions data from prescribed fire vehicles. However, we respectfully request that the rule or accompanying guidance more clearly define what source testing of a prescribed fire vehicle would entail in practice, including the specific pollutants to be measured, the test methodology to be employed, and the standardized operating conditions under which testing would be conducted.

Unlike air curtain incinerators, which are stationary or semi-stationary units with a defined combustion chamber and a relatively controlled burn environment, prescribed fire vehicles are mobile machines that operate in open, variable field conditions. This raises a few practical questions that the rule does not currently address:

- What methodology does the District intend to use to conduct source testing on a prescribed fire vehicle?
- What specific pollutants will be measured during source testing?

2-3

burnbot.com Burnbot, INC. | 310 Shaw Road, Suite D | South San Francisco, CA 94080

BURNBOT

• Under what operating conditions will source testing be conducted? Emissions from prescribed fire vehicles may vary significantly depending on the type and moisture content of vegetation being burned, wind conditions, vehicle speed, and terrain. Will the District specify standardized test conditions, or will testing occur during normal field operations?

• Who bears the cost of source testing, and what advance notice will operators receive? The rule requires operators to make equipment available within six months of a request, but provides no guidance on cost allocation, scheduling logistics, or the number of test runs that may be required.

BurnBot welcomes the opportunity to share our testing protocol with the District, to further develop a practical and meaningful source testing framework for prescribed fire vehicles.

2-3 Cont.

COMMENT: DEFINITIONS OF VEGETATIVE MATERIAL ARE ACI-CENTRIC AND MAY NOT ACCURATELY REFLECT PRESCRIBED FIRE VEHICLE OPERATIONS

BurnBot respectfully submits that the definitions of "Wood Waste," "Yard Waste," and "Agricultural Waste" in subdivision (c) — and by extension the term "Vegetative Waste" that encompasses all three — appear to have been developed primarily with air curtain incinerator operations in mind, and do not accurately describe the material that prescribed fire vehicles are designed and intended to treat. Additionally, we suggest deleting the phrase 'low growth' as a descriptor for vegetation in the proposed definition at (27), Rule 222.

ACIs are principally used to dispose of cut, fallen, or otherwise harvested vegetative material, essentially, material that has been removed from its growing location and is "waste" to be managed or disposed of. The definitions in the rule reflect this framing: they describe unwanted, unsalable, or removed plant material originating from specific source categories such as agricultural operations, residential yards, or timber harvesting.

Prescribed fire vehicles operate on a different principle. While the RX2 machine can burn cut or fallen material, BurnBot's equipment is also designed to burn grasses, shrubs, and other vegetation that are actively growing in place, as part of a deliberate fuel management strategy to create fire breaks and reduce wildfire risk. This material has not always been harvested, cut, or removed. It is not "waste" in any conventional sense of the word, rather it is living vegetation being treated as part of a land management practice.

2-4

This distinction matters for several reasons. First, the "waste" framing may create ambiguity about whether the material burned by prescribed fire vehicles actually falls within the rule's defined categories, potentially creating compliance uncertainty for operators. Second, characterizing actively growing vegetation as "waste" does not accurately reflect the nature of prescribed fire vehicle operations and could be confusing to regulators, landowners, and the public. Third, the moisture content, combustion characteristics, and emissions profile of actively growing vegetation may differ meaningfully from those of cut or harvested material, which has implications for how source testing and emission limits should be designed for prescribed fire vehicles.

BurnBot suggests that the District consider adding a definition or clarifying language that specifically addresses the additional material treated by prescribed fire vehicles — such as "living or standing vegetation," "in situ vegetative fuel," or similar — that accurately captures the nature of prescribed fire vehicle operations.

OVERALL COMMENTS AND RECOMMENDATIONS

BurnBot respectfully requests that the District consider the following modifications:

2-5

• Establish a qualification-based framework for operator eligibility that focuses on the demonstrated experience and procedures of the organization operating the equipment, rather than the public or private nature of their employer.

burnbot.com Burnbot, INC. | 310 Shaw Road, Suite D | South San Francisco, CA 94080

BURNBOT

• Broaden the class of eligible operators to include qualified private entities — subject to the same registration, recordkeeping, burn authorization, and/or source testing requirements applicable to government operators — without requiring those entities to first obtain a government contract.

• At minimum, authorize an expedited pilot program for qualified private operators ahead of the 2026 fire season, so that companies like BurnBot can contribute urgently needed fuel reduction capacity while simultaneously generating the emissions data the District needs for future rulemaking.

• Clarify explicitly in the rule or accompanying guidance whether prescribed fire vehicle operations are subject to burn day restrictions applicable to open burning, and if so, establish a separate or modified framework that reflects the substantially lower emissions profile of prescribed fire vehicles.

• Prior to or concurrent with rule adoption, publish clear guidance on the source testing methodology, target pollutants, standardized operating conditions, cost framework, and scheduling logistics applicable to prescribed fire vehicles.

2-5 Cont.

• Add a definition or clarifying language in subdivision (c) and/or Rule 222 that accurately describes the living, in situ vegetation treated by prescribed fire vehicles, distinct from and in addition to the "waste" framework that governs ACI operations.

BurnBot stands ready to work cooperatively with the District to support its oversight goals, and we are eager to share the results of our recent testing and the protocol developed during the testing process.

We believe the District's legitimate interests can be fully served through robust oversight of all operators, rather than an outright exclusion of private operators that is overly broad, unsupported by the emissions record, and out of step with the urgent realities of the 2026 fire season.

Thank you for your consideration of these comments. We welcome the opportunity to discuss these concerns further with District staff.

Respectfully submitted,

Brittany Black

Brittany Black
Head of Growth & Partnerships
BurnBot, Inc.

burnbot.com Burnbot, INC. | 310 Shaw Road, Suite D | South San Francisco, CA 94080

Staff Response to Comment Letter #2

Response to Comment 2-1:

Staff acknowledges the upcoming fire season and is proposing PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 to allow government agencies responsible for wildfire prevention and response to use ACIs and prescribed fire vehicles. Staff recognizes that establishing contracts can be time intensive, however PR 444.1 does not prohibit the early development of contracts to ensure owners or operators are ready to burn vegetative waste after rule adoption. Although private entities may have interest and/or qualifications to operate prescribed fire vehicles, South Coast AQMD is an air quality agency with the goal of reducing emissions; additional information must be collected and assessed (e.g., source test emission data and modeling) before allowing private operators to use ACIs and prescribed fire vehicles.

At this time there is limited emission data available for ACIs and ~~no~~only preliminary emission data ~~has been provided to South Coast AQMD~~ for prescribed fire vehicles. PR 444.1 will enable South Coast AQMD to collect the necessary emission data from government agencies and their contractors. Allowing the use of ACIs and prescribed fire vehicles is novel to South Coast AQMD jurisdiction and emission impacts must be carefully considered. Currently, open burning is allowed to be conducted ~~only by forestry~~primarily by public agencies and agricultural management operations. When compared to baseline open burning emissions, expanding the operators allowed to use ACIs and prescribed fire vehicles in South Coast AQMD jurisdiction could potentially increase emissions. Once source test data is collected, staff plans to conduct additional modeling to evaluate how private operators, who in many cases cannot currently conduct open burning, would impact air quality. Modeling will help determine if wider use of these technologies would increase emissions in South Coast AQMD jurisdiction and affect PM attainment status for the South Coast Air Basin. Furthermore, staff needs to consider feedback from fire professionals on best management practices before allowing private use in a future rule amendment. These considerations take priority over the expanded pool of operators that South Coast AQMD could partner with to conduct source tests.

See response to Public Workshop Comment #5b regarding the request for a more specific timeline to allow private use.

Response to Comment 2-2:

Staff recognizes the emission reduction benefits of ACIs and prescribed fire vehicles relative to open burning and as a result no burn day restrictions are not included in PR 444.1. ACIs and prescribed fire vehicles contain a combustion chamber and therefore are not considered open burning by South Coast AQMD. Rule 444 defines open burning combustion/open detonation already, which clarifies that open burning occurs outside a combustion chamber, and therefore is not applicable to ACIs and prescribed fire vehicles. Consequently, PR 444.1 does not need to explicitly state that Rule 444 requirements do not apply to ACIs and prescribed fire vehicles. Due to the mobile nature of ACIs and prescribed fire vehicles, a burn authorization is required under PR 444.1 to allow South Coast AQMD to be notified of vegetative waste burning. Burn authorization will also aid South Coast AQMD in conducting compliance investigations.

Response to Comment 2-3:

South Coast AQMD will conduct and bear the cost of source testing under PR 444.1. Staff will develop a source test protocol, which will specify the methodology, operating conditions, and pollutants to be tested, in partnership with the owner or operator of ACIs and prescribed fire vehicles and/or equipment manufacturers before conducting a source test. Due to the mobile nature of the technologies, staff will work with the owner or operator when scheduling a source test.

Response to Comment 2-4:

The staff report has also been updated to clarify that yard waste includes living or standing grass, bushes, or shrubs. The definitions in PR 444.1 are consistent with terminology and definitions in federal regulations and other South Coast AQMD rules to provide clarity and consistency. The definitions in PR 444.1 do not specify cut, fallen, or harvested vegetative materials. The definition of yard waste, which staff envisions being burned by prescribed fire vehicles, expressly specifies "grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs", meaning that living grass, bushes, and shrubs are included in the definition of yard waste. Staff is aware that different vegetative waste have varying moisture content, combustion characteristics, and emissions profiles. Staff plans to conduct several source tests with varying test conditions such as different equipment manufacturers, moisture levels, and types of vegetative waste to determine appropriate emission limits.

Response to Comment 2-5

See response to Comment Letter 2-1 for staff response to establishing a qualification-based network for eligible operators and an expedited pilot program. See response to Comment Letter 2-2 for clarity on applicability of no burn day restrictions. See response to Comment Letter 2-3 on source testing requirements. See response to Comment Letter 2-4 for clarity on definitions of vegetative waste.

Comment Letter #3 – Tigercat International, Inc.

Comments of
Tigercat International Inc.
PR 444.1, and PARs 401, 404, 405, 219 and 222
South Coast Air Quality Management District
04/08/2026

I. Overview of Comments

Tigercat International, Inc. ("Tigercat") is pleased to provide comments concerning the South Coast Air Quality Management District ("SCAQMD") pending proceedings to consider amendments to several rules affecting wildfire prevention and particulate matter reduction. As part of the SCAQMD analysis, staff examined different fuel reduction strategies which carry the twin benefit of helping to prevent wildfires while resulting in substantial reductions in the emission of particulate matter ("PM"). Tigercat applauds this work and its overall intent to promote better environmental solutions to issues regarding forest management and wood waste. We do, however, believe that SCAQMD should first be aware of technological developments in this field and make certain adjustments to its proposed regulations in response.
Specifically, as part of your efforts, a preliminary analysis of Best Available Retrofit Control Technology (BARCT) was undertaken regarding chipping and grinding, gasification, pyrolysis systems, prescribed fire vehicles and air curtain incinerators ("ACIs"). To date, however, only a partial BARCT assessment has been completed.[1] Consequently, SCAQMD is considering adoption of what it considers to be best management practices, monitoring and recordkeeping requirements.[2]

In this regard, SCAQMD should be aware that Tigercat I currently produces fully mobile (self-propelled) equipment that uses a two-chamber pyrolysis system to address wood waste. This equipment (called a Carbonizer) efficiently converts clean wood and wood waste into biochar. More detailed information concerning this equipment and its multiple environmental benefits is attached to these comments (Attachment 1). But in brief, the Carbonizer allows for the production of biochar which sequesters 30% of the available carbon from the feedstock used and results in a product which is between 80 to 95% carbon. This product has multiple beneficial uses that include soil amendment and the reduction in water runoff in forests and less fertilizer use in agricultural lands.

There are also important legal and definitional distinctions which apply to the Carbonizer versus ACIs that the proposed amendments seek to address. Attachment 2 outlines these distinctions which are fundamental to long-standing provisions and concepts contained in the federal Clean Air Act. Quite simply, the Carbonizer is not an ACI.

---

[1] Preliminary Draft Staff Report at 2-7.
[2] *Id.*

II. Comments on Draft Amended Text

With respect to the proposed amendments, Tigercat therefore does not agree that "the terms incinerator, carbonator, and mechanized burner" all refer to the same process, i.e., that of forcing a high-velocity curtain of air across an open combustion chamber used to burn vegetative waste."[3] As SCAQMD itself notes "the term carbonator relates to the production of biochar." And that provides one crucial difference. The Carbonizer has been specifically designed and engineered for this purpose, not for volume reduction of wood waste in a controlled burn. While a Carbonizer does incorporate an air curtain, this is only one element of the equipment's intentional design, much like a car and truck may both have internal combustion engines or electric propulsion, but constitute completely different vehicles designed for different purposes.

Unlike the current federal definition of an ACI which may include virtually any open chamber, including an irregular hole dug into the ground, the Tigercat Carbonizer is an intentionally designed, factory-manufactured product that has been engineered to maximize the production of biochar by incorporating more than one combustion chamber, incorporating an internal quenching system for biochar production and an augur system that allows contemporaneous removal of finished biochar from the equipment. Thus, on a fundamental level an "ACI" cannot mean the same thing as a "carbonator" or carbonizer. We therefore respectfully request that SCAQMD alter the definition of an ACI to both remove "carbonator" from the definition as well as create a separate definition for carbonizing equipment.

Specifically, Tigercat would propose that the current drafts of proposed Rules 444.1 and Rule 222 be amended as follows:

> Rule 441.1(c)
>
> Amend proposed definition (c)(3) as follows:
>
> "(3) AIR CURTAIN INCINERATOR means an incinerator, [delete: carbonator,] or mechanized burner that operates by forcefully projecting a curtain of air across an open, integrated combustion chamber or open pit or trench in which the combustion occurs.
>
> Insert new definition for a "carbonator" or "carbonizer" in (c) as follows:
>
> "(5) CARBONATOR OR CARBONIZER means nonroad equipment that is designed to transform and operated to transform agricultural waste and wood waste into biochar through high-temperature pyrolysis and incorporation of mechanical systems to quench and remove biochar from the production process."
>
> Amend "(d) General Requirements" to include new text in red:

[3] *Id.* at 3-2.

"(3) An Air Curtain Incinerator, Carbonator or Carbonizer, or Prescribed Fire Vehicle shall be operated solely by government agencies or their Contractors or otherwise subject to government supervision and direction."

Rule 222(c)

Amend proposed definition (c)(4) as follows to remove text in red:

"(4) AIR CURTAIN INCINERATOR means an incinerator, [delete: carbonator,] or mechanized burner that operates by forcecully projecting a curtain of air across an open, integrated combustion chamber or open pit or trench in which the combustion occurs."

Insert new definition following Rule 222(c)(9):

"(10) CARBONATOR OR CARBONIZER means nonroad equipment that is designed to transform and operated to transform agricultural waste and wood waste into biochar through high-temperature pyrolysis and incorporation of mechanical systems to quench and remove biochar from the production process."

Proposed Amended Rule 219(c):

Amend current definition (c)(3) as follows to remove text in red:

"(3) AIR CURTAIN INCINERATOR means an incinerator, [delete: carbonator,] or mechanized burner that operates by forcefully projecting a curtain of air across an open, integrated combustion chamber or open pit or trench in which the combustion occurs."

Insert new definition following (c)(3):

"(4) CARBONATOR OR CARBONIZER means nonroad equipment that is designed to transform and operated to transform agricultural waste and wood waste into biochar through high-temperature pyrolysis and incorporation of mechanical systems to quench and remove biochar from the production process."

Insert after (d)(17)(F):

"(G) Carbonator or Carbonizer and associated equipment owned or operated by governmental agencies and/or their Contractors or entities or otherwise supervised or directed by governmental agencies."

Proposed Amended Rule 401

Amend (c) Exemptions as follows to include new text (in red):

"(c)(3) The provisions of this rule shall not apply to air curtain incinerators, carbonators and carbonizers, and prescribed fire vehicles subject to Rule 444.1 – Particulate matter Emission Reductions from Forestry and Agricultural Waste."

Proposed Amended Rule 405

Amend (e) to include new text (in red):

"(e) The provisions of this rule shall not apply to air curtain incinerators, carbonators and carbonizers and prescribed fire vehicles subject to Rule 444.1 – Particulate Matter Emissions Reductions from Forestry and Agricultural Waste."

Necessary Conforming Amendments

In addition to creating the definitional distinctions above, the rules under consideration also provide for General Requirements, Operating Requirements, Monitoring Requirements, Prohibitions, Maintenance, Source Testing and Recordkeeping Requirements (Proposed Rule 444.1(d)-(j)). With the introduction of a newly defined term, certain conforming amendments may also be necessary in these sections. And amendment to Proposed Rule 401(c)(3) Exemptions would also be needed to reference carbonizers within the Exemptions that are proposed for ACIs and prescribed fire vehicles.

III. Conclusion and Request for Consultation

Tigercat does not otherwise at this time object to other elements of SCAQMD's proposed rules such as the requirement to utilize Tier 4 engines, compliant sulfur fuel and operate and maintain equipment in accordance with manufacturer specifications. In fact, we believe that such requirements when practiced in the field obtain the best result for both our customers and the environment.

Apart from clearly distinguishing Tigercat's equipment from Air Curtain Incinerators, however, we would suggest that proposed air permitting treatment of such vehicles be available not only for direct operation or through contracts with governmental agencies but also in situations where operation of the equipment would otherwise be subject to government supervision and direction. This change is suggested in the above regulatory text in order to allow for operations, such as in an emergency, where formal contractual relationships may not have been established prior to the need to remove wood waste. It also reflects commercial realities associated with the operation of equipment in various locations by individuals or companies that may not be directly contracted by a state or local government yet effectively be under their control during operation of the equipment.

Finally, Tigercat stands ready to meet with SCAQMD staff to provide further information on the Carbonizer and address any questions you may have concerning our equipment. We would welcome the opportunity to address any questions you may have concerning the construction and operation of our equipment and the multiple environmental benefits we believe it creates, particularly with respect to more traditional means of addressing wood waste.

Staff Response to Comment Letter #3

Staff recognizes that Tigercat I has PM emission reduction benefits and additional benefits through biochar production. Staff updated the definition of ACI to replace "carbonator" with "carbonizer" to provide more accurate terminology as requested. Creating a separate definition for carbonator or carbonizer could reduce rule clarity at this time as the requirements for ACIs and Tigercat I are the same under PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222. Furthermore, ACIs and Tigercat I both utilize an air curtain as the primary PM control device for burning occurring in a combustion chamber; these are the core components of an ACI described in the proposed ACI definition. For staff's response regarding the requirement to allow only government agencies and their contractors to operate ACIs and prescribed fire vehicles, see response to Comment Letter 2-1.

Comment Letter #4 – Burnbot, Inc.

BURNBOT

April 24, 2026

BurnBot, Inc.
340 Shaw Road
South San Francisco, CA 94080

Niyati Rami
Planning, Rule Development, and Implementation
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Ms. Rami,

BurnBot, Inc. ("BurnBot") submits this letter as a follow-up to our comment letter dated April 8, 2026, and our subsequent meeting with District staff on April 16, 2026. We appreciate the time staff took to meet with us and thank you for the clarifications provided on several of the questions and concerns we raised in our April 8 letter. Those clarifications were helpful and we consider a number of those matters addressed.

However, we continue to have significant concerns regarding the requirement in subdivision (d)(2), which limits the operation of prescribed fire vehicles exclusively to government agencies and their contractors — and by extension, the similar reference in the proposed addition to Table 1 in Rule 222. We respectfully maintain that this restriction is overly broad, not adequately justified by the record before the District, and given current fire conditions forecasts, mis-timed.

We address that remaining concern below.

CONCERN REGARDING RESTRICTING OPERATIONS TO GOVERNMENT AGENCIES

1. The District's Stated Rationale Would Maintain Prescribed Fire Vehicle Activity in the SCAQMD at Zero

During our April 16 meeting, District staff indicated that one reason for restricting prescribed fire vehicle operation to government agencies is a desire to avoid increasing emissions too much or too quickly. We understand and respect that concern. However, we respectfully submit that the restriction as written does not moderate prescribed fire vehicle activity, rather it will likely eliminate it entirely during the period of restriction.

BurnBot is currently the sole provider of a prescribed fire vehicle in California, and we expect to remain in that position for at least the next three to five years. We are aware of no other vendor or manufacturer offering this technology. We currently operate two prescribed fire vehicles in the state. When we deploy, our experienced crews, including former wildland firefighters and Burn Boss-certified personnel, work directly with the local air quality district and local fire department to secure all appropriate authorizations and approvals before any burn activity takes place.

Given this context, the practical effect of the government-only restriction is not to slow or moderate the growth of prescribed fire vehicle activity in the South Coast AQMD — it is to reduce it to zero for the foreseeable future. This is precisely the opposite of what the District's rule is designed to achieve. A rule intended to provide a regulatory pathway for prescribed fire vehicles will, in practice, foreclose that pathway entirely if BurnBot cannot contract with the full range of organizations that are willing and able to fund and support this work.

2. The Timing of This Rule and the Summer Fire Season

4-1

burnbot.com Burnbot, INC. | 310 Shaw Road, Suite D | South San Francisco, CA 94080

BURNBOT

This rule is being finalized as Southern California heads into what is widely forecast to be an exceptionally hot and dry summer. Conditions that drive catastrophic wildfire risk, including drought, heat, and accumulated vegetative fuel, are expected to be severe. This is precisely the moment when the District should be expanding access to effective, lower-emission fuel reduction tools. Limiting prescribed fire vehicle operation to government agencies facing bureaucratic, budgetary, and logistical constraints means that large areas of fire-prone land may go untreated simply because a public contract or procurement process is delayed. The cost of that inaction, measured in lives, structures, and air quality, could far exceed any regulatory risk the District is trying to manage by excluding private organizations from hiring qualified operators.

3. Government Contracting Timelines Make the "Government Contractor" Pathway Effectively Unavailable This Fire Season

The practical reality is that government procurement processes are notoriously slow. Formal contracting with a government agency typically involves competitive bidding, review periods, legal approvals, and administrative processing that can take many months. By the time a company could complete a government contracting process, the 2026 fire season could be well underway or over. If prescribed fire vehicles are to meaningfully contribute to fuel reduction this season, the government contractor requirement should be eliminated.

4. Government Agencies Are Not the Only Source of Funding for Vegetative Fuel Reduction

The restriction appears to assume that government agencies are the primary funders and drivers of vegetative fuel reduction efforts. In our experience, this is not the case. A substantial and growing share of wildfire prevention and fuel management funding flows through private land trusts, charitable foundations, private homeowner associations, and utilities, particularly investor-owned utilities with significant obligations to reduce wildfire risk along their transmission infrastructure and corridors. 4-2

These entities are not government agencies, nor are they able to structure their work as a government contract. Limiting who BurnBot can contract with serves only to cut off access to organizations and businesses that are both interested in and capable of funding our services, making it effectively impossible to perform any meaningful work within the South Coast AQMD.

5. Private Operators Are Highly Qualified

The government-only restriction carries an implicit assumption that government agencies are inherently better qualified to safely operate prescribed fire vehicles than private entities. BurnBot engages highly qualified personnel including former wildland firefighters and Burn Boss-certified individuals, a recognized qualification standard for prescribed burn operations. These individuals bring professional training, field experience, and technical expertise that is directly relevant to the safe and effective operation of prescribed fire vehicles. The District's oversight goals of ensuring safe operation, gathering emissions data, and establishing best practices can be fully achieved through registration, burn authorization, and recordkeeping applied equally to all operators, regardless of whether they are public or private.

6. The Restriction Is Not Supported by Emissions Data

The District acknowledges in the Preliminary Draft Staff Report that prescribed fire vehicles are an emerging technology for which minimal emission data is currently available. The government-only restriction appears to be driven by a desire to gather source test data before allowing broader use. However, restricting private operation does not, by itself, generate the emissions data the District needs. Allowing qualified private operators like BurnBot to participate would actually expand the pool of data available to the District and accelerate the development of meaningful emission limits. With only two machines in operation in California, the emissions impact of BurnBot's activities is inherently limited and easily monitored.

burnbot.com Burnbot, INC. | 310 Shaw Road, Suite D | South San Francisco, CA 94080

BURNBOT

7. Prescribed Fire Vehicles Serve a Different Purpose Than ACIs

The staff report recognizes an important distinction: unlike ACIs, one of the primary purposes of prescribed fire vehicles is to burn vegetative waste near residences and structures to create fuel breaks and reduce wildfire risk near these properties. Private landowners, homeowners associations, agricultural operators, and utilities have a direct and urgent need for exactly this kind of tool, often in areas where government capacity is limited or slow to respond. Excluding qualified private operators from deploying it creates an unnecessary barrier.

8. The Pathway to Private Use Is Undefined

The staff report states that the government-only restriction is intended to prevent private use "until a future PR 444.1 amendment is made." However, no timeline, criteria, or benchmarks are provided to guide when or under what conditions private use would be permitted, and our understanding is that, once passed, amendments to the regulations could take over a year to implement. Additionally, without a defined pathway, this temporary restriction risks becoming a permanent one, leaving private operators like BurnBot indefinitely sidelined despite their qualifications and readiness to contribute.

4-2 Cont.

OVERALL RECOMMENDATIONS

BurnBot respectfully requests that the District consider the following modifications:

• Revise 444.1(d)(2) to strike the reference to prescribed fire vehicles as follows: "An Air Curtain Incinerator ~~or Prescribed Fire Vehicle~~ shall be operated solely by government agencies or their Contractors."

• Establish a qualification-based framework for Prescribed Fire Vehicle operator eligibility that focuses instead on the demonstrated experience and procedures of the organization operating the equipment, rather than the public or private nature of their employer.

• Broaden the class of eligible operators to include qualified private entities without requiring those entities to first obtain a government contract.

• At minimum, authorize an expedited pilot program for qualified private operators ahead of the 2026 fire season, so that companies like BurnBot can contribute urgently needed fuel reduction capacity while simultaneously generating the emissions data the District needs for future rulemaking.

4-3

Given that BurnBot currently operates only two prescribed fire vehicles in California, the emissions risk posed by allowing BurnBot to work with a broader range of clients is minimal, and the benefit to wildfire prevention in the region is significant. BurnBot stands ready to work cooperatively with the District to support its oversight goals, and we are eager and ready to share the results of our recent air quality testing and the protocol developed during that process.

We believe the District's legitimate interests can be fully served through robust oversight of all operators, rather than an outright exclusion of private operators that is overly broad, unsupported by the emissions record, and out of step with the urgent realities of the 2026 fire season.

Thank you again for your engagement on this matter. We welcome the opportunity to continue working with District staff toward a workable solution.

Respectfully submitted,

Brittany Black

Brittany Black
Head of Growth & Partnerships

burnbot.com Burnbot, INC. | 310 Shaw Road, Suite D | South San Francisco, CA 94080

Staff Response to Comment Letter #4

Response to Comment 4-1:

See response to Comment 2-1. PR 444.1 does not reduce operation of prescribed fire vehicles to zero by limiting their operation to government agencies and their contractors. Currently, prescribed fire vehicles cannot be operated in South Coast AQMD jurisdiction; PR 444.1, PAR 401, PAR 404, and PAR 405 will allow the use of prescribed fire vehicles. PR 444.1 allows private operators to partner with government agencies to operate prescribed fire vehicles. Additionally, there does appear to be interest from government agencies in operating prescribed fire vehicles. Staff attended a demonstration of BurnBot's prescribed fire vehicle in which multiple government agencies were present, including fire protection agencies. Although BurnBot may only be operating two prescribed fire vehicles in California at this time, ~~the emissions from the equipment are currently unknown~~ only preliminary emission data is currently available. ~~Emission data has not been provided.~~ Staff needs to conduct source tests and additional modeling to determine if wider use of these technologies would increase emissions and affect PM attainment status in South Coast AQMD jurisdiction.

Response to Comment 4-2:

See response to Comment Letter 2-1.

Response to Comment 4-3:

PR 444.1 still allows ACIs and prescribed fire vehicles to be solely operated by government agencies and their contractors. For details on staff's rationale, see response to Comment Letter 2-1. This rule development is essentially a pilot program that will allow use of prescribed fire vehicles in South Coast AQMD jurisdiction before more emission data is gathered. Staff can then evaluate the emission impacts of amending PR 444.1 to allow more widespread use by private companies. ~~We look forward to meeting with BurnBot to discuss the preliminary emission data they have gathered.~~

ATTACHMENT M

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 RULE 444.1 – PARTICULATE MATTER EMISSION REDUCTIONS FROM FORESTRY AND AGRICULTURAL WASTE; PROPOSED AMENDED RULE 401 – VISIBLE EMISSIONS; PROPOSED AMENDED RULE 404 – PARTICULATE MATTER – CONCENTRATION; PROPOSED AMENDED RULE 405 – SOLID PARTICULATE MATTER – WEIGHT; PROPOSED AMENDED RULE 219 – EQUIPMENT NOT REQUIRING A WRITTEN PERMIT PURSUANT TO REGULATION II; AND PROPOSED AMENDED RULE 222 – FILING REQUIREMENTS FOR SPECIFIC EMISSION SOURCES NOT REQUIRING A WRITTEN PERMIT PURSUANT TO REGULATION II**

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.lci.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-2026.

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 Rule 444.1 – Particulate Matter Emission Reductions from Forestry and Agricultural Waste (PR 444.1); Proposed Amended Rule 401 – Visible Emissions (PAR 401); Proposed Amended Rule 404 – Particulate Matter – Concentration (PAR 404); Proposed Amended Rule 405 – Solid Particulate Matter - Weight (PAR 405); Proposed Amended Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II (PAR 219); and Proposed Amended Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II (PAR 222)

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: PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222 (proposed project) provide a pathway for air curtain incinerators (ACIs) and prescribed fire vehicles to be used for wildfire prevention and to reduce particulate matter (PM) emissions from forestry and agricultural waste. The proposed project will partially implement Best Control Measure 20: Application of All Feasible Measures (BCM-20) from the South Coast Air Basin Attainment Plan for the 2012 Annual PM2.5 Standard and objectives in Chapter 5e of the Eastern Coachella Valley (ECV) Community Emission Reduction Plan (CERP) by allowing and regulating the use of alternative, lower emitting, vegetative fuel reduction technologies, compared to the open burning of forestry and agricultural waste. PR 444.1 establishes requirements for ACIs and prescribed fire vehicles used to reduce vegetative waste. PAR 401, PAR 404 and PAR 405 include an exemption to allow the use of technologies regulated by PR 444.1. PAR 219 includes an exemption for some ACIs, prescribed fire vehicles, and associated air pollution control equipment not subject to Title V from South Coast AQMD permitting requirements. PAR 222 includes a requirement for ACIs and prescribed fire vehicles that are exempt from permitting to be registered with the South Coast AQMD. Allowing the use of ACIs and prescribed fire vehicles within South Coast AQMD jurisdiction will support wildfire prevention efforts and protect public safety by providing additional tools that are capable of reducing vegetative waste with fewer PM emissions than other technologies.

Public Agency Approving Project:	**Agency Carrying Out Project:**
South Coast Air Quality Management District	South Coast Air Quality Management District

Exempt Status:
CEQA Guidelines Section 15269(c) – Emergency Projects: Specific actions necessary to prevent or mitigate an emergency

Reasons Why Project Is Exempt: South Coast AQMD, as Lead Agency, has reviewed the proposed project (PR 444.1, PAR 401, PAR 404, PAR 405, PAR 219, and PAR 222) 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 seeks to reduce and manage vegetative fuel loads of forestry and agricultural waste in order to prevent wildfires and protect public safety by allowing the use of optional ACIs and prescribed fire vehicles, which have fewer PM emissions than what would occur by conducting open burning. Thus, the proposed project consists of actions necessary to prevent or mitigate wildfire-related emergency conditions which are statutorily exempt from CEQA pursuant to CEQA Guidelines Section 15269(c) – Emergency Projects: Specific actions necessary to prevent or mitigate an emergency.

Date When Project Will Be Considered for Approval (subject to change): South Coast AQMD Governing Board Public Hearing: June 5, 2026		
CEQA Contact Person: Sina Taghvaee, Ph.D.	**Phone Number:** (909) 396-2192	**Email:** staghvaee@aqmd.gov
Proposed Project Contact Person: Niyati Rami	**Phone Number:** (909) 396-2249	**Email:** nrami@aqmd.gov

Date Received for Filing: _____ **Signature:** *(Signed and Dated Upon Board Approval)*

Kevin Ni
Program Supervisor, CEQA
Planning, Rule Development, and Implementation

Attachment N

Proposed Rule 444.1 (PR 444.1)
Particulate Matter Emission Reductions from Forestry and Agricultural Waste

Proposed Amended Rule 401 (PAR 401)
Visible Emissions

Proposed Amended Rule 404 (PAR 404)
Particulate Matter - Concentration

Proposed Amended Rule 405 (PAR 405)
Solid Particulate Matter - Weight

Proposed Amended Rule 219 (PAR 219)
Equipment Not Requiring A Written Permit Pursuant To Regulation II

Proposed Amended Rule 222 (PAR 222)
Filing Requirements For Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II

Governing Board Meeting

June 5, 2026

Background

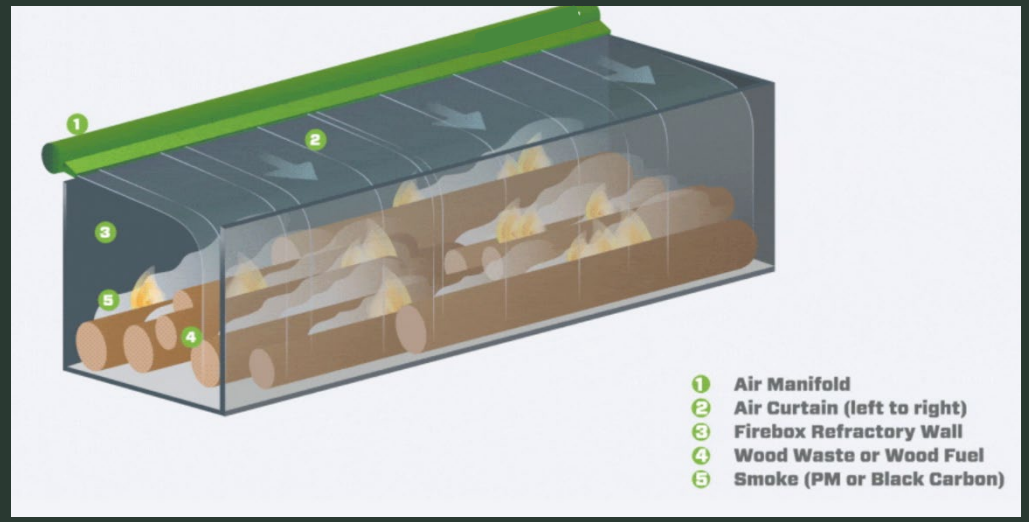
Majority of forestry and agricultural waste is currently disposed of through uncontrolled open burning

Open burning generates high levels of particulate matter (PM)

Air curtain incinerators (ACIs) and prescribed fire vehicles reduce PM emissions and facilitate effective wildfire prevention

Overview of ACIs and Prescribed Fire Vehicles

ACIs burn vegetative waste and promote more complete combustion by projecting a high-velocity air curtain across an open combustion chamber



Prescribed fire vehicles burn grasses and low-growth brush creating fuel breaks near homes, buildings, and along highways

- Contains high temperature torches and fans to draw air in the burn chamber, which produces less smoke

ACIs and prescribed fire vehicles emit high levels of PM, but are a cleaner and safer alternative to open burning

Need for Proposed Rules

Currently, ACIs and prescribed fire vehicles cannot be operated within South Coast AQMD's jurisdiction, as they cannot demonstrate compliance with:

- Rule 401 – Visible Emissions
- Rule 404 – Particulate Matter - Concentration
- Rule 405 – Solid Particulate Matter - Weight

Rule development was initiated to:

- Allow use of controlled burning techniques for vegetative waste
- Partially implement Best Control Measure 20 from the 2024 South Coast Air Basin Attainment Plan for the 2012 Annual PM2.5 standard

Proposed Rule 444.1

Applies to owners and operators of ACIs and prescribed fire vehicles

- Only vegetative waste can be burned
- Only government agencies and their contractors can operate

Prohibitions

- Prohibits burning of controlled substances
- Prohibits operation of an ACI within 300 feet from a sensitive receptor

Establishes requirements for:

- Best management practices
- Obtaining burn authorization (does not restrict use on No Burn Days)
- Recordkeeping

Allows Executive Officer to conduct a source test within 6 months of initial request

PAR 401, PAR 404, PAR 405

PAR 401

Exempts ACIs and prescribed fire vehicles from opacity limits

PAR 404

Exempts ACIs and prescribed fire vehicles from PM concentration limits

PAR 405

Exempts ACIs and prescribed fire vehicles from solid PM limits

PAR 219 and PAR 222

PAR 219

- Exempts ACIs, prescribed fire vehicles, and associated air pollution control equipment from permitting if:
  - Operated by government agencies and/or their contractors
  - Not subject to Title V permitting requirements
  - Only burning vegetative waste

PAR 222

- Requires registration for ACIs, prescribed fire vehicles, and their associated air pollution control equipment if exempt from permitting in PAR 219

CEQA and Socioeconomic Impacts

California Environmental Quality Act (CEQA) Analysis

- Providing an option to use ACIs and prescribed fire vehicles for preventing/mitigating wildfires will help protect the public from an emergency with fewer emissions than would occur via open burning
- Proposed Project qualifies for an exemption from CEQA
- A Notice of Exemption has been prepared

Socioeconomic Impact Assessment

- The use of ACIs and prescribed fire vehicles is optional
- Annual average cost is $35,477 from 2026 to 2035
- Socioeconomic Impact Assessment is available in the Final Staff Report

Key Issue

A stakeholder requested that private entities be allowed to use prescribed fire vehicles*

Allowing private operator use of prescribed fire vehicles could potentially increase emissions and affect PM attainment status

- Emission baseline is open burning regulated under Rule 444 – Open Burning, which restricts private entities from conducting open burning, except for agricultural operations
- Limited emission data is available and additional information must be collected and assessed (e.g., source testing and modeling) before allowing private operation

*Private entities can partner with government agencies and operate prescribed fire vehicles under an established contract

Staff Recommendations

Adopt Resolution:

- Determining that Proposed Rule 444.1 and Proposed Amended Rules 401, 404, 405, 219, and 222 are exempt from CEQA
- Adopting Rule 444.1 and Amending Rules 401, 404, 405, 219, and 222