

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Staff Report

Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard

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Table of Contents

Executive Summary	ES-1
Chapter 1: Introduction	1-1
Chapter 2: Emissions Inventory	2-1
Chapter 3: Contingency Measures	3-1
Chapter 4: Infeasibility Justification	4-1
Fuel Combustion	4-2
Waste Disposal	4-29
Cleaning and Surface Coatings	4-31
Petroleum Production and Marketing	4-93
Industrial Processes	4-113
Solvent Evaporation	4-126
Miscellaneous Processes	4-149
Indirect Source Rules	4-162
Chapter 5: Public Process	5-1
Chapter 6: California Environmental Quality Act and Socioeconomic Impact Assessment	6-1
Chapter 7: Staff Recommendation	7-1
Appendix A: California Smog Check Contingency Measure State Implementation Plan Revision	
Appendix B: CARB's Area Source Infeasibility Justification	
Appendix C: Transportation Control Measures Infeasibility Justification	
Appendix D: Emission Sources and Applicable Rules	

**Coachella Valley Contingency Measure SIP Revision for
the 2008 8-Hour Ozone Standard**

EXECUTIVE SUMMARY

Executive Summary

Overview

The Coachella Valley Planning Area (Coachella Valley) is defined as the desert portion of Riverside County in the Salton Sea Air Basin (SSAB) under the jurisdiction of the South Coast Air Quality Management District (South Coast AQMD). The Coachella Valley is designated nonattainment for the 2008 8-hour ozone National Ambient Air Quality Standard (NAAQS or standard). Originally classified as “severe-15” nonattainment with an attainment date of July 20, 2027, the Coachella Valley was reclassified to “extreme” nonattainment with an attainment date of July 20, 2032.¹ South Coast AQMD voluntarily requested the reclassification to resolve a transportation conformity lockdown impacting billions of dollars’ worth of transportation projects.

South Coast AQMD has prepared the Coachella Valley Contingency Measure State Implementation Plan (SIP) Revision for the 2008 8-Hour Ozone Standard to satisfy applicable Clean Air Act (CAA) requirements. This SIP revision is focused on satisfying the requirement for contingency measures elements for the plan. Contingency measures are defined by CAA Section 172(c)(9) as “specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the national primary ambient air quality standard by the attainment date.” CAA Section 182(c)(9) further requires that ozone nonattainment areas classified as “serious” or above provide for contingency measures to be implemented if the area fails to meet any applicable milestone. This SIP revision satisfies requirements for reasonable further progress (RFP) and attainment contingency measures.

Background on the Coachella Valley Contingency Measure for the 2008 Ozone Standard

The most recent, comprehensive SIP for the 2008 ozone NAAQS in the Coachella Valley was submitted as part of the 2016 Air Quality Management Plan (AQMP).² That SIP included required RFP contingency measure elements. The RFP contingency measure relied upon surplus emission reductions from already implemented control measures, consistent with U.S. EPA’s past guidance. The 2016 AQMP was supplemented with CARB’s attainment contingency measure for the Coachella Valley, which was submitted to U.S. EPA on May 5, 2017.³ However, subsequent court decisions held that contingency measures must be additional measures for emission reductions, not just surplus emission reductions from ongoing programs, and also that these measures must contain triggering mechanisms such that they are

¹ 88 FR 14291

² Available at:

<http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=15>

³ CARB Staff Report - Coachella Valley 8-Hour Ozone Attainment Contingency available at

<https://ww3.arb.ca.gov/planning/sip/planarea/scabsip/cvcont2017.pdf> ;

CARB Resolution 17-13 <https://ww3.arb.ca.gov/planning/sip/planarea/scabsip/res17-13.pdf>;

Submittal letter to U.S. EPA https://ww3.arb.ca.gov/planning/sip/planarea/scabsip/cvcont2017_arbltr.pdf

automatically implemented once an area has failed to attain or missed a major milestone for RFP.^{4,5} Neither the submitted RFP nor the attainment contingency measure met these new requirements. In 2020, U.S. EPA approved the Coachella Valley portion of the 2016 AQMP as meeting all applicable statutory and regulatory requirements, with the exception of the attainment contingency measure element.⁶ With respect to the RFP contingency measure element, U.S. EPA conditionally approved the element based on commitments by CARB and the South Coast AQMD to supplement the element within one year of conditional approval, by October 16, 2021. The due date was later revised to September 30, 2022 based on consent decree.⁷

On August 8, 2022, South Coast AQMD, via CARB, withdrew the contingency measure elements for the 2008 ozone NAAQS in Coachella Valley. At the time U.S. EPA had failed to provide revised contingency measure guidance, and lacking such guidance it was unclear what would suffice as an approvable contingency measure. As a result of this withdrawal, U.S. EPA finalized a finding of failure to submit contingency measure elements for the 2008 ozone NAAQS in Coachella Valley effective October 31, 2022.⁸ The finding established an 18-month deadline for the South Coast AQMD to submit contingency measures or face stationary source permitting sanctions as defined in CAA Section 179(b)(2). There is also a 24-month deadline for highway sanctions as defined in CAA Section 179(b)(1). Submission of the SIP revision followed by a completeness determination by U.S. EPA will stay the sanctions. In addition, if within 24 months U.S. EPA has not approved a contingency measure SIP revision, U.S. EPA must promulgate a federal contingency measure plan in the Coachella Valley.

Contingency Measures for Stationary and Mobile Sources

The Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard contains contingency measures for both stationary and mobile sources that address ozone precursors including nitrogen oxides (NOx) and volatile organic compounds (VOCs). Both these measures are new measures beyond those that have already been implemented, and also satisfy the requirement for a triggering mechanism to automatically implement the measure upon a failure to attain or achieve a major milestone for RFP. For stationary sources, South Coast AQMD commits to consider amending Rule 463 – Organic Liquid Storage to introduce a contingency measure that would require more frequent Optical Gas Imaging (OGI) inspections for certain storage tanks to facilitate leak detection and repair. Emission reductions would be achieved by identifying leaks and repair them. Rulemaking is currently underway and a public hearing for the amendment is tentatively scheduled for summer 2024. Details regarding the contingency measure are presented in Chapter 3.

⁴ *Bahr v. U.S. Environmental Protection Agency*, (9th Cir. 2016) 836 F.3d 1218

⁵ *Association of Irrigated Residents v. U.S. Environmental Protection Agency*, (9th Cir. 2021) 10 F.4th 937

⁶ 85 FR 57714

⁷ U.S. District Court for the Northern District of California, *Center for Biological Diversity v. U.S. EPA Consent Decree*, Case No. 3:20-cv-06020-WHA 882 F.3d 1138

⁸ 87 FR 59012

A mobile source contingency measure, the California Smog Check Contingency Measure State Implementation Plan Revision, was adopted by CARB in October 2023. Currently, new vehicles are exempt from the smog check program for the first 8 years. If triggered, the contingency measure will narrow the newer model year vehicle smog check exemption from 8 to 7 years and 7 to 6 years upon the first and second triggering, respectively. Emission reductions would be achieved by identifying additional emissions control equipment failures from vehicles previously exempt. On December 20, 2023, U.S. EPA proposed approval of the smog check contingency measure.⁹ Details regarding the measure are presented in Appendix A.

In response to court decisions which altered the interpretation of contingency measure requirements, U.S. EPA released the Draft Guidance on the Preparation of State Implementation Plan Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter (Draft Guidance).¹⁰ The Draft Guidance confirms that contingency measures need to include automatic triggering mechanisms, and cannot rely on surplus emission reductions of previously implemented emission reduction measures. It also defines the amount of emission reductions that contingency measures are required to achieve. In the event that the required amount of reductions cannot be achieved by the contingency measure, the Draft Guidance requires the development of a reasoned justification for achieving less than the required amount. The smog check contingency measure and amendment of Rule 463 are expected to achieve less than the required amount of reductions. However, South Coast AQMD and CARB were not able to identify any other contingency measures. Therefore, infeasibility justifications demonstrating the scarcity of further opportunities for stationary and mobile source contingency measures are presented in Chapter 4 and Appendix A, respectively. Additionally, infeasibility justifications for area sources under CARB's authority and Transportation Control Measures (TCMs) are presented in Appendix B and Appendix C, respectively. The infeasibility justifications comprehensively evaluate all source categories contributing VOC and NOx emissions in the Coachella Valley.

The Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard satisfies contingency measure requirements in CAA Sections 172(c)(9) and 182(c)(9) and complies with applicable case law. The SIP revision also conforms to U.S. EPA's Draft Guidance by presenting a robust infeasibility justification, demonstrating the scarcity of remaining measures. Staff recommends adoption of the Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard for submission to U.S. EPA via CARB. A timely completeness finding by U.S. EPA will stay the stationary source permitting sanction clock, which is due to expire on April 30, 2024.

⁹ 88 FR 87981

¹⁰ *Guidance on the Preparation of State Implementation Plan Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter*. March 17, 2023. Retrieved from: <https://www.epa.gov/system/files/documents/2023-03/CMTF%202022%20guidance%203-16-23.pdf>

**Coachella Valley Contingency Measure SIP Revision for
the 2008 8-Hour Ozone Standard**

CHAPTER 1: INTRODUCTION

Introduction

Coachella Valley was originally designated as “severe” nonattainment and reclassified in 2023 as “extreme” nonattainment for the 2008 8-hour ozone standard.¹¹ South Coast AQMD voluntarily requested the reclassification to resolve a transportation conformity lockdown impacting billions of dollars’ worth of transportation projects. The Coachella Valley is downwind from the South Coast Air Basin, and the overwhelming bulk of emissions responsible for ozone nonattainment in the Coachella Valley are from ozone and ozone precursors transported from the South Coast Air Basin. In 2017, the total emissions of NO_x and VOC from the Coachella Valley are 5 percent and 3 percent of the emissions from the South Coast Air Basin, respectively. Accordingly, strategies to attain ozone standards in the Coachella Valley depend on reducing emissions from the South Coast Air Basin.

The Clean Air Act (CAA) specifies that State Implementation Plans (SIPs) must provide for contingency measures, defined in section 172(c)(9) as “specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the national primary ambient air quality standard by the attainment date.” These measures are to be adopted and held in reserve to be automatically triggered under these scenarios. At the same time, nonattainment areas are under an obligation to take all feasible measures to reduce emissions, and to attain ambient air quality standards as expeditiously as possible. Due to the maturity of South Coast AQMD’s air quality regulations and great need to reduce emissions as expeditiously as possible to attain NAAQS by applicable due date, contingency measures are inherently difficult to identify as all feasible measures have largely been taken, and there is little to no potential emission reductions held in reserve. Further, several adverse court interpretations associated with recent U.S. EPA actions have only made this requirement more stringent and difficult to achieve over time.

Historically, the U.S. EPA allowed contingency measure requirements to be met via excess emission reductions from ongoing implementation of adopted emission reduction programs. This is a method that California Air Resources Board (CARB) has used for a contingency measure and the U.S. EPA has approved in the past. In 2016, in *Bahr v. U.S. Environmental Protection Agency*¹² (*Bahr*), the 9th Circuit Court of Appeals determined the U.S. EPA erred in approving a contingency measure that relied on an already-implemented measure for a nonattainment area in Arizona, thereby rejecting the U.S. EPA’s longstanding interpretation of section 172(c)(9). The U.S. EPA staff interpreted this decision to mean that contingency measures must include a future action triggered by a failure to attain, failure to make reasonable further progress, or failure to submit a quantitative milestone report. This decision was applicable to the states covered by the 9th Circuit Court. In the rest of the country, the U.S. EPA was still approving contingency measures using their pre-*Bahr* stance. In January 2021, in *Sierra Club v. Environmental Protection*

¹¹ 88 FR 14291

¹² *Bahr v. U.S. Environmental Protection Agency*, (9th Cir. 2016) 836 F.3d 1218

Agency,¹³ the United States Court of Appeals for the D.C. Circuit, ruled that already implemented measures do not qualify as contingency measures for the rest of the country (*Sierra Club*).

In response to *Bahr* and the need to develop contingency measures for the 75 ppb 8-hour ozone SIPs, CARB developed the statewide Enhanced Enforcement Contingency Measure (Enforcement Contingency Measure) which was included in the *2018 Updates to the California State Implementation Plan*. CARB worked closely with the U.S. EPA regional staff in developing the contingency measure package that included the triggered Enforcement Contingency Measure, a district triggered measure/commitment and emission reductions from on-going implementation of CARB's mobile source emissions program. However, in their action on the *San Joaquin Valley 2016 Ozone Plan for 2008 8-hour Ozone Standard* SIP, the U.S. EPA stated that the Enforcement Contingency Measures did not satisfy requirements to be approved as a "standalone contingency measure" and approved it only as a "SIP strengthening" measure. The U.S. EPA did approve the district's triggered measure and the implementation of the mobile reductions along with a CARB emission reduction commitment as meeting the contingency measure requirement for this SIP.

In addition to *Bahr*, the Association of Irrigated Residents filed a lawsuit against the U.S. EPA for their approval of various elements within the *San Joaquin Valley 2016 Ozone Plan for 2008 8-hour Ozone Standard*, including the contingency measure. The 9th Circuit Court of Appeals issued its decision in *Association of Irrigated Residents v. EPA*¹⁴ (*AIR*) that the U.S. EPA's approval of the contingency element was arbitrary and capricious and rejected the triggered contingency measure that achieves much less than one year's worth of emission reductions. Most importantly, the 9th Circuit Court said that, in line with the U.S. EPA's longstanding interpretation of what is required of a contingency measure and the purpose it serves, together with *Bahr*, all reductions needed to satisfy the Clean Air Act's contingency measure requirements need to come from the contingency measure itself and the amount of reductions needed for contingency should not be reduced by the fact of surplus emission reductions from ongoing programs absent the U.S. EPA formally changing its historic stance on the amount of reductions required. The U.S. EPA staff has interpreted *AIR* to mean that triggered contingency measures must achieve the entirety of the required one year's worth of emission reductions on their own. In addition, surplus emission reductions from ongoing programs cannot reduce the amount of reductions needed for contingency.

In response to *Bahr* and *Sierra Club*, in 2021, the U.S. EPA convened a nation-wide internal task force to develop guidance to support states in their development of contingency measures. On March 17, 2023, U.S. EPA released Draft Guidance on the Preparation of State Implementation Plan Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter (Draft Guidance).¹⁵ The purpose of the Draft Guidance is to identify solutions and flexibility related to key issues that regions face in developing approvable contingency measures, including the scarcity of available

¹³ *Sierra Club v. Environmental Protection Agency*, (D.C. Cir. 2021) 985 F.3d 1055

¹⁴ *Association of Irrigated Residents v. U.S. Environmental Protection Agency*, (9th Cir. 2021) 10 F.4th 937

¹⁵ *Guidance on the Preparation of State Implementation Plan Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter*. March 17, 2023. Retrieved from: <https://www.epa.gov/system/files/documents/2023-03/CMTF%202022%20guidance%203-16-23.pdf>

measures, implementation timelines following a contingency trigger, and the amount of reductions needed, among other issues. The Draft Guidance contains three main concepts: (1) revising the quantity of emissions reductions that contingency measures should provide to account for declining emissions inventories over time; (2) allowing for an infeasibility justification if an area is unable to identify feasible contingency measures in sufficient quantities due to a scarcity of available, qualifying measures; and (3) revising the time period within which emission reductions from contingency measures should occur.

Withdrawal of Contingency Measure Elements for the Coachella Valley

The most recent, comprehensive SIP for the 2008 ozone NAAQS in the Coachella Valley was submitted as part of the 2016 Air Quality Management Plan (AQMP).¹⁶ The 2016 AQMP included air quality analysis, an emissions inventory for ozone precursors (i.e., oxides of nitrogen and volatile organic compounds), a modeled attainment demonstration, a reasonably available control measures (RACM) demonstration, reasonable further progress (RFP) demonstrations, transportation conformity budgets, and a vehicle miles traveled (VMT) offset demonstration for the Coachella Valley. The 2016 AQMP was adopted by the South Coast AQMD Governing Board on March 3, 2017, and submitted to U.S. EPA on April 27, 2017 via CARB.

Complying with CAA Sections 172(c)(9) and 182(c)(9), the 2016 AQMP included RFP contingency measure elements, which relied upon surplus emission reductions from already implemented control measures in the milestone and attainment years. The 2016 AQMP was supplemented with CARB's attainment contingency measure for the Coachella Valley, which was submitted to U.S. EPA on May 5, 2017.¹⁷ However, due to the *Bahr* decision, the contingency measure elements submitted as a part of the plan could no longer be approved by U.S. EPA. The specific deficiencies included a need for the contingency measures to contain triggering mechanisms, specify a schedule for implementation, and be implemented without significant further action by the state or U.S. EPA.

In 2020, U.S. EPA approved the Coachella Valley portion of the 2016 AQMP as meeting all applicable statutory and regulatory requirements, with the exception of the attainment contingency measure element.¹⁸ With respect to the RFP contingency measure element, U.S. EPA conditionally approved the element based on commitments by CARB and the South Coast AQMD to supplement the element within

¹⁶ Available at:

<http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=15>

¹⁷ CARB Staff Report - Coachella Valley 8-Hour Ozone Attainment Contingency available at

<https://ww3.arb.ca.gov/planning/sip/planarea/scabsip/cvcont2017.pdf> ;

CARB Resolution 17-13 <https://ww3.arb.ca.gov/planning/sip/planarea/scabsip/res17-13.pdf>;

Submittal letter to U.S. EPA https://ww3.arb.ca.gov/planning/sip/planarea/scabsip/cvcont2017_arbltr.pdf

¹⁸ 85 FR 57714

one year of conditional approval, by October 16, 2021. The due date was later revised to September 30, 2022 based on consent decree.¹⁹

On August 8, 2022, CARB transmitted a letter to U.S. EPA to withdraw the contingency measure elements for the 2008 ozone NAAQS in Coachella Valley. The withdrawal avoided potential disapproval of the submitted contingency measure elements. Additionally, at the time of withdrawal, U.S. EPA had not yet released the Draft Guidance and additional time was needed to develop an approvable contingency measure SIP revision. Effective October 31, 2022, U.S. EPA finalized a finding of failure to submit contingency measure elements for the 2008 ozone NAAQS in Coachella Valley.²⁰ The finding established an 18-month deadline for the South Coast AQMD to submit contingency measures or face stationary source permitting sanctions as defined in CAA Section 179(b)(2). There is also a 24-month deadline for highway sanctions as defined in CAA Section 179(b)(1). Submission of the SIP revision followed by a completeness determination by U.S. EPA will stay the sanctions. In addition, if within 24-months U.S. EPA has not approved a contingency measure SIP revision, U.S. EPA must promulgate a federal contingency measure plan in the Coachella Valley.

South Coast AQMD's Opportunities for Contingency Measures

The South Coast Air Basin faces some of the most difficult air quality challenges in the nation. As a local air agency, South Coast AQMD's regulatory authority is strongest for stationary sources. Accordingly, South Coast AQMD has exercised that authority and has the most stringent stationary source control program in the country. If there are opportunities to further reduce emissions, these should be relied upon to ensure expeditious attainment of air quality standards, and not held in reserve for contingency. However, the bulk of the emissions responsible for ozone nonattainment are from mobile sources, for which South Coast AQMD has limited regulatory authority.

The South Coast Air Basin is in "extreme" nonattainment for all 8-hour ozone NAAQS and requires substantial reductions of ozone precursor emissions to meet that standard. The bulk of the emissions responsible for ozone nonattainment are from mobile sources, which are subject to direct regulatory authority from CARB and the federal government. Despite lacking direct regulatory authority in this area, South Coast AQMD has explored reducing mobile source emissions using innovative approaches such as indirect source rules, voluntary Memoranda of Understanding, and incentive measures to maximize much needed emission reductions for attainment. Given the stringency of existing requirements and our innovative approaches for further emission reductions there is little to no further feasible control measures left that can be used as contingency measures. In addition, based on prior case law and current Draft Guidance for contingency measures by U.S. EPA, the pool of potential measures is further limited. First, contingency measures must be fully adopted rules that contain provisions to increase the stringency of the rule upon a determination by U.S. EPA that an area has failed to meet RFP or attain a standard by

¹⁹ U.S. District Court for the Northern District of California, *Center for Biological Diversity v. U.S. EPA* Consent Decree, Case No. 3:20-cv-06020-WHA 882 F.3d 1138

²⁰ 87 FR 59012

the attainment date. Second, contingency measures for ozone are required to achieve a defined amount of emission reductions for both NO_x and VOCs, referred to as one year's worth of progress. Finally, the contingency measures must take effect within 60 days of the triggering event and achieve the necessary amount of emission reductions within one year, or up to two years with proper justification.

Staff has prepared a contingency measure SIP revision for the Coachella Valley that addresses the 2008 8-hour ozone standard and is consistent with the Draft Guidance²¹ and CAA Sections 172(c)(9) and 182(c)(9). After extensive analysis, South Coast AQMD determined that there is only one feasible stationary source contingency measure for consideration in the Coachella Valley, which is presented in Chapter 3. However, since the measure does not achieve the required amount of emission reductions, the Draft Guidance requires the preparation of an infeasibility justification which comprehensively evaluates all source categories contributing VOC and NO_x emissions in the Coachella Valley. This justification is presented in Chapter 4 and Appendix A and B.

²¹ The Draft Guidance is not final, but staff expects it will be finalized shortly and will closely follow the draft guidance

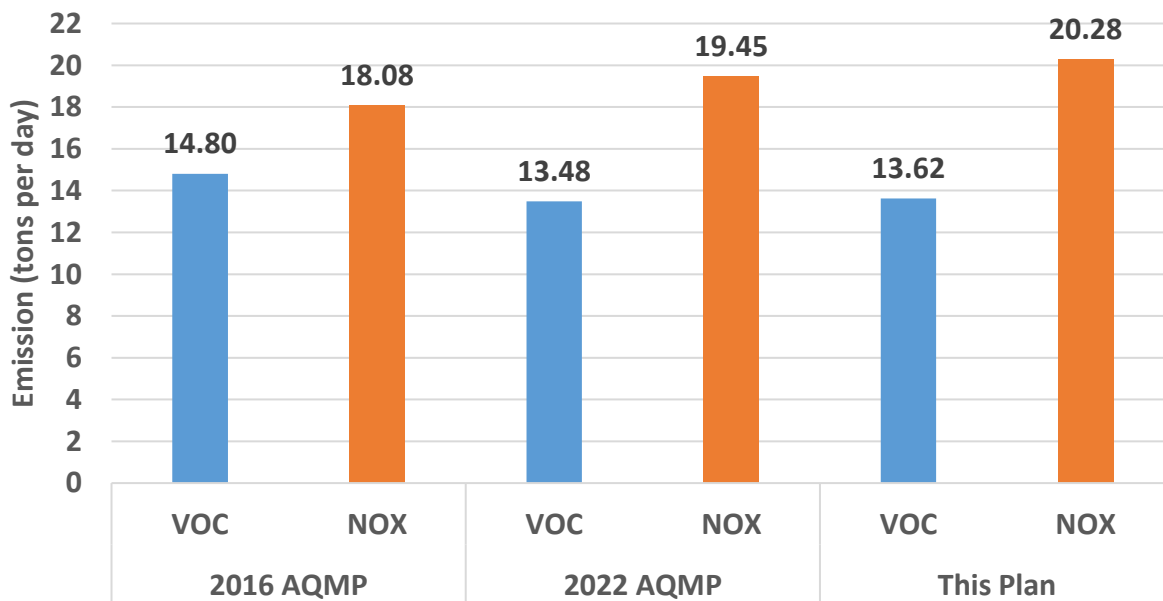
**Coachella Valley Contingency Measure SIP Revision for
the 2008 8-Hour Ozone Standard**

CHAPTER 2: EMISSIONS INVENTORY

Emissions Inventory

The emissions inventory employed in this Contingency Measure SIP revision reflects the latest available input data and methodologies to estimate emissions. Since the development of the inventory for the SIP plan for the 2008 8-hour ozone standard developed under the 2016 AQMP (referred as “2016 AQMP” hereafter), the inventory has gone through two major revisions: the first major revision to support the 2022 Request to Reclassify Coachella Valley for the 2008 8-Hour Ozone Standard (referred as “2022 RFP Plan” hereafter), and the second major revision to support the South Coast Air Basin Attainment Plan for the 2012 Annual PM2.5 Standard (referred as “2024 PM2.5 Plan”). The latter revision is the basis for the emissions inventory discussions in this Plan. The inventory used in the 2022 RFP Plan is identical to the 2022 AQMP emissions inventory. Revisions in the inventory include changes in model versions and vehicle activity for on-road sources, and updated methodologies and projections for off-road, area and stationary sources. A comparison of the emissions among the three different inventories is presented in Figure 2-1.

Figure 2-1 illustrates the NOx and VOC summer planning emissions for 2017 categorized by major emission sources for this Plan. Additionally, it provides a comparison with emissions from the 2016 AQMP and the 2022 AQMP. 2017 is chosen based on its proximity to the base year used in the 2022 AQMP and the 2024 PM2.5 Plan and an RFP milestone year of the 2008 ozone standard. In Coachella Valley, the 2017 NOx emissions have been revised up to 20.28 tons per day (tpd), compared to 18.08 tpd in the 2016 AQMP and 19.45 tpd in the 2022 AQMP. Conversely, base year VOC emissions are revised down to 13.62 tpd for this Plan, compared to 14.80 tpd in the 2016 AQMP and 13.48 tpd in the 2022 AQMP.



**FIGURE 2-1
COMPARISON OF NOx AND VOC EMISSIONS AMONG 2016 AQMP, 2022 AQMP, AND THIS PLAN
FOR 2017 SUMMER PLANNING INVENTORY (TONS PER DAY)**

Table 2-1 provides the breakdown of the three versions of the Coachella Valley emissions inventory for 2017 by stationary point and area sources, on-road and off-road mobile sources. The most significant change comes from mobile sources.

**TABLE 2-1
SOURCE BREAKDOWN OF 2016 AQMP, 2022 AQMP, AND THIS PLAN
FOR 2017 SUMMER PLANNING INVENTORY (TONS PER DAY)**

	2016 AQMP		2022 AQMP		This Plan	
	VOC	NOX	VOC	NOX	VOC	NOX
Stationary Point and Area Sources	7.04	1.39	6.12	1.38	6.11	1.35
On-Road Motor Vehicles	4.41	10.77	3.64	10.43	3.78	11.29
Other Mobile Sources	3.35	5.92	3.73	7.64	3.73	7.64
Total	14.80	18.08	13.48	19.45	13.62	20.28

Updates on On-Road Emissions

EMFAC (EMission FACtor), the motor vehicles emissions models that estimate on-road emissions, have evolved multiple times in recent years. The 2016 AQMP was the original SIP demonstrating attainment of the 2008 ozone standard for the Coachella Valley and used EMFAC2014 and travel activity data from the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The 2022 RFP Plan, which used identical emissions from the 2022 AQMP, relied on EMFAC2017 and travel activity data from the 2020 RTP/SCS. In November 2022, U.S. EPA approved the latest version of the model, EMFAC2021 to use in transportation conformity use. This Contingency Measure SIP revision uses the latest approved EMFAC2021 and the travel activity data from the 2020 RTP/SCS, which is the latest adopted RTP/SCS. SCAG is currently developing the 2024 RTP/SCS and is scheduled to adopt it by SCAG's Regional Council in April 2024. The latest RTP will have updates on travel activity and socioeconomic projections. Acknowledging that a new RTP will be adopted in April 2024, an AQMP/SIP is bounded to rely on the latest adopted RTP. Thus, this plan relies on the 2020 RTP/SCS at this point, although the updated information from the 2024 RTP will be evaluated as soon as it becomes available and reflected in the future SIP revision as needed.

The 2020 RTP/SCS estimates generally lower VMT in the region than those from the 2016 RTP/SCS. The activity of light- and medium-duty vehicles, including passenger cars and light- and medium-duty trucks, are similar to the 2016 RTP traffic activity. However, VMT by heavy-duty vehicles (including light, medium, and heavy heavy-duty gas and diesel trucks categories) were projected to be lower than the 2016 RTP estimates. The reduced VMT is more prominent in the heavy heavy-duty category. On the other hand, EMFAC2017 generates higher emissions for heavy-duty trucks. These updates were based on improved laboratory and in-use testing data, which resulted in higher NOx emission rates, especially for heavy-duty trucks with 2010 and newer model year engines. This increase in the NOx emission factors was largely driven by new data showing higher NOx emissions under low engine load. As a result, the NOx emissions from the 2022 AQMP are higher than corresponding emissions from the 2016 AQMP.

The on-road emissions inventory in this plan (referred as “This Plan” in Figure 2-1) uses the same vehicle activity data as in the 2022 AQMP, but updated on-road emission factors from EMFAC2017 to EMFAC2021 which updates vehicle population, emission factors, and forecasting parameters. The factors that have the greatest effect on emissions changes from EMFAC2017 to EMFAC2021 are the increase in in-use emission factors for some vehicle classes, the updated vehicle age distribution for medium-heavy duty trucks that estimates an older fleet mix with respect to EMFAC2017, and the update on brake wear emission factors based on updated measurements. More detailed information on the changes incorporated in EMFAC2021 can be found in EMFAC2021’s technical documentation.²²

Updates on All Other Sources of Emissions

Major updates in stationary and area sources emissions were introduced in the 2022 AQMP, and those emissions are kept unchanged for this Plan. The changes in emissions with respect to the 2016 AQMP stem from updates in methodologies and socioeconomic factors. Various source categories' base year emissions were adjusted using the latest available activity and emission factors data, while point sources utilized actual emission reporting data from 2018 through the Annual Report Emission program.

Emissions from off-road sources were also updated during the development of the 2022 AQMP. The adjustments in emissions are linked to updates in emission estimates for major off-road source sectors. Notable changes in the 2022 AQMP with respect to the 2016 AQMP include increases in aircraft, locomotives and off-road equipment including quantified emission with Portable Equipment Registration Program (PERP). Appendix III of the 2022 AQMP documents the Emissions Inventory Methodology for the 2008 8-Hour Ozone Extreme Area Plan using CEPAM 2022 v1.01. After the development of the 2022 AQMP, CARB identified a minor mathematical error in the emission allocation for in-use emissions from off-road construction equipment in Riverside County in future years. This minor error was addressed, and the corrected future emissions are included in this Plan. The correction increases NO_x emissions by 0.6 tons per day and VOC emissions by 0.1 tons per day in the Coachella Valley in 2031.

Emissions from the Coachella Valley

Table 2-2 presents the summer planning emissions of VOCs and NO_x for the Coachella Valley by major source category (MSC) in 2017. Stationary and area sources constitute the largest fraction of VOC emissions, with emissions from consumer products being the largest source. On-road mobile sources contribute to a quarter of the VOC emissions, with passenger cars being the largest category contributing to 10 percent of all VOC emissions. Off-road mobile sources contribute to the remaining quarter of VOC emissions, with off-road equipment being the largest source. NO_x emissions are largely dominated by mobile sources. Stationary and area sources only contribute to 7 percent of the total NO_x emissions. The

²² EMFAC2021 Volume III Technical Document Version 1.0.1, April 2021. Available at: https://ww2.arb.ca.gov/sites/default/files/2021-08/emfac2021_technical_documentation_april2021.pdf

largest contributors to NOx from stationary and area sources are electric utilities and fuel combustion in residential, service, and commercial buildings. On-road sources account for 56 percent of the NOx emissions, with heavy-duty trucks being the largest source with a third of all NOx emissions. Off-road sources contribute to 38 percent of all NOx emissions, with trains being the largest single source followed by off-road equipment.

Table 2-3 presents the summer planning emissions of VOCs and NOx for the Coachella Valley by major source category in 2031. In comparison with 2017, emissions from on-road sources decline as a result of ongoing on-road vehicle regulations and due to turnover to cleaner vehicles. Similarly, emissions from off-road equipment also decline due to switching to cleaner equipment. On the other hand, VOC emissions from consumer products are projected to increase due to the increase in population and human activity. NOx emissions from aircrafts and trains are expected to increase due to the increase in economic activity. As in 2017, area and stationary sources constitute the largest fraction of VOC emissions, with emissions from consumer products being the largest source. The relative contribution of on-road mobile sources to VOCs decreases, particularly from light and medium duty classes. The relative contribution of off-road sources to VOC emissions also decreases with respect to 2017, due to decreasing emissions from off-road-equipment. In 2031, NOx emissions from mobile sources continue to be the largest contributor to total NOx in the Coachella Valley, despite the large reductions projected from on-road vehicles. NOx emissions from stationary and area sources are projected to remain unchanged, and their relative contribution to NOx emissions increase to 14 percent just because of the reduction from mobile sources. The relative contribution from on-road sources to NOx drops substantially to 25 percent with heavy-duty trucks still being the largest source of NOx emissions from on-road vehicles. In 2031, off-road sources become the largest NOx emitter, with trains becoming the largest single source of NOx in the Coachella Valley. Because train emissions continue to grow in contrast with other major mobile sources, the relative contribution of trains to NOx emissions grows up to 45 percent.

The emissions are presented by MSC for brevity, however the infeasibility justifications presented in the report were conducted by EIC level identifying further details such as fuel, equipment, process type, etc. in each MSC.

**TABLE 2-2
SUMMER PLANNING EMISSIONS FOR THE COACHELLA VALLEY BY MAJOR SOURCE CATEGORY IN 2017**

MSC	Description	VOC (tpd)	% VOC	NOx (tpd)	% NOx
10	Electric Utilities	0.03	0.2%	0.63	3.1%
20	Cogeneration	0.00	0.0%	0.00	0.0%
30	Oil and Gas Production (combustion)	0.00	0.0%	0.00	0.0%
40	Petroleum Refining (Combustion)	0.00	0.0%	0.00	0.0%
50	Manufacturing and Industrial	0.02	0.1%	0.10	0.5%
52	Food and Agricultural Processing	0.00	0.0%	0.00	0.0%
60	Service and Commercial	0.05	0.3%	0.22	1.1%
99	Other (Fuel Combustion)	0.02	0.1%	0.09	0.4%
110	Sewage Treatment	0.01	0.1%	0.00	0.0%
120	Landfills	0.00	0.0%	0.00	0.0%
130	Incineration	0.00	0.0%	0.01	0.0%
140	Soil Remediation	0.00	0.0%	0.00	0.0%
199	Other (Waste Disposal)	0.00	0.0%	0.00	0.0%
210	Laundering	0.00	0.0%	0.00	0.0%
220	Degreasing	0.25	1.8%	0.00	0.0%
230	Coatings and Related Processes	1.19	8.7%	0.00	0.0%
240	Printing	0.02	0.2%	0.00	0.0%
250	Adhesives and Sealants	0.13	1.0%	0.00	0.0%
299	Other (Cleaning and Surface Coatings)	0.02	0.2%	0.00	0.0%
310	Oil and Gas Production	0.00	0.0%	0.00	0.0%
320	Petroleum Refining	0.00	0.0%	0.00	0.0%
330	Petroleum Marketing	0.37	2.7%	0.00	0.0%
399	Other (Petroleum Production and Marketing)	0.00	0.0%	0.00	0.0%
410	Chemical	0.11	0.8%	0.00	0.0%
420	Food and Agriculture	0.03	0.2%	0.00	0.0%
430	Mineral Processes	0.03	0.2%	0.00	0.0%
440	Metal Processes	0.00	0.0%	0.00	0.0%
450	Wood and Paper	0.00	0.0%	0.00	0.0%
460	Glass and Related Products	0.00	0.0%	0.00	0.0%
470	Electronics	0.00	0.0%	0.00	0.0%
499	Other (Industrial Processes)	0.07	0.5%	0.00	0.0%
510	Consumer Products	2.96	21.7%	0.00	0.0%
520	Architectural Coatings and Related Solvent	0.29	2.2%	0.00	0.0%
530	Pesticides/Fertilizers	0.25	1.9%	0.00	0.0%
540	Asphalt Paving/Roofing	0.06	0.4%	0.00	0.0%

MSC	Description	VOC (tpd)	% VOC	NOx (tpd)	% NOx
610	Residential Fuel Combustion	0.09	0.7%	0.29	1.4%
620	Farming Operations	0.07	0.5%	0.00	0.0%
630	Construction and Demolition	0.00	0.0%	0.00	0.0%
640	Paved Road Dust	0.00	0.0%	0.00	0.0%
645	Unpaved Road Dust	0.00	0.0%	0.00	0.0%
650	Fugitive Windblown Dust	0.00	0.0%	0.00	0.0%
660	Fires	0.01	0.1%	0.00	0.0%
670	Waste Burning and Disposal	0.02	0.1%	0.01	0.0%
690	Cooking	0.02	0.2%	0.00	0.0%
699	Other (Miscellaneous Processes	0.00	0.0%	0.00	0.0%
710	Passenger Cars (P)	1.42	10.4%	0.73	3.6%
722	Light Duty Trucks 1 (T1)	0.36	2.7%	0.25	1.2%
723	Light Duty Trucks 2 (T2)	0.62	4.6%	0.67	3.3%
724	Medium Duty Vehicles (T3)	0.64	4.7%	0.74	3.6%
725	Light Heavy-Duty Trucks 1 (T4)	0.09	0.6%	0.37	1.8%
726	Light Heavy-Duty Trucks 2 (T5)	0.02	0.2%	0.13	0.6%
727	Medium Heavy-Duty Trucks (T6)	0.09	0.7%	1.22	6.0%
728	Heavy Heavy-Duty Trucks (T7)	0.25	2.0%	7.00	34.5%
750	Motorcycles (MCY)	0.25	1.9%	0.03	0.1%
775	Buses	0.01	0.1%	0.13	0.7%
780	Motor Homes (MH)	0.02	0.1%	0.03	0.1%
810	Aircraft	0.10	0.7%	0.39	1.9%
820	Trains	0.16	1.2%	3.47	17.1%
833	Ocean Going Vessels	0.00	0.0%	0.00	0.0%
835	Commercial Harbor Crafts	0.00	0.0%	0.00	0.0%
840	Recreational Boats	0.81	5.9%	0.11	0.5%
850	Off-Road Recreational Vehicles	0.14	1.0%	0.00	0.0%
860	Off-Road Equipment	2.11	15.4%	2.74	13.5%
861	Off-Road Equipment (PERP)	0.05	0.3%	0.54	2.7%
870	Farm Equipment	0.09	0.7%	0.38	1.9%
890	Fuel Storage and Handling	0.26	1.9%	0.00	0.0%
	Total Point Stationary and Area Sources	6.11	45%	1.35	7%
	Total On-Road Vehicles	3.78	28%	11.29	56%
	Total Other Mobile	3.73	27%	7.64	38%
	Total	13.62	100%	20.28	100%

**TABLE 2-3
SUMMER PLANNING EMISSIONS FOR THE COACHELLA VALLEY BY MAJOR SOURCE CATEGORY IN 2031**

MSC	Description	VOC (tpd)	% VOC	NOx (tpd)	% NOx
10	Electric Utilities	0.02	0.1%	0.67	6.7%
20	Cogeneration	0.00	0.0%	0.00	0.0%
30	Oil and Gas Production (combustion)	0.00	0.0%	0.00	0.0%
40	Petroleum Refining (Combustion)	0.00	0.0%	0.00	0.0%
50	Manufacturing and Industrial	0.02	0.2%	0.11	1.1%
52	Food and Agricultural Processing	0.00	0.0%	0.00	0.0%
60	Service and Commercial	0.05	0.5%	0.24	2.4%
99	Other (Fuel Combustion)	0.01	0.1%	0.08	0.7%
110	Sewage Treatment	0.02	0.1%	0.00	0.0%
120	Landfills	0.00	0.0%	0.00	0.0%
130	Incineration	0.00	0.0%	0.01	0.1%
140	Soil Remediation	0.00	0.0%	0.00	0.0%
199	Other (Waste Disposal)	0.00	0.0%	0.00	0.0%
210	Laundering	0.01	0.0%	0.00	0.0%
220	Degreasing	0.32	2.7%	0.00	0.0%
230	Coatings and Related Processes	1.63	13.9%	0.00	0.0%
240	Printing	0.04	0.3%	0.00	0.0%
250	Adhesives and Sealants	0.15	1.3%	0.00	0.0%
299	Other (Cleaning and Surface Coatings)	0.03	0.3%	0.00	0.0%
310	Oil and Gas Production	0.00	0.0%	0.00	0.0%
320	Petroleum Refining	0.00	0.0%	0.00	0.0%
330	Petroleum Marketing	0.32	2.7%	0.00	0.0%
399	Other (Petroleum Production and Marketing)	0.00	0.0%	0.00	0.0%
410	Chemical	0.15	1.3%	0.00	0.0%
420	Food and Agriculture	0.03	0.3%	0.00	0.0%
430	Mineral Processes	0.03	0.3%	0.00	0.0%
440	Metal Processes	0.00	0.0%	0.00	0.0%
450	Wood and Paper	0.00	0.0%	0.00	0.0%
460	Glass and Related Products	0.00	0.0%	0.00	0.0%
470	Electronics	0.00	0.0%	0.00	0.0%
499	Other (Industrial Processes)	0.08	0.7%	0.00	0.0%
510	Consumer Products	3.79	32.5%	0.00	0.0%
520	Architectural Coatings and Related Solvent	0.40	3.4%	0.00	0.0%
530	Pesticides/Fertilizers	0.22	1.9%	0.00	0.0%
540	Asphalt Paving/Roofing	0.08	0.7%	0.00	0.0%

MSC	Description	VOC (tpd)	% VOC	NOx (tpd)	% NOx
610	Residential Fuel Combustion	0.10	0.8%	0.27	2.7%
620	Farming Operations	0.07	0.6%	0.00	0.0%
630	Construction and Demolition	0.00	0.0%	0.00	0.0%
640	Paved Road Dust	0.00	0.0%	0.00	0.0%
645	Unpaved Road Dust	0.00	0.0%	0.00	0.0%
650	Fugitive Windblown Dust	0.00	0.0%	0.00	0.0%
660	Fires	0.01	0.1%	0.00	0.0%
670	Waste Burning and Disposal	0.01	0.1%	0.01	0.1%
690	Cooking	0.03	0.3%	0.00	0.0%
699	Other (Miscellaneous Processes	0.00	0.0%	0.00	0.0%
710	Passenger Cars (P)	0.68	5.8%	0.27	2.7%
722	Light Duty Trucks 1 (T1)	0.13	1.1%	0.06	0.6%
723	Light Duty Trucks 2 (T2)	0.41	3.5%	0.25	2.5%
724	Medium Duty Vehicles (T3)	0.33	2.9%	0.20	2.0%
725	Light Heavy-Duty Trucks 1 (T4)	0.03	0.2%	0.07	0.7%
726	Light Heavy-Duty Trucks 2 (T5)	0.01	0.1%	0.05	0.5%
727	Medium Heavy-Duty Trucks (T6)	0.03	0.2%	0.20	2.0%
728	Heavy Heavy-Duty Trucks (T7)	0.11	0.9%	1.32	13.2%
750	Motorcycles (MCY)	0.25	2.1%	0.02	0.2%
775	Buses	0.01	0.0%	0.03	0.3%
780	Motor Homes (MH)	0.00	0.0%	0.01	0.1%
810	Aircraft	0.09	0.7%	0.54	5.4%
820	Trains	0.18	1.5%	4.51	45.0%
833	Ocean Going Vessels	0.00	0.0%	0.00	0.0%
835	Commercial Harbor Crafts	0.00	0.0%	0.00	0.0%
840	Recreational Boats	0.45	3.8%	0.09	0.9%
850	Off-Road Recreational Vehicles	0.08	0.7%	0.00	0.0%
860	Off-Road Equipment	1.01	8.6%	0.57	5.7%
861	Off-Road Equipment (PERP)	0.03	0.2%	0.20	2.0%
870	Farm Equipment	0.06	0.5%	0.22	2.2%
890	Fuel Storage and Handling	0.22	1.8%	0.00	0.0%
	Total Point Stationary and Area Sources	7.60	65%	1.39	14%
	Total On-Road Vehicles	1.98	17%	2.49	25%
	Total Other Mobile	2.10	18%	6.14	61%
	Total	11.68	100%	10.02	100%

Mobile source categories (i.e., MSCs 710 through 890, as reported by CEPAM) comprise nearly 86 percent of the 2031 NOx emissions in the Coachella Valley. While CARB has unique authority to regulate certain mobile sources by obtaining a waiver from U.S. EPA, a significant portion of mobile source categories such as aircraft, ships, locomotives, and inter-state trucks lie under primarily federal regulatory authority. It is important to note that U.S. EPA is not obligated to evaluate contingency measures for sources under its authority. Furthermore, the dominance of mobile source NOx emissions significantly limits the ability for the South Coast AQMD to achieve the required amount of NOx reductions from contingency measures.

One Year’s Worth of Reductions for NOx and VOC

Table 2-4 lists the One Year’s Worth (OYW) of NOx and VOC reductions in Coachella Valley with respect to the base year 2011, the RFP base year of the 2016 AQMP, the first SIP submitted to address the 2008 ozone standard. Consistent with the Draft Guidance, OYW of NOx and VOC reductions are calculated to be 0.33 tpd and 0.15 tpd, respectively. Chapter 4 presents the infeasibility justification to support contingency measures achieving less than OYW of progress.

**TABLE 2-4
ONE YEAR’S WORTH OF NOX AND VOC SUMMER PLANNING EMISSIONS REDUCTIONS FOR THE
COACHELLA VALLEY (TONS PER DAY)**

Emission Inventory	NOx (tpd)	VOC (tpd)
2011 Summer Planning	28.63	15.87
2031 Summer Planning	10.02	11.68
OYW of Progress ¹	0.33	0.15

¹ Using baseline emissions in 2031 to estimate OYW of progress since there is no approved attainment plan.

**Coachella Valley Contingency Measure SIP Revision for
the 2008 8-Hour Ozone Standard**

**CHAPTER 3: SOUTH COAST AQMD'S
CONTINGENCY MEASURE**

South Coast AQMD's Contingency Measure

South Coast AQMD followed the procedures outlined in the Draft Guidance for the preparation of a contingency measure and a reasoned justification for providing contingency measures achieving less than the required amount of reductions. These procedures, which involve the identification of existing and potential controls and evaluation of the feasibility of such controls, are outlined below:

1. Thoroughly examine the emission sources in the Coachella Valley and identify applicable rules.
2. Compare existing rule requirements with those in other jurisdictions and identify potential control measures.
3. Review each of the measures identified in Step 2 to determine whether it is feasible to implement within up to two years as a contingency measure. If feasible, include the measure in the contingency measure submission.
4. For the remaining infeasible measures from Step 3, document the reason why each measure is infeasible as a contingency measure, including whether the conclusion is based on technological, economic, or other infeasibility considerations. This evaluation is provided in the next chapter.

During the first step in the analysis, examination of the emission sources in the Coachella Valley revealed a potential contingency measure for organic liquid storage tanks.

Rule 1178 - Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities was recently amended to require leak detection and repair through Optical Gas Imaging (OGI). Rule 1178 is currently the only South Coast AQMD rule to require OGI inspections. While staff did not identify any tanks subject to Rule 1178 in the Coachella Valley, there are other types of organic liquid storage tanks in the Coachella Valley which would be suitable for OGI inspection. These tanks are subject to Rule 463 – Organic Liquid Storage.

South Coast AQMD commits to consider amending Rule 463 to include in the SIP as an RFP and attainment contingency measure for the 2008 ozone NAAQS and submit the rule package to U.S. EPA via CARB by the end of 2024 for inclusion in the SIP. Rule 463 applies to above-ground stationary tanks used to store organic liquids and requires certain controls to minimize VOC emissions. Rule 463 applies to approximately 154 facilities within South Coast AQMD that have fixed roof, floating roof, or domed roof storage tanks. Depending on the type of storage tank, Rule 463 requires floating roof seals, vapor recovery units, and best management practices.

South Coast AQMD is undertaking a public process to amend Rule 463 to mandate OGI for facilities that have organic liquid storage tanks to detect leak and repair it, if any. A public hearing is tentatively scheduled for summer 2024 before South Coast AQMD's Governing Board. Staff is conducting a Best Available Retrofit Control Technology (BARCT) assessment for OGI and will establish the frequency of inspections based on the cost-effectiveness of the measure. As part of this effort, staff will look at frequencies that exceed the cost-effectiveness and incremental cost-effectiveness thresholds. If triggered,

the contingency measure element would require more frequent OGI inspection that would be above this cost-effectiveness threshold.

The organic liquid storage tanks subject to the rule are mostly located in the South Coast Air Basin. However, a limited number of storage tanks exist in the Coachella Valley. If the contingency measure is triggered, it will only apply to tanks within the nonattainment area in which it was triggered.

During the rulemaking process, the exact scope of the rule applicability will be determined. The rule could be narrowed to only impact high emitting (i.e., high vapor pressure) tanks. South Coast AQMD will also establish a mechanism to inform facilities subject to Rule 463 when the contingency provision has been triggered. Staff will consider sending out a Compliance Advisory or going through a public notice process similar to that used for noticing a public workshop, i.e., newspaper notice, electronic newsletter, posting on website, etc. A preferred mechanism will be set based on stakeholders input during a public process to amend the rule.

If triggered, the contingency measure elements will reduce VOC emissions by identifying potential leaks and repair them; however, the amount of emission reductions from all identified contingency measure elements is expected to be less than the one year's worth of reduction specified in the U.S. EPA's Draft Guidance.²³ Staff will develop an estimate of the VOC emission reductions associated with the proposed Rule 463 contingency measure during the rulemaking process. See Chapter 4 for the justification that no other control measure to achieve OYW of reductions and meet other requirements of contingency measures exists in the Coachella Valley. Contingency measures for mobile sources and a reasoned justification for achieving less than OYW of reductions are provided in Appendix A.

The transport of ozone from the South Coast Air Basin is a major driver of the poor ozone air quality in the Coachella Valley.²⁴ The proposed amendment to Rule 463 will require more frequent OGI inspections at affected facilities within the nonattainment area in which it was triggered. Additional potential contingency measure elements specific to the South Coast Air Basin will be evaluated as part of the contingency measure SIP element for the 2008 and 2015 ozone standards in the South Coast Air Basin.

²³ *Guidance on the Preparation of State Implementation Plan Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter*. March 17, 2023. Retrieved from: <https://www.epa.gov/system/files/documents/2023-03/CMTF%202022%20guidance%203-16-23.pdf>

²⁴ *Request to Reclassify Coachella Valley for the 2008 8-Hour Ozone Standard and the Updated Motor Vehicle Emissions Budgets, November 2022*. Refer to Chapter 3. Available at <https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/cv-mveb/coachella-valley-reclassification-for-the-2008-8-hour-ozone-standard-and-mveb---final-staff-report.pdf?sfvrsn=8>

**Coachella Valley Contingency Measure SIP Revision for
the 2008 8-Hour Ozone Standard**

CHAPTER 4: INFEASIBILITY JUSTIFICATION

Infeasibility Justification

Reasoned Justification for Proposing Measures Achieving Less than One Year's Worth of RFP

This section contains evaluation of all VOC and NO_x source categories in the Coachella Valley and associated control measures. In order to identify relevant source categories for this evaluation, South Coast AQMD staff examined the stationary major source categories (MSCs) identified in the emissions inventory for the Coachella Valley. Table 2-2 lists the 2017 summer planning emissions of VOC and NO_x for the Coachella Valley by major source category (i.e., three-digit Emission Inventory Code (EIC) and description, and reported in tons per day (tpd) and as percentages of the total inventory). The stationary source emissions inventory used in this Plan is identical to that used in the Coachella Valley RFP SIP.²⁵ Table 2-3 summarizes the projected 2031 summer planning baseline emissions by each MSC.

As shown in Table 2-3, mobile source categories (i.e., MSCs 710 through 890, as reported by CEPAM) comprise nearly 86 percent of the 2031 NO_x emissions in the Coachella Valley. While CARB has unique authority to regulate certain mobile sources by obtaining a waiver from U.S. EPA, significant mobile source categories such as aircraft, ships, locomotives, and inter-state trucks lie under primarily federal regulatory authority. It is important to note that U.S. EPA is not obligated to evaluate contingency measures for sources under its authority. Furthermore, the dominance of mobile source NO_x emissions significantly limits the ability for South Coast AQMD to achieve the required amount of NO_x reductions from contingency measures. The following sections evaluate all the stationary and indirect sources that have emissions in the Coachella Valley and demonstrate that all feasible opportunities for contingency measures other than the one committed in this Plan are exhausted.

²⁵ <https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/cv-mveb/coachella-valley-reclassification-for-the-2008-8-hour-ozone-standard-and-mveb---final-staff-report.pdf?sfvrsn=8>

Fuel Combustion

Fuel combustion emissions are shown in Table 4-1 and consist of nine MSCs including 010 – Electric Utilities, 020 – Cogeneration, 030 – Oil and Gas Production (Combustion), 040 – Petroleum Refining (Combustion), 050 – Manufacturing and Industrial, 052 – Food and Agricultural Processing, 060 – Service and Commercial, 099 – Other (Fuel Combustion), and 610 – Residential Fuel Combustion. Staff examined VOC and NO_x emissions by equipment category rather than source category because the analysis of feasible contingency measures is anticipated to be similar across each source category that combusts fuel. That is, the technologies available to minimize emissions from fuel combustion in each source category are predicted to be more dependent on the equipment combusting fuel than on the type of source generating the emissions.

As demonstrated in Table 4-1, fuel combustion sources contribute 0.19 tpd of VOCs and 1.37 tpd of NO_x to the 2031 baseline emissions inventory. The analysis of fuel combustion equipment was grouped into four categories: (1) boilers, steam generators, and process heaters; (2) engines; (3) combustion turbines; and (4) residential and commercial fuel combustion. Each source group is analyzed below.

**TABLE 4-1
FUEL COMBUSTION SOURCE CATEGORY EMISSIONS BASED ON 2031 SUMMER PLANNING INVENTORY**

Industry	VOC (tpd)	NO _x (tpd)
010 – Electric Utilities	0.02	0.67
020 – Cogeneration	0	0
030 – Oil and Gas Production (Combustion)	0	0
040 – Petroleum Refining (Combustion)	0	0
050 – Manufacturing and Industrial	0.02	0.11
052 – Food and Agricultural Processing	0	0
060 – Service and Commercial	0.05	0.24
099 – Other (Fuel Combustion)	0.01	0.08
610 – Residential Fuel Combustion	0.10	0.27
Total	0.19	1.37

1. Boilers, Steam Generators, and Process Heaters

a. Overview

Boilers, steam generators, and process heaters are used to produce hot water, produce steam, and transfer heat from combustion to liquid or process streams. These units emit VOCs and NO_x from fuel combustion and can be found at facilities representing a wide range of industries. In the Coachella Valley, however, electric utilities are responsible for virtually all the emissions as shown in Table 4-2. Further

examination of the emissions inventory revealed that Desert View Power, a biomass-fueled power plant located on the Cabazon Band of Cahuilla Indians Reservation, is responsible for virtually all of the VOC and NOx emissions from the electric utilities category. Since this facility is located on tribal land, it is regulated by U.S. EPA and therefore is not subject to further evaluation for potential contingency measures.²⁶ Natural gas-fired boilers and process heaters are the only other equipment that contributes to the emissions inventory in Coachella Valley.

**TABLE 4-2
BOILERS, STEAM GENERATORS AND PROCESS HEATERS EMISSIONS BASED ON 2031 SUMMER
PLANNING INVENTORY**

Industry	VOC (tpd)	NOx (tpd)
010 – Electric Utilities	0.01	0.46
020 – Cogeneration	0.00	0.00
030 – Oil and Gas Production (Combustion)	0.00	0.00
040 – Petroleum Refining (Combustion)	0.00	0.00
050 – Manufacturing and Industrial	0.00	0.01
052 – Food and Agricultural Processing	0.00	0.00
060 – Service and Commercial	0.00	0.01
099 – Other (Fuel Combustion)	0.00	0.00
610 – Residential Fuel Combustion	0.00	0.00
Total¹	0.02	0.49

¹Values may not sum due to rounding

b. Evaluation

i. Available Control Technologies

Low NOx burners (LNB) and ultra-low NOx burners (ULNB), as well as flue gas recirculation (FGR), are commonly used combustion control technologies that manage NOx emissions in boilers, steam generators, and process heaters. The most popular post-combustion add-on control method is selective catalytic reduction (SCR). With ULNB, emission limitations of 7 to 9 ppm²⁷ are often feasible to achieve. Current units burning gaseous fuels can achieve a 9 ppm NOx limit with ULNB and meeting 7 ppm is potentially possible with burner replacements.²⁸ Operators often utilize SCR to attain an emissions limit of 5 ppm or below. There are emerging technologies that have demonstrated achieving 5 ppm and lower

²⁶ U.S. EPA, Title V Permit to Operate, <https://www.regulations.gov/document/EPA-R09-OAR-2020-0266-0001>

²⁷ All ppm emission limits are referenced at 3 percent volume stack gas oxygen (O₂) on a dry basis averaged over a period of 15 consecutive minutes

²⁸ Final Staff Report for PARs 1146, 1146.1 and 1146.2, and PR 1100, South Coast AQMD, December 2018

without the use of SCR and these include ULNB for boilers smaller than 20 million British thermal units per hour (MMBtu/hr).²⁹

ii. South Coast AQMD Control Measures

Table 4-3 summarizes two South Coast AQMD control measures for boilers, steam generators, and process heaters.

**TABLE 4-3
SOUTH COAST AQMD CONTROL MEASURES (BOILERS, STEAM GENERATORS, AND PROCESS HEATERS)**

South Coast AQMD Rule	Applicability	Control Measure
Rule 1135 - Emissions of Oxides of Nitrogen from Electricity Generating Facilities	Electric generating units at electricity generating facilities.	Boilers must achieve 5 ppm NOx at 3% O ₂ .
Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (Amended 12/4/20)	Boilers, steam generators, and process heaters of equal to or greater than 5 MMBtu/hr rated input capacity used in all industrial, institutional, and commercial operations	The various limits in the rule apply to different types of units based on use and size but can be achieved using the following control technologies: LNB, ULNB, SCR
Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (Amended 12/7/18)	Boilers, steam generators, and process heaters that are greater than 2 MMBtu/hr and less than 5 MMBtu/hr rated heat input capacity used in any industrial, institutional, or commercial operation	The various limits in the rule apply to different types of units based on use and size but can be achieved using the following control technologies: LNB, ULNB
Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters (Amended 12/7/18)	Natural gas-fired water heaters, boilers, and process heaters that are less than 2 MMBtu/hr	The various limits in the rule apply to different types of units based on use and size

iii. Review of Control Measures in Other Jurisdictions

To find potential measures to consider as contingency measures, staff evaluated the control measures in place in other California jurisdictions such as San Joaquin Valley Air Pollution Control District (SJVAPCD) and Ventura County APCD (VCAPCD) that regulate boilers, steam generators, and process heaters. These rules are not structured identically across agencies or rules, which can make direct comparison difficult. For example, subcategories are organized differently among the rules. Table 4-4 summarizes the applicable control measures identified in other jurisdictions. In the table, two South Coast AQMD rules for

²⁹ John Zink Hamworthy SOLEX™ Burner: <https://www.johnzinkhamworthy.com/wp-content/uploads/solex-burner.pdf>. Accessed on September 27, 2023

boilers, steam generators, and process heaters – Rules 1135 and 1146 – are compared with SJVAPCD Rules 4306 and 4320 and VCAPCD Rule 74.15. For the purpose of comparison, source category numbering follows the format used in SJVAPCD Rule 4320. Only source categories that contribute to emissions in the Coachella Valley are presented.

Boilers, steam generators, and process heaters permitted to operate in the Coachella Valley are sources of NO_x emissions. Most of these units are installed with ULNB and/or SCR and they exclusively burn natural gas. South Coast AQMD Rule 1146 is more stringent than VCAPCD Rule 74.15, but is less stringent than SJVAPCD Rules 4306 and 4320 for some of the unit categories listed below:

- Category A1 (fire tube boilers rated > 5 MMBtu/hr and ≤ 20 MMBtu/hr)
 - Rule 4320 limit: 5 ppm
 - Rule 1146 limit: 7 ppm
- Category A4 (thermal fluid heaters rated > 5 MMBtu/hr and ≤ 20 MMBtu/hr)
 - Rules 4306 and 4320 limits: 9 ppm
 - Rule 1146 limit: 12 ppm
- Category A5 (all other units rated > 5 MMBtu/hr and ≤ 20 MMBtu/hr)
 - Rule 4320 limit: 5 ppm
 - Rule 1146 limit: 9 ppm
- Categories B (B1, B2, and B3 – boilers rated > 20.0 MMBtu/hr and ≤ 75 MMBtu/hr)
 - Rule 4320 limit: 2.5 ppm
 - Rule 1146 limit: 7 ppm for B1 (20 to 75 MMBtu/hr) and 5 ppm for B2 (20 to 75 MMBtu/hr) and B3 (> 75 MMBtu/hr)
- Category C2 (units rated > 20 MMBtu/hr and ≤ 75 MMBtu/hr)
 - Rule 4320 limit: 5 ppm
 - Rule 1146 limit: 9 ppm

SJVAPCD Rule 4320 includes technology forcing NO_x limits. For example, for categories A1 (5 ppm) and C2 (5 ppm), very few units have achieved these NO_x limits in the SJVAPCD. As of 2020, only 2 percent of 550 units (i.e., 11 units) in these categories were permitted to comply with these NO_x limits.³⁰ Another example is for categories B2 (2.5 ppm) and B3 (2.5 ppm), which have not been demonstrated in practice. Because of these technological challenges, Rule 4320 allows operators to pay a compliance fee in lieu of meeting the technology forcing limits until such limits are proven to be feasible in practice. This contrasts with the limits in South Coast AQMD's rules which are mandatory and do not offer fee based alternative compliance options.

South Coast AQMD Rule 1146 establishes NO_x limits for existing boiler, steam generator and process heater units which have been demonstrated to be achieved in practice. The current NO_x limits for gaseous

³⁰ SJVAPCD, Final Staff Report, "Proposed Amendment to Rule 4306 (Boilers, Steam Generators, and Process Heaters - Phase 3) Proposed amendments to Rule 4320 (Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater Than 5.0 MMBtu/hr)," December 17, 2020, Appendix B: Emissions Reduction Analysis ("Boilers Staff Report: Appendix B")

fuel fired units, excluding digester and landfill gases and fire-tube boilers, with a rated heat input capacity between 5 and 75 MMBtu/hr is 9 ppm in Rule 1146. Based on vendor discussion, NOx emissions at a level of 7 ppm or lower are feasible only with ULNB replacement and new installation. The source test results also showed that it is technically feasible for existing Rule 1146 units (between 5 and 75 MMBtus/hr) to achieve an emission limit of 7 ppm or less with burner replacements. Achieving a 5 ppm NOx limit usually requires the use of SCR. SCR systems are generally utilized for units greater than 10 MMBtu/hr. Although it is theoretically feasible, there are several practical limitations impacting the ability of SCR retrofits to meet 4 ppm or less, such as the age, flow, and size of the catalyst bed of the existing SCR system. The most significant constraint is the inadequate safety margin between the permitted limit and the actual emissions to account for fluctuations in external factors such as ambient temperature or fuel heat input. Due to those limitations, it would not be technologically feasible for SCR retrofits to achieve the lower NOx emission limit (e.g., 2.5 ppm).³¹

The NOx emission limit for thermal fluid heaters in Rule 1146 is 12 ppm. Thermal fluid heaters use water as the heating fluid and typically operate at much higher temperatures than process heaters, which results in higher NOx emissions. ULNB replacement for existing units could meet a 12 ppm NOx limit at the time of rule development, while an emission limit of 9 ppm is available for new units of certain applications. Based on the assumptions of 10 to 90 percent operating capacity of the thermal fluid heaters at different heat capacity sizes, lowering the emission limit from 12 ppm to 9 ppm for existing units would cost \$58,000 to \$523,000 per ton of NOx reduced.³² Due to high cost-effectiveness, the 9 ppm NOx emission limit is considered not feasible.

The implementation timeline is an additional consideration regarding the feasibility of the lower NOx limits discussed in this section. Achieving these limits would potentially require single stage SCR, two stage SCR systems, or next generation ULNB combined with SCR. These emission control technologies require complex retrofits or full unit replacement and require significantly longer than two years to implement. For this reason, South Coast AQMD rules typically provide more than three years for operators to install these technologies to comply with lower emission limits.³³ It is also worth noting that some heaters are incompatible with some of these control technologies (e.g., two stage SCR systems) due to space limitations.

³¹ South Coast AQMD, Final Staff Report for PARs 1146, 1146.1 and 1146.2, December 2018.

<http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2018/2018-dec7-028.pdf?sfvrsn=6>

³² South Coast AQMD, 2022 Air Quality Management Plan, Attachment VI-A-1B to Appendix VI, December 2, 2022

³³ U.S. EPA similarly concluded that tighter limits for this source category are infeasible as a contingency measure due to SCR units requiring more than two years to install in its recently proposed Contingency Measures for Fine Particulate Matter Standards for San Joaquin Valley (88 FR 88008).

**TABLE 4-4
COMPARISON OF EXISTING CONTROL REQUIREMENTS (BOILERS, STEAM GENERATORS, AND PROCESS HEATERS)**

	South Coast AQMD Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (Amended 12/4/20)	SJVAPCD Rule 4306 – Boilers, Steam Generators, and Process Heaters (Amended 12/17/20)	SJVAPCD Rule 4320 – Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (Amended 12/17/20)	VCAPCD Rule 74.15 – Boilers, Steam Generators and Process Heaters (Amended 11/10/20)
Applicability	Boilers, steam generators, and process heaters of equal to or greater than 5 MMBtu/hr rated input capacity used in all industrial, institutional, and commercial operations	Gaseous or liquid fuel fired boilers, steam generator, or process heater with a total rated heat input greater than 5 MMBtu/hr	Gaseous or liquid fuel fired boilers, steam generator, or process heater with a total rated heat input greater than 5 MMBtu/hr	Portable and stationary boilers, steam generators, and process heaters fired on any gaseous fuel or liquid fuel with a rated heat input capacity equal to or greater than 5 MMBtu/hr, except for utility electric power generating units and any auxiliary boiler thereof and water heaters
A. Units with a total rated heat input > 5 MMBtu/hr to ≤ 20 MMBtu/hr, except for Categories C through G units				
A1. Fire Tube Boilers	7 ppm	7 ppm	5 ppm	9 ppm
A2. Units at Schools	9 ppm	9 ppm	9 ppm	9 ppm or 12 ppm
A3. Units fired on Digester Gas	15 ppm	9 ppm	9 ppm	15 ppm
A4. Thermal Fluid Heaters	12 ppm	9 ppm	9 ppm	9 ppm or 12 ppm
A5. All other units	9 ppm	9 ppm	5 ppm	9 ppm or 12 ppm
B. Units with a total rated heat input > 20 MMBtu/hr, except for Categories C through G units				

	South Coast AQMD Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (Amended 12/4/20)	SJVAPCD Rule 4306 – Boilers, Steam Generators, and Process Heaters (Amended 12/17/20)	SJVAPCD Rule 4320 – Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (Amended 12/17/20)	VCAPCD Rule 74.15 – Boilers, Steam Generators and Process Heaters (Amended 11/10/20)
B1. Fire Tube Boilers with a total rated heat input > 20.0 MMBtu/hr and ≤ 75 MMBtu/hr	7 ppm	7 ppm	2.5 ppm	9 ppm
B2. All other units with a total rated heat input > 20.0 MMBtu/hr and ≤ 75 MMBtu/hour	9 ppm for units with previous NOx limit ≤ 12 and > 5 ppm prior to 12/7/18 or 5 ppm	7 ppm	2.5 ppm	9 ppm or 12 ppm
B3. Units with a rated heat input > 75 MMBtu/hr	5 ppm	5 ppm	2.5 ppm	9 ppm or 12 ppm
E. Lower Use Units				
E1. Units limited by a Permit to Operate to an annual heat input of 9 billion Btu/year to 30 billion Btu/year “Low Use” (no more than 10 percent operating capacity)	<ul style="list-style-type: none"> Operate units so stack is maintained with gas oxygen concentrations less than or equal to three percent on a dry basis for 15 min averaging period Tune units at least twice a year or follow different tune up procedure 	30 ppm	9 ppm * Units limited by a Permit to Operate to an annual heat input >1.8 billion Btu/year but < 30 billion Btu/year	<ul style="list-style-type: none"> Operate units so stack is maintained with gas oxygen concentrations less than or equal to three percent on a dry basis for 15 min averaging period Tune units at least twice a year or follow different tune up procedure
Liquid Fueled Units	40 ppm	40 ppm	40 ppm	40 ppm

c. Conclusion

Staff does not propose any contingency measures for this category of units. South Coast AQMD's rules as well as regulations in other jurisdictions do not enforce VOC emission limits for boilers, steam generators, or process heaters. For NO_x, staff considered several potential measures such as lower NO_x limits using ULNB and SCR, but these were not suitable contingency measures considering that it would be technologically infeasible to design, install and operate advanced emission control technology within two years of the triggering event. This feasibility consideration is discussed in more detail in the evaluation section. A contingency measure that will not result in emission reductions until more than two years in the future would not satisfy the criteria of contingency measures as defined in the Draft Guidance.

2. Reciprocating Internal Combustion Engines (RICE)

a. Overview

A stationary RICE includes any internal combustion engine (ICE) which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICES are used in a wide array of industries, including electricity generation (either as stand-alone generators or in cogeneration applications); oil and gas production; agriculture; and commercial/institutional settings (including as back-up electricity generators). NO_x emissions are generated by engines combusting either gaseous or liquid fuels.

As summarized in Table 4-5, RICE contribute 0.16 tpd of NO_x and 0.02 tpd of VOC emissions to the 2031 baseline inventory.

**TABLE 4-5
STATIONARY ENGINE EMISSIONS BASED ON 2031 SUMMER PLANNING INVENTORY**

Industry	VOC (tpd)	NO _x (tpd)
010 – Electric Utilities	0.00	0.00
020 – Cogeneration	0.00	0.00
030 – Oil and Gas Production (Combustion)	0.00	0.00
040 – Petroleum Refining (Combustion)	0.00	0.00
050 – Manufacturing and Industrial	0.01	0.07
052 – Food and Agricultural Processing	0.00	0.00
060 – Service and Commercial	0.00	0.02
099 – Other (Fuel Combustion)	0.00	0.07
Total	0.02	0.16

¹ Values may not sum due to rounding

b. Evaluation

i. Available Control Technologies

Available control techniques for stationary engines vary by engine configuration and are summarized below. Each engine type produces emissions of NO_x and VOCs at different rates and can have differing approaches for controlling emissions.

- Compression-ignition (CI) engines: CI engines are primarily diesel engines but could also be dual-fuel (diesel and natural gas) engines. NO_x can be controlled with either combustion controls (e.g., exhaust gas recirculation) and/or exhaust treatment such as diesel oxidation catalysts as part of a Diesel Particle Filter (DPF) and SCR.
- Spark-ignition (SI) four-stroke rich-burn (4SRB) engines: 4SRB engines use natural gas as primary fuel. NO_x emissions are inherently lower from rich-burn engines compared to lean-burn and add-on controls include three-way catalysts (also known as non-selective catalytic reduction (NSCR)).
- SI four-stroke lean-burn (4SLB) engines: Natural gas is the primary fuel for 4SLB engines. NO_x emissions can be controlled by combustion techniques or exhaust controls, such as SCR.
- SI two-stroke lean-burn (2SLB) engines: 2SLB engines primarily use natural gas. Typically, combustion controls are applied to reduce NO_x, including layered combustion.³⁴

Existing federal regulations require manufacturers to certify stationary CI engines to the U.S. EPA's tiered engine requirements (Tiers 1-4, with Tier 4 being the most stringent).³⁵ Since 2014, new CI engines have been required to meet Tier 4 criteria except for engines qualifying as emergency engines which must be certified to Tier 2 or Tier 3 standards. The U.S. EPA's requirements, on the other hand, do not mandate owners/operators to replace older engines that are uncertified or certified to lower tier levels. U.S. EPA-certified Tier 4 engines are typically not required to install additional controls to meet Best Available Control Technology/Lowest Achievable Emission Rate (BACT/LAER) determinations for NO_x and VOCs. A search of the Reasonably Available Control Technology (RACT)/BACT/LAER Clearinghouse (RBLC) did not identify "beyond Tier 4" restrictions for CI engines.

Existing federal regulations require stationary SI engines to meet emissions standards, but do not require U.S. EPA certification for all new SI engines.³⁶ Like CI engines, these regulations do not require

³⁴ In a layered or stratified charge arrangement: a pre-stratified control kit is applied that results in lower combustion temperatures and lower NO_x formation. Example technologies that could be considered layered stratification include turbochargers and inter-cooling, pre-chamber ignition or high energy ignition, improved fuel injection control, and air/fuel ratio control

³⁵ See [40 CFR Part 60, Subparts IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines](#), and [40 CFR Part 1039 – Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines](#)

³⁶ See [40 CFR Part 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines](#)

owner/operators to replace older engines or upgrade engines to meet the most recent standards. However, to meet BACT/LAER determinations for NO_x, the addition of add-on NO_x controls is often required (e.g., SCR or a NSCR, depending on engine type).³⁷

ii. South Coast AQMD Control Measures

Table 4-6 summarizes South Coast AQMD rules and control measures that are applicable to stationary engines. In addition to rule requirements, South Coast AQMD requires that new or modified emergency backup generators with $\geq 1,000$ horsepower CI engines meet updated LAER and BACT guidelines which require that the units achieve U.S. EPA's Tier 4 Final emission standards.³⁸ Existing Tier 2 units can achieve Tier 4 Final emission limits through the use of DPF and SCR.

TABLE 4-6
SOUTH COAST AQMD RULES FOR RECIPROCATING ENGINES

South Coast AQMD Rule	Applicability	Emission Limits
Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines (Amended 11/3/23)	All stationary and portable engines over 50 rated brake horsepower (bhp)	
	Stationary ICE ≥ 50 bhp, including landfill and digester gas (i.e., biogas) fired engines	11 ppm NO _x 30 ppm VOC
	Stationary, low-use engines	36 ppm NO _x for ≥ 500 bhp 45 ppm NO _x for < 500 bhp 250 ppm VOC
	Stationary, low-use landfill or biogas fired engines	36 x ECF* ppm NO _x for ≥ 500 bhp, 45 x ECF ppm NO _x for < 500 bhp 40 ppm VOC (landfill gas) 250 x ECF ppm VOC (biogas)
	Stationary, non-emergency electrical generators	0.070 lbs/mega Watt (MW)-hr NO _x 0.10 lbs/MW-hr VOC

* ECF is the efficiency correction factor and is no less than 1.0.

iii. Review of Control Measures in Other Jurisdictions

Table 4-7 compares and summarizes the applicable control measures in South Coast AQMD with the requirements in other jurisdictions including SJVAPCD, the Sacramento Metropolitan Air Quality Management District (SMAQMD), and the Maricopa County Air Quality Department (MCAQD). The statewide Air Toxics Control Measure (ATCM) for stationary CI engines is also evaluated.³⁹ South Coast AQMD's Rule 1110.2 requires most engines to meet 11 ppm and 30 ppm NO_x and VOC emission limits, respectively. Some engines used in agricultural operations can be exempt from this requirement if a Tier

³⁷ <https://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch&lang=en>

³⁸ <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2022/2022-sept2-030.pdf?sfvrsn=6You>

³⁹ <https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/finalreg2011.pdf>

4 diesel engine is installed and other requirements are met. Overall, South Coast AQMD's Rule 1110.2 is designed to incentivize electrification and has the most stringent emission limits for stationary engines compared to other air districts.

c. Conclusion

Staff does not propose any contingency measures for stationary engines. Staff did not identify any more stringent emission limits in other districts' rules. While lower limits of NO_x could potentially be achieved by installing SCR, installing SCR and achieving reductions within two years of triggering would be technically and practically infeasible. Contingency measures should be measures that would result in the projected emission reductions within a year after the triggering event, or within two years with proper justification. A contingency measure that will not result in emission reductions until further in the future would not satisfy the criteria of contingency measures as defined in the Draft Guidance.

**TABLE 4-7
COMPARISON OF EXISTING CONTROL REQUIREMENTS (RECIPROCATING INTERNAL COMBUSTION ENGINES)**

	South Coast AQMD Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Engines (Amended 11/1/19)	SJVAPCD Rule 4702 – Internal Combustion Engines (Amended 8/19/21)	SMAQMD Rule 412 – Stationary Internal Combustion Engines Located at Major Sources of NOx (Adopted 6/1/95)	Maricopa County, AZ Rule 324 – Stationary Reciprocating Internal Combustion Engines (RICE) (Amended 6/23/21)	CA ATCM for Diesel Stationary Compression Ignition Engines (Amended 5/19/11)
Applicability (Equipment, size, fuel type)	All stationary and portable engines rated >50 bhp	All internal combustion engines >50 bhp* * For non-agriculture operations (AO) engines >25 to ≤50 bhp, if non-certified, these may not be offered for sale.	Stationary IC engines rated >50 bhp located at major sources of NOx* * Major sources have potential to emit >25 tpy	Stationary IC engines >125 bhp used for cogeneration; located not at a major NOx source Stationary IC engines >50 bhp used for cogen not at a major NOx source if all engines aggregate to >125 bhp Stationary IC engines >50 bhp at major NOx sources Nonroad engines >125 bhp with potential to emit: 0.5 tpy PM2.5; 1.0 tpy NOx, 0.5 tpy VOC; or 1.0 tpy CO	All stationary diesel engines >50 bhp
Control Measure					
NOx emissions limit(s)	Stationary engines with approved emission control plan: 11 ppm	Non-AO SI engines by 12/31/2023: 1. Rich-burn: a. 11 ppm 2. Lean-burn:	SI rich-burn: 25 ppm or 90% control SI lean-burn: 65 ppm or 90% control	CI engines >250 bhp: 530 ppm CI engines >399 bhp: 550 ppm	Generally the same as EPA certified standards

	South Coast AQMD Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Engines (Amended 11/1/19)	SJVAPCD Rule 4702 – Internal Combustion Engines (Amended 8/19/21)	SMAQMD Rule 412 – Stationary Internal Combustion Engines Located at Major Sources of NOx (Adopted 6/1/95)	Maricopa County, AZ Rule 324 – Stationary Reciprocating Internal Combustion Engines (RICE) (Amended 6/23/21)	CA ATCM for Diesel Stationary Compression Ignition Engines (Amended 5/19/11)
	<p>Other stationary engines without an emission control plan, biogas-fired: 11 ppm</p> <p>Limits for low-use engines*:</p> <ul style="list-style-type: none"> • <500 bhp = 45 ppm • ≥500 bhp = 36 ppm <p>* Low use engines <500 HOP/yr or 1 billion Btu/yr. Slightly higher limits are also applicable to landfill or biogas fired engines to account for efficiency</p> <p>Non-emergency electrical generators: 0.070 lb/MWh</p> <p>Note: agricultural and non-agricultural engines held to the same standards but different compliance schedules applied.</p>	<p>a. Gas compression engines: 40 ppm</p> <p>b. >50% waste gas: 40 ppm</p> <p>c. Others: 11 ppm</p> <p>AO SI Engines:</p> <ul style="list-style-type: none"> • Rich-burn (by 12/31/23): 11 ppm or 0.15 g/bhp-hr • Lean-burn (by 12/31/29): 0.6 g/bhp-hr or 43 ppm <p>Certified AO and non-AO compression-ignited (CI) engines (no later than 6/1/18):</p> <ul style="list-style-type: none"> • EPA certified Tier 1 or 2: EPA Tier 4 • EPA certified Tier 3 or 4: CI standard in effect at time of installation <p>Non-certified AO and non-AO CI engines (by 2011):</p>	<p>CI: 80 ppm or 90% control</p>	<p>(at major sources, all CI: 530 ppm)</p> <p>SI lean-burn: 110 ppm</p> <p>SI rich-burn: 20 ppm</p>	

	South Coast AQMD Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Engines (Amended 11/1/19)	SJVAPCD Rule 4702 – Internal Combustion Engines (Amended 8/19/21)	SMAQMD Rule 412 – Stationary Internal Combustion Engines Located at Major Sources of NOx (Adopted 6/1/95)	Maricopa County, AZ Rule 324 – Stationary Reciprocating Internal Combustion Engines (RICE) (Amended 6/23/21)	CA ATCM for Diesel Stationary Compression Ignition Engines (Amended 5/19/11)
		<ul style="list-style-type: none"> • 50 – 500 bhp: EPA Tier 3 or Tier 4 • 500 – 750 bhp and <1000 annual HOP: EPA Tier 3 • >750 bhp and <1000 annual HOP: EPA Tier 4 			
VOC Emission Limits	<p>Stationary engines with approved emission control plan: 30 ppm</p> <p>Other stationary engines without an emission control plan, biogas-fired: 30 ppm</p> <p>Limit for low-use engines*: 250 ppm</p> <p>* Low use engines <500 HOP/yr or 1 billion Btu/yr. Slightly higher limits are also applicable to landfill or biogas fired engines to account for efficiency</p>	<p>Non-AO SI engines by 12/31/2023:</p> <ol style="list-style-type: none"> 1. Rich-burn: 90 ppm 2. Lean-burn: 90 ppm <p>AO SI Engines by 12/31/2023:</p> <ul style="list-style-type: none"> • Rich-burn: 90 ppm • Lean-burn: 90 ppm <p>Certified AO and non-AO compression-ignited (CI) engines (no later than 6/1/18):</p> <ul style="list-style-type: none"> • EPA certified Tier 1 or 2: EPA Tier 4 • EPA certified Tier 3 or 4: CI standard in effect at time of installation 	<p>SI rich-burn: 250 ppm</p> <p>SI lean-burn: 750 ppm</p> <p>CI: 750 ppm</p>	<p>CI engines >250 bhp: Not Applicable</p> <p>SI lean-burn: 800 ppm</p> <p>SI rich-burn: 800 ppm</p>	Generally the same as EPA certified standards

	South Coast AQMD Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Engines (Amended 11/1/19)	SJVAPCD Rule 4702 – Internal Combustion Engines (Amended 8/19/21)	SMAQMD Rule 412 – Stationary Internal Combustion Engines Located at Major Sources of NOx (Adopted 6/1/95)	Maricopa County, AZ Rule 324 – Stationary Reciprocating Internal Combustion Engines (RICE) (Amended 6/23/21)	CA ATCM for Diesel Stationary Compression Ignition Engines (Amended 5/19/11)
	<p>Non-emergency electrical generators: 0.10 lb/MWh</p> <p>Note: agricultural and non-agricultural engines held to the same standards but different compliance schedules applied.</p>	<p>Non-certified AO and non-AO CI engines (by 2011):</p> <ul style="list-style-type: none"> • 50 – 500 bhp: EPA Tier 3 or Tier 4 • 500 – 750 bhp and <1000 annual HOP: EPA Tier 3 • >750 bhp and <1000 annual HOP: EPA Tier 4 			
Exemptions	<ul style="list-style-type: none"> • Engines powering orchard wind machines • Emergency standby engines, engines use for fire-fighting and flood control, and any other emergency engines limited to 200 hrs/yr • Laboratory engines • Engines used for performance testing • Auxiliary engines used to power other engines/ turbines during start-ups 	<ul style="list-style-type: none"> • Engines used to propel implements of husbandry • Engines used exclusively to power wind machines • Some de-rated AO and non-AO engines with de-rating before 6/1/2005 (below 50 bhp) • Engines powering mobile agricultural equipment • State-registered or Rule 2280 registered 	<ul style="list-style-type: none"> • Emergency standby engines • Engines used exclusively for agricultural purposes • Engine test stands • Engine control evaluations • Nonroad engines • Motor vehicle engines • Flight line engines • Low use engines: <ul style="list-style-type: none"> ○ SI: varies by engine size, range is 40-200 hrs/yr 	<ul style="list-style-type: none"> • Emergency standby engines used for power, emergency services, sewage overflow • Compressed gas stationary RICE used for solar testing and research • Engine performance verification, including at the production facility • Engine development and testing • Flight line engines • Nonroad engines 	Some emergency engines not required to install particulate matter controls

	South Coast AQMD Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Engines (Amended 11/1/19)	SJVAPCD Rule 4702 – Internal Combustion Engines (Amended 8/19/21)	SMAQMD Rule 412 – Stationary Internal Combustion Engines Located at Major Sources of NOx (Adopted 6/1/95)	Maricopa County, AZ Rule 324 – Stationary Reciprocating Internal Combustion Engines (RICE) (Amended 6/23/21)	CA ATCM for Diesel Stationary Compression Ignition Engines (Amended 5/19/11)
	<ul style="list-style-type: none"> • Portable engines registered under state registration (Title 13, Article 5 of CCR) • Agriculture stationary engines that: cannot get electrical service or operator does not qualify for state funding under CA Health and Safety Code Section 44229; and replace engines with Tier 4 replacement engines; and does not operate the Tier 4 engines in a manner to exceed the not-to-exceed standards of 40 CFR Part 1039 Section 1039.101(e) • Some additional exemptions also apply 	<p>portable equipment engines</p> <ul style="list-style-type: none"> • Emergency standby or low use engines • Public safety equipment 	<ul style="list-style-type: none"> ○ CI: varies by engine size, range is 200-1,435 hrs/yr 	<ul style="list-style-type: none"> • Low use engines: <ul style="list-style-type: none"> ○ Engines ≤1000 bhp operating <200 hrs/yr ○ Engines >1000 bhp operating <100 hrs/yr 	
NOx emissions compliance alternative	None listed	Payment of NOx emissions fee in lieu of meeting the emissions limits: sunsets 12/31/23	None listed	None listed	None listed

	South Coast AQMD Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Engines (Amended 11/1/19)	SJVAPCD Rule 4702 – Internal Combustion Engines (Amended 8/19/21)	SMAQMD Rule 412 – Stationary Internal Combustion Engines Located at Major Sources of NOx (Adopted 6/1/95)	Maricopa County, AZ Rule 324 – Stationary Reciprocating Internal Combustion Engines (RICE) (Amended 6/23/21)	CA ATCM for Diesel Stationary Compression Ignition Engines (Amended 5/19/11)
		after which engines must meet limits for non-AO SI engines			

3. Combustion Turbines

a. Overview

Industries operating in the Coachella Valley that use combustion turbines include electric utilities and commercial operations. Most often, combustion turbines are used to generate power for supplying the electrical grid or for on-site use. Natural gas and diesel/distillate oil are the only fuels combusted according to the emissions inventory.

NOx emissions result from fuel combustion in various types of industry. Emissions are summarized below in Table 4-8 by industry.

**TABLE 4-8
COMBUSTION TURBINE EMISSIONS BASED ON 2031 SUMMER PLANNING INVENTORY**

Industry	VOC (tpd)	NOx (tpd)
010 – Electric Utilities	0.01	0.21
020 – Cogeneration	0.00	0.00
030 – Oil and Gas Production (Combustion)	0.00	0.00
040 – Petroleum Refining (Combustion)	0.00	0.00
050 – Manufacturing and Industrial	0.00	0.00
052 – Food and Agricultural Processing	0.00	0.00
060 – Service and Commercial	0.00	0.02
Total	0.01	0.23

Electric utilities account for over 85 percent of the category total NOx emissions, and natural gas is the only fuel combusted in electric utility turbines in the Coachella Valley. For the service and commercial sector, over 90 percent of the emissions are from natural gas-fired turbines, with a small contribution from diesel/distillate oil fired turbines.

Control of NOx from combustion turbines can be accomplished using combustion controls, such as water or steam injection dry low NOx (DLN) and ULNB, or post-combustion controls, including SCR.⁴⁰ DLN combustors can achieve between 9 ppm and 25 ppm in gas turbines operating with natural gas and between 10 ppm and 27.5 ppm in gas turbines operating on refinery gas. SCR can achieve about 95 percent NOx reduction in both types of gas turbines. It is common for multiple control technologies to be applied (e.g., DLN + SCR + oxidation catalyst). Combination of DLN and SCR can achieve 2 ppm NOx with proper engineering and design.

⁴⁰ <https://www.epa.gov/system/files/documents/2022-03/combustion-turbine-nox-technology-memo.pdf>

b. Evaluation

Emissions from combustion turbines are regulated by Rules 1134 and 1135. Rule 1134 establishes limits for NOx emissions based on unit size (0.3 MW and greater) and fuel type (gas or oil). The rule has different compliance limits through the end of 2023 by unit size and has varied emission limits on and after January 1, 2024 by fuel type. Rule 1135 establishes 2 ppm and 2.5 ppm NOx limits for combined cycle and simple cycle gas turbines, respectively, at electricity generating facilities (EGFs). All emission limits are expressed on a dry volume basis, corrected to 15 percent O₂. The emission limits under Rules 1134 and 1135 are further detailed in Table 4-9.

**TABLE 4-9
SOUTH COAST AQMD RULES FOR COMBUSTION TURBINES**

Rule	Applicability	Control Measure
South Coast AQMD Rule 1134 – Emissions of Oxides of Nitrogen from Stationary Gas Turbines (Amended 2/4/22)	Applies to all stationary gas turbines, 0.3 MW and greater	NOx emission limits are identified below by unit size (MW rating) and by fuel type. <u>Beginning 1/1/2024:</u> <ul style="list-style-type: none"> • Liquid fuel turbines on outer continental shelf (OCS): 30 ppm • Natural gas - combined cycle/cogeneration turbine: 2 ppm • Natural gas - simple cycle: 2.5 ppm • Produced gas: 9 ppm • Produced gas - OCS turbines: 15 ppm • Other (including recuperative gas turbines): 12.5 ppm • Natural gas - compressor gas turbines: 3.5 ppm
South Coast AQMD Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities (Amended 1/7/22)	Applies to electric generating units at electricity generating facilities	Combined cycle gas turbines and associated duct burners: 2 ppm Simple cycle gas turbines: 2.5 ppm

Staff examined stationary gas turbine rules in other California air districts as well as the RBLC as summarized in Table 4-10.

**TABLE 4-10
COMPARISON OF EXISTING CONTROL REQUIREMENTS FOR GAS TURBINES**

Source Category	South Coast AQMD Rules 1134 and 1135	SJVAPCD Rule 4703	BAAQMD Rule 9-9	RACT/BACT/LAER Clearinghouse (RBLC)
<3 MW: gas fuel	Rules 1134/1135: 2.5 ppm (simple cycle NG) Rule 1134: 9 ppm (PG) 12.5 ppm (other)	9 ppm	<0.5 MW units: exempt 42 ppm (natural gas) 50 ppm (RFG, WG, LPG)	2 ppm (<25 MW non-EGU NG)
<3 MW: liquid fuel	^	25 ppm	<0.5 MW units: exempt 65 ppm	No data
3-10 MW pipeline turbine: gas fuel*	Rule 1134: 3.5 ppm (gas compressors)	8 ppm	25-42 ppm (NG) 50 ppm (RFG, WG, LPG)	2 ppm (<25 MW non-EGU NG)
3-10 MW pipeline turbine: liquid fuel	^	25 ppm	65 ppm	-
3-10 MW other turbines (<877 hr/yr): gas fuel	Rule 1134/1135: 2.5 ppm (simple cycle NG) Rule 1134: 9 ppm (PG) 12.5 ppm (other)	9 ppm	25-42 ppm (NG) 50 ppm (RFG, WG, LPG)	2 ppm (<25 MW non-EGU NG)
3-10 MW other turbines (<877 hr/yr): liquid fuel	^	25 ppm	65 ppm	-
3-10 MW other turbines (>877 hr/yr): gas fuel	Rule 1134/1135: 2.5 ppm (simple cycle NG) Rule 1134: 9 ppm (PG) 12.5 ppm (other)	5 ppm	25-42 ppm (NG) 50 ppm (RFG, WG, LPG)	2 ppm (<25 MW non-EGU NG)
3-10 MW other turbines (>877 hr/yr): liquid fuel	^	25 ppm	65 ppm	-
>10 MW simple cycle (<200 hr/yr): gas fuel	Rule 1134/1135: 2.5 ppm (simple cycle NG)	25 ppm	15 ppm (15 to 25 MW) 9 ppm (>25 to 50 MW) 5 ppm (>50 MW NG) 9 ppm (>50 MW RFG, WG)	2 ppm (>25 MW)

Source Category	South Coast AQMD Rules 1134 and 1135	SJVAPCD Rule 4703	BAAQMD Rule 9-9	RACT/BACT/LAER Clearinghouse (RBLC)
>10 MW simple cycle (<200 hr/yr): liquid fuel	^	42 ppm	42 ppm (15 to 25 MW) 25 ppm (>25 MW)	4 ppm (>25 MW EGU, ULSD)
>10 MW simple cycle (>200 hr/yr): gas fuel	Rule 1134/1135: 2.5 ppm (NG)	5 ppm	15 ppm (15 to 25 MW) 9 ppm (>25 to 50 MW) 5 ppm (>50 MW NG) 9 ppm (>50 MW RFG, WG)	2 ppm (>25 MW)
>10 MW simple cycle (>200 hr/yr): liquid fuel	^	25 ppm	42 ppm (15 to 25 MW) 25 ppm (>25 MW)	4 ppm (>25 MW EGU ULSD)
>10 MW combined cycle, standard compliance: gas fuel	Rule 1134/1135: 2.5 ppm (NG)	5 ppm	15 ppm (15 to 25 MW) 9 ppm (>25 to 50 MW) 5 ppm (>50 MW NG) 9 ppm (>50 MW RFG, WG)	2 ppm (>25 MW)
>10 MW combined cycle, standard compliance: liquid fuel	^	25 ppm	42 ppm (15 to 25 MW) 25 ppm (>25 MW)	4 ppm (>25 MW EGU ULSD)
>10 MW combined cycle, enhanced compliance: gas fuel	Rule 1134/1135: 2.5 ppm (NG)	3 ppm	15 ppm (15 to 25 MW) 9 ppm (>25 to 50 MW) 5 ppm (>50 MW NG) 9 ppm (>50 MW RFG, WG)	2 ppm (>25 MW)
>10 MW combined cycle, enhanced compliance: liquid fuel	^	25 ppm	42 ppm (15 to 25 MW) 25 ppm (>25 MW)	4 ppm (>25 MW EGU ULSD)

Abbreviations: EGU – electricity generating unit; NG – natural gas; PG – process gas; RFG – refinery fuel gas; WG – waste gas; LPG – liquefied petroleum gas; ULSD – ultra-low sulfur diesel.

* 12 ppm is the limit under non-steady state operating conditions.

^ Rule 1134 disallows the use of liquid fuel in gas turbines except for units located in the outer continental shelf (OCS) or units providing emergency power to a health facility during a natural gas curtailment; Rule 1135 has similar provisions for EGUs during natural gas curtailment. NO_x limits during these periods are specified in the permit.

c. Conclusion

Staff compared South Coast AQMD's NOx emission limits for combustion turbines to those in other air districts, although there were no applicable VOC limits identified for comparison. South Coast AQMD's NOx emission limits are generally the most stringent and are equivalent to BACT standards. While the RBLC contains slightly lower emission limits for certain categories, lowering regulatory limits as a contingency measure would not be appropriate as affected sources would need to design and install advanced emission control technology such as SCR. This feasibility consideration is discussed in further detail in the evaluation section for boilers, steam generators, and process heaters. No contingency measures are proposed for combustion turbines, as implementing potential measures within 2 years is not feasible.

4. Residential and Commercial Fuel Combustion

a. Overview

Major source categories 060-020 (Service and Commercial-Space Heating), 060-030 (Service and Commercial-Water Heating), 610-606 (Residential Fuel Combustion-Space Heating), and 610-608 (Residential Fuel Combustion-Water Heating) are comprised of combustion appliances or furnaces in commercial and residential buildings that typically burn natural gas. Table 4-11 summarizes the annual emissions of NOx and VOCs from these sources in the 2031 baseline emissions inventory. Note that residential wood combustion is evaluated separately (see Miscellaneous Processes).

**TABLE 4-11
COMMERCIAL AND RESIDENTIAL SPACE AND WATER HEATERS EMISSIONS BASED ON 2031 SUMMER
PLANNING INVENTORY**

Source Category	VOC (tpd)	NOx (tpd)
060-020: Service and Commercial – Space Heating	0.00	0.01
060-030: Service and Commercial – Water Heating	0.00	0.02
610-606: Residential Fuel Combustion – Space Heating	0.01	0.08
610-608: Residential Fuel Combustion – Water Heating	0.01	0.06
Total	0.02	0.17

Manufacturers of water heaters have implemented combustion modifications to meet the NOx limits required in rules by South Coast AQMD and other jurisdictions. This is done using burner designs such as LNBS and ULNBS, incorporating design principles that include staged air burners, staged fuel burners, pre-mix burners, internal recirculation, and radiant burners.

It is important to note that South Coast AQMD's existing rules for these emission categories, as well as existing rules in other jurisdictions, apply to new units manufactured or installed after the rule's compliance date. As a result, achieving emission reductions from these sources is difficult because these restrictions do not apply to the existing population of units and only apply when an existing unit needs to be replaced or a

unit is installed in a new home or establishment. According to the International Association of Certified Home Inspectors (NACHI), a conventional water heater has an expected service life of 6 to 12 years, a pool water heater has a typical life of 8 years, furnaces have a typical life of 15 to 25 years, and heat pumps and heat exchangers typically last 10 to 15 years.⁴¹ These life expectancies are guidelines only, and a number of factors can influence the actual life of these units including the quality of the unit, weather, usage, installation, and maintenance.

b. Evaluation

South Coast AQMD currently has three rules that regulate NOx emissions from residential and commercial water heating (Rules 1121 and 1146.2, respectively) and residential space heating (Rule 1111). Rule 1121 regulates NOx emissions from residential type, natural gas-fired water heaters with heat input rates less than 75,000 Btu/hr; Rule 1146.2 regulates NOx emissions from small boilers, process heaters, and water heaters including the commercial sector with heat input rates less than or equal to 2,000,000 Btu/hr; and Rule 1111 regulates NOx emissions from residential type, natural gas-fired central furnaces for heating with a heat input rate less than 175,000 Btu/hr or for combination heating and cooling units with a cooling rate less than 65,000 Btu/hr. The emission limits that currently apply to newly manufactured or installed residential space and water heaters and commercial water heaters are itemized in Table 4-12.

**TABLE 4-12
SOUTH COAST AQMD CONTROL MEASURES FOR SPACE AND WATER HEATERS**

Rule	Applicability	Control Measure
South Coast AQMD Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters (Amended 9/3/04)	Residential type, natural gas-fired water heaters rated <75,000 Btu/hr; exemptions: <ul style="list-style-type: none"> • Water heaters rated ≥75,000 Btu/hr • Water heaters used in recreational vehicles • Water heaters in mobile homes (except where specified) 	<ul style="list-style-type: none"> • 10 ng NOx/joule or 15 ppm • Gas-fired mobile home water heaters: 40 ng/joule or 55 ppm
South Coast AQMD Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters (Amended 12/7/18)	Natural gas-fired water heaters, boilers, and process heaters with a rated heat input ≤2,000,000 Btu/hr	14 ng/joule or 20 ppm
South Coast AQMD Rule 1111 – Reduction of NOx Emissions from Natural Gas-Fired, Fan-	Natural gas-fired central furnaces rated <175,000 Btu/hr or combined heating and	14 ng/joule for both condensing and non-condensing furnaces,

⁴¹ International Association of Certified Home Inspectors, InterNACHI’s Standard Estimated Life Expectancy Chart for Homes, <https://www.nachi.org/life-expectancy.htm>, accessed November 1, 2023

Rule	Applicability	Control Measure
Type Central Furnaces (Amended 9/1/23)	cooling units rated <65,000 Btu/hr	weatherized furnace, and mobile home furnace; Mitigation fee alternate compliance option end date extended to 9/30/25 for mobile home furnaces

As summarized in Table 4-12, South Coast AQMD's regulated limits are 10 ng NOx/joule for water heaters and 14 ng NOx/joule for space heaters. Staff also examined water and space heater emission limits that have been implemented or recommended for implementation in other air districts in Table 4-13.

**TABLE 4-13
OTHER AIR DISTRICTS' CONTROL MEASURES FOR SPACE AND WATER HEATERS**

Rule	Applicability	Control Measure
SJVAPCD Rule 4308 – Boilers, Steam Generators, and Process Heaters - 0.075 MMBtu/hr to less than 2.0 MMBtu/hr (Amended 11/14/13)	Applies to boilers, steam generators, process heaters and water heaters rated from 0.075 to 2 MMBtu/hr; exemptions: <ul style="list-style-type: none"> • Units installed in manufactured homes • Units installed in recreational vehicles • Hot water pressure heaters 	Pool Heaters using natural gas: <ul style="list-style-type: none"> • ≥ 0.075 to ≤ 0.4 MMBtu/hr: 0.068 lb/MMBtu or 55 ppm • > 0.4 to < 2.0 MMBtu/hr: 0.024 lb/MMBtu or 20 ppm All other units using natural gas: 0.024 lb/MMBtu or 20 ppm Units fired on liquid fuel: <ul style="list-style-type: none"> • ≥ 0.075 to ≤ 0.4 MMBtu/hr: 0.093 lb/MMBtu or 77 ppm • > 0.4 MMBtu/hr: 0.036 lb/MMBtu or 30 ppm
SJVAPCD Rule 4905 – Natural Gas-Fired, Fan-Type Central Furnaces (Amended 12/16/21)	Applies to natural gas-fired, fan-type central furnaces <175,000 Btu/hr and combination heating and cooling units <65,000 Btu/hr; Exemptions: <ul style="list-style-type: none"> • Units to be installed with propane conversion kits for propane firing only 	Condensing, Non-condensing, Weatherized, and Manufactured Home Units: 14 ng/joule of heat output Emission fee compliance option for manufacturers; fee end date has passed for all unit types except Manufactured Home units with fee end date of 9/30/2023
SJVAPCD Rule 4902 – Residential Water Heaters (Certified Water Heaters) (Amended 3/19/09)	Applies to natural gas-fired residential water heaters $\leq 75,000$ Btu/hr; exemptions: <ul style="list-style-type: none"> • Water heaters $> 75,000$ Btu/hr • Water heaters using fuels other than natural gas 	Natural gas-fired mobile home water heater: 40 ng NOx/joule of heat output Natural gas-fired pool heater: 40 ng NOx/joule

Rule	Applicability	Control Measure
	<ul style="list-style-type: none"> Water heaters used exclusively in recreational vehicles 	<p>Natural gas-fired water heater (excluding mobile home water heaters, instantaneous water heaters, and pool heaters): 10 ng NOx/joule</p> <p>Natural gas-fired instantaneous residential water heaters: 14 ng NOx/joule</p>
<p>SMAQMD Rule 414 – Water Heaters, Boilers and Process Heaters Rated Less Than 1,000,000 Btu per Hour (Amended 10/25/18)</p>	<p>Water Heaters, boilers, or process heaters rated <1 million Btu/hr fired with gaseous or nongaseous fuels; exemptions:</p> <ul style="list-style-type: none"> Water heaters in recreational vehicles Pool/spa heaters <75,000 Btu/hr Water heaters, boiler, and process heaters fired with liquefied petroleum gas Hot water pressure washers fired with gaseous or liquid fuels 	<p><75,000 Btu/hr:</p> <ul style="list-style-type: none"> Mobile Home: 40 ng NOx/joule or 55 ppm All others: 10 ng NOx/joule or 15 ppm <p>75,000 to < 400,000 Btu/hr:</p> <ul style="list-style-type: none"> Pool/spa: 40 ng NOx/joule or 55 ppm All others: 14 ng NOx/joule or 20 ppm <p>400,000 to < 1 million Btu/hr:</p> <ul style="list-style-type: none"> All types – 14 ng NOx/joule or 20 ppm
<p>BAAQMD Regulation 9, Rule 6 – Nitrogen Oxides Emissions from Natural Gas-Fired Water Heaters (Amended 3/15/23)</p>	<p>Natural Gas-Fired Water Heaters and Boilers; exemptions:</p> <ul style="list-style-type: none"> Natural gas-fired water heaters and boilers rated > 2 million Btu/hr Natural gas water heaters used in recreational vehicles Water heaters using a fuel other than natural gas <p>Natural gas-fired pool/spa heaters rated <400,000 Btu/hr</p>	<p>Natural gas-fired storage tank water heaters ≤75,000 Btu/hr:</p> <ul style="list-style-type: none"> 10 ng NOx/joule (excludes water heaters used for mobile homes) 0 ng NOx/joule (manufactured after 1/1/27; excludes water heaters used for mobile homes) <p>Natural gas-fired boilers and water heaters >75,000 to 2 million Btu/hr:</p> <ul style="list-style-type: none"> 14 ng NOx/joule 0 ng NOx/joule (manufactured after 1/1/31) <p>Natural gas-fired boilers and water heaters 400,000 to 2 million Btu/hr: 14 ng NOx/joule</p> <p>Natural gas-fired mobile home water heaters: 40 ng NOx/joule</p> <p>Natural gas-fired pool/spa heaters >400,000 to 2 million Btu/hr: 14 ng NOx/joule</p>
<p>San Diego Air Pollution Control District (SDAPCD) Rule 69.5.1 – Natural Gas-</p>	<p>Natural Gas-Fired Water Heaters ≤ 75,000 Btu/hr; exemptions:</p> <ul style="list-style-type: none"> Water heaters rated >75,000 Btu/hr Water heaters used in recreational vehicles 	<p>Natural gas-fired water heater (excluding mobile home water heaters): 10 ng NOx/joule or 15 ppm</p>

Rule	Applicability	Control Measure
Fired Water Heaters (Adopted 6/24/15)	<ul style="list-style-type: none"> Water heaters used exclusively to heat swimming pools and hot tubs Water heaters using fuels other than natural gas Instantaneous water heaters 	Natural gas-fired mobile home water heater: 40 ng NOx/joule or 55 ppm
VCAPCD Rule 74.11 – Natural Gas-Fired Water Heaters (Revised 1/12/10)	<p>Natural Gas-Fired Water Heaters <75,000 Btu/hr; exemptions:</p> <ul style="list-style-type: none"> Water heaters rated >75,000 Btu/hr Natural gas water heaters used in recreational vehicles 	<p>Natural gas-fired water heater (excluding mobile home water heaters): 10 ng NOx/joule</p> <p>Natural gas-fired mobile home water heater: 40 ng NOx/joule</p>
VCAPCD Rule 74.11.1 – Large Water Heaters and Small Boilers (Revised 9/11/12)	Large Water Heaters and Small Boilers; exemptions	<p>Units rated 75,000 to 400,000 Btu/hr: 14 ng NOx/joule</p> <p>Units rated 400,000 to 1 million Btu/hr: 20 ppm NOx (after 1/1/13)</p>
VCAPCD Rule 74.22 – Natural Gas-Fired, Fan-Type Central Furnaces (Adopted 11/9/93)	<p>Natural Gas-Fired, Fan-Type Central Furnaces; exemptions:</p> <ul style="list-style-type: none"> Units installed in mobile homes 	40 ng NOx/joule
BAAQMD Regulation 9, Rule 4 – Nitrogen Oxides from Natural Gas-Fired Furnaces (Amended 3/15/23)	Natural gas-fired furnaces rated 175,000 Btu/hr or less	<p>Natural gas-fired fan type central furnace:</p> <ul style="list-style-type: none"> 40 ng NOx/joule (1984+) 14 ng NOx/joule (2024+) <p>0 ng NOx/joule (manufactured after 1/1/29)</p>
CARB Zero-Emission Standard for Space and Water Heaters	Space heaters and water heaters, implementation begins in 2030	Zero emission standard
Other Identified Potential Measures	Residential space and water heating	<ul style="list-style-type: none"> Develop incentives for early replacement of residential space and water heaters with high-efficiency electric heat pumps or zero-emission heaters Require that, at replacement, natural gas and propane water or space heaters be replaced with units that run on electricity Require a zero-NOx appliance standard in existing buildings. <p>Require new residential buildings to be all-electric as currently implemented in 77 jurisdictions across California states⁴²</p>

⁴² J. Gable, Sierra Club, “California’s Cities Lead the Way on Pollution-Free Homes and Buildings,” February 14, 2023, <https://www.sierraclub.org/articles/2021/07/californias-cities-lead-way-pollution-free-homes-and-buildings>

None of the current limits in other jurisdictions are more stringent than those currently in place in the South Coast AQMD. However, BAAQMD's rules include zero emission limits for furnaces and water heaters that begin to phase in for new units starting in 2027.

c. Conclusion

South Coast AQMD is already pursuing rulemaking to require newly sold or installed residential fuel combustion units to be zero emission where feasible and low NO_x where not.⁴³ This is a follow up of commitments included in the 2022 AQMP to attain the 2015 ozone NAAQS. Due to the urgent need to achieve emission reductions to attain ozone NAAQS, it would be impractical to withhold the zero emission limits to satisfy contingency measure obligations - these emission reductions are needed for attainment purposes. According to U.S. EPA's Draft Guidance and recent case laws, a control measure relied upon for attainment purposes cannot serve as a contingency measure. In addition, CARB has committed to adopt the Zero-Emission Standard for space and water heaters control measure with implementation beginning in 2030.⁴⁴ The only potential contingency measure that would be surplus to those efforts would be to require replacement of existing units before the end of their useful life. Staff does not consider this to be economically feasible, especially due to the undue burden it would place on disadvantaged communities. Time to design, manufacture, and install these units must also be considered. Therefore, staff has not identified any feasible controls to propose as contingency measures for this source category.

⁴³ Proposed Amended Rules (PAR) 1111 and 1121. <https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1111-and-rule-1121>

Proposed Amended Rule 1146.2. <https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1146-2>

⁴⁴ https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf

Waste Disposal

a. Overview

Waste Disposal categories include 110 – Sewage Treatment, 120 – Landfills, 130 – Incinerators, 140 – Soil Remediation, and 199 – Other (Waste Disposal). Collectively, these source categories contribute 0.02 tpd VOC emissions and 0.01 tpd NO_x emissions to the 2031 Coachella Valley emissions inventory as shown in Table 4-14. All categories have zero emissions except for sewage treatment and incineration. The small quantity of emissions is generated by treatment of liquid waste and incinerators burning natural gas.

**TABLE 4-14
WASTE DISPOSAL EMISSIONS BASED ON 2031 SUMMER PLANNING INVENTORY**

Source Category	VOC (tpd)	NO _x (tpd)
110 – Sewage Treatment	0.02	0.00
120 – Landfills	0.00	0.00
130 – Incineration	0.00	0.01
140 – Soil Remediation	0.00	0.00
199 – Other (Waste Disposal)	0.00	0.00
Total	0.02	0.01

b. Evaluation

1. Sewage Treatment

In the Coachella Valley, there are no emissions associated with combustion processes at sewage treatment plants. However, there are VOC emissions associated with the treatment of liquid waste. This source is regulated by South Coast AQMD Rule 1179 – Publicly Owned Treatment Works Operations, which is summarized in Table 4-15. Staff did not identify any rules in other jurisdictions comparable to Rule 1179.

**TABLE 4-15
SOUTH COAST AQMD RULES FOR SEWAGE TREATMENT**

Rule	Applicability	Control Measure
South Coast AQMD Rule 1179 – Publicly Owned Treatment Works Operations (Amended 3/6/92)	Applies to all Publicly Owned Treatment Works (POTWs)	POTWs with design capacity \geq 10 million gallons per day: <ul style="list-style-type: none"> Submit an Emissions Inventory Plan specifying the procedures, protocols, methods, and source test data used to quantify VOC emissions. The Plan must provide other information regarding

Rule	Applicability	Control Measure
		the facility and specify plan parameters. <ul style="list-style-type: none"> • Implement the Plan and quantify controlled and uncontrolled VOC emissions for each unit process/operation. • Submit an Odor Evaluation Report. All other POTWs: <ul style="list-style-type: none"> • Submit a Facility Description Report specifying the plant parameters. • Submit a wastewater analysis report of the mass rate of VOCs present in the influent and effluent wastewater.

2. Incinerators

Incinerators are used to burn waste material at high temperatures until reduced to ash and are exclusively fueled by natural gas in the Coachella Valley. While South Coast AQMD does not currently implement source-specific rules for incinerators, incinerators are subject to general NOx emission limits under Rule 474 – Fuel Burning Equipment - Oxides of Nitrogen. However, staff is pursuing development of a new rule for incinerators to implement 2022 AQMP control measure L-CMB-09.⁴⁵ As part of the rulemaking process, staff is conducting a BARCT assessment to identify potential control technologies.

Under SJVAPCD Rule 4352 – Solid Fuel Fired Boilers, Steam Generators and Process Heaters, Municipal Solid Waste combustors are required to comply with a NOx emission limit of 110 ppm at 12 percent CO₂ on a 24-hour average, however, there are no applicable VOC emission limits. Rule 4352 applies to solid fuel fired combustors, while the emissions inventory indicates that incinerator emissions in the Coachella Valley are associated with natural gas combustion. An extensive evaluation of rules covering natural gas combustion is presented in the fuel combustion section of this document.

c. Conclusion

As detailed above, staff did not identify any potential contingency measures for the waste disposal categories in the Coachella Valley that would be surplus to existing rulemaking efforts and achieve quantifiable reductions within 2 years.

⁴⁵ <https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1165>

Cleaning and Surface Coatings

Cleaning and Surface Coating source categories include 210 – Laundering, 220 – Degreasing, 230 – Coatings and Related Process Solvents, 240 – Printing, 250 – Adhesives and Sealants, and 299 – Other (Cleaning and Surface Coating). These source categories contribute zero tpd NOx and 2.17 tpd of VOCs to the 2031 Coachella Valley summer planning emissions inventory.

Emissions from these source categories are primarily VOCs from the application and use of solvents, coatings, inks, adhesives, and sealants. Seventy five percent of VOC emissions are from the 230 – Coatings and Related Processes category and key contributing emission sources consist of auto refinishing, metal parts and products coatings, wood furniture and fabricated products coatings, aircraft and aerospace coatings, and thinning and cleanup solvent uses. Table 4-16 includes the list of emission source categories and applicable South Coast AQMD VOC rules. Key requirements and VOC limits for these VOC rules are summarized in Table 4-17.

TABLE 4-16
LIST OF EMISSION SOURCE CATEGORIES AND APPLICABLE VOC RULES IN SOUTH COAST AQMD

Cleaning and Surface Coating Category	Applicable South Coast AQMD Rules
210 – Laundering	1102
220 – Degreasing	442, 1122, 1171
230 – Coatings and Related Process Solvents	442, 1104, 1106, 1107, 1115, 1124, 1125, 1126, 1132, 1136, 1145, 1151, 1162
240 – Printing	442, 1128, 1130, 1130.1
250 – Adhesives and Sealants	442, 1168
299 – Other (Cleaning and Surface Coatings)	442, 1144

TABLE 4-17
SOUTH COAST AQMD RULES FOR CLEANING AND SURFACE COATING CATEGORY

Rule	Applicability	Control Measure
Rule 442 – Usage of Solvents (Amended 12/15/00)	Applies to any person using VOC-containing materials or equipment that emit VOCs and are not subject to Regulation XI rule. VOC-containing materials include coatings, resins, adhesives, inks, solvents, thinners, diluents, mold seal and release compounds, lubricants, cutting oils and quenching oils. Equipment and materials include, but are not	<ul style="list-style-type: none"> Shall not discharge organic materials into the atmosphere from equipment in which organic solvents or materials containing organic solvents are used, unless such emissions have been reduced by 85%

Rule	Applicability	Control Measure
	limited to, coating, adhesive, and ink application equipment, metal forming, casting, or forging operations	
Rule 1102 – Dry Cleaners Using Solvent Other Than Perchloroethylene (Amended 11/17/00)	Applies to all persons owning or operating a dry cleaning facility using solvent other than perchloroethylene (PERC)	<ul style="list-style-type: none"> • Install and operate a solvent recovery dryer or an equivalent control device that reduces VOC emissions from drying tumblers by at least 90% by weight • Usage of overall solvent shall be less than 4.5 lbs/100 lbs of materials dry cleaned
Rule 1104 – Wood Flat Stock Coating Operations (Amended 8/13/99)	Applies to all persons applying coating, inks, and adhesives to wood flat stock for the purpose of manufacturing a finished wood panel intended for attachment to the inside walls of buildings, including, but not limited to, homes and office buildings, mobile homes, trailers, prefabricated buildings and similar structures, boats, and ships; or a finished exterior wood siding intended for use in construction	<p>VOC requirements:</p> <ul style="list-style-type: none"> • 250 grams/Liter (g/L) of coating, ink, or adhesive (2.1 lbs/gal) for interior wood panels and exterior wood siding <p>Application methods:</p> <ul style="list-style-type: none"> • Flow coater, roll coater, or dip coater; • Hand application method; or • High-volume, low-pressure (HVLV) or electrostatic applications <p>Control equipment requirements:</p> <ul style="list-style-type: none"> • Reduce emissions from an emission collection system by at least 95% by weight, or the output of the air pollution control device less than 50 ppm as carbon (ppmC) • Emission collection system collection efficiency at least 90% by weight of the emissions generated by the sources
Rule 1106 – Marine and Pleasure Craft Coatings (Amended 1/6/23)	Applies to any person who supplies, sells, offers for sale, markets, manufactures, blends, packages, repackages, possesses or distributes any Marine or Pleasure Craft Coating and any associated solvent used with a Marine or Pleasure Craft Coating for use, as well as any person who applies, stores at a worksite, or solicits the application of any	<p>VOC contents of marine coatings:</p> <ul style="list-style-type: none"> • 275 to 420 g/L of baked coating • 340 to 610 g/L of air dried coating <p>VOC content of pleasure craft coatings:</p> <ul style="list-style-type: none"> • 330 to 780 g/L <p>VOC content of low-solids coatings:</p>

Rule	Applicability	Control Measure
	Marine or Pleasure Craft Coating and any associated solvent used with a Marine or Pleasure Craft Coating, within the South Coast AQMD Jurisdiction	<ul style="list-style-type: none"> • 120 g/L for marine and pleasure craft coatings
Rule 1107 – Coating of Metal Parts and Products (Amended 1/6/23)	Applies to all metal coatings operations except those performed on aerospace assembly, magnet wire, marine craft, motor vehicle, metal container, and coil coating operations	VOC content of coatings: <ul style="list-style-type: none"> • 275 to 420 g/L (2.3 to 3.5 lb/gal) of air dried or baked coating
Rule 1115 – Motor Vehicle Assembly Line Coating Operations (Amended 3/4/22)	Applies to an owner or operator engaged in assembly line coating operations conducted during the manufacturing of new motor vehicles and other automotive parts that are coated during the vehicle assembly process as well as during associated solvent cleaning operations	VOC emission limits for motor vehicle assembly coating operations: <ul style="list-style-type: none"> • Electrodeposition primer operations: <ul style="list-style-type: none"> • Solids turnover ratio (RT)≥0.16 <ul style="list-style-type: none"> ○ 0.084 kg/L of solid deposited • $0.04 \leq RT < 0.16$ <ul style="list-style-type: none"> ○ $0.084 \times 350^{0.160-RT}$ kg/L • $RT < 0.04$ <ul style="list-style-type: none"> ○ No VOC emission limit • Primer-surfacer, topcoat, combined primer-surfacer and topcoat operations: <ul style="list-style-type: none"> • 1.44 kg/L (12 lbs/gal) of solids • Final repair operations: <ul style="list-style-type: none"> • 0.58 kg/L (4.8 lbs/gal) of coating VOC content limits for miscellaneous materials used in motor vehicle assembly coating operations: <ul style="list-style-type: none"> • Vary depending on materials used ranging from 200 to 900 lbs/gal (1.7 to 7.5 lbs/gal)
Rule 1122 – Solvent Degreasers (Amended 5/1/09)	Applies to all persons who own or operate batch-loaded cold cleaners, open-top vapor degreasers, all types of conveyORIZED degreasers, and air-tight and airless cleaning systems that carry out solvent degreasing operations with a solvent containing VOCs or with a National Emission Standards for Hazardous	Cleaning solvent VOC content limits: <ul style="list-style-type: none"> • Batch-loaded cold cleaners: 25 g/L • ConveyORIZED (in-line) cold cleaners: 25 g/L • Vapor degreasers: 25 g/L Includes other applicable requirements

Rule	Applicability	Control Measure
	Air Pollutant (NESHAP) halogenated solvent	
Rule 1125 – Metal Container, Closure, and Coil Coating Operations (Amended 3/7/08)	Applies to all coating operations in the manufacturing and/or reconditioning of metal cans, containers, drums, pails, lids, closures, flat metal sheets, strips, rolls, and coils	<p>VOC limits vary depending on coating categories:</p> <ul style="list-style-type: none"> • Can coatings: 225 to 660 g/L • Drums, pails, and lids coatings: 340 to 510 g/L • Coil coatings: 200 g/L • All other operations: 0 to 800 g/L <p>Emission control system with $\geq 90\%$ collection efficiency and destruction efficiency $\geq 95\%$ by weight</p>
Rule 1126 – Magnet Wire Coating Operations (Amended 1/13/95)	Applies to all coating operations on magnet wire, where the wire is continuously drawn through a coating applicator	<p>Rule applicability threshold: Operations emit 1 kg (2.2 lbs)/hour or more but not to exceed 5 kg (11 lbs)/day of VOCs</p> <p>VOC limit: 200 g/L (1.67 lb/gal) of coating</p> <p>Emission control system shall achieve $\geq 90\%$ overall efficiency by direct incineration at $\geq 1,499$ °F</p>
Rule 1130 – Graphic Arts (Amended 5/2/14)	Applies to any person performing graphic arts operations or who supplies, sells, offers for sale, markets, manufactures, blends, repackages, stores at a worksite, distributes, applies or solicits the application of graphic arts materials for use	<p>VOC content of graphic arts materials limits varies by material type, ranging from 150 to 300 g/L</p> <p>VOC content of fountain solution varies ranging from 16 to 85 g/L</p> <p>Approved emission control system requires reduction of VOC emissions by at least 95% or no more than 50 ppm at the output of the control device</p>
Rule 1130.1 – Screen Printing Operations (Amended 5/13/96)	Applies to persons performing screen printing operations or who sell, distribute, or require the use of screen printing materials	<p>For screen printing coatings and inks products: 500 to 800 g VOC/L</p> <p>For screen printing coatings and inks substrate: 600 to 800 g VOC/L</p> <p>For screen printing materials: 400 to 800 g VOC/L</p>

Rule	Applicability	Control Measure
Rule 1132 – Further Control of VOC Emissions from High-Emitting Spray Booth Facilities (Amended 5/5/06)	Applies to any spray booth facility, except petroleum industry facilities, that uses VOC-containing materials that amount to more than 40,000 lbs (20 tons) per year of VOC emissions in any emission inventory year beginning in 1999	<p>For extreme performance screen printing materials: 400 g VOC/L</p> <p>Requirements for each spray booth:</p> <ul style="list-style-type: none"> • VOC-containing materials that have a VOC content 65% or lower than any applicable rule limit; • Emission control system that has an overall efficiency of 65% or more; or • A combination thereof <p>Requirements of spray booth that reported >20 tpy of VOC emissions:</p> <ul style="list-style-type: none"> • Use of VOC-containing materials that have a VOC content at least 85% lower than any applicable rule limit, • emission control systems that have an overall efficiency at least 85% by weight, or • a combination thereof
Rule 1136 – Wood Products Coatings (Amended 6/14/96)	Applies to coatings or strippers to, and surface preparation of, any wood products, including furniture, cabinets, shutters, frames and toys. This rule shall not apply to residential noncommercial operations	<p>VOC content limits of coatings and strippers:</p> <ul style="list-style-type: none"> • High-solid stains: 350 g/L • Inks: 500 g/L • Mold-seal coatings: 750 g/L • Multi-colored coatings: 275 g/L • Low-solids coatings: 120 g/L • All other coatings: 275 g/L <p>VOC limits in wood products strippers:</p> <ul style="list-style-type: none"> • Contain less than 350 g VOC/L • VOC composite vapor pressure ≤ 2 mm Hg (0.04 psia) at 20°C
Rule 1143 – Consumer Paint Thinners and Multi-Purpose Solvents (Amended 12/3/10)	Applies to any person who supplies, sells, offers for sale, or manufactures consumer paint thinners and multi-purpose solvents for sale, as well as any person who uses or solicits the use of any consumer paint thinner and multi-purpose solvent within the South Coast AQMD jurisdiction	<p>VOC content limits:</p> <ul style="list-style-type: none"> • Consumer paint thinner: 25 g/L • Consumer multi-purpose solvent: 25 g/L
Rule 1145 – Plastic, Rubber, Leather, and	Reduces VOC emissions from the application of coatings to any	VOC limits vary by coating category ranging from 60 to 800 g/L

Rule	Applicability	Control Measure
Glass Coatings (Amended 12/4/09)	plastic, rubber, leather, or glass products	Air pollution control equipment shall reduce VOC emissions from an emission collection system by $\geq 95\%$, or the device output VOC concentration shall be less than 50 ppm calculated as carbon
Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing (Amended 5/2/08)	Applies to the cleaning and degassing of a pipeline opened to atmosphere outside the boundaries of a facility, stationary tank, reservoir, or other container, storing or last used to store VOCs	Vapor pressures of VOC within the tank, reservoir or other container to be less than: <ul style="list-style-type: none"> • 500 gal (1,893 L): 3.9 psia • 26,420 gal (100,000 L): 2.6 psia • 100,000 gal (378,500 L): 0.5 psia
Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations (Amended 9/5/14)	Applies to VOC emissions from automotive coating applications performed on motor vehicles, mobile equipment, and associated parts and components	VOC content limits vary by automotive coating category ranging from 60 to 680 g/L (0.5 to 5.7 lb/gal)
Rule 1168 – Adhesive and Sealant Applications (Amended 11/4/22)	Applies to any person who uses, stores, sells, supplies, distributes, offers for sale, or manufactures any adhesives, adhesive primers, sealants, or sealant primers for use, or the owner or operator of a facility conducting such operations	<p>VOC content limits:</p> <p>For adhesives</p> <ul style="list-style-type: none"> • 20 to 850 g/L • Higher viscosity CPVC: 490 g/L (400 g/L, effective 7/1/24) • Rubber vulcanization adhesive 850 g/L (250 g/L, effective 1/1/28) • Top and trim adhesive: 540 g/L (250 g/L, effective 1/1/28) <p>For substrate specific adhesives:</p> <ul style="list-style-type: none"> • 30 to 200 g/L <p>For sealants:</p> <ul style="list-style-type: none"> • 50 to 760 g/L • Clear, paintable, and immediately water-resistant sealant: 380 g/L (250 g/L, effective 1/1/26) • On-component foam sealant: 18% (~180 g/L, effective 7/1/23) <p>For adhesive primers: 150 to 785 g/L</p> <p>For sealant primers: 250 to 775 g/L</p>

Rule	Applicability	Control Measure
Rule 1171 – Solvent Cleaning Operations (Amended 5/1/09)	Applies to all persons who use these solvent materials in solvent cleaning operations during the production, repair, maintenance, or servicing of parts, products, tools, machinery, equipment, or general work areas; all persons who store and dispose of these materials used in solvent cleaning operations; and all solvent suppliers who supply, sell, or offer for sale solvent cleaning materials for use in solvent cleaning operations	VOC content limits for product cleaning during manufacturing process or surface preparation for coating, adhesive, or ink application: <ul style="list-style-type: none"> • 25 to 800 g/L (0.21 to 6.7 lb/gal) For repair and maintenance cleaning: <ul style="list-style-type: none"> • 25 to 800 g/L (0.21 to 6.7 lb/gal) For cleaning of coatings or adhesive application equipment: <ul style="list-style-type: none"> • 25 g/L (0.21 lb/gal) For cleaning of ink application equipment: <ul style="list-style-type: none"> • 25 to 100 g/L (0.21 to 0.83 lb/gal) For cleaning of polyester resin application equipment: <ul style="list-style-type: none"> • 25 g/L (0.21 lb/gal)

To find potentially feasible contingency measures, staff reviewed other air districts' VOC rules for the cleaning and surface coating category that are comparable to South Coast AQMD rules. Since there are no NOx emissions associated with this source category in the Coachella Valley, NOx rules were not considered. In the following sections, South Coast AQMD staff compared emission limits, optional control requirements, and work practice standards in South Coast AQMD rules to comparable requirements in rules from other air districts.

1. Laundering

a. Overview

This source category contributes 0.01 tpd of VOC to the Coachella Valley 2031 summer planning emissions inventory.

b. Evaluation

South Coast AQMD Rule 1102 establishes dry cleaning operation and equipment requirements for dry cleaners using non-perchloroethylene as the cleaning solvent. Rule 1102 does not have a small operation exemption for dry cleaning solvent usage, while other air districts such as SMAQMD and BAAQMD exempt dry cleaning facilities that use less than 10,000 liters (L) of solvent per year. All air districts including South Coast AQMD have similar equipment and operation requirements, including no liquid leaks or visible emissions from dry cleaning equipment, storage of solvent in sealed containers, a full drainage of cartridge

filters before removal, etc. Rule 1102 requires draining cartridge filters a minimum of 24 hours before being discarded, whereas other districts require 8 to 24 hours lead time to drain filters before being discarded. It also requires emission control equipment that reduces VOC emissions with a control efficiency of 90 percent or more.

c. Conclusion

As demonstrated below in Table 4-18, South Coast AQMD Rule 1102 currently has in place the most stringent measures feasible to implement in the Coachella Valley and the rule requirements are at least as stringent as applicable rules in other California air districts. Therefore, staff concludes that no additional emission reduction opportunities exist and that no measure is identified as feasible to be implemented as a contingency measure.

TABLE 4-18
COMPARISON OF APPLICABLE RULES FOR MAJOR SOURCE CATEGORY OF LAUNDERING

	South Coast AQMD Rule 1102 - Dry Cleaners Using Solvent Other Than Perchloroethylene (Amended 11/17/00)	SJVAPCD Rule 4672 - Petroleum Solvent Dry Cleaning Operations (Amended 12/17/92)	SMAQMD Rule 444 - Petroleum Solvent Dry Cleaning (Adopted 8/3/81)	BAAQMD Rule 8-17 - Non-Halogenated Solvent Dry Cleaning Operations (Amended 3/4/09)	VCAPCD Rule 74.5.1 - Petroleum Solvent Dry Cleaning (Adopted 12/4/90)
Applicability	Dry cleaning facility using solvent other than perchloroethylene (PERC)	Petroleum solvent washers, dryers, solvent filters, settling tanks, vacuum stills, and other containers and conveyors of petroleum solvents that are used in petroleum solvent dry cleaning facilities	Emissions of petroleum solvents used in dry cleaning	Dry cleaning or related operations using non-halogenated solvent(s) or solvent(s) containing less than 5% by weight of total halogens	Any petroleum solvent dry cleaning operation
Exemptions	<ul style="list-style-type: none"> • Dry cleaning equipment exclusively using PERC as cleaning solvent • Dry cleaning equipment exclusively using a Group II exempt compound as cleaning solvent, professional laundering equipment using liquid CO₂ as cleaning solvent, and professional wet cleaning equipment using water as cleaning solvent, provided the detergents and additives contain <50 g VOC/L 	<ul style="list-style-type: none"> • Dry cleaning facilities exclusively using PERC as cleaning solvent 	<ul style="list-style-type: none"> • Dry cleaning using other than a petroleum solvent (e.g., Stoddard) • Dry cleaners consuming <10,000 L (2,642 gal) of petroleum solvent per year 	<ul style="list-style-type: none"> • Dry cleaning operations that use CO₂, aqueous solvents, or synthetic solvents containing ≥5% by weight of total halogens (which are subject to Rule 11-16) • Dry cleaners consuming <10,000 L (2,642 gal) of petroleum solvent per year 	
Equipment and Operating Requirements	<ul style="list-style-type: none"> • No liquid leaking from equipment • Keep all washer lint traps, button traps, access doors, and other parts closed at all times 	<ul style="list-style-type: none"> • No liquid leaking from equipment • Keep all washer lint traps, button traps, access doors, and other parts closed at all times 	<ul style="list-style-type: none"> • No liquid leaking from equipment • Keep all solvents in closed containers • Keep all washer lint traps, button traps, 	<ul style="list-style-type: none"> • Keep all parts of dry cleaning system closed • Cartridge filters shall be drained in the filter housing for at least 8 hours or placed in an enclosed device 	<ul style="list-style-type: none"> • A filter system reduces petroleum solvent content in all filtration wastes to no greater than 1.0 lb/100 lb of articles cleaned

	South Coast AQMD Rule 1102 - Dry Cleaners Using Solvent Other Than Perchloroethylene (Amended 11/17/00)	SJVAPCD Rule 4672 - Petroleum Solvent Dry Cleaning Operations (Amended 12/17/92)	SMAQMD Rule 444 - Petroleum Solvent Dry Cleaning (Adopted 8/3/81)	BAAQMD Rule 8-17 - Non-Halogenated Solvent Dry Cleaning Operations (Amended 3/4/09)	VCAPCD Rule 74.5.1 - Petroleum Solvent Dry Cleaning (Adopted 12/4/90)
	<ul style="list-style-type: none"> • Clean button and lint traps each working day • Store still residue, used filtering material, lint, used solvent and all other wastes containing solvent in sealed containers • Cartridge filters shall be fully drained in a sealed filter housing for at least 24 hrs before removed • Store all solvents in closed containers • No liquid solvent or visible emission is allowed to vaporize from wastewater evaporators • Overall gallons of solvent used shall be <4.5 lb/100 lb of materials dry cleaned 	<ul style="list-style-type: none"> • Store solvents in closed container • Store used filtering material into a sealed container immediately after removal from the filter • Cartridge filters shall be fully drained in a sealed filter housing for at least 24 hrs before being discarded, or 12 hrs if the filter is dried in a dryer vented to an emission control device • Reduce petroleum solvent content in all filtration wastes to ≤1 kg/100 kg of materials dry cleaned 	<p>access doors, and other parts closed at all times</p> <ul style="list-style-type: none"> • Store still residue in sealed containers • Cartridge filters shall be fully drained in a sealed filter housing for at least 12 hours before removal • Reduce solvent content in filtering system <1 kg/100 kg of articles dry cleaned 	<p>including a solvent recovery dryer until dry before being discarded</p>	<ul style="list-style-type: none"> • Cartridge filters shall be fully drained in a sealed filter housing for at least 24 hrs before being discarded, or 12 hrs if the filter is dried in a dryer vented to an emission control device
Emission control requirements	<ul style="list-style-type: none"> • Requires a solvent recovery dryer that reduces VOC emissions by at least 90% 	<ul style="list-style-type: none"> • Requires a solvent recovery dryer that reduces VOC emissions by at least 90% 	<ul style="list-style-type: none"> • Limit solvent emissions to an average of 3.5 kg/100 kg of articles dry cleaned 	<ul style="list-style-type: none"> • A solvent recovery dryer shall recover at least 85% by weight of solvent 	<p>A solvent recovery dryer shall reduce VOC emissions by at least 90%</p>

2. Degreasing

a. Overview

There are three South Coast AQMD rules that regulate VOC emissions from degreasing – Rules 442, 1122, and 1171. This source category contributes 0.32 tpd of VOCs to the 2031 Coachella Valley summer planning emissions inventory. Table 4-19 summarizes applicable rule requirements in South Coast AQMD and other air districts for this major source category.

b. Evaluation

South Coast AQMD Rule 442 establishes general VOC emission limits and emission control requirements for VOC-containing materials or equipment that are not subject to source-specific VOC rules. Rule 442 generally requires an overall VOC emission reduction of 85 percent. While other air districts have similar requirements, South Coast AQMD has a more stringent facility-wide VOC emission limit of 833 pounds per month per facility.

South Coast AQMD Rule 1122 establishes a VOC content for cleaning solvents which is 25 gram per liter of solvent or less. This VOC content limit is as stringent as other air districts' applicable rules.

South Coast AQMD Rule 1171 establishes VOC emissions control and other applicable operational requirements in solvent cleaning operations. Comparing the VOC content limits in cleaning solvents with other air districts in California is not straightforward because other air district rules have different scope of applicability and exemptions from the South Coast AQMD rule, and include VOC limits that apply not only to solvent cleaning operations, but also to coating operations. For example, BAAQMD Rule 8-16 has VOC content limits on architectural coating operations, which are regulated by South Coast AQMD Rule 1113. Table 4-19.3 summarizes the comparison of Rule 1171 with similar rules from other air districts. Overall, Rule 1171 and other applicable South Coast AQMD rules have VOC limits and emission control requirements comparable to other air districts for degreasing source category.

c. Conclusion

Based on the evaluation that South Coast AQMD has rules applicable to this source category as stringent as or more stringent than other districts' rules, staff did not find any potential contingency measure in the degreasing category.

**TABLE 4-19
COMPARISON OF APPLICABLE RULES FOR THE MAJOR SOURCE CATEGORY OF DEGREASING**

TABLE 4-19.1 – General Usage of Solvents				
	South Coast AQMD Rule 442 - Usage of Solvents (Amended 12/15/00)	SJVAPCD Rule 4661 - Organic Solvents (Amended 9/20/07)	SMAQMD Rule 441 - Organic Solvents (Adopted 12/6/78)	BAAQMD Rule 8-4 - General Solvent and Surface Coating Operations (Amended 10/16/02)
Applicability	Use of VOC-containing materials or equipment that emit VOCs, including, but not limited to, coatings, resins, adhesives, inks, solvents, thinners, diluents, mold seal and release compounds, lubricants, cutting oils and quenching oils. Equipment and materials used in coating, adhesive, and ink application equipment, metal forming, casting, or forging operations	Any source operation that uses organic solvents	Emissions of organic solvents that may result from the use of organic solvents	Operations using solvents and surface coatings other than those specified by other Regulation 8 rules. Applies to model making, printed circuit board manufacturing and assembly, electrical and electronic component manufacturing, surface coating of test panels, training facilities where the application of coating is for training purposes, stencil coatings, low usage coating activities exempt from other Regulation 8 Rules, coatings specifically exempt from other Regulation 8 Rules or solvent usage not specified by other Regulation 8 Rules
Exemptions	<ul style="list-style-type: none"> • Manufacture, transport, or storage of organic solvents, or the transport or storage of materials containing organic solvents • VOC emissions from VOC-containing materials or equipment subject to other Regulation IV rules (except Rule 481 – Spray Coating Operations) or which are exempt from air pollution control requirements 	<ul style="list-style-type: none"> • Manufacture of organic solvents, or the transport of organic solvents or materials containing organic solvents • Any source operation subject to other source-specific VOC rules • Spraying or other employment of insecticides, pesticides or herbicides • Employment, application, evaporation, or drying of saturated halogenated hydrocarbons (HCs) or PERC 	<ul style="list-style-type: none"> • Manufacture of organic solvents, or the transport or storage of organic solvents or materials containing organic solvents • Spraying or other employment of insecticides, pesticides, or herbicides • employment, application, evaporation or drying of saturated halogenated HCs or PERC 	<ul style="list-style-type: none"> • Surface preparation of material subject to specific requirements of other rules • Surface coating operations using non-refillable aerosol containers • Film cleaning operations that use 1,1,1-trichloroethane exclusively • Limited exemption to specific surface preparation and cleaning operations • Moving and working surfaces of machinery used for product development and in production

TABLE 4-19.1 – General Usage of Solvents

	South Coast AQMD Rule 442 - Usage of Solvents (Amended 12/15/00)	SJVAPCD Rule 4661 - Organic Solvents (Amended 9/20/07)	SMAQMD Rule 441 - Organic Solvents (Adopted 12/6/78)	BAAQMD Rule 8-4 - General Solvent and Surface Coating Operations (Amended 10/16/02)
	<ul style="list-style-type: none"> • Use of pesticides, including insecticides, rodenticides, or herbicides • Aerosol products 	<ul style="list-style-type: none"> • Use of any material meeting all the following conditions: <ul style="list-style-type: none"> ○ Volatile content consists only of water and organic solvents ○ Organic solvent content comprises not more than 20% of total volatile content ○ Volatile content is photochemically not reactive ○ Organic solvent does not contact with flame 	<ul style="list-style-type: none"> • Use of any material, machine, equipment or other contrivance that meet all the following: <ul style="list-style-type: none"> ○ Volatile content consists only of water and organic solvents ○ Organic solvent content comprises not more than 20% of total volatile content ○ Volatile content is photochemically not reactive ○ Organic solvent does not contact with flame 	
VOC Emissions Limit and Emission Control Requirements	<p>VOC emissions limit</p> <ul style="list-style-type: none"> • 833 lbs/month per facility <p>Emission control equipment</p> <ul style="list-style-type: none"> • 85% overall reductions • Output concentration <50 ppm as carbon with no dilution 	<p>VOC emissions limit from solvents subjected to heat</p> <ul style="list-style-type: none"> • 15 lb VOC/day per operation <p>Emission control equipment</p> <ul style="list-style-type: none"> • 85% overall reductions <p>Photochemically reactive solvents VOC emissions</p> <ul style="list-style-type: none"> • 40 lb/day per operation <p>Non-photochemically reactive solvents VOC emissions</p> <ul style="list-style-type: none"> • 3,000 lb/day per operation 	<p>Organic materials VOC emission limits</p> <ul style="list-style-type: none"> • 15 lb/day or 3.1 lb/hr per operation <p>Photochemically reactive solvents VOC emission limits</p> <ul style="list-style-type: none"> • 39.7 lb/day or 7.9 lb/hr per operation <p>Non-photochemically reactive solvents VOC emission limits</p> <ul style="list-style-type: none"> • 2,970 lb/day or 441 lb/hr per operation <p>Emission control equipment</p> <ul style="list-style-type: none"> • 85% overall control 	<p>Solvents or surface coating VOC emissions</p> <ul style="list-style-type: none"> • 5 tons/year from any source <p>Emission control equipment</p> <ul style="list-style-type: none"> • 85% overall control

TABLE 4-19.2 – Solvent Degreasing

	South Coast AQMD Rule 1122 - Solvent Degreasers (Amended 5/1/09)	SJVAPCD Rule 4662 - Organic Solvent Degreasing (Amended 9/20/07)	SMAQMD Rule 454 - Degreasing Operations (Amended 9/25/08)	VCAPCD Rule 74.6 - Surface Cleaning and Degreasing (Amended 11/10/20)
Applicability	Batch-loaded cold cleaners, open-top vapor degreasers, all types of conveyorized degreasers, and air-tight and airless cleaning systems that carry out solvent degreasing operations with a solvent containing VOCs or with a NESHAP halogenated solvent. Solvent degreasing operations that are regulated by this rule include, but are not limited to, the removal of contaminants from parts, products, tools, machinery, and equipment	All organic solvent degreasing operations	Solvent degreasing operations	Solvent cleaning activities (application equipment cleanup and all other cleanup of uncured coatings, adhesives, inks, or resins)
Exemptions	<ul style="list-style-type: none"> • Degreasers using cleaning materials that contain ≤ 25 g/L with no NESHAP halogenated solvents • Batch-loaded cold cleansers or vapor degreasers with open-top surface area < 1 square feet or with a capacity of < 2 gallons <ul style="list-style-type: none"> ○ Emission collection and control system have overall 85% efficiency or have an output < 50 ppm as carbon ○ No NESHAP halogenated solvents are used ○ VOC emissions from all the equipment do not exceed 22 lb/month per facility • Other applicable exemptions 	<ul style="list-style-type: none"> • Any degreaser which uses: <ul style="list-style-type: none"> ○ Unheated non-halogenated solvent ○ Open top surface area < 1 square feet or with a capacity < 2 gallons ○ A solvent usage < 5 gals/month • Non-halogenated cleaning material having a VOC content of ≤ 25 g/L solvent • Other applicable exemptions 	<ul style="list-style-type: none"> • Degreasers which use solvents that contain ≤ 25 g/L VOCs including water and exempt compounds • Other applicable exemptions 	<ul style="list-style-type: none"> • Use of solvent with a VOC content of ≤ 25 g/L
Requirements	VOC content for a batch-loaded or a conveyorized cold cleaner	VOC content for a cold cleaner <ul style="list-style-type: none"> • 25 g/L or less 	VOC content for a non-vapor degreaser	Maximum VOC content of solvent cleaning activity

TABLE 4-19.2 – Solvent Degreasing

	South Coast AQMD Rule 1122 - Solvent Degreasers (Amended 5/1/09)	SJVAPCD Rule 4662 - Organic Solvent Degreasing (Amended 9/20/07)	SMAQMD Rule 454 - Degreasing Operations (Amended 9/25/08)	VCAPCD Rule 74.6 - Surface Cleaning and Degreasing (Amended 11/10/20)
	<ul style="list-style-type: none"> • 25 g/L or less Other operational requirements	Other operational requirements	<ul style="list-style-type: none"> • 25 g/L or less including water and exempt compounds Other operational requirements	<ul style="list-style-type: none"> • Application equipment cleanup and all other cleanup of uncured coatings, adhesives, inks, or resins: 25 g/L • Cleaning of electronic components, electrical apparatus, or aerospace components conducted inside a degreaser: 100 g/L • Medical devices and pharmaceuticals, including repair and maintenance of tools, equipment and machinery: 800 g/L • Medical devices and pharmaceuticals – general work surfaces cleaning: 600 g/L • All other solvent cleaning: 25 g/L Other applicable requirements

TABLE 4-19.3 – Solvent Cleaning Operations					
	South Coast AQMD Rule 1171 - Solvent Cleaning Operations (Amended 5/1/09)	SJVAPCD Rule 4663 - Organic Solvent Cleaning, Storage, and Disposal (Amended 9/20/07)	SMAQMD Rule 466 - Solvent Cleaning (Amended 10/28/10)	BAAQMD Rule 8-16 - Solvent Cleaning Operations (Amended 10/16/02)	VCAPCD Rule 74.6 - Surface Cleaning and Degreasing (Amended 11/10/20)
Applicability	All persons who use solvent materials in solvent cleaning operations during the production, repair, maintenance, or servicing of parts, products, tools, machinery, equipment, or general work areas; all persons who store and dispose of these materials used in solvent cleaning operations; and all solvent suppliers who supply, sell, or offer for sale solvent cleaning materials for use in solvent cleaning operations	Any organic solvent cleaning performed outside a degreaser during the production, repair, maintenance, or servicing of parts, products, tools, machinery, equipment, or in general work areas at stationary sources. Also applies to the storage and disposal of all solvents and waste solvent materials at stationary sources	Persons who use VOC-containing materials in solvent cleaning operations during the production, repair, maintenance or servicing of parts, products, tools, machinery, or equipment, or in general work areas, and to all persons who store and dispose of VOC-containing materials used in solvent cleaning. Also applies to sellers of VOC-containing materials for use in solvent cleaning operations, and to all persons who use VOC-containing materials for the sterilization of food manufacturing and processing equipment	Solvent cleaning operations including wipe cleaning, used to clean or dry metal and non-metal surfaces typically using a cold, vapor or conveyORIZED solvent cleaner	Any person who performs solvent cleaning activities, and any person who manufactures or supplies solvents for use in solvent cleaning activities

	South Coast AQMD Rule 1171 - Solvent Cleaning Operations (Amended 5/1/09)	SJVAPCD Rule 4663 - Organic Solvent Cleaning, Storage, and Disposal (Amended 9/20/07)	SMAQMD Rule 466 - Solvent Cleaning (Amended 10/28/10)	BAAQMD Rule 8-16 - Solvent Cleaning Operations (Amended 10/16/02)	VCAPCD Rule 74.6 - Surface Cleaning and Degreasing (Amended 11/10/20)
Exemptions	<ul style="list-style-type: none"> • Cleaning operations using a solvent containing no more than 25 g/L of material • Medical device and pharmaceutical facilities using up to 1.5 gal/day of solvent • Cleaning of adhesive application equipment used for thin metal laminating operations provided the clean-up solvent used contains no more than 950 g VOC/L • Cleaning of electronic or electrical cables provided the clean-up solvent used contains no more than 400 g VOC/L • Touch up cleaning performed on printed circuit boards provided the solvent used contains no more than 800 g VOC/L • Other exemptions apply 	<ul style="list-style-type: none"> • Operator using ≤55 gal of organic solvent products in all source operations subject to Rule 4663 in a stationary source, in any rolling, consecutive 365-day period • Cleaning of architectural coating application equipment provided the cleaning solvent used does not exceed 950 g VOC/L • Other exemptions apply 	<ul style="list-style-type: none"> • Cleaning using solvents that contain ≤25 g/L • Cleaning of sterilization ink indicating equipment provided the solvent usage is <1.5 gal/day • Other exemptions apply 	<ul style="list-style-type: none"> • Equipment or operations that use unheated solvent and that contain <1 gal of solvent • Other exemptions apply 	Use of solvent with a VOC content of 25 g/L or less
Emission Control Requirements	<ul style="list-style-type: none"> • Overall 85% control efficiency • Output concentration <50 ppm 	<ul style="list-style-type: none"> • Overall 85% control efficiency • Output concentration <50 ppm 	<ul style="list-style-type: none"> • Overall 85% control efficiency • Output concentration <50 ppm 	None listed	<ul style="list-style-type: none"> • Overall 85% control efficiency

Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard

Requirements	VOC Limits, g/L					
	Category	South Coast AQMD Rule 1171	SJVAPCD Rule 4663 Rule 4607	SMAQMD Rule 466 Rule 450	BAAQMD Rule 8-16 Rule 8-20	VCAPCD Rule 74.6 Rule 74.19
	Product cleaning during manufacturing process or surface preparation for coating, adhesive, or ink application VOC limits					
	General	25	25	25	-	25
	Electrical apparatus components & electronic components	100	100	100	-	100
	Medical devices & pharmaceuticals	800	800	800	-	800
	Repair & maintenance cleaning					
	General	25	25	25	-	25
	Electrical apparatus components & electronic components	100	100	100	-	100
	Medical devices & pharmaceuticals – Tools, equipment & machinery	800	800	800	-	800
	Medical devices & pharmaceuticals – General work surfaces	600	600	600	-	600
	Cleaning of coatings or adhesives application equipment	25	25	25	-	25
	Cleaning of ink application equipment					
	General	25	25	25	25	25
	Flexographic printing	25	25	25	25	25
	Gravure printing – Publication	100	100	-	100	100
	Gravure printing – Packaging	25	25	-	25	25
	Lithographic (offset) or letter press printing – Roller wash, blanket wash, & on-press components	100	100	100	100	100
	Lithographic (offset) or letter press printing – Removable press components	25	25	25	-	25
	Screen printing	100	100	100	100	-
	Ultraviolet ink/electron beam ink application equipment (except screen printing)	100	100	100	100	100
	Specialty flexographic printing	100	100	100	100	100
	Cleaning of polyester resin application equipment	25	-	-	-	25

3. Coatings and Related Processes

a. Overview

Major source category 230 – Coatings and Related Processes includes various VOC-emitting operations including auto refinishing, marine coatings, paper coatings, fabric coatings, metal parts and products coatings, wood furniture and fabricated products coatings, plastic parts coatings, semiconductor coatings, aircraft and aerospace coatings, thinning and cleanup solvent uses, preparation solvent uses, and other coating and related processes. This source contributes 1.62 tpd of VOC emissions to the 2031 emissions inventory as shown in Table 4-20.

**TABLE 4-20
COATINGS AND RELATED PROCESSES EMISSIONS BASED ON 2031 SUMMER PLANNING INVENTORY**

3-digit Equipment Identification Code (EIC)	Source Category	VOC (tpd)	NOx (tpd)
216	Preparation Solvents	0.00	0.00
218	Auto Refinishing	1.12	0.00
222	Paper Coatings	0.01	0.00
230	Metal Parts and Products Coatings	0.30	0.00
232	Wood Furniture and Fabricated Products Coatings	0.07	0.00
236	Plastic Parts	0.01	0.00
237	Semiconductor Coatings	0.00	0.00
238	Aircraft and Aerospace Coatings	0.06	0.00
240	Thinning and Cleanup Solvent Uses	0.05	0.00
	Total	1.62	0.00

b. Evaluation

i. Metal Products Coating Operations

South Coast AQMD Rule 1107 applies to metal coatings and is compared with applicable rules in other air districts. The requirements and VOC limits for the metal coatings rules in South Coast AQMD, BAAQMD, SJVAPCD, and SMAQMD are identical for the most part. BAAQMD, SJVAPCD, and SMAQMD allow some annual non-compliant material use that South Coast AQMD does not. BAAQMD and SMAQMD exempt Touch Up and Repair coatings from VOC limits. Table 4-21 compares South Coast AQMD Rule 1107 to metal coatings rules in other air districts.

Staff did not identify any potential contingency measure for metal products coating operations since evaluation of South Coast AQMD Rule 1107 revealed that it is the most stringent.

**TABLE 4-21
RULE 1107 COMPARATIVE ANALYSIS. VOC CONTENT LIMITS ARE IN G/L**

Rule Element	South Coast AQMD Rule 1107 – Coating of Metal Parts and Products (Amended 1/6/23)	SJVAPCD Rule 4603 – Surface Coating of Metal Parts and Products, Plastic Parts and Products, and Pleasure Crafts (Amended 9/17/09)	BAAQMD Rule 8-19 – Surface Coating of Miscellaneous Metal Parts and Products (Amended 10/26/02)	SMAQMD Rule 451 – Surface Coating of Miscellaneous Metal Parts and Products (Amended 10/28/10)
Applicability	Coating of metal parts and products excluding aerospace assembly, magnet wire, marine craft, motor vehicle, metal container, and coil coating operations, or for architectural components coated at the structure site	Surface coating operations of metal parts or products, large appliances parts or products, metal furniture excluding aerospace, motor vehicle assembly	Miscellaneous coating operations on metal parts and products	Miscellaneous coating operations on metal parts and products
VOC Limits	VOC limits by individual coating category; use of add-on controls allowed if lieu of VOC limits General One-Component	VOC limits by individual coating category; use of add-on controls allowed if lieu of VOC limits; 55 gallons per year of non-compliant coatings allowed	VOC limits by individual coating category; use of add-on controls allowed if lieu of VOC limits; 100 gallons per year of non-compliant coatings allowed	VOC limits by individual coating category; use of add-on controls allowed if lieu of VOC limits; 55 gallons per year of non-compliant coatings allowed
General One Component	275	340/275	340/275	340/275
General Multi-Component	340/275	340/275	340/275	340/275
Military Specification	340/275	340/275	340/275	-
Etching Filler	420	-	-	420
Solar Absorbent	420/360	420/360	420/360	420/360
Heat-Resistant	420/360	420/360	420/360	420/360
Extreme High-Gloss	340/360	420/360	420/360	420/360

Rule Element	South Coast AQMD Rule 1107 – Coating of Metal Parts and Products (Amended 1/6/23)	SJVAPCD Rule 4603 – Surface Coating of Metal Parts and Products, Plastic Parts and Products, and Pleasure Crafts (Amended 9/17/09)	BAAQMD Rule 8-19 – Surface Coating of Miscellaneous Metal Parts and Products (Amended 10/26/02)	SMAQMD Rule 451 – Surface Coating of Miscellaneous Metal Parts and Products (Amended 10/28/10)
Metallic	420/360	420/360	420/360	420
Extreme Performance	420/360	420/360	420	420/360
Prefabricated Architectural One-Component	275	340/275	340/275	420/275
Prefabricated Architectural Multi-Component	340/275	340/275	340/275	420/275
Touch Up	420/360	420/360	Exempt	Exempt
Repair	420/360	420/360	Exempt	Exempt
Silicone Release	420	420	420	420
High-Performance Architectural	420	-	420	420
Camouflage	420/360	420/360	420/360	420/360
Vacuum-Metalizing	420	-	420/360	-
Mold-Seal	420	-	-	-
High-Temperature	420	-	420	-
Electric-Insulating Varnish	420	-	-	340/275
Pan Backing	420	-	-	-

Rule Element	South Coast AQMD Rule 1107 – Coating of Metal Parts and Products (Amended 1/6/23)	SJVAPCD Rule 4603 – Surface Coating of Metal Parts and Products, Plastic Parts and Products, and Pleasure Crafts (Amended 9/17/09)	BAAQMD Rule 8-19 – Surface Coating of Miscellaneous Metal Parts and Products (Amended 10/26/02)	SMAQMD Rule 451 – Surface Coating of Miscellaneous Metal Parts and Products (Amended 10/28/10)
Pretreatment Coatings	420	420	420	420
Transfer Efficiency	Use of HVLP [^] or equivalent transfer efficiency	Use of HVLP [^] or equivalent transfer efficiency	Use of HVLP [^] or equivalent transfer efficiency	Use of HVLP [^] or equivalent transfer efficiency
Work Practices	Storage, use, and disposal of coatings and waste; VOC limits and work practices for solvent cleaning	Storage, use, and disposal of coatings and waste; VOC limits and work practices for solvent cleaning	Storage, use, and disposal of coatings and waste; VOC limits and work practices for solvent cleaning	Storage, use, and disposal of coatings and waste; VOC limits and work practices for solvent cleaning

[^]High-Volume, Low-Pressure (HVLP)

ii. Aerospace Coating Operations

South Coast AQMD Rule 1124 applies to aerospace coating operations and is compared with the applicable rules in other air districts in Table 4-22.

The requirements and VOC limits for the metal coatings rules in South Coast AQMD and SJVAPCD are identical for the most part. SJVAPCD includes higher VOC limits for specialty categories (e.g., Ablative, Bearing, Caulking and Smoothing, Chemical Acid Resistance, Electric Interference, Intermediary Release, Lacquer, Part Marking, Rocket Motor Nozzle, Screen Print Ink, Silicone Insulation, Specialized Function, Thermal Control, Epoxy Polamide, and Wet Fastener). South Coast AQMD’s rule is more stringent with respect to these specialty categories.

BAAQMD’s regulation was last updated in 1995 and generally has higher limits and fewer categories. High volume categories in South Coast AQMD are more stringent but there are a few specialty categories where BAAQMD may have a lower limit. Staff reviewed the availability of products in those categories and found that products were not available for commercial, military, and spacecraft at the VOC contents specified in BAAQMD’s rule for all applications. Specifications apply to each of types of aircrafts which require approval which can take several years at a minimum. In some cases the products relied on the European Union definition of VOC which is not applicable to South Coast AQMD. Additionally, these products were not found to be usable in spray, dip, and brush applications which are typical of aerospace operations.

SMAQMD has fewer specialty categories resulting in some lower limits but mostly higher limits across the board. Like the BAAQMD, SMAQMD’s rule has not been updated in some time. There may be instances

that an update to their rule would lead to some revision of limits that would be more consistent with South Coast AQMD's and SJVAPCD's versions of the rule.

South Coast AQMD Rule 1124 generally has the most stringent limits in place. In addition, reformulating aerospace coatings to achieve lower VOC limits is not feasible as a contingency measure since this process requires significant lead time. Therefore, no contingency measure is proposed for this source category.

TABLE 4-22
RULE 1124 COMPARATIVE ANALYSIS

Rule Element	South Coast AQMD Rule 1124 – Aerospace Assembly Line Coating Operations (Amended 9/21/01)	SJVAPCD Rule 4605 – Aerospace Assembly and Component Coatings (Amended 6/16/11)	BAAQMD Rule 8-29 – Aerospace Assembly and Component Coating Operations (Amended 12/20/95)	SMAQMD Rule 456 – Aerospace Assembly and Component Coating Operations (Amended 10/23/08)
Applicability	Assembly and component manufacturing operations	Manufacturing, assembly, coating, and cleaning of aerospace components	Surface preparation and coating of aerospace components and cleanup of aerospace coating equipment	Coatings of aerospace components including coating removal, surface preparation and cleaning
VOC Limits	VOC limits by individual coating category; use of add-on controls allowed if lieu of VOC limits	VOC limits by individual coating category; use of add-on controls allowed if lieu of VOC limits; 20 gallons per year of non-compliant coatings allowed	VOC limits by individual coating category; use of add-on controls allowed if lieu of VOC limits; 100 gallons per year of non-compliant coatings allowed	VOC limits by individual coating category; use of add-on controls allowed if lieu of VOC limits
General Primer	350	350	350	350
Low-Solids Corrosion Resistant Primer	350	350	-	-
Pretreatment Primer	780	780	-	780
Rain Erosion Resistant Coating Compatible Primer	850	N/A	-	-
Adhesion Promoter	250	850	-	780

Rule Element	South Coast AQMD Rule 1124 – Aerospace Assembly Line Coating Operations (Amended 9/21/01)	SJVAPCD Rule 4605 – Aerospace Assembly and Component Coatings (Amended 6/16/11)	BAAQMD Rule 8-29 – Aerospace Assembly and Component Coating Operations (Amended 12/20/95)	SMAQMD Rule 456 – Aerospace Assembly and Component Coating Operations (Amended 10/23/08)
Adhesive Bonding Primer – New Aircraft	250	250	850	-
Adhesive Bonding Primer – Military Aircraft	805	805	-	-
Adhesive Bonding Primer – Remanufactured Commercial Aircraft Parts	805	805	-	-
Adhesive Bonding Primer – Sonic and Acoustic Applications	805	805	-	-
Adhesive Bonding Primer	250	250	780	-
Topcoat	420	420	420/340	-
Clear Topcoat	520	520	-	-
Unicoat	420	420	-	-
Wing Coating	750	750	-	-
Impact Resistant Coating	420	420	-	-
High-Temperature	850	850	720	420
Antichafe	600	600	-	-

Rule Element	South Coast AQMD Rule 1124 – Aerospace Assembly Line Coating Operations (Amended 9/21/01)	SJVAPCD Rule 4605 – Aerospace Assembly and Component Coatings (Amended 6/16/11)	BAAQMD Rule 8-29 – Aerospace Assembly and Component Coating Operations (Amended 12/20/95)	SMAQMD Rule 456 – Aerospace Assembly and Component Coating Operations (Amended 10/23/08)
Rain Erosion Resistant Coating	800	800	-	800
Conformal	750	750	420	600
Optical Anti Reflective	700	700	-	-
Scale Inhibitor	880	880	-	-
Metallized Epoxy	700	740	-	-
Electric or Radiation Effect	800	800	800	600
Temporary Protective	250	250	250	250
Fuel Tank	420	420	720	650
Mold Release	780	780	-	762
Flight Test – Missiles	420	420	-	420
Flight Test – All Others	840	600	-	420
Fire Resistant - Commercial	650	650	-	600
Fire Resistant – Military	970	N/A	-	600
Wire Coatings – Phospate Ester Resistant Ink	925	925	-	-
Wire Coatings – Other	420	420	-	-
Space Vehicle – Electrostatic Discharge Protection	800	800	-	880
Space Vehicle - Other	1000	1000	-	1000
Non Structural Adhesive	250	250	-	600
Structural Adhesive - Autoclavable	50	50	-	600
Structural Adhesive –	850	850	-	600

Rule Element	South Coast AQMD Rule 1124 – Aerospace Assembly Line Coating Operations (Amended 9/21/01)	SJVAPCD Rule 4605 – Aerospace Assembly and Component Coatings (Amended 6/16/11)	BAAQMD Rule 8-29 – Aerospace Assembly and Component Coating Operations (Amended 12/20/95)	SMAQMD Rule 456 – Aerospace Assembly and Component Coating Operations (Amended 10/23/08)
Non-Autoclavable				
Space Vehicle Adhesive	800	800	-	600
Fuel Tank Adhesive	620	620	-	600
Fastener Sealant	675	600/675	600	600
Extrudable, Rollable or Brushable Sealant	600	280/600	600	600
Other Sealant	600	N/A	-	600
Maskant for Chemical Processing	250	250	-	-
Maskant for Chemical Milling Type 1	250	250	-	622
Maskant for Chemical Milling Type II	160	250	-	160
Photolithographic Maskant	850	-	-	850
Touch Up, Line Sealer Maskant	750	-	-	850
Fastener Installation Solid-Film Lubricant	880	880	-	880
Fastener Installation Dry Lubricative Material	675	880	-	-
Fastener Manufacturing Solid Film Lubricant	250	250	-	880
Fastener Manufacturing Dry Lubricative Material	120	120	-	-

Rule Element	South Coast AQMD Rule 1124 – Aerospace Assembly Line Coating Operations (Amended 9/21/01)	SJVAPCD Rule 4605 – Aerospace Assembly and Component Coatings (Amended 6/16/11)	BAAQMD Rule 8-29 – Aerospace Assembly and Component Coating Operations (Amended 12/20/95)	SMAQMD Rule 456 – Aerospace Assembly and Component Coating Operations (Amended 10/23/08)
Fastener Manufacturing Barrier Coating	420	250	-	-
Non-Fastener Solid Film Lubricant	880	880	-	880
Non-Fastener Dry Lubricative Material	675	675	-	-
Transfer Efficiency	Use of HVLP or equivalent transfer efficiency	Use of HVLP or equivalent transfer efficiency	Use of HVLP or equivalent transfer efficiency	Use of HVLP or equivalent transfer efficiency
Work Practices	Storage, use, and disposal of coatings and waste; VOC limits and work practices for solvent cleaning	Storage, use, and disposal of coatings and waste; VOC limits and work practices for solvent cleaning	Storage, use, and disposal of coatings and waste; VOC limits and work practices for solvent cleaning	Storage, use, and disposal of coatings and waste; VOC limits and work practices for solvent cleaning
Surface Cleaning	200 g/L or 45 mm Hg	200 g/L or 45 mm Hg	None	200 g/L or 45 mm Hg
Stripping	300 g/L or 9.5 mm Hg	300 g/L or 9.5 mm Hg	400 g/L or 10 mm Hg	300 g/L or 9.5 mm Hg

iii. Wood Products Coating Operations

South Coast AQMD Rule 1136 applies to the wood products coating operations and is compared with other air district rules in Table 4-23. Table 4-24 summarizes and compares the VOC limits for wood coatings in South Coast AQMD with the rules in other air districts.

**TABLE 4-23
CONTROL MEASURES IMPLEMENTED BY SOUTH COAST AQMD AND OTHER DISTRICTS FOR WOOD COATING**

Rule	Applicability	Control Measure
South Coast AQMD Rule 1136 - Wood Products Coatings (Last Amended 06/14/96)	Applies to the application of coatings or strippers to, and surface preparation of, any wood products, including furniture, cabinets, shutters, frames, and toys	<ul style="list-style-type: none"> • VOC content limit ranges from 120-750 g/L VOC (e.g., Low-Solid Stains limit 120 g/L) • Averaging provisions and add-on control are allowed • At least 65% transfer efficiency is required, otherwise the use of additional control equipment must be used. (e.g., HVLP equipment)
Bay Area Air Quality Management District (BAAQMD) Rule 32 – Wood Products Coatings (Last Amended 08/05/09)	Applies to the coating of wood products, including surface preparation, application of coatings and cleanup	<ul style="list-style-type: none"> • VOC content limit ranges from 120-550 g/L VOC – (No mold seal application limit) (e.g., Low-Solid Stains limit 120 g/L) • Emissions to the atmosphere must be controlled with an abatement device efficiency of at least 85% instead of complying with VOC content limits
Mojave Desert Air Quality Management District (MDAQMD) Rule 1114 - Wood Products Coating Operations (Last Amended 08/24/20)	Applies to wood products coating application operations	<ul style="list-style-type: none"> • VOC content limit ranges from 120-750 g/L VOC (e.g., Low-Solid Stains limit 120 g/L) • Gives alternative in lieu of complying with the VOC content limits with a capture and control system of combined efficiency of at least 90%
SJVAPCD Rule 4606 - Wood Products and Flat Wood Paneling Products Coating Operations (Last Amended 10/16/08)	Applies to the application of coatings to wood products, including furniture, cabinets, flat wood paneling, and custom replica furniture	<ul style="list-style-type: none"> • VOC content limit ranges from 120-750 g/L VOC (e.g. Low -Solid Stains limit 120 g/L) • Gives alternative in lieu of complying with the VOC content limits with control system of efficiency of at least 85% by weight for wood product coating

**TABLE 4-24
RELEVANT VOC CONTENT LIMITS IN COATINGS BY SOUTH COAST AQMD AND OTHER DISTRICT FOR
WOOD COATINGS**

Type of Coating	South Coast AQMD Rule 1136 VOC Limit, g/L	MDAQMD Rule 1114 VOC Limit, g/L	SJVAPCD Rule 4606 VOC Limit, g/L	BAAQMD Rule 32 VOC Limit, g/L
Clear Sealers	275	275	275	275
Clear Topcoat	275	275	275	275
Fillers	275 (All Products)	275 (New Products) 500 (Refurbished)	275 (All Products)	275 (All Products)
High-Solids Stain	350 (All Products)	240 (New Products) 700 (Refurbished)	240 (All Products)	350 (All Products)
Inks	500	500	500	500
Low-Solid Stain	120	120	120	120
Mold-Seal Coating	750	750	750	-
Multi-colored Coatings	275 (All Products)	275 (New Products) 700 (Refurbished)	275 (All Products)	275 (All Products)
Pigmented Primers, Sealers, & Undercoats	275	275	275	275
Pigmented Topcoats	275	275	275	275

The control measures identified rely on similar control measures among South Coast AQMD and other air districts as shown in Table 4-23. Furthermore, the requirements set by Rule 1136 are very similar to those identified in MDAQMD, SJVAPCD, and BAAQMD which include similar VOC content limits for wood coatings application and an alternative to install a control emission system in lieu of meeting the VOC content limits. In some categories, South Coast AQMD's Rule 1136 requirements were more stringent; for example, in the high-solids Stain limit where it is set at 350 g/L and the MDAQMD Rule 114 requirements sets it up to 700 g/L for refurbished applications. For the majority of categories, Rule 1136 is as stringent or more stringent than the other air districts.

Staff reviewed the available control measures for wood coating processes and found that the available measures are already being implemented. In addition, as any reformulation of VOC-containing products requires a minimum of a few years, there are no feasible short-term contingency measures that can be taken regarding the VOC content of wood coatings. Consequently, no contingency measures are proposed.

iv. Solvent Thinning Operations

Consumer products are primarily regulated under the CARB Consumer Products Regulatory Program.⁴⁶ South Coast AQMD Rule 1143 – Consumer Paint Thinners and Multi-Purpose Solvents was adopted in March 2009 and last amended on December 3, 2010 to reduce VOC emissions from paint thinners and multi-purpose solvents from products not yet regulated by CARB. South Coast AQMD Rule 1143 was compared to BAAQMD’s Regulation 8, Rule 4 (Rule 8-4) – General Solvent and Coating Operations and SJVAPCD’s Rule 4661 – Organic Solvents, to determine areas if South Coast AQMD is less stringent. U.S. EPA’s Control Techniques Guidelines (CTG) for Industrial Cleaning Solvents covers solvents used for thinning. South Coast AQMD Rule 1143 is compared with other air district rules in Table 4-25.

In September 2009, CARB adopted an amendment to include multi-purpose solvents and paint thinners under the consumer products regulation. Since CARB’s consumer products regulation is statewide, CARB’s VOC limits for multi-purpose solvents and paint thinners preempt South Coast AQMD’s Rule 1143 VOC limits and are in effect for the Coachella Valley. More details can be found under the “Solvent Evaporation-Consumer Products” section of this Plan. Additionally, an infeasibility justification for consumer products regulated under CARB’s authority is presented in Appendix B.

**TABLE 4-25
RULE 1143 COMPARATIVE ANALYSIS**

	South Coast AQMD Rule 1143 – Consumer Paint Thinners and Multi-Purpose Solvents (Amended 12/3/10)	BAAQMD Rule 8-4 – General Solvent and Coating Operations (Amended 10/16/22)	SJVAPCD Rule 4661 – Organic Solvents (Amended 9/20/07)
Applicability	Users, suppliers, and manufacturers of consumer paint thinners and multi-purpose solvent	Solvent and Coating Operations	Operations that use organic solvents
Requirements	<ul style="list-style-type: none"> • Consumer paint thinner – 25 g/L (2.5%) • Consumer multi-purpose solvent – 25 g/L (2.5%) 	Surface coating – 420 g/L	Refers to Rule 4663 for VOC limits (which are \geq 25 g/L – see Table 4-19.3)
Exemptions	<ul style="list-style-type: none"> • Solvents designated for cleanup of polyaspartic and polyurea coatings application equipment • Thinners designated for Industrial Maintenance, Zinc IM Primers, and High Temperature Coatings • Artist solvents/thinners designated to reduce viscosity of, or remove, art coating compositions or components 	Exemptions listed in Table 4-19.1	Exemptions listed in Table 4-19.1

⁴⁶ CCR Title 17 § 94509

v. Plastic, Rubber, Leather and Glass Coating Operations

South Coast AQMD Rule 1145 applies to the plastic, rubber, leather and glass coating operations and is compared against applicable rules in other air districts in Table 4-26, which include U.S. EPA's CTG for Miscellaneous Metal and Plastic Parts Coatings, Antelope Valley AQMD (AVAQMD) Rule 1145 – Plastic, Rubber, and Glass Coatings, and BAAQMD Rule 31 – Surface Preparation of Plastic Parts and Products. Table 4-27 shows the VOC limits for plastic coatings in these rules by South Coast AQMD and other air districts.

TABLE 4-26
CONTROL MEASURES IMPLEMENTED BY SOUTH COAST AQMD AND OTHER DISTRICTS FOR PLASTIC COATINGS

Rule	Applicability	Control Measure
South Coast AQMD Rule 1145 - Plastic, Rubber, Leather, and Glass Coatings (Last Amended 12/04/09)	Applies to the application of coatings to any plastic, rubber, leather, or glass products	<ul style="list-style-type: none"> • Sets VOC limits ranging from 50-800 g/L depending on coating category or, • Able to comply by using air pollution control equipment <ul style="list-style-type: none"> - Reduce VOC emission from an emission collection system by at least 95% by weight or the concentration of VOC in the output of the air pollution control device is less than 50 ppm and; - The system, collects at least 90% by weight of the VOC emissions generated • Requires High transfer coating equipment (e.g., HVLP) • Solvent cleaning operations must comply with Rule 1171 – Solvent Cleaning Operations
U.S. EPA CTG for Miscellaneous Metal and Plastic Parts Coatings (Last Revised 09/2008)	Applies to facilities that perform surface coating operations to metal & plastic parts	<ul style="list-style-type: none"> • States that recommended limits in SCAQMD Rule 1145 are more stringent than in other existing federal, state and local actions limiting VOC emissions.
AVAQMD Rule 1145 – Plastic, Rubber, and Glass Coatings (Last Amended 02/14/97)	Applies to the application of coatings to any plastic, rubber, or glass	<ul style="list-style-type: none"> • Sets VOC limits ranging from 275-800 g/L depending on coating category; or • Able to comply with by using air pollution control equipment: <ul style="list-style-type: none"> - The control device reduces VOC emissions from an emission collection system by

Rule	Applicability	Control Measure
		at least 95% by weight or the concentration of VOC in the output of the air pollution control device is less than 50 ppm and; <ul style="list-style-type: none"> - The system, collects at least 90% by weight of the VOC emissions generated • Solvent cleaning operations must comply with Rule 1171 – Solvent Cleaning Operations • Requires High transfer coating equipment (e.g., HVLP)
BAAQMD Rule 31 – Surface Preparation of Plastic Parts and Products (Last Amended 10/16/02)	Applies to the surface preparation and coating of plastic parts and products, including polyester resin (fiberglass) products	<ul style="list-style-type: none"> • Sets VOC limit of 340 g/L of coating applied to plastic parts or; • Able to comply with by using air pollution abatement device with an efficiency of at least 85%

**TABLE 4-27
RELEVANT VOC CONTENT LIMITS IN COATINGS BY SOUTH COAST AQMD AND OTHER DISTRICTS FOR
PLASTIC COATINGS**

Type of Coating	South Coast AQMD Rule 1136 VOC Limit, g/L	AVAQMD Rule 1145 VOC Limit, g/L	BAAQMD Rule 31 VOC Limit, g/L
Electrical Dissipating and shock free coatings	360	360	340
General one-component coatings	120	275	340
General two-component coatings	120	420	340
Metallic coatings	420	420	420
Military specification one-component coatings	340	340	340
Military specification two-component coatings	420	420	340
Mold seal coatings	750	750	-

Type of Coating	South Coast AQMD Rule 1136 VOC Limit, g/L	AVAQMD Rule 1145 VOC Limit, g/L	BAAQMD Rule 31 VOC Limit, g/L
Multi-color coatings	680	685	-
Optical Coatings	50	800	800

The plastic coatings process controls identified fall into common categories. The requirements of the relevant South Coast AQMD rules are similar and some more stringent in certain categories such as in general one-component coatings when compared with the requirements set by AVAQMD and BAAQMD as shown in Table 2-29. Furthermore, in the 2008 CTG, released by the U.S. EPA, states that the South Coast AQMD recommended limits in Rule 1145 and Rule 1107 are more stringent than limits provided in other existing Federal, State, and local actions limiting VOC emissions from these coating categories. Because of the large size of the South Coast AQMD and the number of regulated sources, the facilities subject to the South Coast AQMD rules are considered to be representative of the type of sources located in other parts of the country. U.S. EPA recommends these limits as technically and economically feasible in other parts of the country. The available control measures are already being implemented and as such, no contingency measures are proposed for this category.

vi. Motor Vehicle Non-Assembly Line Coating Operations

South Coast AQMD Rule 1151 applies to this source category. Staff reviewed control measures for this source category implemented by South Coast AQMD and other state and local air agencies, including Santa Barbara County APCD (SBCAPCD) Rule 339, San Diego County APCD (SDAPCD) Rule 67.20.1, BAAQMD Rule 8-45, SJVAPCD Rule 4612, SMAQMD Rule 459, and CARB. Each jurisdiction has different rule structures, which can make direct comparison difficult. The tables below summarize the control measures staff considered for this source category comparative analysis.

TABLE 4-28
RULE 1151 COMPARATIVE ANALYSIS

Rule	Applicability	Control Measure
South Coast AQMD Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations (Amended September 5, 2014)	Any person who supplies, sells, offers for sale, markets, manufactures, blends, packages, repackages, possesses or distributes any automotive coating or associated solvent for use within the District, as well as any person who uses, applies, or solicits the use or	The rule contains various VOC content limits that apply to different types of automotive refinishing coatings based on use and purpose. The VOC content limits can be achieved using the following control technologies: waterborne formulation and

Rule	Applicability	Control Measure
	<p>application of any automotive coating or associated solvent within the South Coast AQMD jurisdiction.</p>	<p>utilization of exempt compounds.</p> <p>Rule provides an alternative compliance option allowing for the use of an approved emission control system, consisting of collection and control devices, only if the VOC emissions resulting from the use of non-compliant automotive coatings will be reduced to a level equivalent to or lower than that which would have been achieved by compliance with VOC content limits.</p>
<p>SBCAPCD Rule 339 – Motor Vehicle and Mobile Equipment Coating Operations (Amended in 2008)</p>	<p>This rule is applicable to any person who supplies, sells, offers for sale, manufactures, or distributes any automotive coating or associated solvent for use within the jurisdiction, as well as any person who uses, applies, or solicits the use or application of any automotive coating or associated solvent within the jurisdiction. The purpose of this rule is to limit VOC emissions from coatings and solvents associated with the coating of motor vehicles, mobile equipment, and associated parts and components.</p>	<p>SBCAPCD Rule 339 – Motor Vehicle and Mobile Equipment Coating Operations (Amended in 2008)</p>
<p>SDAPCD Rule 67.20.1 – Motor Vehicle and Mobile Equipment Coating Operations (Amended in 2010)</p>	<p>This rule is applicable to: All motor vehicle and mobile equipment coating operations including finishing or refinishing of motor vehicles, mobile equipment, non-motorized models, and their associated parts and components. (ii) All cleaning operations associated with motor</p>	<p>The rule contains various VOC content limits that apply to different types of automotive refinishing coatings based on use and purpose.</p> <p>The VOC content limits can be achieved using the following control technologies: waterborne formulation and utilization of exempt</p>

Rule	Applicability	Control Measure
	<p>vehicle and mobile equipment coating operations.</p> <p>Any person who supplies, sells, offers for sale, manufactures, or distributes any automotive coating or associated cleaning material for use within San Diego County.</p>	<p>compounds.</p> <p>Rule provides an alternative compliance option allowing for the use of an approved emission control system, which achieves an overall control efficiency of at least 85 percent by weight.</p>
<p>BAAQMD Rule 8-45 - Motor Vehicle and Mobile Equipment Coating Operations (Amended in 2008)</p>	<p>The purpose of this rule is to limit the emission of volatile organic compounds from the finishing or refinishing of motor vehicles, mobile equipment and their parts and components.</p>	<p>The rule contains various VOC content limits that apply to different types of automotive refinishing coatings based on use and purpose.</p> <p>The VOC content limits can be achieved using the following control technologies: waterborne formulation and utilization of exempt compounds.</p>
<p>SJVAPCD Rule 4612 - Motor Vehicle and Mobile Equipment Coating Operations (Amended in 2010)</p>	<p>This rule is applicable to any person who supplies, sells, offers for sale, manufacturers, or distributes any automotive coating for use within the jurisdiction, as well as any person who uses, applies, or solicits the use or application of any automotive coating within the jurisdiction.</p>	<p>The rule contains various VOC content limits that apply to different types of automotive refinishing coatings based on use and purpose.</p> <p>The VOC content limits can be achieved using the following control technologies: waterborne formulation and utilization of exempt compounds.</p>
<p>SMAQMD Rule 459 – Automotive, Mobile Equipment, and Associated Parts and Components Coating Operations (Amended in 2011)</p>	<p>The provisions of this rule shall apply to any person who supplies, sells, offers for sale, manufactures, or distributes any automotive coating or associated solvent for use within the jurisdiction, as well as any person who uses, applies, or solicits the use or application of any automotive coating or associated solvent within the jurisdiction. The</p>	<p>The rule contains various VOC content limits that apply to different types of automotive refinishing coatings based on use and purpose.</p> <p>The VOC content limits can be achieved using the following control technologies: waterborne formulation and utilization of exempt compounds.</p>

Rule	Applicability	Control Measure
	<p>provisions of Rule 441, Organic Solvents, shall not apply to persons using automotive coatings and solvents subject to this rule.</p>	<p>Rule provides an alternative compliance option allowing for the use of an approved emission control system, which achieves an overall control efficiency of at least 85 percent.</p>
<p>CARB 2005 Suggested Control Measures for Automotive Refinishing Coatings</p>	<p>The provisions of the measure apply to facilities conducting automotive refinishing activities.</p>	<p>Suggested control measure contains various suggested VOC content limits that apply to different types of automotive refinishing coatings based on use and purpose.</p> <p>The VOC content limits can be achieved using the following control technologies: waterborne formulation and utilization of exempt compounds.</p>

TABLE 4-29
VOC CONTENT LIMITS (G/L) – LESS WATER AND EXEMPT COMPOUNDS

Coating Category	South Coast AQMD Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations (Amended 9/5/14)	SBCAPCD Rule 339 – Motor Vehicle and Mobile Equipment Coating Operations (Amended 6/19/08)	SDAPCD Rule 67.20.1 - Motor Vehicle and Mobile Equipment Coating Operations (Amended 6/30/10)	BAAQMD Rule 8-45 – Motor Vehicle and Mobile Equipment Coating Operations (Amended 12/3/08)	SJVAPCD Rule 4612 – Motor Vehicle and Mobile Equipment Coating Operations (Amended 10/21/10)	SMAQMD Rule 459 – Automotive, Mobile Equipment, and Associated Parts and Components Coating Operations (Amended 8/25/11)	CARB - 2005 Suggested Control Measures for Automotive Refinishing Coatings
Adhesion Promoter	540	540	540	540	540	540	540
Clear Coating	250	250	250	250	250	250	250
Color Coating	420	420	420	420	420	420	420
Multi-Color Coating	680	680	680	680	680	520 or 680*	680
Pretreatment Coating	660	660	660	660	660	660	660
Primer	250	250	250	250	250	250	250
Primer Sealer	N/A	250	250	250	250	250	N/A
Single-Stage Coating	340	340	340	340	340	340	340
Temporary Protective Coating	60	60	60	60	60	60	60
Truck Bed Liner Coating	310	310	310	310	310	310	310
Underbody Coating	430	430	430	430	430	430	430
Uniform Finishing Coating	540	540	540	540	540	540	540

Coating Category	South Coast AQMD Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations (Amended 9/5/14)	SBCAPCD Rule 339 – Motor Vehicle and Mobile Equipment Coating Operations (Amended 6/19/08)	SDAPCD Rule 67.20.1 - Motor Vehicle and Mobile Equipment Coating Operations (Amended 6/30/10)	BAAQMD Rule 8-45 – Motor Vehicle and Mobile Equipment Coating Operations (Amended 12/3/08)	SJVAPCD Rule 4612 – Motor Vehicle and Mobile Equipment Coating Operations (Amended 10/21/10)	SMAQMD Rule 459 – Automotive, Mobile Equipment, and Associated Parts and Components Coating Operations (Amended 8/25/11)	CARB - 2005 Suggested Control Measures for Automotive Refinishing Coatings
Pigmented Coating for Military Tactical Support Vehicles and Equipment	N/A	N/A	420	N/A	N/A	N/A	N/A
Primer for Military Tactical Support Vehicles and Equipment	N/A	N/A	420	N/A	N/A	N/A	N/A
Any Other Coating Type	250	250	250	250	250	250	250

* Mobile equipment driven or drawn on rails and its associated parts and components (520 g/L); Any other mobile equipment or motor vehicle and its associated parts and components (680 g/L)

Staff compared the provisions of South Coast AQMD Rule 1151 with control measures implemented in other jurisdictions in the tables above. South Coast AQMD's Rule 1151 contains nearly identical VOC content limits, the primary mechanism by which VOC emissions from motor vehicle and mobile equipment non-assembly line coating operations are regulated, as those established in similar rules in BAAQMD, SJVAPCD, SBCAPCD and SDAPCD. The few differences include the coating categories "Pigmented Coating for Military Tactical Support Vehicles and Equipment" and "Primer for Military Tactical Support Vehicles and Equipment" being included in SDAPCD's Rule 67-20-1, and each of the above-mentioned air districts including the coating category "primer sealer" in their rule. Under South Coast AQMD Rule 1151, primer sealers would fall under the established primer category, which has an identical primer VOC content limit as the other districts do for both the primer and primer sealer categories. Overall, South Coast AQMD is just as stringent as other large regulatory agencies in regulating automotive coatings.

c. Conclusion

Staff reviewed the available control measures for the major source category 230 – Coatings and Related Process Solvents category and found that the available measures are already being implemented. Furthermore, South Coast AQMD rules are just as stringent as other large regulatory bodies. In addition, as coating manufacturers would require a minimum of a few years to reformulate coatings, there are no feasible short-term contingency measures that can be taken regarding the VOC limits in applicable rules. Consequently, no contingency measures are identified at this time.

4. Printing

a. Overview

Major source category 240 – Printing includes thinning and cleanup solvents, rotogravure, flexographic, lithographic, letter press, screen printing, and other printing related sources. In the Coachella Valley, the only VOC emissions associated with printing are from other solvents (unspecified), which contribute 0.03 tpd.

b. Evaluation

South Coast AQMD Rules 442, 1128, 1130, and 1130.1 apply to this printing source category. Because Rule 442 was discussed in Table 4-19 for the degreasing source category, it is excluded in this section, and the remaining rules are compared with the applicable rules in other air districts.

Staff compared South Coast AQMD rules and other air districts' rules in Table 4-30. The review of the different control measures indicated that South Coast AQMD's requirements are similar to other air districts. One of those requirements is the utilization of an emission control device with a control efficiency of at least 90 percent. Furthermore, the implementation of similar best management practices and good housekeeping to minimize emissions is required, e.g., prohibiting the use of spray coating unless a high transfer efficiency method is used. In addition, South Coast AQMD sets a VOC content limit for coatings of

265 g/L, which aligns with that in other air districts, as well as an overall emission control efficiency of 90 percent. This VOC limit is more stringent than the limit recommended by U.S. EPA's CTG. Staff did not identify control measures for further consideration as contingency measures in the South Coast AQMD jurisdiction.

c. Conclusion

Comparison revealed that South Coast AQMD rules for the printing source category generally contain the most stringent requirements. In addition, reformulating to lower VOC-content materials would take more than 2 years. Therefore, staff did not identify any potential contingency measure for printing.

**TABLE 4-30
COMPARISON OF SOUTH COAST AQMD RULES AND OTHER AIR DISTRICTS RULES FOR PRINTING**

TABLE 4-30.1 – Paper, Fabric, and Film Coating Operations						
	South Coast AQMD Rule 1128 - Paper, Fabric, and Film Coating Operations (Amended 3/8/96)	SJVAPCD Rule 4607 – Graphic Arts and Paper, Film, Foil and Fabric Coatings (Amended 12/18/08)	BAAQMD Rule 8-12 – Paper, Fabric and Film Coating (Amended 12/20/95)	U.S. EPA – CTG for Paper, Film, and Foil Coatings (Amended 9/2009)	SDAPCD Rule 67.5 - Paper, Film and Fabric Coating Operations (Amended 05/15/96)	VCAPCD Rule 74.3 – Paper, Fabric and Film Coating Operation (Amended 12/10/91)
Applicability	Coatings or wash primers to paper, fabric, or film substrates	Graphic arts printing operations, digital printing operations, and paper, film, foil or fabric coating operations	Application of coatings and adhesives to paper, fabric or films	This CTG provides control recommendations for reducing VOC emissions stemming from the use of coatings in paper, film, and foil surface coating operations	Applies to any paper, fabric, and/or film coating application process	Coating of paper, fabric or film
Key Exemptions	Coating facility that applies <2 gal/day Application of materials with <20 g/L	None applicable	Coating line that emits <14.3 lb/day			

	South Coast AQMD Rule 1128 - Paper, Fabric, and Film Coating Operations (Amended 3/8/96)	SJVAPCD Rule 4607 – Graphic Arts and Paper, Film, Foil and Fabric Coatings (Amended 12/18/08)	BAAQMD Rule 8-12 – Paper, Fabric and Film Coating (Amended 12/20/95)	U.S. EPA – CTG for Paper, Film, and Foil Coatings (Amended 9/2009)	SDAPCD Rule 67.5 - Paper, Film and Fabric Coating Operations (Amended 05/15/96)	VCAPCD Rule 74.3 – Paper, Fabric and Film Coating Operation (Amended 12/10/91)
Key Requirements	<p>Coating VOC content:</p> <ul style="list-style-type: none"> <265 g/L of coating, with or without heating ovens and a minimum transfer efficiency of 95%; or VOC emissions are reduced to <120 g/L of coating applied <p>Plastisol VOC content:</p> <ul style="list-style-type: none"> <20 g/L of coating <p>Wash primer VOC content:</p> <ul style="list-style-type: none"> <265 g/L of material used; or VOC emissions are collected and reduced by an approved emission control system <p>Cleaning of application equipment:</p>	<p>Coating VOC content:</p> <ul style="list-style-type: none"> <265 g/L of coating <p>Plastisol VOC content:</p> <ul style="list-style-type: none"> <20 g/L of coating <p>Wash primer VOC content:</p> <ul style="list-style-type: none"> <265 g/L of material used <p>Emission control system:</p> <ul style="list-style-type: none"> 90%, overall capture and control efficiency 	<p>Coating or adhesive VOC content:</p> <ul style="list-style-type: none"> <265 g/L of coating VOC emissions are reduced to <120 g/L of coating applied 	<ul style="list-style-type: none"> Recommends a limit of 350 g/L VOC control efficiency of 90% overall control 	<ul style="list-style-type: none"> Coating-specific VOC content limits of 265 g/L, or Use control system with a combined collection efficiency of 90% Coating must display the content of methyl chloride 	<p>Coating VOC content:</p> <ul style="list-style-type: none"> <265 g/L of coating <p>VOC emissions from application process are <120 g/L of coating applied</p> <p>Combined capture and destruction efficiency of no less than 90%</p> <p>Clean-up solvent VOC content:</p> <ul style="list-style-type: none"> <200 g/L <p>All VOC-containing solvents must be stored in non-absorbent, non-leaking containers</p>

	South Coast AQMD Rule 1128 - Paper, Fabric, and Film Coating Operations (Amended 3/8/96)	SJVAPCD Rule 4607 – Graphic Arts and Paper, Film, Foil and Fabric Coatings (Amended 12/18/08)	BAAQMD Rule 8-12 – Paper, Fabric and Film Coating (Amended 12/20/95)	U.S. EPA – CTG for Paper, Film, and Foil Coatings (Amended 9/2009)	SDAPCD Rule 67.5 - Paper, Film and Fabric Coating Operations (Amended 05/15/96)	VCAPCD Rule 74.3 – Paper, Fabric and Film Coating Operation (Amended 12/10/91)
	<ul style="list-style-type: none"> • 85% of VOCs are collected and disposed; or • Clean-up materials contain ≤15% VOC <p>Approved emission control system:</p> <ul style="list-style-type: none"> • 90% emission collection and 95% emission reduction (85%, overall efficiency); or • 50 ppm outlet concentration <p>All VOC-containing solvents must be stored in non-absorbent, non-leaking containers</p>					

TABLE 4-30.2 – Graphic Arts Operations

	South Coast AQMD Rule 1130 – Graphic Arts (Amended 5/2/14)	SJVAPCD Rule 4607 – Graphic Arts and Paper, Film, Foil and Fabric Coatings (Amended 12/18/08)	SMAQMD Rule 450 – Graphic Arts Operations (Amended 10/23/08)	BAAQMD Rule 8-20 – Graphic Arts Printing and Coating Operations (Amended 11/19/08)	VCAPCD Rule 74.19 – Graphic Arts (Amended 6/14/11)
Applicability	Any person performing graphic arts operations or who supplies, sells, offers for sale, markets, manufactures, blends, repackages, stores at a worksite, distributes, applies or solicits the application of graphic arts materials for use	Graphic arts printing operations, digital printing operations, and paper, film, foil or fabric coating operations	Graphic arts operations and any screen printing operation at any stationary source regardless of the substrate	Graphic arts operation	Any person who applies, manufactures, or supplies any ink, coating, adhesive, fountain solution, or solvent containing VOC that is as part of a graphic arts operation or sold for use in a graphic arts operation

	South Coast AQMD Rule 1130 – Graphic Arts (Amended 5/2/14)	SJVAPCD Rule 4607 – Graphic Arts and Paper, Film, Foil and Fabric Coatings (Amended 12/18/08)	SMAQMD Rule 450 – Graphic Arts Operations (Amended 10/23/08)	BAAQMD Rule 8-20 – Graphic Arts Printing and Coating Operations (Amended 11/19/08)	VCAPCD Rule 74.19 – Graphic Arts (Amended 6/14/11)
Exemptions	<p>Metallic and matte finish inks:</p> <ul style="list-style-type: none"> • Usage not to exceed 2 gallons on any one day and 125 gal/year at a facility • Potential to emit (PTE) and actual VOC emissions do not exceed 10 tons per calendar year from all VOC sources; and • VOC content of matte finish does not exceed 535 g/L • VOC content of metallic inks does not exceed 460 g/L 		<p>Any graphic arts operation:</p> <ul style="list-style-type: none"> • Actual emissions <60 lb/month from all graphic arts operations and cleaning materials; or • PTE ≤175 lb/month <p>Aerosol adhesives:</p> <ul style="list-style-type: none"> • <600 lb/month <p>Lithographic and letterpress printing, metering rollers and printing plates:</p> <ul style="list-style-type: none"> • ≤100 g/L <p>Fountain solution:</p> <ul style="list-style-type: none"> • Total actual emissions of <450 lb/month from all offset lithographic printing operations <p>Heatset web offset lithographic printing and heatset web letterpress printing:</p> <ul style="list-style-type: none"> • PTE from drying oven, prior to emissions 	<p>Low-emitting exemption:</p> <ul style="list-style-type: none"> • <75 lb/month 	<p>Any stationary source that emits <200 lb VOC/rolling 12 month</p>

	South Coast AQMD Rule 1130 – Graphic Arts (Amended 5/2/14)	SJVAPCD Rule 4607 – Graphic Arts and Paper, Film, Foil and Fabric Coatings (Amended 12/18/08)	SMAQMD Rule 450 – Graphic Arts Operations (Amended 10/23/08)	BAAQMD Rule 8-20 – Graphic Arts Printing and Coating Operations (Amended 11/19/08)	VCAPCD Rule 74.19 – Graphic Arts (Amended 6/14/11)	
			control equipment, <25 tpy Flexible package printing inks, coatings, and adhesives: <ul style="list-style-type: none"> PTE from drying oven, prior to emissions control equipment, <25 tpy 			
Requirements	VOC Content Limits, g/L					
	Category	South Coast AQMD Rule 1130	SJVAPCD Rule 4607	SMAQMD Rule 450	BAAQMD Rule 8-20	VCAPCD Rule 74.19
	Graphic art material					
	Adhesive	150	150	150	150	150
	Coating	300	300	300	300	300
	Flexographic fluorescent ink	300	300	300	300	300
	Flexographic, non-porous substrate	300	300	-	300	-
	Flexographic, porous substrate	225	225	-	225	225
	Gravure ink	225	-	-	-	-
	Letterpress ink	300	-	-	-	-
	Offset lithographic ink	300	-	-	-	-
	Fountain solution	-	-	-	8% by volume	-
	Heatset web-fed		1.6% by volume	-	-	-
	Using alcohol without refrigerated chiller	16	-	1.6% by weight	-	16
	Using alcohol with refrigerated chiller	30	-	3% by weight	-	30
	Using alcohol substitute	50	-	-	-	50
	Sheet-fed		5.0% by volume	-	-	-

Requirements	VOC Content Limits, g/L					
	Category	South Coast AQMD Rule 1130	SJVAPCD Rule 4607	SMAQMD Rule 450	BAAQMD Rule 8-20	VCAPCD Rule 74.19
	Using alcohol with refrigerated chiller	85	-	8.5% by weight	-	85
	Using alcohol substitute	50	-	5% by weight	-	50
	Not-heatset web-fed	-	5.0% by volume	-	-	50
	Using alcohol without refrigerated chiller	50	-	-	-	-
	Using alcohol with refrigerated chiller	50	-	-	-	-

TABLE 4-30.3 – Screen Printing Operations						
	South Coast AQMD Rule 1130.1 – Screen Printing Operation (Amended 12/13/96)	SJVAPCD Rule 4607 – Graphic Arts and Paper, Film, Foil and Fabric Coatings (Amended 12/18/08)	SMAQMD Rule 450 – Graphic Arts Operations (Amended 10/23/08)	BAAQMD Rule 8-20 – Graphic Arts Printing and Coating Operations (Amended 11/19/08)	VCAPCD Rule 74.19.1 – Screen Printing Operations (Amended 11/11/03)	
Applicability	Persons performing screen printing operations or who sell, distribute, or require the use of screen printing materials	See Table 4-30.2	See Table 4-30.2	See Table 4-30.2	Any person who uses or manufactures, specifies the use of, sells, or offers for sale, any ink, coating, adhesive, resist, or solvent containing VOC	
Exemptions	A facility or screen printing operations performed by manufacturers for performance research and development (R&D) that emit ≤2 lb VOC/day	See Table 4-30.2	See Table 4-30.2	See Table 4-30.2	Any facility that emits <200 lb VOC/rolling period of 12 months	
Requirements	VOC Limits, g/L					
	Category	South Coast AQMD Rule 1130.1	SJVAPCD Rule 4607	SMAQMD Rule 450	BAAQMD Rule 8-20	VCAPCD Rule 74.19.1
	Product					
	Chlorine indicator	500	-	-	-	-
	Containers	800	-	-	-	-

Requirements	VOC Limits, g/L					
	Category	South Coast AQMD Rule 1130.1	SJVAPCD Rule 4607	SMAQMD Rule 450	BAAQMD Rule 8-20	VCAPCD Rule 74.19.1
	Electronic circuit	850	-	-	-	-
	Mechanically-formed products	800	-	800	-	-
	Overlays	800	-	800	-	-
	Polyethylene products	800	-	-	-	-
	Sterilization indicator	600	-	-	-	-
	Water slide decals:	-	-	800	-	800
	Opaque inks	800	-	-	-	-
	Clear inks	800	-	-	-	-
	Ceramic decal inks	800	-	-	-	800
	Substrate					
	Ceramic	800	-	-	-	-
	Fiberglass	600	-	-	-	-
	Glass or metal	600	-	-	-	-
	Man-made textile	800	-	-	-	-
	Unsealed aluminum	800	-	-	-	-
	Screen Printing Material					
	Adhesive	400	150	150	150	400
	Coating	400	400	400	400	400
	Fine detail loose-leaf binder ink	745	-	-	-	-
	Fluorescent ink	540	-	-	-	-
	High-VOC serigraph ink	800	-	-	-	-
	Loose-leaf binder metallic ink	745	-	-	-	-
	Metallic ink	400	-	400	400	400
	Printing ink	400	-	-	-	400
	Resists	600	600	-	-	600
	Scratch-off ink	800	-	-	-	-
	Water-slide decal adhesive	800	-	-	-	-
	Extreme performance screen printing material	400	-	800	400	800

5. Adhesives and Sealants

a. Overview

Major source category 250 – Adhesives and Sealants includes the applications, operations, or usage of VOC-containing organic solvent-based or water-based adhesives and sealant materials. This major source category contributes 0.15 tpd of VOC to the 2031 summer planning emissions inventory in the Coachella Valley.

b. Evaluation

South Coast AQMD Rules 442 and 1168 apply to the major source category 250 – Adhesives and Sealants. Key requirements of Rule 442 were already discussed in Table 4-19 for the degreasing source category, along with the comparable requirements in other air districts' rules. Therefore, this section only includes analysis of Rule 1168 and applicable air districts' rules. Rule 1168 was amended in November 2022 to relax the stringency of certain limits due to a technology assessment which demonstrated that previous limits were not feasible.⁴⁷ In addition, the amendment prohibited the use of paraChlorobenzotrifluoride (pCBtF) and tertiary-Butyl Acetate (t-BAC), which are significantly more toxic than previously thought, resulting in some VOC limits being increased to accommodate substitution with lower toxic material.

South Coast AQMD Rule 1168 is compared with SJVAPCD Rule 4653, SMAQMD Rule 460, BAAQMD Rule 8-51, and VCAPCD Rule 74.20 in Table 4-31. Comparison of these rules revealed that the VOC limits in South Coast AQMD Rule 1168 are more stringent for most unit categories than those in other air districts. While there are some categories where other air districts' rules are more stringent, Rule 1168 sets the most stringent limit that is technically feasible and restricts exemptions carefully. For example, SJVAPCD Rule 4653 has a significantly more stringent limit for pressure sensitive adhesive primers (250 g/L vs. 785 g/L). However, at the time of rule amendment, staff did not identify any pressure sensitive adhesive primers compliant with the 250 g/L limit and concluded that the limit is technologically infeasible.

SJVAPCD Rule 4653's low usage and small container exemptions (20 gal/year adhesives and sealants; and adhesives that are sold or supplied in ≤ 8 oz. non-reusable containers) differ from those in South Coast AQMD Rule 1168 (55 gal/year, with some exceptions; and regulated products, which weigh ≤ 1 lb., or consist of ≤ 16 fluid oz.). For products which weigh ≤ 1 lb. or consist of ≤ 16 fluid oz., they are exempted because they are regulated by CARB's Consumer Products Regulation⁴⁸ and are not subject to Rule 1168. In addition, the low usage exemption in SJVAPCD Rule 4653 applies generally to facilities that use less than 20 gal/year of any type of adhesive or sealant, meaning such facilities do not have to comply with any VOC limits. In contrast, South Coast AQMD allows facilities to use up to 55 gal/year of noncompliant products, but restricts this exemption where there are no compliant products and the facilities solely rely on this

⁴⁷ <https://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2022/2022-Nov4-027.pdf?sfvrsn=6>

⁴⁸ CCR Title 17 § 94509

exemption (e.g., pressure sensitive and rubber vulcanization products). The low usage exemption also excludes:

- Architectural applications;
- Contact adhesives;
- Special purpose contact adhesives;
- Adhesives used on porous substrates;
- Rubber vulcanization adhesives; and
- Top and trim adhesives.

South Coast AQMD also has the following exemptions, which do not correspond to any equivalent exemptions in SJVAPCD Rule 4653:

1. Regulated products used in the field installation and repair of potable water linings and covers at water treatment, storage, or water distribution facilities.
2. Adhesive tape.
3. Regulated products sold in quantities of ≤ 1 fluid oz.
4. Adhesives used to glue flowers to parade floats.
5. Shoe repair, luggage, and handbag adhesives.

While these exemptions may appear to be less stringent than other districts' rules, further analysis revealed this not to be the case. The potable water linings and covers exemption was needed to support a more stringent VOC limit for potable water architectural sealants (100 g/L in Rule 1168 vs. 250 g/L in other districts' rules), as these were the instances where the lower limit could not be achieved. Adhesive tapes were exempted because these products do not have a measurable VOC content and products sold in quantities of ≤ 1 fluid oz. are exempted to align with CARB's Consumer Products Regulation.⁴⁹ The "adhesives used to glue flowers to parade floats" are exempted to support the New Year's Rose Parade. No other district has this type of parade and therefore no exemption was granted. Shoe repair, luggage, and handbag adhesives use contact adhesives in quantities less than 20 gallons per year. Other air districts exempt all adhesive use below 20 gallons per year per facility. Since contact adhesives are not included in the 55 gallon exemption for Rule 1168, an exemption for that specific use is included in the rule. Ultimately, these operations are exempted either directly (as in Rule 1168) or the more broadly applicable 20 gallon per year per facility exemption in other air district regulations. Table 4-31 compares South Coast AQMD's Rule 1168 with other districts' rules and demonstrates that South Coast AQMD has more stringent limits in multiple adhesive categories.

c. Conclusion

Staff concluded that there is no appropriate contingency measure for the adhesives and sealants source category. VOC limits in certain categories were identified as technologically infeasible during recent rule amendments. Besides the technological feasibility, it is not feasible to trigger lower VOC limits for

⁴⁹ CCR Title 17 § 94509

adhesives and sealants due to the required implementation timeline of a contingency measure. Consistent with the Draft Guidance, South Coast AQMD would only have 60 days from the triggering date to issue a compliance advisory to adhesive and sealant manufacturers and distribute lower VOC products within two years. Reformulation to lower VOC content products requires significantly longer lead times than two years. Given the urgency and severity of ozone air quality in the Coachella Valley and the South Coast Air Basin, if such opportunities to reduce VOC emissions existed, they would be adopted as control measures to attain ozone standards and improve air quality, rather than being reserved for contingency.

In some instances, commercially available products already have lower VOC content than is required by regulation and VOC emissions from these products are already reflected in the SIP inventory, which is based on reported sales data. Therefore, there would be no emission reductions associated with these products. In all, staff does not consider lower VOC limits for adhesives and sealants to be a feasible contingency measure.

**TABLE 4-31
COMPARISON OF SOUTH COAST AQMD RULE 1168 AND OTHER AIR DISTRICTS' RULES FOR ADHESIVES AND SEALANTS**

	South Coast AQMD Rule 1168 – Adhesive and Sealant Applications (Amended 11/4/22)	SJVAPCD Rule 4653 – Adhesives and Sealants (Amended 9/16/10)	SMAQMD Rule 460 – Adhesives and Sealants (Amended 11/30/00)	BAAQMD Rule 8-51 – Adhesive and Sealant Products (Amended 7/17/02)	VCAPCD Rule 74.20 – Adhesives and Sealants (Amended 10/9/18)
Applicability	Any person who uses, sells, stores, supplies, distributes, offers for sale, or manufactures for sale any adhesives, adhesive primers, sealants, or sealant primers, unless otherwise specifically exempted by this rule	Any person who supplies, sells, offers for sale, or applies any adhesive product, sealant product, or associated solvent	Any person who manufactures, sells, offers for sale, or supplies an adhesive or sealant product for use in the district, or uses an adhesive or sealant product, or uses a surface preparation solvent, a cleanup solvent, or a stripper, or solicits, requires the use of, or specifies the application of an adhesive or sealant product, surface preparation solvent, cleanup solvent, or stripper that does not comply with this rule		Any person who supplies, sells, offers for sale, manufactures, solicits the application of, or uses adhesives, sealants, sealant primers or adhesive primers in Ventura County
Exemptions	<ul style="list-style-type: none"> • Adhesive tape • Adhesives, adhesive primers, sealants, or sealant primers, and associated application processes • Regulated products shipped, supplied, or sold to persons for use outside the District, or distribution centers that do not ship regulated products 	<ul style="list-style-type: none"> • Stationary sources that use ≤20 gallons (gal.) of adhesive products • Adhesive/sealant products containing less than 20 g VOC/L. • Testing and evaluation of adhesives in research laboratories, analytical laboratories, or quality assurance laboratories 	<ul style="list-style-type: none"> • Household adhesives regulated by the State of California • Solvent welding operations used in the manufacturing medical devices including catheters, heart valves, blood cardioplegia machines, tracheotomy tubes, blood oxygenators, and cardiatory reservoirs 	<ul style="list-style-type: none"> • Aerosol adhesive products • Adhesive or sealant products in the manufacture or repair of aerospace or undersea-based weapons system components • consumer adhesives subject to the CARB consumer products regulation, 17 CCR 	<ul style="list-style-type: none"> • Any stationary source that emits less than 200 pounds (lb.) of VOC in every rolling period of 12 consecutive calendar months from adhesive and sealant operations • Assembling, manufacturing and repairing of aerospace components • Graphic arts operations

	South Coast AQMD Rule 1168 – Adhesive and Sealant Applications (Amended 11/4/22)	SJVAPCD Rule 4653 – Adhesives and Sealants (Amended 9/16/10)	SMAQMD Rule 460 – Adhesives and Sealants (Amended 11/30/00)	BAAQMD Rule 8-51 – Adhesive and Sealant Products (Amended 7/17/02)	VCAPCD Rule 74.20 – Adhesives and Sealants (Amended 10/9/18)
	<p>into or within the District.</p> <ul style="list-style-type: none"> • Aerosol adhesives and primers dispensed from non-refillable aerosol spray systems. • Regulated products sold in quantities of ≤1 fl. oz. • Adhesives used to glue flowers to parade floats • Adhesives used to fabricate orthotics and prosthetics under a medical doctor’s prescription • Shoe repair, luggage, and handbag adhesives • Research and development programs and quality assurance labs • Solvent welding operations used in the manufacturing of medical devices • Adhesives used in tire repair • A facility that demonstrates that the total volume of 	<ul style="list-style-type: none"> • The use of adhesives in tire repair provided the label states “for tire repair use only” • The use of adhesives sold or supplied with ≤8 fluid ounces (fl. oz.) of adhesive in non-reusable containers. • Aerosol spray adhesive products • Household adhesives • Adhesive products subject to the VOC limit requirements of Rule 4605 (Aerospace Assembly and Component Coating Operations), Rule 4607 (Graphic Arts), and Rule 4681 (Rubber Tire Manufacturing) • Contact adhesives that are subject to the Consumer Product Safety Commission regulations in 16 CFR, Part 1302, that have a flash point greater than 20°F as determined pursuant to those regulations, and that 	<ul style="list-style-type: none"> • Material regulated by Rule 450 (Graphic Arts Operations) and Rule 456 (Aerospace Assembly and Component Coating Operations) • Materials used for tire repair if the label states “for tire repair only” • Manufacture, maintenance, or repair of undersea-based weapon systems • Low-VOC materials containing ≤20 g/L • Materials sold or supplied in non-reusable containers to hold no more than 8 fl. oz. • Testing and evaluation of materials in R&D laboratories, QA laboratories, or analytical laboratories • Contact adhesives subject to the Consumer Product Safety Commission regulations in 16 CFR, Part 1302, provided 	<ul style="list-style-type: none"> • Low usage of non-complying adhesive products <20 gal. in any calendar year • Low VOC adhesive or sealant products of <20 g VOC/L • Adhesives in the manufacture of medical equipment • Testing and evaluation of adhesive or sealant products in R&D laboratories, QA laboratories, or analytical laboratories, or to R&D facilities which produce only non-commercial products solely for R&D purposes • Adhesives and sealants applied in Rule 11-8 (Metal, Can and Coil Operations) and Rule 8-12 (Paper, Fabric and Film), Rule 8-13 (Graphic Arts Operations), and 8-23 (Flat Wood Paneling Operations) • Adhesive and sealants shipped, supplied or 	<ul style="list-style-type: none"> • Screen printing operations • Assembling and manufacturing of undersea-based weapon systems • Testing and evaluation of adhesive or sealant products in any research and development or analytical laboratories • Plastic welding operations used in the manufacturing of medical devices • Tire repair operations, provided the label on the adhesive used states “For Tire Repair Only” • Field installation or repair of potable water linings and covers at potable water treatment, potable water storage, or potable water distribution facilities • Manufacturing operations of the following products: diving suits, rubber fuel

	South Coast AQMD Rule 1168 – Adhesive and Sealant Applications (Amended 11/4/22)	SJVAPCD Rule 4653 – Adhesives and Sealants (Amended 9/16/10)	SMAQMD Rule 460 – Adhesives and Sealants (Amended 11/30/00)	BAAQMD Rule 8-51 – Adhesive and Sealant Products (Amended 7/17/02)	VCAPCD Rule 74.20 – Adhesives and Sealants (Amended 10/9/18)
	<p>noncompliant products is less than 55 gal. per facility per calendar year</p> <ul style="list-style-type: none"> Adhesives used in architectural applications, contact adhesives, special purpose contact adhesives, and adhesives used on porous substrates Regulated products used in the field installation and repair of potable water linings and covers at water treatment, storage, or water distribution facilities Regulated products with a viscosity of ≥ 200 centipoise Thermoplastic hot melt adhesives or to regulated products offered for sale as a dry mix, containing no polymer, which are ready for use or only mixed with water prior to use, and include, but are not limited to, 	<p>are sold in packages that contain ≤ 128 fl. oz.</p> <ul style="list-style-type: none"> Stripping of cured adhesives, except the stripping of such materials from spray application equipment A stationary source that uses ≤ 20 gal. of sealant products in a calendar year Testing and evaluation of sealant products in research laboratories, analytical laboratories, or quality assurance laboratories The use of aerosol adhesive or aerosol adhesive primer products Adhesive products used in assembly, repair, or manufacture of undersea-based weapon systems Adhesive products used in medical equipment manufacturing operations Cyanoacrylate adhesive application processes 	<p>that adhesives are sold in packages of ≤ 128 fl. oz.</p> <ul style="list-style-type: none"> Aerosol cleaning solvents at the stationary source, provided total usage does not exceed 160 fl. oz. per day Ethyl acetate to clean adhesive application equipment used in the manufacturing of transdermal drug delivery products, and fewer than 3 gal./day of ethyl acetate, averaged over a calendar month Low usage of not exceeding 55 gal. during any calendar year Cyanoacrylate adhesives Reactive adhesives 	<p>sold to persons outside the District for use outside the District</p> <ul style="list-style-type: none"> Adhesive or sealants sold to any person who complies with the requirements of this rule Any manufacture of adhesives or sealants, provided the manufacturer has provided the maximum VOC content and category information for the product and the product was not sold directly to a user or a sales outlet located in the District, or the product was sold to an independent distributor located in the District that is not a subsidiary of, or under the direct control of the manufacturer VOC limits for contact bond adhesives that exceed a VOC content of 540 g/L 	<p>bladders, inflatable boats, life preservers or other stand-alone elastomeric type products designed for immersion in liquids</p> <ul style="list-style-type: none"> Inkjet printer head assembly operations where the VOC content of the adhesive used for laminating is less than 100 g/L of material Thin film laminating operations of magnetic or electronic components excluding inkjet printer head assembly operations Glass bonding and priming processes in automotive convertible top manufacturing operations Any adhesive, primer, or sealant that contains less than 20 g VOC/L of material Any aerosol adhesive Any cyanoacrylate or methacrylate-based adhesive Any adhesive tape

	South Coast AQMD Rule 1168 – Adhesive and Sealant Applications (Amended 11/4/22)	SJVAPCD Rule 4653 – Adhesives and Sealants (Amended 9/16/10)	SMAQMD Rule 460 – Adhesives and Sealants (Amended 11/30/00)	BAAQMD Rule 8-51 – Adhesive and Sealant Products (Amended 7/17/02)	VCAPCD Rule 74.20 – Adhesives and Sealants (Amended 10/9/18)
	<p>grouts, cements, and mortars</p> <ul style="list-style-type: none"> • Products with a VOC content no more than 20 g/L, less water and less exempt compounds, or no more than 20 g/L material for low solids regulated products • Solvent welding formulations containing methylene chloride used to bond hard acrylic, polycarbonate, and polyethylene terephthalate glycol plastic fabrications, provided that the concentration of methylene chloride in any solvent welding formulation does not exceed 60% by weight; and the purchase of all solvent welding products does not exceed 20 gal. per calendar year at a single facility • Regulated products weighing ≤ 1 lb. or 	<ul style="list-style-type: none"> • Processes using polyester bonding putties to assemble fiberglass parts at fiberglass boat manufacturing facilities and at other reinforced plastic composite manufacturing facilities • Adhesive products and sealant products shipped, supplied, or sold exclusively to persons outside the District for use outside the District • Adhesive products and sealant products sold to any person who complies with the VOC emission control system requirements • Cleaning of solar cells, laser hardware, scientific instruments, or high precision optics • Cleaning in laboratory tests and analyses, or bench scale or research and development projects • Cleaning of clutch assemblies where 		<ul style="list-style-type: none"> • ABS, CPVC, PVC, and plastic welding cement primers • Adhesives or sealants in small containers that weigh ≤ 1 lb. or contain ≤ 16 fl. oz. • Contact adhesives that are subject to the Consumer Product Safety Commission regulations in 16 CFR, Part 1302, that have a flash point greater than 20°F as determined pursuant to those regulations, and that are sold in packages that contain ≤ 1 gal., and that are used at a home, a construction site, or at any location other than in a facility • Facilities using Contact Bond Adhesive primarily for special substrates where $\geq 80\%$ of the annual contact bond adhesive use at a single facility meets the definition of “Contact Bond 	<ul style="list-style-type: none"> • Any low pressure (less than 250 psi) or high pressure (1,000 to 1,300 psi) two-component spray polyurethane foam system that uses exempt organic compounds as the blowing agent and that uses ancillary spray equipment and hoses to apply the foam • Any one-component spray polyurethane foam system in a cylinder (containing not less than 10 lb. and not more than 23 lb. of prepolymerized mixtures) that uses exempt organic compounds as the blowing agent and that uses ancillary spray equipment or hoses to apply the foam • Any person who uses less than 10 gal. per rolling period (consisting of 12 consecutive calendar months) per stationary

	South Coast AQMD Rule 1168 – Adhesive and Sealant Applications (Amended 11/4/22)	SJVAPCD Rule 4653 – Adhesives and Sealants (Amended 9/16/10)	SMAQMD Rule 460 – Adhesives and Sealants (Amended 11/30/00)	BAAQMD Rule 8-51 – Adhesive and Sealant Products (Amended 7/17/02)	VCAPCD Rule 74.20 – Adhesives and Sealants (Amended 10/9/18)	
	consist of ≤16 fl. oz. and have VOC content limits, unless used exclusively in the manufacture or construction of the goods or commodities or used in pollution- generating activities that take place at stationary sources, excluding maintenance and repair <ul style="list-style-type: none"> Manufacturer or supplier of regulated products provided the product sells to an independent distributor, informed in writing, including electronic formats, by the manufacturer or supplier, the regulated product is not used in the District 	rubber bonds to metal by means of an adhesive <ul style="list-style-type: none"> Cleaning of paper- based gaskets 		Adhesive - Special Substrates” <ul style="list-style-type: none"> Tire retread adhesive in retreading off-the- road and industrial tires that are rated or used for non-highway service and have a minimum nominal rim diameter of 20 inches Self-curing adhesives and sealants with reactive diluents 	source of an adhesive, a sealant, or primer in a separate formulation provided the total volume of noncomplying adhesives, sealants, or primers at a stationary source does not exceed 55 gal. per rolling period (consisting of 12 consecutive calendar months)	
Requirements	VOC Limits, g/L					
	Category	South Coast AQMD Rule 1168	SJVAPCD Rule 4653	SMAQMD Rule 460	BAAQMD Rule 8-51	VCAPCD Rule 74.20
	Adhesives					
	Architectural applications					
	Building envelope membrane adhesive	250	-	-	-	-
	Carpet pad adhesive	50	-	-	-	50

Requirements	VOC Limits, g/L					
	Category	South Coast AQMD Rule 1168	SJVAPCD Rule 4653	SMAQMD Rule 460	BAAQMD Rule 8-51	VCAPCD Rule 74.20
	Ceramic glass, porcelain, & stone tile adhesive	65	65	130	130	65
	Cove base adhesive	50	50	150	150	50
	Dry wall and panel adhesive	50	50	--	-	50
	Multi-purpose construction adhesives	70	70	200	200	70
	Roofing					
	Hot applied modified bitumen/built up roof adhesive	30	-	-	-	-
	EPDM/TPO single ply roof membrane adhesive	250	-	-	-	--
	Single ply roof membrane adhesive (except EPDM/TPO)	250	250	250	250	250
	Shingle laminating adhesive	30	-	-	-	-
	All other roof adhesives	250	300	-	300	300
	Rubber floor adhesive	60	60	-	-	60
	Structural glazing adhesive	100	100	100	100	100
	Structural wood member adhesive	140	140	-	-	140
	Subfloor adhesive	50	50	-	-	50
	VCT and asphalt tile adhesive	50	50	-	-	50
	Wood flooring adhesive	20	100	-	-	20
	All other indoor floor covering adhesives	50	150	150	150	-
	Computer diskette manufacturing adhesive	350	-	850	850	-
	Contact adhesive	80	80	250	-	80
	Edge glue adhesive	250	-	-	-	-
	Plastic welding cement					
	ABS welding cement	325	325	400	400	325
	ABS to PVC transition cement	425	250	--	--	510
	CPVC welding cement	400	490	490	490	490
	CPVC for life-safety systems	490	-	-	-	-
	Higher viscosity CPVC	490 / 400 (7/1/24)	-	-	-	-
	PVC welding cement	425	510	510	-	510
	All other plastic welding cements	100	250	450	500	500
	Rubber vulcanization adhesive	850 / 250 (1/1/28)	850	-	850	-

Requirements	VOC Limits, g/L					
	Category	South Coast AQMD Rule 1168	SJVAPCD Rule 4653	SMAQMD Rule 460	BAAQMD Rule 8-51	VCAPCD Rule 74.20
	Special purpose contact adhesive	250	250	-	-	250
	Thin metal laminating adhesive	780	780	780	780	-
	Tire tread adhesive	100	100	100	100	100
	Top and trim adhesive	540 / 250 (1/1/28)	540	-	540	540
	Waterproof resorcinol glue	170	170	170	170	-
	All other adhesives	250	-	-	-	-
	Substrate Specific Adhesives					
	Metal	30	30	30	30	30
	Plastic foams	50	50	250	--	50
	Porous material (except wood)	50	50	120	120	50
	Wood	30	30	250	120	30
	Fiberglass	80	80	200	-	80
	Reinforced plastic composite	200	200	250	-	-
	Sealants					
	Architectural applications					
	Clear, paintable, and immediately water-resistant sealant	380 / 250 (1/1/26)	-	-	-	-
	Foam insulation	5%^	250	-	-	250
	One-component foam sealant	18%^	-	-	-	-
	High-pressure two-component foam sealant	5%^	-	-	-	-
	Low-pressure two-component foam sealant	5%^	-	-	-	-
	Grout	65	250	-	-	-
	Roadway sealant	250	250	250	250	250
	Non-staining plumbing putty	50	250	-	-	50
	Potable water sealant	100	250	-	-	100
	Roofing					
	Single ply roof membrane sealant (except cut edge)	250	450	450	450	-
	Cut edge single ply roof membrane sealant	250	-	-	-	-
	All other roof sealants	300	250	300	300	300
	All other architectural sealants	50	250	250	250	50

Requirements	VOC Limits, g/L					
	Category	South Coast AQMD Rule 1168	SJVAPCD Rule 4653	SMAQMD Rule 460	BAAQMD Rule 8-51	VCAPCD Rule 74.20
Marine deck sealant		760	760	250	760	760
All other sealants		250	420	420	420	250
Adhesive Primers						
Plastic		550	650	400	650	-
Pressure sensitive		785	250	-	-	785
Traffic marking tape		150	-	150	150	150
Vehicle glass		700	700	700	700	700
Roof adhesive primers		250	-	250	-	-
All other adhesive primers		250	250	250	250	250
Sealant Primers						
Architectural applications						
Non-porous		250	-	250	250	250
Porous		775	-	775	775	775
Marine deck		760	760	760	-	760
Modified bituminous		500	500	-	-	250
Roof sealant primers		750	-	-	-	-
All other sealant primers		750	750	750	750	750

^ VOC limit expressed as percent VOC by weight.

Note: Numbers after slash (/) are VOC limits at future effective dates in parentheses.

6. Other (Cleaning and Surface Coatings)

a. Overview

This major source category 299 – Other (Cleaning and Surface Coatings) contributes 0.03 tpd of VOC to the 2031 Coachella Valley summer planning emissions inventory. The only VOC emissions in this source category came from the usage of solvents (unspecified).

b. Evaluation

This source category is regulated by South Coast AQMD Rule 442 – Usage of Solvents (Amended December 15, 2000), Rule 1144 – Metal Working Fluids and Direct Contact Lubricants (Amended July 8, 2010), and Rule 1171 – Solvent Cleaning Operations (Amended May 1, 2009). Rules 442 and 1171 were already examined under other categories (e.g., 220 – Degreasing), thus only Rule 1144 is evaluated in this section (see Table 4-32). South Coast AQMD Rule 1144 already has the most stringent measures in place and is as stringent as VCAPCD Rule 74.31. Staff did not identify any other applicable rules for comparison.

c. Conclusion

South Coast AQMD staff evaluated the cleaning and surface coatings source category for a potential contingency measure and concluded that there is no suitable contingency measure because the most stringent feasible controls are already in place, and no additional emission reduction opportunities could be identified.

**TABLE 4-32
COMPARISON OF SOUTH COAST AQMD AND OTHER AIR DISTRICTS' RULES FOR OTHER (CLEANING AND SURFACE COATING)**

	South Coast AQMD Rule 1144 – Metal Working Fluids and Direct-Contact Lubricants (Amended 7/9/10)	VCAPCD Rule 74.31 – Metalworking Fluids and Direct-Contact Lubricants (Amended 11/12/13)
Applicability	All persons who use metalworking fluids and direct-contact lubricants on products and parts during manufacture and assembly; and all manufacturers and suppliers who supply, sell, or offer for sale metalworking fluids and direct-contact lubricants for use at industrial facilities; all VOC containing fluids used for metalworking including metal removal, metal forming, metal treating or lubricating operations where the metalworking fluid or direct-contact	Any person who uses metalworking fluids or direct-contact lubricants on products or parts; and to any manufacturer or supplier who supplies, sells, or offers for sale either metalworking fluids or direct-contact lubricants for use at industrial or commercial facilities; all reactive VOC-containing fluids used for metalworking including, but not limited to, metal removal, metal forming, metal treating, or lubricating operations where the metalworking fluid or direct-contact

	South Coast AQMD Rule 1144 – Metal Working Fluids and Direct-Contact Lubricants (Amended 7/9/10)	VCAPCD Rule 74.31 – Metalworking Fluids and Direct-Contact Lubricants (Amended 11/12/13)
	<p>lubricant comes into direct contact with products and parts including, but not limited to, blanking, broaching, coining, cutting, drilling, drawing, forming, forging, grinding, heading, honing, lapping, marquenching, milling, piercing, quenching, roll forming, rolling, stamping, tapping, threading, turning and wire drawing; and VOC containing fluids used for metal protection, including rust and corrosion prevention and inhibition, during the manufacture and assembly of products and parts</p>	<p>lubricant come into contact with products or parts including, but not limited to, blanking, broaching, coining, cutting, drilling, drawing, forming, forging, grinding, heading, honing, lapping, marquenching, milling, piercing, quenching, roll forming, rolling, stamping, tapping, threading, turning, and wire drawing; and VOC-containing fluids used for metal protection, including rust and corrosion prevention and inhibition, but shall not apply to coatings, sealants, adhesives, or lubricants regulated by other District rules including, but not limited to, Rule 74.12 (Surface Coating of Metal Parts and Products), or 74.13 (Aerospace Assembly and Component Manufacturing Operations)</p>
<p>Exemptions</p>	<ul style="list-style-type: none"> • Metalworking fluids and direct-contact lubricants subject to the California Air Resources Board consumer products regulation found in 17 CCR beginning at Section 94507 • Metalworking fluids and direct-contact lubricants sold in this District for shipment outside of this District or for shipment to other manufacturers for repackaging • Metalworking fluids and direct-contact lubricants subject to VOC limits in other Regulation XI rule • Lapping, sinker EDM, avionics and assembled aircraft, space vehicle components, and fluid utilizing the control device option • Facilities that demonstrate that total permitted and non-permitted facility VOC emissions do not exceed 4 tons in any calendar year, including emissions from the Super Compliant Material, as shown by annual purchase record • Use of dimethyl carbonate used as a cooling solvent in computed 	<ul style="list-style-type: none"> • Metalworking fluids and direct-contact lubricants subject to the California Air Resources Board consumer products regulation found in 17 CCR beginning at Section 94507 • Use of any metalworking fluid or direct-contact lubricant subject to ARB Consumer Product Regulations and applied via a hand-held prepressurized non-refillable aerosol product, provided 100 cans or less per calendar year are used based on purchase and/or usage records • Use of any metalworking fluid or direct contact lubricant for the purpose of maintaining or repairing operator-owned machine tools • Research operations • The Sales Prohibition in Subsection B.2 shall not apply to metalworking fluids and direct-contact lubricants sold in this District for shipment and use outside of this district or for shipment to other manufacturers for repackaging

	South Coast AQMD Rule 1144 – Metal Working Fluids and Direct-Contact Lubricants (Amended 7/9/10)	VCAPCD Rule 74.31 – Metalworking Fluids and Direct-Contact Lubricants (Amended 11/12/13)	
	numerically controlled (CNC) machines where permeable media are used to maintain a vacuum that holds the part in place during cutting provided that the equipment existed at the time of rule adoption, is enclosed and an exhaust fan discharges the exhaust air from the equipment outside of the building	<ul style="list-style-type: none"> Lapping, sinker EDM, avionics, assembled aircraft or any assembled aircraft component, space vehicle components, and fluids utilizing the control equipment option Metalworking fluids that are “Super Compliant,” (VOC content is ≤50 g/L of material). If a shop uses both super compliant and non-super compliant materials, the administrative requirements still apply to the non-super compliant materials. Any person claiming this exemption shall provide documentation or other evidence to substantiate this claim, upon request of APCD personnel. This exemption does not apply to metalworking fluids used at metal forging operations 	
Requirements	VOC Limits, g/L		
	Fluid	South Coast AQMD Rule 1144	VCAPCD Rule 74.31
	Vanishing oil	50	50
	Metalworking fluid	-	-
	Metal forming	75	75
	Metal removal	-	-
	General	75	75
	Precision metal removal	130	130
	Metal treating	75	75
	Metal protecting	-	-
	General	50	50
	Military specified preservative	340	340
	Direct-contact lubricant	50	50

Petroleum Production and Marketing

Petroleum Production and Marketing includes four sub-categories of 310 – Oil and Gas Production, 320 – Petroleum Refining, 330 – Petroleum Marketing, and 399 – Other (see Table 4-33). However, the only sub-category with emissions in Coachella Valley is 330 – Petroleum Marketing, which contributes 0.32 tpd VOC emissions to the 2031 Coachella Valley’s emissions inventory. The primary emissions sources in these categories are Gasoline Cargo Tanks (mostly pressure-related fugitive losses), Liquefied Petroleum Gas (LPG) Transfer and Dispensing Losses, Vehicle Refueling (mostly spillage-related), and Fuel Dispensing Tanks - Working Losses; these contribute 30 percent (0.10 tpd), 25 percent (0.08 tpd), 19 percent (0.06 tpd), and 11 percent (0.04 tpd), respectively, to the total VOC emissions of 330 – Petroleum Marketing (0.32 tpd; see Table 4-34). As the agency responsible for regulating Cargo Tank emissions is CARB, this source is excluded from South Coast AQMD’s analysis.

TABLE 4-33
PETROLEUM MARKETING AND PRODUCTION EMISSIONS BASED ON 2031 SUMMER PLANNING INVENTORY

3-digit EIC	Source Category	VOC (tpd)	NOx (tpd)
310	Oil and Gas Production	0.00	0.00
320	Petroleum Refining	0.00	0.00
330	Petroleum Marketing	0.32	0.00
399	Other (Petroleum Production and Marketing)	0.00	0.00
	Total	0.32	0.00

TABLE 4-34
PETROLEUM MARKETING VOC EMISSIONS BASED ON 2031 SUMMER PLANNING INVENTORY

Source Category/Process	Fuel	VOC (tpd)	% of total VOC
Natural Gas Transmission Losses	Natural Gas	0.01	4%
LPG Transfer and Dispensing Losses	LPG	0.12	37%
Fuel Dispensing Tanks - Breathing Losses	Gasoline	0.00	1%
Vehicle Refueling - Vapor Displacement Losses	Gasoline	0.01	2%
Vehicle Refueling – Spillage	Gasoline	0.04	12%
Vehicle Refueling - Hose Permeation	Gasoline	0.00	1%
Storage Tanks and Pipeline Cleaning and Degassing	Gasoline	0.00	1%
Cargo Tanks - Pressure Related Fugitive Losses	Gasoline	0.08	25%
Cargo Tanks - Vapor Hose Fugitive Losses	Gasoline	0.00	1%
Cargo Tanks - Product Hose Fugitive Losses	Gasoline	0.02	6%
Gasoline Dispensing Tanks - Working Losses	Gasoline	0.03	10%

South Coast AQMD regulates the Petroleum Marketing source category through multiple rules including Rule 461 – Gasoline Transfer and Dispensing, Rule 461.1 – Gasoline Transfer and Dispensing for Mobile Fueling Operations, Rule 462 - Organic Liquid Loading, Rule 463 – Organic Liquid Storage, Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing, and Rule 1177 – Liquefied Petroleum Gas Transfer and Dispensing, and Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities. An overview of these rules is presented in Table 4-35.

In Chapter 3, South Coast AQMD proposed a contingency measure in Rule 463 to require more frequent OGI inspections of organic liquid storage tanks, including those used for gasoline storage in the Coachella Valley. The remainder of this section evaluates additional controls beyond the proposed measure.

**TABLE 4-35
SOUTH COAST AQMD RULES FOR PETROLEUM MARKETING**

	Applicability	Control Measures
Rule 461	<ul style="list-style-type: none"> Facilities that transfer gasoline from any tank truck, trailer, or railroad tank car into a stationary storage tank and from stationary storage tank into a motor vehicle fuel tank Persons that conduct testing, installations or repairs Manufacturers and suppliers 	See Table 4-36
Rule 461.1	<ul style="list-style-type: none"> Mobile fueler that conducts retail or non-retail operations Persons that conduct testing, installation or repairs Manufacturers and suppliers 	See Table 4-36
Rule 462	Facilities that load organic liquids with a vapor pressure of 1.5 psia (77.5 mm Hg) or greater under actual loading conditions into any tank truck, trailer, or railroad tank car.	See Table 4-37
Rule 463	Any above-ground stationary tank with a capacity of 75,000 liters (19,815 gallons) or greater used for storage of organic liquids, and any above-ground tank with a capacity between 950 liters (251 gallons) and 75,000 liters (19,815 gallons) used for storage of gasoline.	See Chapter 3
Rule 1149	Applies to the cleaning and degassing of a pipeline opened to atmosphere outside the boundaries of a facility, stationary tank, reservoir, or other container, storing or last used to store VOCs.	See Table 4-38
Rule 1177	Applies to the transfer and dispensing of LPG from any cargo tank, stationary storage tank or cylinder into any other cargo tank, stationary storage tank, cylinder, or portable storage tank.	See Section 2.a- LPG Transfer & Dispensing Losses Overview
Rule 1178	Applies to aboveground Storage Tanks at petroleum facilities with capacity equal to or greater than 75,000 liters (19,815 gallons) storing Organic Liquid; and (2) Storage Tanks with a Potential For VOC Emissions of 6 tons per year used in Crude Oil And Natural Gas Production Operations.	See Section 3- Storage Tank & Pipeline Cleaning and Degassing

1. Gasoline Dispensing Tanks

a. Overview

Rule 461 – Gasoline Transfer and Dispensing was adopted in January 1976 and regulates stationary and mobile gasoline dispensing facilities that dispense into motor vehicles. Rule 461 controls VOC and toxic air contaminant emissions during the filling of storage tanks and when dispensing gasoline from both stationary gasoline dispensing facilities and mobile fuelers into motor vehicles. The primary toxic air contaminants associated with gasoline vapors are benzene, ethyl benzene, and naphthalene, which are carcinogens. Provisions for mobile fueler transfer and dispensing of gasoline have been included in Rule 461 since 1995 and relied on the same approach as stationary gasoline dispensing which requires use of Phase I and Phase II vapor recovery systems that are tested and certified by CARB. Although Rule 461 includes provisions for mobile fuelers that dispense fuel into motor vehicles, the variation of retail mobile fuelers was not envisioned when these provisions were established over 20 years ago. Rule 461.1 – Gasoline Transfer and Dispensing for Mobile Fueling Operations was adopted on January 7, 2022 to ensure that CARB certified vapor control systems are installed for retail mobile fuelers, to address the current status of CARB certified vapor recovery systems for mobile fuelers, to restrict operation near a school during school hours, and to establish other requirements for retail and non-retail mobile fuelers.

In Coachella Valley, Gasoline Dispensing Tanks - Working Losses contributes 10 percent (0.03 tpd) to total VOC emissions of 330- Petroleum Marketing in 2031. The VOC emissions for this source category are gasoline wholesale facility point sources. There is also an area source category Fuel Dispensing Tanks-Breathing Losses which contributes only 1 percent (<0.01 tpd) to the total VOC emissions of 330 – Petroleum Marketing. Additionally, emissions from gasoline vehicle refueling sources (mostly due to spillage) contribute 15 percent (0.05 tpd) to the total VOC emissions; the sources leading to these VOC emissions are Vapor Displacement Losses (2 percent; 0.01 tpd), Spillage (12 percent; 0.04 tpd), and Hose Permeation (1 percent; <0.01 tpd).

b. Evaluation

Table 4-36 compares the South Coast AQMD Rules 461 and 461.1 with rules at other agencies including MDAQMD Rule 461, AVAQMD Rule 461, SJVAPCD Rule 4621 – Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants, and SJVAPCD Rule 4622- Gasoline Transfer into Motor Vehicle Fuel Tanks. The analysis shows that South Coast AQMD’s rules are mostly as stringent as or more stringent than other agencies. For example, the vapor recovery system requirements in Rules 461 and 461.1, which require the recovery of 98 percent (Phase I) and 95 percent (Phase II) of displaced gasoline vapors, are the most stringent. The technologies to drain spillage for underground tanks is gravity-based in AVAQMD and MDAQMD while South Coast AQMD requires a spill box equipped with integral drain valve. While they are different, they both emphasize no spillage and are likely equivalent.

Additionally, pertaining to emissions from Gasoline Dispensing Tanks, Table 4-37 shows the comparison between the South Coast AQMD’s Rule 462 – Organic Liquid Loading, with AVAQMD and MDAQMD Rule

462. For a subcategory of applicable sources (Class B facilities), South Coast AQMD Rule 462 is potentially not as stringent as Mojave Desert AQMD Rule 462. Class B facilities are required to be equipped with CARB certified vapor recovery devices or, in the absence of CARB certification, a device approved by South Coast AQMD that is designed to recover at least 90 percent of vapors. Mojave Desert AQMD Rule 462 requires a 95 percent vapor recovery efficiency. However, South Coast AQMD's compliance records indicate that the actual control efficiency exceeds 95 percent.⁵⁰ Therefore, no further opportunity to reduce emissions as contingency measure exists in this category.

c. Conclusion

Evaluation of rules for gasoline dispensing tanks revealed that South Coast AQMD's rules are generally the most stringent. Staff did not identify any potential contingency measures that can achieve quantifiable reductions within two years.

⁵⁰ <https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/2-final-coachella-valley-extreme-area-plan-for-1997-8-hour-ozone-standard.pdf?sfvrsn=6>

**TABLE 4-36
COMPARISON OF RULES 461 AND 461.1 WITH RULES AT OTHER AGENCIES**

Rule Element	South Coast AQMD Rule 461 – Gasoline Transfer and Dispensing (Amended 1/7/22)	South Coast AQMD Rule 461.1 – Gasoline Transfer and Dispensing for Mobile Fueling Operations (Adopted 1/7/22)	AVAQMD 461 – Gasoline Transfer and Dispensing (Amended 10/21/08)	MDAQMD 461 – Gasoline Transfer and Dispensing (Amended 1/22/18)	SJVAPCD Rule 4621 – Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, And Bulk Plants (Amended 12/9/13)	SJVAPCD Rule 4622 – Gasoline Transfer into Motor Vehicle Fuel Tanks (Amended 12/19/2013)
Applicability	Transfer of gasoline from any tank truck, trailer, or railroad tank car into any stationary storage tank, and from any stationary storage tank into any motor vehicle fuel tank.	Retail and non-retail mobile fuelers that are transferring or dispensing gasoline.	Transfer of Gasoline from any tank truck, trailer, or railroad tank car into any stationary storage tank or Mobile Fueler, and from any stationary storage tank or Mobile Fueler into any Mobile Fueler or Motor Vehicle fuel tank.	Transfer of Gasoline from any tank truck, or railroad tank car into any stationary storage tank or Mobile Fueler, and from any stationary storage tank or Mobile Fueler into any Mobile Fueler or Motor Vehicle fuel tank.	This rule applies to any tank with a capacity of 1,100 gallons or greater in which any organic liquid is placed, held, or stored.	This rule applies to any gasoline storage and dispensing operation or mobile fueler from which gasoline is transferred into motor vehicle fuel tanks, except as provided in Section 4.0 of the rule.
Phase I: Gasoline Transfer into	<ul style="list-style-type: none"> Underground storage tanks: 1) are equipped with a “CARB 	<ul style="list-style-type: none"> The Tank is equipped with CARB Certified 	<ul style="list-style-type: none"> Stationary storage tank or Mobile Fueler tank is equipped 	<ul style="list-style-type: none"> The tank is equipped with a CARB Certified Vapor 	<ul style="list-style-type: none"> Containers used for aviation gasoline are 	From SJVAPCD Rule 4621: <ul style="list-style-type: none"> Containers used for

Rule Element	South Coast AQMD Rule 461 – Gasoline Transfer and Dispensing (Amended 1/7/22)	South Coast AQMD Rule 461.1 – Gasoline Transfer and Dispensing for Mobile Fueling Operations (Adopted 1/7/22)	AVAQMD 461 – Gasoline Transfer and Dispensing (Amended 10/21/08)	MDAQMD 461 – Gasoline Transfer and Dispensing (Amended 1/22/18)	SJVAPCD Rule 4621 – Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, And Bulk Plants (Amended 12/9/13)	SJVAPCD Rule 4622 – Gasoline Transfer into Motor Vehicle Fuel Tanks (Amended 12/19/2013)
Stationary Storage Tanks and Mobile Fuelers	<p>certified” enhanced vapor recovery system having a minimum volumetric efficiency of 98% and an emission factor not exceeding 0.15 pounds per 1,000 gallons.</p> <p>2) A “CARB certified” spill box shall be installed and equipped with an integral drain valve or</p>	<p>Phase I Vapor Recovery System for Mobile Fuelers certified pursuant to CARB’s CP-204, Certification Procedures for Vapor Recovery Systems of Cargo Tanks.</p>	<p>with a CARB Certified Vapor Recovery System, which is maintained and operated according to the manufacturer’s specifications.</p> <ul style="list-style-type: none"> Underground tank lines are gravity drained, and above-ground tanks are equipped with dry breaks, or as approved by the District, such that upon line 	<p>Recovery System capable of recovering or processing 98 percent (98%) of the displaced Gasoline Vapors.</p> <ul style="list-style-type: none"> The Mobile Fueler is equipped with a CARB Certified Vapor Recovery System capable of recovering or 	<p>equipped with a Phase I vapor recovery system that is certified to meet a minimum volumetric control of 95%.</p> <ul style="list-style-type: none"> For an underground storage container that contains gasoline and is not 	<p>aviation gasoline are equipped with a Phase I vapor recovery system that is certified to meet a minimum volumetric control of 95%.</p> <ul style="list-style-type: none"> For an underground storage container that contains

Rule Element	South Coast AQMD Rule 461 – Gasoline Transfer and Dispensing (Amended 1/7/22)	South Coast AQMD Rule 461.1 – Gasoline Transfer and Dispensing for Mobile Fueling Operations (Adopted 1/7/22)	AVAQMD 461 – Gasoline Transfer and Dispensing (Amended 10/21/08)	MDAQMD 461 – Gasoline Transfer and Dispensing (Amended 1/22/18)	SJVAPCD Rule 4621 – Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, And Bulk Plants (Amended 12/9/13)	SJVAPCD Rule 4622 – Gasoline Transfer into Motor Vehicle Fuel Tanks (Amended 12/19/2013)
	<p>other devices (CARB certified) to return spilled gasoline to the underground stationary storage tank.</p> <ul style="list-style-type: none"> Aboveground Storage Tanks are equipped with a “CARB certified” vapor recovery system having a minimum volumetric efficiency of 95%. 		<p>disconnect the liquid leak rate does not exceed three drops per minute.</p>	<p>processing 95 percent (95%) of the displaced Gasoline Vapors.</p> <ul style="list-style-type: none"> Underground tank lines shall be gravity drained; in such a manner that upon disconnect no liquid spillage would occur. Aboveground storage tanks shall be equipped with 	<p>located at a bulk plant, the container shall be equipped with an CARB certified Phase I vapor recovery system that is certified to have a minimum volumetric control efficiency of 98% (but 95% for aviation gasoline).</p>	<p>gasoline and is not located at a bulk plant, the container shall be equipped with an CARB certified Phase I vapor recovery system that is certified to have a minimum volumetric control efficiency of 98% (but 95% for aviation gasoline).</p>

Rule Element	South Coast AQMD Rule 461 – Gasoline Transfer and Dispensing (Amended 1/7/22)	South Coast AQMD Rule 461.1 – Gasoline Transfer and Dispensing for Mobile Fueling Operations (Adopted 1/7/22)	AVAQMD 461 – Gasoline Transfer and Dispensing (Amended 10/21/08)	MDAQMD 461 – Gasoline Transfer and Dispensing (Amended 1/22/18)	SJVAPCD Rule 4621 – Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, And Bulk Plants (Amended 12/9/13)	SJVAPCD Rule 4622 – Gasoline Transfer into Motor Vehicle Fuel Tanks (Amended 12/19/2013)
				<p>Dry Breaks, such that liquid spillage upon disconnect shall not exceed 10 milliliters.</p>	<ul style="list-style-type: none"> All aboveground storage containers that contain gasoline shall be equipped with an CARB certified pressure vacuum relief valve set 3.0±0.5 inches water column pressure relief and 8.0±2.0 inches water 	<ul style="list-style-type: none"> All aboveground storage containers that contain gasoline shall be equipped with an CARB certified pressure vacuum relief valve set 3.0±0.5 inches water column pressure relief and 8.0±2.0 inches water

Rule Element	South Coast AQMD Rule 461 – Gasoline Transfer and Dispensing (Amended 1/7/22)	South Coast AQMD Rule 461.1 – Gasoline Transfer and Dispensing for Mobile Fueling Operations (Adopted 1/7/22)	AVAQMD 461 – Gasoline Transfer and Dispensing (Amended 10/21/08)	MDAQMD 461 – Gasoline Transfer and Dispensing (Amended 1/22/18)	SJVAPCD Rule 4621 – Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, And Bulk Plants (Amended 12/9/13)	SJVAPCD Rule 4622 – Gasoline Transfer into Motor Vehicle Fuel Tanks (Amended 12/19/2013)
					<p>column vacuum relief.</p> <ul style="list-style-type: none"> All aboveground storage containers that contain aviation gasoline shall be equipped with pressure relief valves set at eight (8) ounces per square inch. 	<p>column vacuum relief.</p> <ul style="list-style-type: none"> All aboveground storage containers that contain aviation gasoline shall be equipped with pressure relief valves set at eight (8) ounces per square inch.

Rule Element	South Coast AQMD Rule 461 – Gasoline Transfer and Dispensing (Amended 1/7/22)	South Coast AQMD Rule 461.1 – Gasoline Transfer and Dispensing for Mobile Fueling Operations (Adopted 1/7/22)	AVAQMD 461 – Gasoline Transfer and Dispensing (Amended 10/21/08)	MDAQMD 461 – Gasoline Transfer and Dispensing (Amended 1/22/18)	SJVAPCD Rule 4621 – Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, And Bulk Plants (Amended 12/9/13)	SJVAPCD Rule 4622 – Gasoline Transfer into Motor Vehicle Fuel Tanks (Amended 12/19/2013)
<p>Phase II- Gasoline Transfer into Vehicle Fuel Trucks*</p>	<ul style="list-style-type: none"> The dispensing unit used to transfer the gasoline from the stationary storage tank to the motor vehicle fuel tank is equipped with a “CARB certified” vapor recovery system as capable of recovering or processing displaced gasoline vapors 	<p>Each Mobile Fueler Cargo Tank, excluding one individual portable fuel container with a capacity up to 6.6 gallons of gasoline, is equipped with a CARB Certified Phase II Vapor Recovery System certified pursuant to CARB’s CP-205, Certification Procedure for Vapor Recovery Systems of Novel</p>	<ul style="list-style-type: none"> The dispensing unit is equipped with a “CARB Certified” Vapor Recovery System operated and maintained in a Vapor-tight and Liquid-tight manner in accordance with the manufacturer’s specifications and the applicable CARB certification. All Liquid Removal Devices 	<ul style="list-style-type: none"> The dispensing unit is equipped with a CARB Certified Vapor Recovery System capable of recovering 95 percent (95%) of the displaced Gasoline Vapors, or having an emission factor not exceeding 0.38 		<ul style="list-style-type: none"> Gasoline dispensing unit used to transfer the gasoline is equipped with and has in operation an CARB certified Phase II vapor recovery system.

Rule Element	South Coast AQMD Rule 461 – Gasoline Transfer and Dispensing (Amended 1/7/22)	South Coast AQMD Rule 461.1 – Gasoline Transfer and Dispensing for Mobile Fueling Operations (Adopted 1/7/22)	AVAQMD 461 – Gasoline Transfer and Dispensing (Amended 10/21/08)	MDAQMD 461 – Gasoline Transfer and Dispensing (Amended 1/22/18)	SJVAPCD Rule 4621 – Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, And Bulk Plants (Amended 12/9/13)	SJVAPCD Rule 4622 – Gasoline Transfer into Motor Vehicle Fuel Tanks (Amended 12/19/2013)
	<p>by at least 95%, or having an emission factor not exceeding 0.38 pounds per 1,000 gallons, as applicable;</p> <ul style="list-style-type: none"> All liquid removal devices installed for any gasoline dispensing nozzle with a dispensing rate of greater than five gallons per minute shall be 	<p>Facilities, using TP-205.2, Test Procedure for Determination of Efficiency of Phase II Vapor Recovery of Novel Facilities, to be capable of recovering or processing displaced Gasoline Vapors by at least 95%, or having an emission factor not exceeding 0.38 pounds per 1,000 gallons, as applicable;</p>	<p>installed for any Gasoline-dispensing nozzle with a dispensing rate of greater than five gallons per minute shall be “CARB Certified” with a minimum liquid removal rate of five milliliters per gallon transferred.</p>	<p>pounds per 1,000 gallons.</p> <ul style="list-style-type: none"> All Liquid Removal devices installed for any Gasoline dispensing nozzle with a dispensing rate of greater than five gallons per minute shall be CARB Certified with a minimum Liquid Removal rate 		

Rule Element	South Coast AQMD Rule 461 – Gasoline Transfer and Dispensing (Amended 1/7/22)	South Coast AQMD Rule 461.1 – Gasoline Transfer and Dispensing for Mobile Fueling Operations (Adopted 1/7/22)	AVAQMD 461 – Gasoline Transfer and Dispensing (Amended 10/21/08)	MDAQMD 461 – Gasoline Transfer and Dispensing (Amended 1/22/18)	SJVAPCD Rule 4621 – Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, And Bulk Plants (Amended 12/9/13)	SJVAPCD Rule 4622 – Gasoline Transfer into Motor Vehicle Fuel Tanks (Amended 12/19/2013)
	“CARB certified” with a minimum liquid removal rate of five milliliters per gallon transferred.			of five milliliters per gallon transferred.		

**TABLE 4-37
COMPARISON OF SOUTH COAST AQMD RULE 462 WITH RULES AT OTHER AGENCIES**

	South Coast AQMD 462 – Organic Liquid Loading (Amended 5/14/1999)	AVAQMD 462 – Organic Liquid Loading (Amended 9/19/2017)	MDAQMD 462 – Organic Liquid Loading (Amended 1/22/2018)
Applicability	Facilities that load organic liquids with a vapor pressure of 1.5 psia (77.5 mm Hg) or greater under actual loading conditions into any tank truck, trailer, or railroad tank car. The provisions of this rule shall apply to all the organic liquid loading facilities that are defined as Class A, B or C facilities.	Same as South Coast AQMD Rule 462	To control emissions of Volatile Organic Compounds (VOC) and toxic compounds from facilities that transport and load organic liquids into tanks, including Motor Vehicle fuel tanks, tank trucks, trailers or railroad tank cars. (2) Applicability: (a) The provisions of this rule shall apply to all Class “A” or “B” Facilities, Retail and non-retail service stations or any other facility where Organic Liquids are stored or transferred.
Class Definition	Class "A" Facility- Any facility which loads 20,000 gallons (75,700 liters) or more on any one day of organic liquids into any tank truck, trailer, or railroad tank car. Class "B" Facility- Any facility: 1) which was constructed before January 9, 1976 and loads more than 4,000 gallons (15,140 liters) but not more than 20,000 gallons (75,700 liters) of gasoline on any	Same as South Coast AQMD Rule 462	(1) Class “A” Facility – Any Organic Liquid Loading Facility loading 5,000,000 gallons (18,925,000 liters) or more per year and/or 20,000 gallons (73,700 liters) or more on any day of Organic Liquids with a True Vapor Pressure, determined at actual storage conditions, of 77.5 mm (1.5 psia) or greater into any tank truck, trailer, or railroad tank car.

	South Coast AQMD 462 – Organic Liquid Loading (Amended 5/14/1999)	AVAQMD 462 – Organic Liquid Loading (Amended 9/19/2017)	MDAQMD 462 – Organic Liquid Loading (Amended 1/22/2018)
	<p>one day; Or loads not more than 4,000 gallons of gasoline on any one day, but more than 500,000 gallons of gasoline in any one calendar year, into any tank truck, trailer, or railroad tank car.</p> <p>2) which was constructed after January 9, 1976 and loads not more than 20,000 gallons (75,700 liters) of gasoline on any one day into a tank truck, trailer or railroad tank car.</p> <p>Class "C" Facility- Any facility existing before January 9, 1976 which loads not more than 4,000 gallons (15,140 liters) of gasoline on any one day and not more than 500,000 gallons in any one calendar year, into any tank truck, trailer, or railroad tank car.</p>		<p>(2) Class “B” Facility – Any Organic Liquid Loading Facility loading less than 5,000,000 gallons (18,925,000 liters) per year. with a True Vapor Pressure, determined at actual storage conditions, of 77.5 mm (1.5 psia) or greater into any tank truck, trailer, or railroad tank car.</p>
Loading Requirements	<p>At Class A Facilities: each vapor recovery and/or disposal system shall reduce the emissions of VOCs to 0.08 pound or less per thousand gallons (10 grams per 1,000 liters) of organic liquid transferred. The backpressure in the vapor recovery and/or disposal system shall not exceed 18 inches of water column pressure.</p>	<p>At Class A Facilities: From June 9, 1995 until January 31, 1998, each system shall reduce the emissions of volatile organic compounds (VOC) to 0.29 pound or less per thousand gallons (35 grams per 1,000 liters) of organic liquid transferred. Effective February 1, 1998, each system shall reduce the emissions</p>	<p>At Class A Facilities: Each Vapor Recovery and/or disposal system shall reduce the emissions of VOCs to 0.08 pound or less per thousand gallons (10 grams per 1,000 liters) of Organic Liquid transferred. The backpressure in the Vapor Recovery and/or disposal system</p>

	South Coast AQMD 462 – Organic Liquid Loading (Amended 5/14/1999)	AVAQMD 462 – Organic Liquid Loading (Amended 9/19/2017)	MDAQMD 462 – Organic Liquid Loading (Amended 1/22/2018)
	<p>At Class B Facilities: vapor recovery and/or disposal system shall be designed and operated to recover at least 90 percent of the displaced vapors. The backpressure in the vapor recovery system shall not exceed 18 inches of water column pressure.</p>	<p>of VOCs to 0.08 pound or less per thousand gallons (10 grams per 1,000 liters) of organic liquid transferred.</p> <p>At Class B Facilities: Vapor recovery and/or disposal system shall be designed and operated to recover at least 90 percent of the displaced vapors. The backpressure in the vapor recovery system shall not exceed 18 inches of water pressure.</p>	<p>shall not exceed 18 inches of water column pressure.</p> <p>At Class B Facilities: Equipped with a vapor Recovery and/or disposal system with a Vapor Recovery Efficiency of 95 percent (95%).</p> <p>a. The backpressure in the Vapor Recovery and/or disposal system shall not exceed 18 inches of water column pressure.</p> <p>Each class B facility should be equipped with a pressure vacuum valve on the aboveground stationary storage tank with a minimum pressure valve setting of eight 8 ounces per square inch, provided that such setting will not exceed the tank’s maximum pressure rating. This requirement does not pertain to Floating Roof Tanks.</p>

2. LPG Transfer and Dispensing Losses

a. Overview

South Coast AQMD Rule 1177 – Liquefied Petroleum Gas Transfer and Dispensing applies to the transfer of LPG to and from stationary storage tanks, cylinders and cargo tanks, including bobtail trucks, tanker or transport trucks and railroad tank cars, as well as into portable tanks and cylinders. The following summarizes key requirements:

- Require use of LPG low emission connectors to limit the discharge of LPG upon disconnection to four cubic centimeters or less by July 1, 2013.
- Require that all LPG-receiving containers be filled using a low emission fixed liquid level gauge (FLLG) by July 1, 2017 or through use of an equivalent, alternative technique or technology that does not require the FLLG to be open to comply with fire protection laws.
- Implement a Leak Detection and Repair program that requires routine leak checks using a simple bubble test of LPG low emission connectors, as well as repair and proper maintenance of any installed vapor recovery or equalization system.
- Require records of all low emission FLLG and LPG low emission connector installations, leak repairs, and vapor recovery and equalization system maintenance.
- Require annual reports for LPG bulk loading facilities and LPG transfer and dispensing facilities that offer LPG for sale to an end user, including monthly purchase and dispensing volumes for calendar years 2013 through 2015, end of year inventories of all containers and associated low emission FLLGs for calendar years 2013 through 2017, and low emission connectors installed for calendar year 2013.
- Exemptions provided for containers with a water capacity of less than 4 gallons, LPG cylinders that are specifically dedicated for and installed for use with recreational vehicles, and for facilities that are subject to the requirements of Rule 1173.

Based on LPG low emission connector and low emission FLLG technologies that were available at the time of rule adoption, Rule 1177 was estimated to reduce VOC emissions by more than 70 percent upon full implementation. Emissions from LPG Transfer and Dispensing Losses contribute 37 percent (0.118 tpd) to Coachella Valley's 2031 total VOC emissions from 330-Petroleum Marketing.

b. Evaluation and Conclusion

The only comprehensive rule at other agencies pertaining to LPG transfer and dispensing is the VCAQMD Rule 74.33 – Liquefied Petroleum Gas Transfer or Dispensing (adopted January 13, 2015) which is based on South Coast AQMD Rule 1177 (adopted June 1, 2012). As Rule 74.33 is equivalent to Rule 1177, staff did not identify any control measure to be considered as a contingency measure for this source category.

3. Storage Tanks and Pipeline Cleaning and Degassing

a. Overview

In the Coachella Valley, Storage Tanks and Pipeline Cleaning and Degassing contribute less than 0.01 tpd VOC emissions in the 2031 inventory.

b. Evaluation

South Coast AQMD regulates this source category through Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing. Table 4-38 contains a comparison of South Coast AQMD Rule 1149, SJVAPCD Rule 4623 – Storage of Organic Liquids, AVAQMD Rule 1149- Storage Tank Cleaning and Degassing, and BAAQMD Regulation 8 (Organic Compounds), Rule 5 (Storage of Organic Liquids). South Coast AQMD, SJVAPCD, and BAAQMD rules are generally similar; South Coast AQMD Rule 1149 and SJVAPCD Rule 4623 are the most stringent by requiring that the VOC concentrations within the tank or pipeline be reduced to 5,000 ppm or less for cleaning and degassing operations. While AVAQMD Rule 1149 requires at least 90 percent efficiency for any control measure in reducing VOC emissions (as opposed to limiting VOC concentrations), staff have not found any indication that this requirement is more stringent than South Coast AQMD Rule 1149.

c. Conclusion

Staff concludes that South Coast AQMD Rule 1149 is the most stringent and does not propose a potential contingency measure for this rule. However, staff is proposing a contingency measure in Rule 463 (see Chapter 3), which will apply to at least two gasoline storage tanks in Coachella Valley. No additional contingency measures are being proposed for this source category.

**TABLE 4-38
COMPARISON OF SOUTH COAST AQMD RULES 1149 WITH EXISTING RULES AT OTHER AGENCIES**

	South Coast Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing (Amended May 2, 2008)	SJVAPCD Rule 4623 – Storage of Organic Liquids (Amended 06/15/2023)	AVAQMD Rule 1149 – Storage Tank Cleaning and Degassing (Amended 07/14/95)	BAAQMD Regulation 8 Rule 5 – Storage of Organic Liquids (Amended 11/3/2021)
Applicability	The purpose of this rule is to reduce Volatile Organic Compounds (VOCs) and toxics emissions from roof landings, cleaning, maintenance, testing, repair and removal of storage tanks and pipelines. This rule applies to the cleaning and degassing of a pipeline opened to atmosphere outside the boundaries of a facility, stationary tank, reservoir, or other container, storing or last used to store VOCs.	The purpose of this rule is to limit volatile organic compound (VOC) emissions from the storage of organic liquids. This rule applies to any tank with a capacity of 1,100 gallons or greater in which any organic liquid is placed, held, or stored.	This rule applies to the cleaning and degassing of a stationary tank, reservoir, or other container storing or last used to store Volatile Organic Compounds.	The purpose of this rule is to limit emissions of organic compounds from storage tanks.
Control Measure	<ul style="list-style-type: none"> For stationary tank, reservoir, or container the emissions are controlled by one of the following: (A) Liquid balancing; or (B) Other control techniques such that the gaseous VOC concentration within the tank, reservoir or other container is reduced to less than 5,000 ppm, measured as methane, for at least 	<ul style="list-style-type: none"> For Tank Degassing operations, organic vapors shall be minimized by exhaust VOCs contained in the tank vapor space to a vapor recovery system until the organic vapor concentration is 5,000 ppm or less, or is 10 percent or less of the lower explosion limit (LEL), whichever is less; 	<ul style="list-style-type: none"> Above-ground stationary tank subject to this rule: during cleaning or degassing operations, emissions are controlled by: (A) Liquid balancing (B) Negative pressure displacement and subsequent incineration (C) A refrigerated condenser which reduces the vapor temperature to -100°F or lower, and 	<ul style="list-style-type: none"> For tanks larger than 75 m³, the emissions of organic compounds resulting from degassing shall be controlled by an abatement device that collects and processes all organic vapors and gases and has an abatement efficiency of at least 90% by weight. The system shall be operated until the concentration of organic compounds in the

	South Coast Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing (Amended May 2, 2008)	SJVAPCD Rule 4623 – Storage of Organic Liquids (Amended 06/15/2023)	AVAQMD Rule 1149 – Storage Tank Cleaning and Degassing (Amended 07/14/95)	BAAQMD Regulation 8 Rule 5 – Storage of Organic Liquids (Amended 11/3/2021)
	<p>one hour after degassing operations have ceased.</p> <ul style="list-style-type: none"> The roof of a floating storage tank containing or last containing a VOC liquid emissions are controlled by one of the following: (A) The vapor space created is vented to a control device approved by the Executive Officer; or (B) The gaseous VOC concentration within the tank, reservoir or other container is reduced to less than 5,000 ppm, measured as methane, for at least one hour after degassing operations have ceased. For pipelines the emissions are controlled by one of the following: A) The gaseous VOC concentration within the pipeline is reduced to less than 5,000 ppm, measured as methane, for at least one hour after degassing 	<ul style="list-style-type: none"> During tank cleaning operations; 1) while performing tank cleaning activities, operators may use the following cleaning agents: diesel, solvents with an initial boiling point of greater than 302°F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams per liter VOC content or less. 2) Steam cleaning shall be allowed at locations where wastewater treatment facilities are limited or during the months of December through March. 	<p>capable of handling the displaced vapors. (D) Any other control method or control equipment that has been approved by the Executive Officer or designee to be at least 90 percent efficient in reducing VOC emissions.</p> <ul style="list-style-type: none"> Underground Storage Tanks: A person shall not allow cleaning or degassing of any underground storage tanks subject to this rule unless the VOC emissions are controlled by a device that has been approved by the Executive Officer or designee to be at least 90 percent efficient. 	<p>tank is less than 10,000 ppm expressed as methane. In order to satisfy this requirement, effective June 1, 2007, the residual organic concentration must be measured to be less than 10,000 ppm as methane for at least four consecutive measurements performed at intervals no shorter than 15 minutes each.</p> <ul style="list-style-type: none"> Effective June 1, 2007, tank interior cleaning agents must meet the following requirements, unless all organic vapors and gases emitted during tank cleaning are collected and processed at an abatement device that has an abatement efficiency of at least 90% by weight. Agents used to clean tank interiors shall have an initial boiling point greater than 302 degrees F, a true vapor pressure less than 0.5 psia,

	South Coast Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing (Amended May 2, 2008)	SJVAPCD Rule 4623 – Storage of Organic Liquids (Amended 06/15/2023)	AVAQMD Rule 1149 – Storage Tank Cleaning and Degassing (Amended 07/14/95)	BAAQMD Regulation 8 Rule 5 – Storage of Organic Liquids (Amended 11/3/2021)
	<p>operations have ceased; or</p> <p>B) The gaseous VOC concentration outside the pipeline, as measured pursuant to paragraph (d)(1) while the pipeline is open, is less than 5,000 ppm, measured as methane.</p> <ul style="list-style-type: none"> • Vacuum trucks used to remove liquid, sludge or vapors from tanks or pipelines subject to this rule shall not exhaust vapors to the atmosphere greater than 500 ppm, measured as methane. 			<p>or a VOC content less than 50 grams per liter.</p>

Industrial Processes

Industrial processes contribute 0.29 tpd of VOC emissions and zero NOx emissions to the 2031 Coachella Valley emissions inventory. The source categories contributing emissions include chemical, food and agriculture, mineral processes, and other. These categories are individually evaluated below.

1. Chemical

a. Overview

MSC 410, pertaining to chemicals within industrial processes, contributes 0.15 tpd of VOC emissions and zero NOx emissions to the 2031 Coachella Valley summer planning emissions inventory. Table 4-39 provides a detailed breakdown of NOx and VOC emissions from this source category. Among the four identified EICs with non-zero emissions, three EICs originate from stationary area sources, while one EIC is associated with a point source. The VOC emissions from stationary area sources within MSC 410 arise from the manufacturing of plastic products, rubber products, and fiberglass. More specifically, area source VOC emissions result from milling, calendaring, extrusion, and vulcanizing (curing) operations related to resin and polyester resin processors. VOC emissions from the point source facility originate from working losses in fixed-roof tanks used in the process of converting waste cooking oil from restaurants into a clean-burning alternative fuel, namely biodiesel.⁵¹ In Chapter 3, South Coast AQMD proposed a contingency measure in Rule 463 to require more frequent OGI inspections of organic liquid storage tanks, potentially including those used for waste cooking oil. The remainder of this section evaluates additional controls beyond the proposed measure.

**TABLE 4-39
CHEMICAL EMISSIONS BASED ON 2031 SUMMER PLANNING INVENTORY**

EIC	EIC Description	VOC (tpd)	NOx (tpd)
410-328-3220-0000	Fixed roof tanks – working losses	0.01	0.00
410-402-5062-0000	Rubber and rubber products manufacturing	0.04	0.00
410-403-5018-0000	Fiberglass and fiberglass products manufacturing	0.02	0.00
410-404-5000-0000	Plastics and plastic products manufacturing	0.08	0.00

Control measures for sources in chemical industrial processes generally encompass various common strategies. In the case of VOC emissions from resin manufacturing and polyester resin operations, specific minimum VOC control efficiencies are mandated, contingent upon the resin production process employed. There are also VOC limits for the application of resin or gel coat materials onto open mold surfaces. To curtail fugitive VOC emissions resulting from VOC leaks in chemical plants, designated leak thresholds are established for different components or devices. Regular inspections and maintenance procedures are

⁵¹ <https://www.imperialwesternproducts.com/products/>

mandatory, with prompt repairs mandated upon the detection of violations, and mitigation fees may be imposed as part of enforcement.

b. Evaluation

Staff reviewed available control measures for this source category as implemented by South Coast AQMD and other state and local air agencies. Given the distinct rule structures across jurisdictions, direct comparisons can be challenging. Nevertheless, Table 4-40 provides a summary of the considered control measures for source category 410. Specifically, for controlling VOC emissions from the manufacture of plastic, rubber, and fiberglass, South Coast AQMD Rule 1141 (Control of Volatile Organic Compound Emissions from Resin) and Rule 1162 (Polyester Resin Operations) were identified as applicable. Additionally, to address VOC leaks during storage in the chemical plant, South Coast AQMD Rule 1173 (Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants) was deemed applicable.

TABLE 4-40
CONTROL MEASURES IMPLEMENTED BY SOUTH COAST AQMD AND OTHER DISTRICTS FOR CHEMICAL INDUSTRIAL PROCESSES

Rule	Applicability	Control Measure/Emission Limits
South Coast AQMD Rule 1141 Control of Volatile Organic Compound Emissions from Resin Manufacturing (Amended 11/17/00)	Applies to resin manufacturing which emits VOC	95–98% VOC control Less than 0.12–0.5 lbs VOC emission to the atmosphere from the organic resin reactor, recycle treaters, thinning tank, blending tank and product finishing section vents per 1,000 lbs of complete resin produced
BAAQMD Regulation 8 Rule 36 Resin Manufacturing (Adopted 6/6/84)	Emissions of precursor organic compounds from resin manufacturing operations	Total VOC emissions to the atmosphere from the resin reactor, thinning tank and blending tank are abated by 95% or more VOC emissions from all resin reactors, thinning tanks and blending task do not exceed 10 lbs per day
South Coast AQMD Rule 1162 Polyester Resin Operations (Amended 7/8/05)	Applies to polyester resin manufacturing which emits VOC	VOC limits (monomer content) from 10-48% by weight or alternatively 90% control efficiency for add-on control. Various requirements when applying resin or gel coat materials to open mold surface. Monomer (VOC) content limits from 10 to 48% by weight for 14 source categories: <ul style="list-style-type: none"> • Clear gel coat: 40–44% • Pigmented gel coat: 28–37% • Specialty gel coats: 48% • General purpose resins: 10–17% • Others polyester resins: 35%
MDAQMD Rule 1162 Polyester Resin Operations (Amended 4/23/18)	Applies to manufacture of products from, or the use of, Polyester Resin Material	Tooling Resin Atomized (spray) is 30% weight average monomer limits the weighted average monomer VOC content for fiberglass boat manufacturing operations
U.S. EPA 40 CFR 63 Subpart VVVV National Emission Standard for Hazardous Air Pollutants for Boat Manufacturing (Amended 3/20/20)	Establishes national emission standards for hazardous air pollutants (HAP) for new and existing boat manufacturing facilities with resin and gel coat operations, carpet and fabric adhesive operations, or aluminum recreational boat surface coating operations	VOC limits for 7 source categories: Pigmented Gel Coat Operations is 33%; Tooling Resin is 30–39%; Tooling Get Coat is 40%, Clear Gel Coats is 48%; production resin operations is 28-35%.

Rule	Applicability	Control Measure/Emission Limits
SMAQMD R465 Polyester Resin Operations (Amended 9/25/08)	Applies to polyester resin operations which emits VOC within Sacramento County	Resins, less than 35% by weight average monomer VOC content limits by weight: Pigmented gel coats is 45%; Specialty resins and clear gel coats is 50%
South Coast AQMD R1173 Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants (Amended 2/6/09)	Applies to components at refineries, chemical plants, lubricating oil and grease re-refiners, marine terminals, oil and gas production fields, natural gas processing plants and pipeline transfer stations	Implement Leak Detection and Repair (LDAR) program to reduce fugitive emissions. Leak thresholds are: <ul style="list-style-type: none"> • for light liquid/gas/vapor service >10,000 ppm • for pressure relief devices > 200 ppm • for pumps in heavy liquid > 100 ppm In lieu of connecting PRDs to control, operator may elect to pay mitigation fee of \$350,000 for any release exceeding the threshold
VCAPCD RULE 74.7 Fugitive Emissions of Reactive Organic Compounds at Petroleum Refineries and Chemical Plants (Amended 10/10/95)	Limit fugitive VOC emissions at petroleum refineries and chemical plants	Require VOC vapor destruction or removal efficiency of at least 90% by weight Reduce VOC concentration of any vapors being emitted from pressure relief devices to a level of no more than 200 ppm above background
BAAQMD Regulation 8 Rule 18 Equipment Leaks (Amended 11/2/21)	Limit emissions of total organic compounds from equipment leaks at refineries, chemical plants, bulk plants, and bulk terminals buildings	Prohibit use any valves and connections that leak VOC in excess of 100 ppm Prohibit use any pumps, compressors and pressure relief devices that leak VOC in excess of 500 ppm
SMAQMD R443 Leaks from Synthetic Organic Chemical and Polymer Manufacturing (Amended 9/5/96)	Limit VOC emissions from leaking components which have potential to vent to atmosphere are chemical plants	For leak rate more than 10,000 ppm above the background, repair within 2 working days to achieve 90% control

The comprehensive analysis of RACT within the 2022 AQMP demonstrates that the current VOC and NOx rules of the South Coast AQMD meet or exceed federal RACT requirements for all relevant MSC 410 sources.⁵² Upon revisiting the comparable rules identified in the RACT analysis, staff found no updates to VOC limits or overall control efficiency for the source category MSC 410. Specifically, South Coast AQMD Rule 1141 requires a more stringent overall VOC control efficiency (98 percent) compared to BAAQMD rules (95 percent). South Coast AQMD Rule 1162 includes a total of 14 source category Monomer (VOC) content limits ranging from 10 to 48% by weight for polyester resin operations. These limits are comparable or more stringent than rules from other agencies or national standards. While U.S. EPA emission standard 40 CFR 63 Subpart VVVV and MDAQMD Rule 1162 require VOC limits for fiberglass boat manufacturing operations, South Coast AQMD Rule 1162 does not have equivalent requirements. Nevertheless, Rule 1162 exhibits varying stringency compared to other agencies' requirements, being as stringent as other agency rules for almost all categories and providing RACM for this source category.

South Coast AQMD Rule 1173 implements a Leak Detection and Repair (LDAR) program to reduce VOC fugitive emissions at chemical plants, specifically applicable to the point source facility in Coachella Valley. The proposed leak thresholds are comparable to or lower than those in VCAPCD Rule 74.7, BAAQMD Regulation 8 Rule 18, and SMAQMD Rule 443. Rule 1173 also specifies fees for violations to ensure the enforceability of the rule. The identified point source facility in Coachella Valley maintains valid permits and reports annual emissions to the South Coast AQMD AER program.

It is important to note that SJVAPCD Rule 4684 (Amended 8/18/11)⁵³ and VCAPCD Rule 74.14 (Amended 4/12/05)⁵⁴ established the exact same VOC limits for polyester resin operations as South Coast AQMD Rule 1162. Therefore, the district's rule aligns with VOC control efficiency in adjacent counties with ozone nonattainment status. As these rules align with South Coast AQMD Rule 1162, they have been omitted in Table 2-42 for brevity.

c. Conclusion

Staff reviewed the control measures currently in place for the MSC 410 Chemical Industrial Processes category and determined that the existing measures implemented in Coachella Valley are as stringent as comparable rules from other agencies. However, staff is proposing a contingency measure in Rule 463 (see Chapter 3), which potentially applies to this source category. No additional contingency measures are being proposed for this source category.

2. Food and Agriculture

a. Overview

⁵² <https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/final-2022-aqmp/appendix-vi.pdf?sfvrsn=12>

⁵³ <https://ww2.valleyair.org/media/ob5bqzxc/rule-4684.pdf>

⁵⁴ [Rule 74.14 Proposed Revisions 2005 \(vcapcd.org\)](https://www.vcapcd.org/rule-74.14-proposed-revisions-2005)

Source category 420 – Food and Agriculture includes emissions from various types of food processing operations including food product processing, bakeries, and wineries. The projected 2031 VOC baseline emissions for this category are 0.034 tpd (0.019 tpd for bread/baked goods, 0.015 tpd for wine aging, and <<0.01 tpd for wine fermentation). In addition to a number of rules with VOC emissions thresholds, for the food and agriculture source categories, Rule 1153 – Commercial Bakery Ovens limits bakery oven emissions of VOCs in the Coachella Valley and Rule 1131 – Food Product Manufacturing and Processing Operations limits emissions of VOCs used in the food product manufacturing and processing operations.

b. Evaluation

Staff reviewed control measures for this source category implemented by South Coast AQMD and other state and local air agencies. Each jurisdiction has different rule structures, which can make direct comparison difficult. Table 4-41 summarizes the control measures staff considered for this source category.

**TABLE 4-41
CONTROL MEASURES IMPLEMENTED BY SOUTH COAST AQMD AND OTHER DISTRICTS FOR SOURCE CATEGORY 420 - FOOD AND AGRICULTURE PROCESSES**

Rule	Applicability	Control Measure
South Coast AQMD Rule 1153 – Commercial Bakery Ovens (Amended January 13, 1995)	This rule controls volatile organic compound (VOC) emissions from commercial bakery ovens with a rated heat input capacity of 2 million BTU per hour or more and with an average daily emissions of 50 pounds or more of VOC.	VOC emissions must be reduced at least: <ul style="list-style-type: none"> • (A) 70% by weight (as carbon) for an oven with a base year average daily VOC emissions of 50 pounds or more, but less than 100 pounds. • (B) 95% by weight (as carbon) for an oven with a base year average daily VOC emissions of 100 pounds or more.
South Coast AQMD Rule 1131 – Food Product Manufacturing and Processing Operations (Amended June 6, 2003)	The purpose of this rule is to reduce emissions of VOCs from solvents used in food product manufacturing and processing operations. This rule applies to any person using solvents in any food product manufacturing and processing operation except food supplements in tablet or capsule form. However, exemptions to the rule include: <ul style="list-style-type: none"> • Fermentation operations in breweries, wineries, or distilleries 	<ul style="list-style-type: none"> • Reduce emissions of isopropyl alcohol and hexane from food manufacturing and processing operations such as extraction, blending, separation, crystallization, and drying. The current rule sets VOC concentration limits on both manufacturing processes and sterilization of the equipment used to manufacture and process food products, or allows the use of add-on control equipment to capture and destroy VOC emissions at a minimum of 85.5%

Rule	Applicability	Control Measure
AVAQMD Rule 1153 – Commercial Bakery Ovens (Amended 01/13/95)	This rule controls volatile organic compound (VOC) emissions from commercial bakery ovens with a rated heat input capacity of 2 million BTU per hour or more and with an average daily emission of 50 pounds or more of VOC.	See requirements above for South Coast AQMD Rule 1153
SJVAPCD Rule 4693 – Bakery Ovens (Adopted May 16, 2002)	The requirements of this rule shall apply to bakery ovens operated at major source facilities, which emit VOCs during the baking of yeast-leavened products.	<p>No person shall operate a new or existing bakery oven unless:</p> <ul style="list-style-type: none"> • Emissions from all oven stacks are vented to an emission collection system, and • The collected emissions are vented to an approved emission control device, which has a control efficiency of at least 95 percent.
SJVAPCD Rule 4694 – Wine Storage and Fermentation Tanks (Adopted December 15, 2005)	This rule applies to any winery fermenting wine and/or storing wine in bulk containers equal to or greater than 5,000 gallons. Wineries with bulk containers containing over 5,000 gallons AND with baseline fermentation emissions less than 10 tons per year, and wood or concrete wine storage tanks are exempted.	<ul style="list-style-type: none"> • Winery Fermentation Tanks Operators shall achieve Required Annual Emissions Reductions (RAER) equal to at least 35% of the winery’s Baseline Fermentation Emissions (BFE). • Storage Tanks Operators of any wine storage tank having an internal volume equal to or greater than 5,000 gallons shall: Have a pressure-vacuum relief valve meeting all of the following requirements: <ul style="list-style-type: none"> • The pressure-vacuum relief valve shall operate within 10% of the maximum allowable working pressure of the tank • The pressure-vacuum relief valve shall be permanently labeled with the operating pressure settings. • The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. • The temperature of the stored wine shall be maintained at or below 75°F and are recorded at least once per week.

Rule	Applicability	Control Measure
		<ul style="list-style-type: none"> For each batch of wine, operators shall achieve the storage temperature of 75°F or less within 60 days after completing fermentation.
<p>SJVAPCD Rule 4695 – Brandy Aging and Wine Aging Operations (Adopted September 17, 2009)</p>	<p>The purpose of this rule is to limit volatile organic compound (VOC) emissions from brandy aging and wine aging operations.</p>	<p>Implement the following RACT work practices:</p> <ul style="list-style-type: none"> Prevent and minimize the unnecessary occurrence of brandy or wine exposure to the atmosphere, and leaks and spills Immediate clean-up of leaks and spills Preventative actions for reoccurrence of a similar brandy or wine leak or spill. <p>A Stationary Source with a wine aging operation that equals or exceeds rule applicable inventory and emission thresholds shall also comply with the RACT work practices:</p> <ul style="list-style-type: none"> Maintain the wine aging warehouse such that the daily average temperature, averaged over a calendar year, does not exceed 70°F, or Implement a control technology to reduce the Uncontrolled Aging Emissions (UAE), as defined in the rule With a brandy aging operation that equals or exceeds both the rule applicable inventory and emission thresholds, operator shall implement BARCT to produce a brandy with UAE of less than or equal to 0.3 proof gallons per 50 gallons Aging wine shall be maintained at or below 75°F during aging operations
<p>SBCAPCD Rule 802.D.2 – New Source Review – Nonattainment Review BACT Requirement (Revised August 25, 2016)</p>	<p>Wine stored in oak barrels. Low production wineries may qualify for a written determination of exemption if the annual emissions of ethanol are less than 1 ton per year</p>	<ul style="list-style-type: none"> Permits are required for fermentation and storage tanks, including vats, along with annual winery reporting requirements.

Rule	Applicability	Control Measure
	(approximately less than 25,000 barrels a year).	
SDAPCD Rule 67.24 – Bakery Ovens (Adopted & Effective May 15, 1996)	Applicable to bakery ovens which emit VOCs during the baking of yeast-leavened products. Excludes bakery ovens: <ul style="list-style-type: none"> • with combined rated heat input capacity of all bakery ovens is less than 2 MMBTU/hr, • baking of unleavened products, or • uncontrolled emissions of VOCs from all bakery ovens is less than 50 TPY 	<ul style="list-style-type: none"> • No person shall operate a bakery oven subject to this rule, unless the uncontrolled VOC emissions are reduced by at least 90% by weight.
SMAQMD Rule 458 – Large Commercial Bread Bakeries (Amended September 5, 1996)	Limits emission of VOCs from bread ovens at large commercial bread bakeries, except for bakeries whose total VOC emissions for each and every operating day are less than 100 pounds, or bakery products leavened chemically in the absence of yeast.	<ul style="list-style-type: none"> • All ovens shall vent emissions to an emission control system that captures emissions from all oven stacks which has a control efficiency of at least 95% on a mass basis.

The control measures identified for agricultural and food processing sources rely on limiting the emissions of VOCs from fermentation of yeast for both baking and fermentation operations, along with limiting emissions of VOCs from other food manufacturing and processing operations.

Rule 1153 controls VOC emissions from commercial bakery ovens with a rated heat input capacity of 2 million BTU per hour or more and with an average daily VOC emissions of 50 pounds or more. VOC emissions must be reduced by 70 percent by weight as carbon for an oven with base year average daily VOC emissions of 50 pounds or more, but less than 100 pounds. VOC emissions must be reduced by at least 95 percent by weight as carbon for an oven with a base year average daily VOC emissions of 100 pounds or more. Rule 1153 is generally similar to the rules identified in SJVAPCD, BAAQMD, SMAQMD, and AVAQMD.

Rule 1131 applies to food product manufacturing and processing operations. Past emission inventory work on several District projects and other information from inspectors led to the discovery of large amounts of solvent usage (primarily isopropyl alcohol) at several food manufacturing facilities. Food products are considered to be any combination of carbohydrates, proteins, or fats intended for human consumption. Colorings, flavorings, spices, and extracts that are manufactured and subsequently used in the preparation of human consumable foods are considered to be food products. Food processing and manufacturing operations include, but are not limited to distillation, extraction, reacting, blending, drying, crystallizing, granulating, separation, sterilization, and filtering. Exemptions to the rule include operations

at breweries, wineries, or distilleries, and deep-fat frying operations, however, other general District rules such as Rule 201 – Permit to Construct and Rule 203 – Permit to Operate, requires that units that may cause issuance of air contaminants or units used to control pollutants to be permitted. Additionally, wineries are not exempt from BACT; VOCs or other contaminants will still need to be controlled if emissions are greater than 1 pound a day. Similarly, SBCAPCD does not have winery specific rules, but require wine storage tanks under 30,000 gallons to be permitted.

Overall, staff identified two wine production/fermentation/storage/aging related VOC control measures implemented in SJVAPCD (Rule 4694 – Wine Storage and Fermentation, and Rule 4695 – Brandy Aging and Wine Aging Operations) that are not covered under South Coast AQMD rules. SJVAPCD Rule 4694 implements relief pressure valve requirements and at least 35 percent annual emissions reductions. SJVAPCD Rule 4695 implements various BMPs for storage tanks and reduces emissions by at least 50 percent. Both of these rules also require temperature of stored wine or brandy to be lower than 75 °F and for Rule 4695, the daily average temperature of the wine aging warehouse, averaged over a calendar year, is maintained at or does not exceed 70 °F, along with some recordkeeping requirements. There are currently no source-specific rules that apply to wine production and related operations in the Coachella Valley.

c. Conclusion

South Coast AQMD does not have any rules that directly apply to VOC emissions from wine storage tanks or wine and brandy aging. While nominal VOC emissions associated with wine fermentation and aging are present in the Coachella Valley, it is likely that wineries already implement many of the requirements of SJVAPCD Rules 4694 and 4695. For example, it is unlikely that aging is performed at temperatures exceeding 70 °F as this would produce poor quality wine. For this reason, virtually all wineries employ climate-control systems. Since such measures are already being implemented in practice, no emission reductions would result from a potential contingency measure to align with SJVAPCD's rules. Therefore, no contingency measure is proposed for this source category.

3. Mineral Processes

a. Overview

Major source category 430 – Mineral Processes contributes with 0.03 tpd of VOC and zero NO_x emissions to the 2031 Coachella Valley's baseline emissions inventory. The VOC emissions for this source category come from two asphaltic concrete production facilities. The VOC emissions at these two facilities originate from non-combustion sources that include storage silos, aggregate conveyors and hot elevators, and truck load-out operations.

Emissions of VOC are disaggregated by Source Classification Code (SCC) in Table 4-42. VOC emission factors for those sources are discussed in the AP-42 database, for hot mix asphalt plants.⁵⁵ These are fugitive emissions resulting from the movement of asphaltic concrete through its processing, and no control measure for such fugitive emissions was identified.

**TABLE 4-42
MINERAL PROCESSES VOC EMISSIONS BASED ON 2031 SUMMER PLANNING INVENTORY**

SCC	SCC Description	VOC (tpd)
30500202	Batch Mix Plant: Hot Elevators, Screens, Bins & Mixer	0.00
30500213	Storage Silo	0.01
30500214	Truck Load-out	0.00
30500217	Cold Aggregate Conveyors and Elevators	0.01

b. Evaluation

There are numerous rules that address controls of PM emissions from those type of facilities, but staff did not identify any source-specific South Coast AQMD control measure or rule related to VOC emissions from those facilities. However, sources in this category are subject to the general VOC limits in Rule 442. We explored relevant regulations in other jurisdictions, e.g., BAAQMD and SJVAPCD. As in South Coast AQMD, there are several rules that apply to PM emissions, but there are no rules to control VOC emissions from those sources.

c. Conclusion

Staff evaluation of controls for this category did not identify any potential contingency measures that could be implemented and achieve quantifiable emission reductions within two years of being triggered.

4. Other Industrial Processes

a. Overview

Based on the 2031 baseline emissions inventory for the Coachella Valley, source Category 499 – Other Industrial Processes contributes 0.081 tpd of VOC and zero NOx emissions. The VOC emissions are from three point sources with fixed roof tanks (totaling 0.006 tpd) and one category of area sources (metalworking fluids & lubricants) emitting 0.075 tpd. The latter category was quantified as an area source using population surrogates in the absence of industry-specific data. The emissions are summarized in Table 4-43.

⁵⁵ AP 42, Fifth Edition, Volume I Chapter 11: Mineral Products Industry. Section 11.1 Hot Mix Asphalt Plants. Available at: <https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-fifth-edition-volume-i-chapter-11-mineral-products-0>

**TABLE 4-43
VOC EMISSIONS FROM OTHER INDUSTRIAL PROCESSES IN THE COACHELLA VALLEY**

Source type	South Coast AQMD Facility ID	Facility Name/Source Category	SIC	VOC emissions (tpd)
Point	42218	Palm Springs City	9224	<<0.01
Point	153576	Matich Corporation – Cabazon Plant	5032	<<0.01
Point	178534	Granite Construction Company	2951	<<0.01
Area	N/A	Metalworking fluids & lubricants	N/A	0.08

b. Evaluation

Staff examined the permits of each of the point sources and found them to cover asphalt, urea and miscellaneous chemical storage tanks with fixed roofs. The permits don't explicitly mention specific rules, but require best management practices and certain temperatures to be maintained in the storage tanks. None of the storage tanks had any permit violations associated with them. Since emissions from fixed roof storage tanks containing VOCs are subject to South Coast AQMD Rule 463 - Organic Liquid Storage, staff evaluated this rule against comparable regulations in other jurisdictions. While the compliance records do not show any violation, South Coast AQMD is amending the Rule 463 to require Optical Gas Imaging technique to detect any potential leak from tanks storing organic liquid and to repair it, if any. The contingency measure proposed in this Plan will consider more frequent inspections for potential leak and repair.

South Coast AQMD Rule 1144 - Metalworking Fluids and Direct-Contact Lubricants covers this source category and was evaluated for stringency.

i. Point sources: South Coast AQMD Rule 463

Since Rule 463 was last evaluated in Sept 2021 in support of the 2022 AQMP and found to be as stringent as those of other air agencies,⁵⁶ staff restricted the search to other rules that were updated since then (within the last two years). Rule 463 was amended on 5/5/2023, but the fixed roof tank capacity, pressure and vapor recovery system efficiency requirements were unchanged.

⁵⁶ 2022 AQMP RACM Demonstration. <https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/final-2022-aqmp/appendix-vi.pdf?sfvrsn=12>

Texas Administrative Code Title 30 Chapter 115 (Amended 7/21/2021) requires 90 percent control efficiency for aboveground or underground storage tanks storing VOCs with a true vapor pressure of 1.5 psia. Exempted tank capacity varies by region ranging from 1,000 to 210,000 gallons. This is slightly less stringent than South Coast AQMD Rule 463.

Both BAAQMD Regulation 8 Rule 5 Section 300 (8-5-301 and 307; last amended 11/18/2006) and MDAQMD Rule 463 (Amended 1/22/18) have the same size, pressure and control efficiency requirements for similar sized tanks as Rule 463.

In the preamble of U.S EPA's Proposed Rule "New Source Performance Standards (NSPS) Review for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)",⁵⁷ South Coast AQMD's Rule 463 pressure conditions are used to evaluate U.S. EPA's NSPS cost thresholds. This suggests U.S. EPA considers Rule 463 to contain the most stringent pressure requirements.

- ii. Area sources: South Coast AQMD Rule 1144

This rule was already evaluated under "Cleaning and Surface Coatings - Other" (MSC-299) category, and found to be as stringent as the most comparable rule adopted by another regulatory agency.

c. Conclusion

Staff evaluation of comparable regulations elsewhere did not identify rules more stringent than South Coast AQMD's Rules 463 and 1144. Therefore, no potential contingency measure has been identified.

⁵⁷ 88 FR 68535

Solvent Evaporation

Source categories in the solvent evaporation group include 510 – Consumer Products, 520 - Architectural Coatings and Related Process Solvents, 530 - Pesticides/Fertilizers, and 540 – Asphalt Paving and Roofing. Solvent evaporation emits primarily VOCs and there are zero NOx emissions associated with these categories. In the Coachella Valley 2031 emissions inventory, solvent evaporation contributes a total of 4.5 tpd of VOCs. South Coast AQMD has regulatory authority over source categories 520 – Architectural Coatings and Related Process Solvents and 540 – Asphalt Paving and Roofing, while source categories 510 – Consumer Products and 530 - Pesticides/Fertilizers are primarily regulated by CARB.

1. Consumer Products

A consumer product is a chemically formulated product used by household and institutional consumers including, but not limited to, detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints and adhesives; and automotive specialty products; but does not include other paint products, furniture coatings, or architectural coatings. Although each product only contains a small amount of VOCs, Californians use over half a billion of these items every year.⁵⁸ Consumer products contribute 3.8 tpd VOC emissions to the 2031 Coachella Valley emissions inventory. The main portion of area source category VOC emissions comes from consumer products, which increases over time due to population growth in the region.

Consumer products are primarily regulated under the CARB Consumer Products Regulatory Program. However, under California Health & Safety Code § 41712(f) air pollution control districts may regulate consumer products that CARB has not yet regulated. South Coast AQMD Rule 1143 – Consumer Paint Thinners and Multi-Purpose Solvents was adopted in March 2009 and last amended on December 3, 2010 to reduce VOC emissions from the use, storage and disposal of consumer paint thinners and multipurpose solvents commonly used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations not regulated by CARB at that time. A comparative analysis of Rule 1143 requirements, applicability, and exemptions can be found in Table 4-25. Rule 1143 established a VOC limit of 300 g/L effective January 1, 2010, and a VOC limit of 25 g/L effective January 1, 2011, for all consumer paint thinners and multi-purpose solvents and established labeling requirements. In September 2009, CARB adopted an amendment to include multi-purpose solvents and paint thinners under the consumer products regulation and established a VOC limit of 30 percent by weight as of December 31, 2010 and a VOC limit of 3 percent by weight as of December 31, 2013. Since CARB’s consumer products regulation is statewide, CARB’s VOC limits for multi-purpose solvents and paint thinners preempt South Coast AQMD’s Rule 1143 VOC limits and are in effect for the Coachella Valley. Additionally, an infeasibility justification for consumer products regulated under CARB’s authority is presented in Appendix B.

2. Architectural Coatings

⁵⁸ <https://ww2.arb.ca.gov/our-work/programs/consumer-products-program/about>

a. Overview

Architectural coatings are any coatings used to enhance the appearance of and to protect stationary structures and their appurtenances, including homes, office buildings, factories, pavements, curbs, roadways, racetracks, bridges, and other structures on a variety of substrates. Architectural coatings are typically applied using brushes, rollers, or spray guns by homeowners, painting contractors, and maintenance personnel. Architectural coatings are one of the largest non-mobile sources of VOC emissions in the Coachella Valley and contribute 0.4 tpd of VOCs in 2031. This source category is regulated under South Coast AQMD Rules 1113 – Architectural Coatings and 314 – Fees for Architectural Coatings.

Rule 1113 was first adopted in 1977 and most recently amended on February 5, 2016 to limit the VOC content of architectural coatings used in the South Coast AQMD jurisdiction. Rule 1113 applies to any person who supplies, sells, markets, offers for sale, or manufactures any architectural coating that is intended to be applied within the South Coast Air Basin and the Coachella Valley to stationary structures or their appurtenances, and to fields and lawns. Coating-specific emission limits range from 50 to 730 g/L, depending on coating category. Rule 1113 has a small container exemption for architectural coatings in containers less than one liter, unless otherwise specified in Table 4-44. The small container exemption only applies if the following conditions are met:

- (A) The manufacturer reports the sales in the Rule 314 Annual Quantity and Emissions Report;
- (B) The coating containers of the same specific coating category are not bundled together to be sold as a unit that exceeds one liter, or eight fluid ounces for Flat and Nonflat Coatings and Rust Preventative Coatings, excluding containers packed together for shipping to a retail outlet;
- (C) The label or any other product literature does not suggest combining multiple containers so that the combination exceeds one liter, or eight fluid ounces for Flat and Nonflat Coatings and Rust Preventative Coatings.

Rule 314 requires architectural coating manufacturers who sell architectural coatings into or within South Coast AQMD's jurisdiction and are subject to Rule 1113 to electronically submit an Annual Quantity and Emissions Report (AQER). The AQER reports the total annual quantity (in gallons) and emissions of architectural products distributed or sold during the previous year. The emissions inventory for architectural coatings is based on these annual quantity and emissions reports. Fees are assessed on the manufacturers' reported annual quantity of architectural coatings and the cumulative VOC emissions reported annually. Rule 314 affects about 200 architectural coatings manufacturers.

b. Evaluation

Existing regulations for architectural coatings in other jurisdictions that have recently been adopted or amended were evaluated in Table 4-44 and include: MDAQMD Rule 1113, SJVAPCD Rule 4601, SDAPCD Rule 67.0.1, VCAPCD Rule 74.2, Regulations of Connecticut State Agencies (RCSA) Section 22a-174-41a, and the 2020 CARB Suggested Control Measure (SCM) for Architectural Coatings.

This analysis determined that VOC emissions limits in South Coast AQMD Rule 1113 are as stringent as, if not more stringent than those in other jurisdictions for most architectural coating categories. Rule 1113 sets the most stringent limits for graphic arts and metallic pigmented coatings. Furthermore, Rule 1113 breaks down the industrial maintenance and faux finishing categories with more function-specific emission limits unlike rules in other districts. There are other differences in how categories are defined among districts' rules. For example, basement specialty coatings, concrete/masonry sealers, and waterproofing membranes categories as defined by other districts' rules all fall under the waterproofing concrete/masonry sealers category in South Coast AQMD Rule 1113 that has an equivalent or more stringent VOC limit.

Staff also evaluated the small container exemption in Rule 1113. As shown in Table 4-44, while all districts generally exempt small containers of one liter or less, South Coast AQMD has removed more coatings categories from the small container exemption list than any other district. Staff therefore concludes that South Coast AQMD Rule 1113 is the most stringent with respect to the small container exemption.

c. Conclusion

Staff evaluation of control measures for architectural coatings found that South Coast AQMD rules are as stringent as or more stringent than other air agencies' rules and did not identify any VOC controls for consideration as contingency measures in the Coachella Valley.

**TABLE 4-44
COMPARISON OF ARCHITECTURAL COATINGS CONTROL REQUIREMENTS**

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
Applicability	Any person who supplies, applies, stores, sells, markets, offers for sale, or manufactures any architectural coating that is intended to be field applied within the District to stationary structures or their appurtenances, and to fields and lawns	Any person who supplies, applies, sells, offers for sale, manufactures, blends or repackages any Architectural Coating for use within the District	Any person who supplies, markets, sells, offers for sale, applies, or solicits the application of any architectural coating, or who manufactures, blends or repackages any architectural coating for use within the District	Any person who manufactures, blends or repackages, supplies, sells, markets, offers for sale, applies, or solicits the application of any architectural coating for use within San Diego County	Any person who markets, supplies, applies, sells, offers for sale, or manufactures, blends, or repackages any architectural coating for use within the District	Any person who sells, supplies, applies, offers for sale or manufactures for sale in the state of Connecticut any architectural coating manufactured on or after May 1, 2018 for use in the state of Connecticut	Any person who supplies, sells, applies, markets, offers for sale, manufactures, blends, or repackages any architectural coating for use within the District
Exemptions	<ul style="list-style-type: none"> Coatings that are supplied, sold, offered for sale or manufactured 	<ul style="list-style-type: none"> Coatings that are supplied, sold, offered for sale or manufactured 	<ul style="list-style-type: none"> Coatings that are supplied, sold, offered for sale or manufactured for use outside of the 	<ul style="list-style-type: none"> Coatings that are supplied, sold, offered for sale or manufactured for use outside of the 	<ul style="list-style-type: none"> Coatings that are supplied, sold, offered for sale or manufactured 	<ul style="list-style-type: none"> Coatings that are supplied, sold, offered for sale or manufactured 	<ul style="list-style-type: none"> Coatings that are supplied, sold, offered for sale or manufactured

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
	<p>for use outside of the District</p> <ul style="list-style-type: none"> • Certain categories of coatings in containers having a capacity of one liter or less • Any coating in containers having a capacity of two fluid ounces or less • Emulsion type bituminous pavement sealers • Aerosol coatings products • Use of stains and lacquers in areas at an elevation of 4,000 feet or greater • Facilities which apply coatings 	<p>for use outside of the District</p> <ul style="list-style-type: none"> • Coatings in containers having a capacity of one liter or less • Aerosol coating products • Colorants added at the factory or at the worksite 	<p>District</p> <ul style="list-style-type: none"> • Coatings in containers having a capacity of one liter or less • Aerosol coating products • Colorants added at the factory or at the worksite 	<p>District</p> <ul style="list-style-type: none"> • Aerosol coating products • Emulsion type bituminous pavement sealers • Coatings in containers having a capacity of one liter or less • Colorants added at the factory or at the worksite 	<p>for use outside of the District</p> <ul style="list-style-type: none"> • Aerosol coating products • Facilities which apply coatings to test specimens for purposes of research and development of those coatings • Coatings in containers having a capacity of one liter or less • Colorants added at the factory or at the worksite 	<p>for use outside of the State</p> <ul style="list-style-type: none"> • Aerosol coating products • An architectural coating manufactured prior to May 1, 2018 • Coatings in containers having a capacity of one liter or less • Transactions involving architectural coatings to, from or within an installation operated by any branch of the U.S. military 	<p>for use outside of the District</p> <ul style="list-style-type: none"> • Aerosol coating products • Coatings in containers having a capacity of one liter or less • Colorants added at the factory or at the worksite

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
	to test specimens for purposes of research and development of those coatings						
The Small Container exemption does not apply to:	Wood Coatings, including Lacquers, Varnishes, and Sanding Sealers; Concrete-Curing Compounds For Roadways and Bridges; Magnesite Cement Coatings; Multi-Color Coatings; PreTreatment Wash Primers; Roof Primers, Bituminous; Sacrificial AntiGraffiti Coatings; Stone Consolidants; Repair and Other Swimming Pool	-	Bituminous Roof Coatings; Flat Coatings that are sold in containers having capacities greater than eight fluid ounces; Magnesite Cement Coatings; Multi-Color Coatings; Nonflat Coatings that are sold in containers having capacities greater than eight fluid ounces; Pre-Treatment Wash Primers; Reactive Penetrating Sealers; Shellacs (Clear and Opaque); Stone Consolidants; Swimming Pool Coatings; Tub and Tile Refinishing Coatings;	Bituminous Roof Coatings; Flat Coatings that are sold in containers having capacities greater than eight fluid ounces; Magnesite Cement Coatings; Multi-Color Coatings; Nonflat Coatings that are sold in containers having capacities greater than eight fluid ounces; Pretreatment Wash Primers; Reactive Penetrating Sealers; Shellacs (Clear and Opaque); Stone Consolidants; Swimming Pool	-	-	-

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
	Coatings; and Below-Ground and Other Wood Preservatives; Tub and Tile Refinishing Coatings; Clear and Pigmented Shellacs; and Reactive Penetrating Sealers; Flats and Nonflat, Coatings that are sold: (i) In containers having capacities greater than eight fluid ounce, or (ii) For purposes other than touch up; Industrial Maintenance Coatings, including Color Indicating Safety Coatings, High Temperature IM Coatings, NonSacrificial Anti-Graffiti		Wood Coatings, including Lacquers, Varnishes, and Sanding Sealers; and Wood Preservatives.	Coatings; Tub and Tile Refinishing Coatings; Wood Coatings; and Wood Preservatives.			

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
	Coatings, and Zinc-Rich IM Primers that are sold: (i) In containers having capacities greater than one liter, or (ii) For purposes other than touch up, or (iii) Displayed or advertised for sale at a retail outlet; Rust Preventative Coatings that are sold: (i) In containers having capacities greater than eight fluid ounce, or (ii) For purposes other than touch up.						
VOC Content of General Coatings (g/L)							
Flat Coatings	50	50	50	50	50	50	50

Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
Nonflat Coatings	50	50	50	50	50	100	50
VOC Content of Specialty Coatings (g/L)							
Nonflat - High Gloss Coatings	50	-	50	50	50	150	-
Aluminum Roof Coatings	100	100	100	100	100	450	100
Basement Specialty Coatings ^a	-	400	400	400	400	400	400
Bituminous Roof Coatings	50	50	50	50	50	270	50

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
Bituminous Roof Primers	350	350	350	350	350	350	350
Bond Breakers	350	350	350	350	350	350	350
Building Envelope Coatings	50	50	50	50	50	-	50
Concrete Curing Compounds	100	100	350	350	350	350	350
Concrete/Masonry Sealers ^a	-	100	100	100	100	100	100
Driveway Sealers	50	50	50	50	50	50	50
Dry Fog Coatings	50	50	50	50	50	150	50

Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
Faux Finishing Coatings:	-	350	350	350	350	350	350
Clear Topcoat	100	-	-	-	-	-	-
Decorative Coatings	350	-	-	-	-	-	-
Glazes	350	-	-	-	-	-	-
Japan	350	-	-	-	-	-	-
Trowel Applied Coatings	50	-	-	-	-	-	-
Fire Resistive Coatings	150	150	150	150	150	350	350

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
Floor Coatings	50	50	50	50	50	100	100
Form-Release Compounds	100	100	100	100	100	250	100
Graphic Arts Coatings (Sign Paints)	200	500	500	500	500	500	500
High Temperature Coatings ^b	-	420	420	420	420	420	420
Industrial Maintenance (IM) Coatings:	100	250	250	250	250	250	250
Color Indicating Safety Coatings	480	-	-	-	-	-	-

Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
High Temperature IM Coatings ^b	420	-	-	-	-	-	-
Non-Sacrificial Anti-Graffiti Coatings	100	-	-	-	-	-	-
Zinc-Rich IM Primers ^c	100	-	-	-	-	-	-
Low Solids Coatings	120	120	120	120	120	120	120
Magnesite Cement Coatings	450	450	450	450	450	450	450

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
Mastic Texture Coatings	100	100	100	100	100	100	100
Metallic Pigmented Coatings	150	500	500	500	500	500	500
Multi-Color Coatings	250	250	250	250	250	250	250
Pre-Treatment Wash Primers	420	420	420	420	420	420	420
Primers, Sealers, and Undercoaters	100	100	100	100	100	100	100

Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
Reactive Penetrating Sealers	350	350	350	350	350	350	350
Recycled Coatings	150	250	250	250	250	250	250
Roof Coatings	50	50	50	50	50	250	50
Rust Preventative Coatings	100	250	250	250	250	250	250
Sacrificial Anti-Graffiti Coatings	50	-	-	-	-	-	-
Shellacs:							
Clear	730	730	730	730	730	730	730

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
Opaque	550	550	550	550	550	550	550
Specialty Primers, Sealers, and Undercoaters	100	100	100	100	100	100	100
Stains:							
Exterior/Dual	100	100	-	100	100	250	100
Interior	250	100	250	250	250	250	250
Stone Consolidants	450	450	450	450	450	450	450
Swimming Pool Coatings	340	340	340	340	340	340	340

Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
Tile and Stone Sealer	100	100	100	100	100	-	100
Traffic Marking Coatings	100	100	100	100	100	100	100
Tub and Tile Refinish Coatings	420	420	420	420	420	420	420
Waterproofing Concrete/Masonry Sealers ^a	100	-	-	-	-	-	-
Waterproofing Membranes ^a	-	100	100	100	100	250	250
Wood Coatings	275	275	275	275	275	275	275

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
Wood Conditioners	100	-	-	-	-	-	-
Wood Preservatives	350	350	350	350	350	350	350
Zinc-Rich Primers ^c	-	340	340	340	340	340	340
VOC Content of Colorants (g/L)							
Architectural Coatings, excluding IM Coatings	50	50	50	50	50	-	50
Solvent-Based IM	600	600	600	600	600	-	600

	South Coast AQMD Rule 1113- Architectural Coatings (Amended 02/05/2016)	MDAQMD Rule 1113- Architectural Coatings (Amended 10/26/20)	SJVAPCD Rule 4601- Architectural Coatings (Amended 04/16/20)	SDAPCD Rule 67.0.1- Architectural Coatings (Amended 01/01/22)	VCAPCD Rule 74.2- Architectural Coatings (Amended 11/10/2020)	RCSA Section 22a-174-41a- Architectural and Industrial Maintenance Coatings (Amended 02/02/18)	2020 CARB SCM for Architectural Coatings (Amended 05/28/20)
Waterborne IM	50	50	50	50	50	-	50

^a The Basement Specialty Coatings, Concrete/Masonry Sealers, and Waterproofing Membranes categories as defined by other districts’ rules all fall under the Waterproofing Concrete/Masonry Sealers category in South Coast AQMD Rule 1113 that has an equivalent or more stringent VOC limit.

^b The South Coast AQMD Rule 1113 High-Temperature Industrial Maintenance Coatings category has a comparable definition to the High Temperature Coatings category in other districts’ rules and an equivalent VOC limit.

^c The South Coast AQMD Rule 1113 Zinc-Rich Industrial Maintenance Primers category has a comparable definition to the Zinc-Rich Primers category in other districts’ rules and a more stringent VOC limit.

3. Pesticides and Fertilizers

In the Coachella Valley, pesticides contribute 0.22 tpd VOC emissions to the 2031 baseline inventory emissions due to the use of methyl bromide and other pesticides. There are no emissions associated with fertilizers in the Coachella Valley.

Pesticides are regulated under both federal and state law. Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the U.S. EPA has authority to control pesticide distribution, sale, and use. Pesticides used in the United States must first be registered (licensed) by the U.S. EPA and subsequently registered by the Department of Pesticide Regulation (DPR) prior to being distributed, sold or used in California. Registration ensures that pesticides will be properly labeled and will not cause significant adverse effects to human health or the environment. DPR is the agency responsible for regulating the sale and use of pesticides in California. DPR can generally reduce exposures to pesticides through the development and implementation of necessary restrictions on pesticide sales and use and by encouraging integrated pest management. Mitigation measures may be implemented by several methods, including regulations, local permit conditions, pesticide label changes, or product cancellation.

Additionally, an infeasibility justification for pesticides under CARB's authority is presented in Appendix B.

4. Asphalt Paving and Roofing

a. Overview

Source category 540 – Asphalt Paving and Roofing contributes 0.1 tpd of VOC emissions to the 2031 Coachella Valley emissions inventory. This source category is regulated by South Coast AQMD Rules 1108 – Cutback Asphalt, Rule 1108.1 – Emulsified Asphalt, and Rule 470 – Asphalt Air Blowing.

Cutback asphalt is a liquid petroleum product produced by fluxing an asphaltic base with suitable distillate and is classed as medium or slow curing grade, as defined in Section 93 of the January 1981, State of California Department of Transportation Standard Specifications. Rule 1108 prohibits the sale or use of any cutback asphalt containing more than 0.5 percent by volume organic compounds which evaporate at 260°C (500°F) or lower. The cutback asphalt sub-category has no VOC emissions in the 2031 Coachella Valley emissions inventory. However, road oils, a type of slow cure cutback asphalt, contribute the majority of emissions (0.04 tpd VOC) associated with source category 540.

Emulsified asphalt is a liquid petroleum product produced by fluxing an asphaltic base with water and an emulsifier, and is classed as rapid, medium, or slow setting grade as described under Section 94 of the January 1981, State of California Department of Transportation Standard Specifications. Rule 1108.1 prohibits the sale and use of any emulsified asphalt containing organic compounds which evaporate at 260°C (500°F) or lower in excess of three percent by volume. The emulsified asphalt source category emits 0.02 tpd to the 2031 Coachella Valley Emissions Inventory.

Asphalt air blowing is an oxidation process which involves the blowing of air through asphalt, either on a batch or a continuous basis, at a temperature of 240°C to 320°C. The emissions inventory does not provide a sufficient level of detail to ascertain whether asphalt air blowing is used in any of the processes that contribute to emissions under source category 540. Nevertheless, asphalt air blowing is regulated by Rule 470, which requires that all gases and vapors from asphalt blowing equipment are incinerated at temperatures of not less than 760°C (1,400°F) for a period of not less than 0.3 second.

b. Evaluation

Existing regulations for asphalt paving and roofing in other jurisdictions are evaluated in Table 4-45. South Coast AQMD Rules 1108 and 1108.1 were evaluated together to facilitate comparison. Control requirements are generally similar except for MDAQMD Rule 471, which contains specific requirements for asphalt roofing operations. The rule primarily requires close fitting lids and other best management practices during the preparation and transfer of asphalt. South Coast AQMD does not have an equivalent rule applicable to asphalt roofing operations, which contributes 0.01 tpd VOC to the 2031 emissions inventory. However, the MDAQMD's rule mitigates nuisances from the odor during transfer, rather than removes VOCs.

c. Conclusion

Staff considered asphalt roofing requirements under MDAQMD Rule 471 as a potential contingency measure. However, the containment of VOC emissions within the roofing kettle does not reduce overall VOC emissions from this process since the kettle contents must be drained and applied to roofs. Assuming that the temperature of the asphalt when it is applied to roofs is the same as in the kettle, the asphalt will emit the same quantity of VOCs. Since this measure would not result in emission reductions, staff determined that it would not be a suitable contingency measure. There were no other potential contingency measures identified for this source category.

**TABLE 4-45
COMPARISON OF ASPHALT CONTROL REQUIREMENTS**

	South Coast AQMD Rule 1108.1 – Emulsified Asphalt (Amended 11/4/83) Rule 1108 – Cutback Asphalt (Amended 2/1/85)	MDAQMD Rule 471 - Asphalt Roofing Operations (Amended 12/21/94)	SJVAPCD Rule 4641 - Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations (Amended 12/17/92)	SMAQMD Rule 453 - Cutback and Emulsified Asphalt Paving Materials (Amended 8/31/82)	BAAQMD Rule 8-15 - Emulsified and Liquid Asphalts (Amended 9/16/87)
Applicability	Any person who supplies, sells, markets, offers for sale, or uses emulsified or cutback asphalt.	Any person who operates equipment used for melting, heating, or holding asphalt or coal tar pitch.	Manufacturers and users of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations	Any person who supplies, sells, markets, offers for sale, or uses cutback or emulsified asphalt.	Any person who supplies, sells, markets, offers for sale, or uses cutback or emulsified asphalt.
Exemptions	<ul style="list-style-type: none"> Emulsified or cutback asphalt for which other source-specific rules apply 	<ul style="list-style-type: none"> Equipment having a capacity of 100 liters (26.4 gallons) or less. Equipment having a capacity of 600 liters (159 gallons) or less which is equipped with a close fitting lid and not opened except for loading the kettle 	<p>Asphalt manufactured for shipment and use outside of the District</p> <ul style="list-style-type: none"> Medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24 hour period following application is below 50°F 	<p>Use of cutback asphalt or emulsified asphalt in the manufacturing of paving materials where such materials are for immediate shipment and eventual use outside of the County of Sacramento</p> <ul style="list-style-type: none"> Medium cure cutback asphalt as a penetrating prime coat until suitable substitute is identified (evaluated annually) 	<ul style="list-style-type: none"> Medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24 hour period following application is below 50°F

	South Coast AQMD Rule 1108.1 – Emulsified Asphalt (Amended 11/4/83) Rule 1108 – Cutback Asphalt (Amended 2/1/85)	MDAQMD Rule 471 - Asphalt Roofing Operations (Amended 12/21/94)	SJVAPCD Rule 4641 - Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations (Amended 12/17/92)	SMAQMD Rule 453 - Cutback and Emulsified Asphalt Paving Materials (Amended 8/31/82)	BAAQMD Rule 8-15 - Emulsified and Liquid Asphalts (Amended 9/16/87)
Control Measure	<ul style="list-style-type: none"> • Emulsified asphalt cannot contain more than 3% VOC by volume at temperatures $\leq 260^{\circ}\text{C}$ (500°F) • Cutback asphalt cannot contain more than 0.5% VOC by volume at temperatures $\leq 260^{\circ}\text{C}$ (500°F) 	<ul style="list-style-type: none"> • Equipment used for melting, heating, or holding asphalt or coal tar pitch must employ a close fitting lid that shall not be opened except for loading the kettle or when the kettle is $< 150^{\circ}\text{F}$ • Roofing kettles must adhere to the following temperature limits: <ul style="list-style-type: none"> • 500°F for asphalt • 400°F for coal tar pitch • During roofing kettle draining, the kettle must be contained by a close fitting lid and the receiving vessel must also be covered by a close fitting lid or capped within 2 minutes • Kettle vents must remain closed except during a pressure release 	<ul style="list-style-type: none"> • For penetrating prime coat, tack coat, dust palliative, or other paving and maintenance operations: <ul style="list-style-type: none"> • The use of rapid and medium cure cutback asphalts are prohibited • Slow cure asphalt must not contain more than 0.5% VOC at temperatures $\leq 260^{\circ}\text{C}$ (500°F) • Emulsified asphalt must not contain more than 3% VOC by volume at temperatures $\leq 260^{\circ}\text{C}$ (500°F) 	<ul style="list-style-type: none"> • Cutback asphalt: <ul style="list-style-type: none"> • The use of rapid and medium cure cutback asphalts are prohibited • Slow cure asphalt containing VOCs at temperatures $\leq 260^{\circ}\text{C}$ (500°F) is prohibited • Emulsified asphalt cannot contain more than 3% VOC by volume at temperatures $\leq 260^{\circ}\text{C}$ (500°F) 	<ul style="list-style-type: none"> • The use of rapid and medium cure cutback asphalts are prohibited • Slow cure asphalt must not contain more than 0.5% VOC at temperatures $\leq 260^{\circ}\text{C}$ (500°F) • Emulsified asphalt cannot contain more than 3% VOC by volume at temperatures $\leq 260^{\circ}\text{C}$ (500°F)

Miscellaneous Processes

1. Residential Fuel Combustion

a. Overview

Source category 610 - Residential Fuel Combustion consists of several subcategories, including wood combustion and fuel combustion (space heating, water heating, cooking, and other appliances, such as clothes dryers, barbecues, and water heaters used for pools, spas and hot tubs). Residential wood combustion sources are evaluated in this section; fuel combustion sources (particularly space heaters and water heaters) were previously evaluated in this chapter.

Residential wood combustion sources contribute less than 0.01 tpd NO_x and 0.07 tpd VOC emissions to the 2031 baseline inventory in the Coachella Valley (approximately 0.10 percent and 0.60 percent of overall NO_x and VOC emissions, respectively). Residential wood burning includes wood-burning heaters (i.e., woodstoves, pellet stoves, and wood-burning fireplace inserts), which are used primarily for heat generation, and wood-burning fireplaces, which are used primarily for aesthetic purposes.

One of the most effective ways to reduce VOC and NO_x emissions is through a curtailment program that restricts use of wood-burning heaters and fireplaces on days that are conducive to poor air quality. South Coast AQMD Rule 445 - Wood Burning Devices - establishes requirements for the sale, transfer, operation, and installation of wood burning devices and on the advertising of wood for sale intended for burning. Among those requirements is a wood burning curtailment program that implements an approved PM_{2.5} contingency measure in the South Coast Air Basin.⁵⁹ However, Rule 445 does not apply to the Coachella Valley.

b. Evaluation

Rule 445 includes contingency measure components for ozone and PM_{2.5} NAAQS for the South Coast Air Basin and was submitted for the inclusion into SIP. U.S. EPA approved the PM_{2.5} contingency measure components but deferred action for the ozone portion.⁶⁰ Staff examined expanding Rule 445 applicability to include the Coachella Valley, however, U.S. EPA Region 9 subsequently indicated that expanding the ozone contingency portion to the Coachella Valley was not a viable option.

c. Conclusion

Per communication with U.S. EPA Region 9 staff, South Coast AQMD will not be pursuing Rule 445 as a contingency measure for ozone in the Coachella Valley.

⁵⁹ 87 FR 12866

⁶⁰ Ibid.

2. Farming Operations

a. Overview

Source category 620 – Farming Operations consists of stationary source emissions related to animal husbandry and crop farming. Farming operations from these sources contribute 0.07 tpd VOC and zero NOx emissions to the 2031 baseline inventory. All stationary source VOC emissions from farming operations are attributable to non-cattle livestock waste. Horses account for 79 percent of the VOC emissions followed by sheep, goats, and other livestock.

b. Evaluation

South Coast AQMD Rule 223 - Emission Reduction Permits for Large Confined Animal Facilities (CAFs) applies to CAFs with more than 2,500 horses or 15,000 sheep. Rule 223 requires that applicable CAFs submit a permit application including an emissions mitigation plan that demonstrates that the CAF will use BARCT to reduce emissions.

Staff reviewed control measures in other jurisdictions including SJVAPCD Rule 4570 - Confined Animal Facilities, SMAQMD Rule 496 – Large Confined Animal Facilities, BAAQMD Regulation 2 Rule 10 - Large Confined Animal Facilities, and Imperial County APCD (ICAPCD) Rule 217 - Large Confined Animal Facilities (LCAF) Permits Required. Staff did not identify more stringent rule applicability thresholds in any of the rules evaluated for the livestock contributing emissions in the Coachella Valley. While most districts’ rules contain mitigation measures for dairies, poultry farms, and swine operations, staff did not identify any mitigation measures specific to horses, sheep, or goats, which contribute nearly all VOC emissions in the Coachella Valley from this source category.

c. Conclusion

Based on evaluation of other districts’ rules, there were no potential contingency measures identified for livestock waste from horses, sheep, or goats.

3. Fugitive Dust Categories

Fugitive dust source categories include 630 – Construction and Demolition, 640 – Paved Road Dust, 645 – Unpaved Road Dust, and 650 – Fugitive Windblown Dust. Fugitive dust emissions are typically generated through the pulverization of surface materials by mechanical force or by entrainment of dust particles in turbulent air streams.⁶¹ These categories do not contribute any VOC or NOx emissions and, therefore, were not further evaluated.

⁶¹ EPA, “Compilation of Air Pollutant Emissions Factors, Volume 1: Stationary Point and Area Sources,” Chapter 13, Section 2, available at https://www.epa.gov/sites/default/files/2020-10/documents/13.2_fugitive_dust_sources.pdf (last updated January 1995).

4. Fires

Source Category 660 – Fires includes emissions from automobile fires and structure fires. The structural fire subcategory includes residential and commercial structures as well as mobile home fires. The fires source category contributes 0.01 tpd VOC and zero NOX emissions to the 2031 emissions inventory. The reported emissions are based on the number of vehicle fires per year and based on structural fires data from California Fire Incident Reporting System from the California State Fire Marshall's Office.⁶² Considering the fires under this source category are non-routine and unpredictable, no control measures have been identified to mitigate emissions from these sources.

4. Managed Burning and Disposal (Open Burning)

a. Overview

Source category 670 - Managed Burning and Disposal consists of numerous sub-categories including various agricultural burning, forest management, and non-agricultural open burning. This source category contributes 0.01 tpd VOC and 0.01 tpd NOx emissions to the 2031 emissions inventory. South Coast AQMD Rule 444 - Open Burning - has strict requirements for when and which types of burns are allowed.

i. Burning of Agricultural Materials

Agricultural burning involves open burning of vegetative materials produced from growing and harvesting of crops. It includes the burning of grass and weeds in fence rows, ditch banks and berms in no-till orchard operations, the burning of fields being prepared for cultivation, the burning of agricultural wastes, and the operation or maintenance of a system for the delivery of water for agricultural operations. The only sub-category with emissions in the 2031 inventory is "Prunings - Sub-category Unspecified." The associated VOC and NOx emissions are both very small (<< 0.01 tpd).

ii. Land Management and Hazard Reduction Burning

Prescribed burning is the planned application of fire conducted by state and federal land managers, local governments, utilities and private land owners to meet planned resource management objectives, such as forest management, wildlife habitat management, range improvement, fire hazard reduction, wilderness management, weed abatement, watershed rehabilitation, vegetation manipulation, disease and pest prevention, and ecosystem management. Hazard reduction burning involves the disposal of dry brush surrounding homes and business in the wildland-urban interface in order to ensure a barrier of fire protection of 100 feet in all directions. Wildland fire use and range improvement are the only sub-categories with emissions in the 2031 inventory.

b. Evaluation

⁶² CARB 1999 emission inventory summary for structure and automobile fires:
<https://www.arb.ca.gov/ej/areasrc/arbmiscprocfires.htm>

Table 4-46 briefly summarizes Rule 444 requirements and Table 4-47 briefly summarizes the control measures in other jurisdictions.

**TABLE 4-46
RULE 444 REQUIREMENTS**

Applicability	Requirements
<ul style="list-style-type: none"> • Agricultural burning • Disposal of Russian thistle • Prescribed burning • Fire prevention/suppression training; • Open detonation or use of pyrotechnics • Fire hazard removal • Disposal of infectious waste, other than hospital waste, research of testing materials, equipment or techniques • Disposal of contraband • Residential burning • Beach burning. <p>Exemptions:</p> <ul style="list-style-type: none"> • Fire suppression training by fire agencies • Open burning to protect crops from freezing • Open burning on islands located 15 miles or more from the mainland • Fireworks display • Explosives detonation • Recreational and ceremonial fires • Food preparation fires and fires for warmth at social gatherings. 	<ul style="list-style-type: none"> • No specific agricultural crop phase outs or bans. • Burning of waste/garbage is prohibited. • No burning except on permissive burn days or marginal burn days on which burning is permitted in the applicable source or receptor area, and such burning is not prohibited by the applicable public fire protection agency. • Specific requirements for burn authorization requests and permit conditions for each category of burning.

**TABLE 4-47
OTHER CONTROL MEASURES CONSIDERED (MANAGED BURNING AND DISPOSAL)**

Measure	Applicability	Requirements
SJVAPCD Rule 4103 – Open Burning	<p>Open burning conducted in the San Joaquin Valley Air Basin, except for prescribed burning and hazard reduction burning (regulated under District Rule 4106)</p> <p>Exemptions:</p> <ul style="list-style-type: none"> • Fires used for cooking, campfires, and religious fires with clean fuel, dry wood or charcoal • Emergency burning by a fire agency • Respectful burning of an unserviceable American Flag • Bags used for agricultural chemicals • Raisin trays. 	<ul style="list-style-type: none"> • No burning of garbage or other materials • Burning shall be allocated by the APCO dependent on dispersion conditions and shall avoid negative impacts to receptors • No permit shall be issued for the burning of the field crops, prunings, weed abatement, orchard removals, vineyard removals, surface harvested prunings and other materials, except for crops covered by section 5.5.2 • Additional requirements for burning times, drying times, contraband burning • Permit required for burning of Russian Thistle • Conditional burning permit required for diseased materials with specific requirements • Burn plans required for fire suppression training, burning of contraband • BMP selection required for weed maintenance.

Measure	Applicability	Requirements
<p>SJVAPCD Rule 4106 - Prescribed Burning and Hazard Reduction Burning</p>	<p>Applies to all prescribed burning and to hazard reduction burning in wildland-urban interface.</p>	<ul style="list-style-type: none"> • No burning of garbage or green waste • District allocates burning permits based on predicted meteorological conditions and whether contaminants could create or contribute to an exceedance of an ambient air quality standard or impact smoke sensitive areas • Requirements such as minimizing smoke, ignition devices, keeping vegetation free of dirt, soil, and moisture • Requirement for prescribed burn conductors to complete prescribed burning smoke management training class approved by the APCO • Permits required for all hazard reduction burning, valid only on days that burning is not prohibited by the CARB, by the District or other designated agencies.
<p>BAAQMD Regulation 5 “Open Burning” (adopted November 20, 2019)</p>	<p>Open burning activities Exemptions:</p> <ul style="list-style-type: none"> • Fires set only for cooking • Fires burning as safety flares or for the combustion of waste gases • Flame cultivation when the burning is performed with LPG or natural gas-fired burners designed and used to kill seedling grass and weeds and the growth is such that the combustion will not continue without the burner • Fires set for the purposes of fire training using one gallon or less of flammable liquid per fire. 	<ul style="list-style-type: none"> • No specific agricultural crop phase-outs or bans • Recreational fires allowed on non-curtailed days • On permissive burn days, numerous select fire types are allowed with permission from the APCO.

Measure	Applicability	Requirements
SMAQMD Rule 501 “Agriculture Burning” (amended April 3, 1997)	Agricultural burning, including: <ul style="list-style-type: none"> • Agricultural waste disease prevention • Range improvement • Forest, wildlife and game habitat, irrigation system, and wild land vegetation management • Paper containers of agricultural chemicals. Contains similar exemptions as San Joaquin Valley for agricultural operations, including burning of bags used for agricultural chemicals and emergency agricultural burns which would cause economic loss if denied.	<ul style="list-style-type: none"> • No specific crop phase outs or bans (subject to air basin-wide rice burning reduction) • Permit holder must contact District for permission to burn and ensure that it is not a no- burn day and must contact the fire protection agency having jurisdiction over the burn location • Contains specific drying time requirements for different agricultural materials.
VCAPCD Rule 56 “Open Burning” (adopted November 11, 2003)	Combustible materials in open outdoor fires Exemptions: <ul style="list-style-type: none"> • Fires used only for the heating or cooking of food for human consumption • Recreational fires confined to a fireplace or barbecue pit • Flag burning • Fire suppression training • Fire agency or public officer may set fires to reduce hazards as needed. 	<ul style="list-style-type: none"> • No specific crop phase-outs or bans • Permit required for open burning • Burning only allowed on permissive burn days • Open burning allowed for the disposal of agricultural wastes in the pursuit of agricultural operations, range improvement burning, wildland vegetation management burning, levee, reservoir, or ditch maintenance and the disposal of Russian thistle • Burn times, drying times, and permit conditions also specified.

Measure	Applicability	Requirements
<p>Placer County APCD (PCAPCD) Rule 301 “Nonagricultural Burning Smoke Management” (amended August 9, 2018)</p>	<p>Open outdoor fires, including the use of burn barrels</p> <p>Exemptions:</p> <ul style="list-style-type: none"> • Fire hazard reduction burning • Public officer waiver • Recreational or cooking fire • American Flag • Open burning conducted by public officers. 	<ul style="list-style-type: none"> • No person shall ignite or allow open outdoor burning without a valid burn permit from the District for fire hazard reduction, mechanized burner, open burning conducted by public officers, right of way clearing, levee, ditch and reservoir maintenance. • Separate burn permit required from fire protection agency with jurisdiction in area of the proposed burn project. • Air Pollution Control Officer may prohibit or add additional specific burn permit conditions.

Staff did not identify any more stringent requirements in other districts' rules except SJVAPCD's near-complete prohibition of agricultural burning by 2025. Agricultural burning is extremely limited in the Coachella Valley as evidenced by the very small emissions inventory. Chipping and grinding is the primary alternative to agricultural burning. However, chipping and grinding usually has a high incremental cost compared to burning. Due to the high incremental cost, SJVAPCD provides incentives ranging from \$300/acre to \$1,300/acre depending on the crop and whether soil incorporation is included.⁶³ The extremely limited extent of agricultural burning in the Coachella Valley combined with the high cost of alternatives suggest that this measure is economically infeasible and would have an inconsequential impact on air quality. Nevertheless, as a part of the SIP revision to demonstrate attainment of the annual PM_{2.5} standard in the South Coast Air Basin, South Coast AQMD will consider performing outreach to the entities responsible for agricultural burning to raise awareness of alternatives such as chipping and grinding.

Regarding prescribed burns and range improvement, staff did not identify any more stringent provisions in other districts' rules. Furthermore, these programs have a proven record of reducing wildfire severity and therefore have implications for public safety. There are renewed efforts to drastically increase the number of acres treated by prescribed fire in order to reduce the air quality impacts of increasingly intense wildfires caused by years of drought due to climate change and past forest management practices that have allowed the accumulation of the understory in forests throughout the west. Forest management through prescribed fire reduces overall emissions by reducing the intensity and available fuel of wildfires occurring on recently treated lands.

The distinct wet and dry seasons in the Coachella Valley along with poor summertime air quality that may restrict prescribed fire for nearly half of a year in some locations make finding suitable conditions for prescribed fire extremely challenging for fire agencies. Placing further restrictions on prescribed fires is inconsistent with the goal of increasing the number of acres treated by prescribed fire and may result in higher intensity wildfires, increased threats to life and property, and increased emissions that occur from fires that burn on untreated lands. Given these considerations, contingency measures for prescribed burns are infeasible.

c. Conclusion

There are no potential contingency measures for this source category that could be implemented within two years and result in significant emission reductions within that time frame.

3. Commercial Cooking

a. Overview

Source category 690 – Commercial Cooking mostly includes emissions from commercial charbroiling,

⁶³ https://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2021/August/final/10.pdf

deep fat frying, and general cooking. The majority of emissions in this category come from charbroiling, which consists of two types of commercial charbroilers: chain-driven and under-fired. A chain-driven charbroiler is a semi-enclosed broiler that moves food mechanically through the device on a grated grill to cook the food for a specific amount of time. An under-fired charbroiler has a metal "grid," a heavy-duty grill similar to that of a home barbecue, with gas burners, electric heating elements, or solid fuel (wood or charcoal) located under the grill to provide heat to cook the food. Under-fired charbroilers are widely used in commercial kitchens to cook meats, including beef, burgers, and chicken. These heavy-duty appliances commonly use evenly spaced, gas-fired burners to produce direct-flame, radiant heat a few inches below slatted, cast-iron cooking surfaces.⁶⁴ The slatted cooking surface allows fat, oil, and grease (FOG) from the meat to fall into the burner flames, which produces flaring that brings the flame into direct contact with the meat. Charbroilers do not include flat-top or plancha grills with continuous cooking surfaces that prevent the flame from directly contacting the meat.

Commercial cooking sources contribute 0.03 tpd VOC emissions and zero NOx emissions to the 2031 emissions inventory. Under-fired and chain-driven charbroilers contribute about 80 percent of the VOC emissions from commercial cooking. For under-fired charbroilers, grease is typically captured by the grease filter of the ventilation hood over the charbroiler with the remaining VOC exhausted unless a secondary control is installed. Catalytic oxidizers are used to control VOC emissions from chain-driven charbroilers, but they are not effective for reducing emissions from under-fired charbroilers. For under-fired charbroilers, the exhaust from these devices loses heat as it is directed to the control device, and the reactions at the catalyst cannot take place under these lower temperatures. Thus, electrostatic precipitators (ESP) and filter media are anticipated to be the potential control technologies for reducing PM2.5 emissions from under-fired charbroilers, but these technologies have little, if any, benefit for reducing VOC emissions.⁶⁵

b. Evaluation

Rule 1138 – Control of Emissions from Restaurant Operations reduces VOC emissions from commercial cooking by requiring catalytic oxidizers for chain-driven charbroilers that cook greater than or equal to 875 pounds of meat per week. Currently, Rule 1138 does not require emissions controls for under-fired charbroilers. However, given that available control technologies for under-fired charbroilers primarily reduce PM2.5 emissions, it is unclear how effective these technologies would be at controlling VOC emissions. Therefore, staff determined that further evaluation of control measures for under-fired

⁶⁴ Specifications for Commercial Hoods and Kitchen Ventilation in the 2019 California Mechanical Code are classified under four duty categories: light, medium, heavy, and extra-heavy duty cooking service. Gas underfired charbroilers are listed as heavy-duty cooking appliances. Charbroilers utilizing solid fuel (e.g., charcoal, wood) are classified as extra-heavy-duty and are outside the scope of this evaluation. Available at <https://epubs.iapmo.org/2019/CMC/index.html#p=136>.

⁶⁵ San Joaquin Valley Air Pollution Control District. *Commercial Underfired Charbroiler Emissions Control Technologies*. Available at <http://www.valleyair.org/Grants/documents/rctp/Charbroiler-Control-Technologies.pdf> (accessed 06/01/2022).

charbroilers was unwarranted.

In evaluating chain-driven charbroiler control measures, staff reviewed SJVAPCD's Rule 4692, as U.S. EPA found in 2020 that the rule satisfies stringent control requirements such as Best Available Control Measures (BACM) and Most Stringent Measures (MSM). U.S. EPA noted that "Rule 4692 implements the most stringent measures adopted or demonstrated to be technically and economically feasible for commercial chain-driven charbroilers."⁶⁶ Rule 4692 reduces VOC emissions by requiring catalytic oxidizers for chain-driven charbroilers cooking 400 pounds of meat or more per week. This threshold is more stringent than that in South Coast AQMD Rule 1138 (875 pounds of meat or more per week). Finally, staff reviewed chain-driven charbroiler regulations in other jurisdictions such as BAAQMD, VCAPCD, and New York City. The evaluation is summarized in Table 4-48.

⁶⁶ Technical Support Document, EPA Evaluation of BACM/MSM for the San Joaquin Valley PM2.5 Plan for the 2006 PM2.5 NAAQS, pp. 30-36. (February 2020). Retrieved from: <https://www.regulations.gov/document/EPAR09-OAR-2019-0318-0005>

**TABLE 4-48
COMPARISON OF CONTROL MEASURES FOR CHAIN-DRIVEN CHARBROILERS**

Rule	Applicability	Control Measure
South Coast AQMD Rule 1138 "Control of Emissions from Restaurant Operations" (amended November 14, 1997)	Chain-driven charbroilers Exemptions: - Exempt if (1) accept a permitting condition limiting the amount of meat cooked to less than 875 lbs per week; or (2) submit testing showing that emissions are less than 1lb per day of any criteria pollutant	Only operate a chain-driven charbroiler with an approved catalytic oxidizer.
SJVAPCD Rule 4692 (amended June 21, 2018)	Chain-driven charbroilers and underfired charbroilers at commercial cooking operations Exemptions: <ul style="list-style-type: none"> • If a chain-driven or underfired charbroiler cooks less than 400 lbs of meat per week, OR less than 10,800 lbs in the most recent 12-month rolling period and the total amount of meat cooked per week does not exceed 875 lbs 	Chain-driven charbroilers: Reduce VOC emissions by 86% through the installation of an approved catalytic oxidizer. Catalytic oxidizers certified by South Coast AQMD are compliant. Underfired charbroilers: Registration requirement; weekly recordkeeping requirement for both charbroiler categories.
VCAPCD Rule 74.25 "Restaurant Cooking Operations" (amended October 12, 2004)	Conveyorized (chain-driven) charbroilers Exemptions: - Charbroilers placed into service prior to Oct. 2005 that cook less than 875 lbs per week	Requires the installation of an approved control device to reduce VOC emissions by 83%. Catalytic oxidizers certified by South Coast AQMD are compliant.

Rule	Applicability	Control Measure
BAAQMD Regulation 6 Rule 2 "Commercial Cooking Equipment" (amended December 5, 2007)	Chain-driven charbroilers at commercial cooking operations. Exemptions: <ul style="list-style-type: none"> Chain-driven charbroilers that cook less than 400 lbs of beef per week 	Requires the installation of a certified catalytic oxidizer (controlled to 0.32 lbs of VOC per 1,000 lbs of beef cooked). Catalytic oxidizers certified by South Coast AQMD are compliant.
City of New York Title 24 of the Administrative Code, Section 24-149.4 "Commercial char broilers" (amended May 6, 2016) and NYC Rules, Title 15, Section 37-02 "Requirements for Emissions Control Devices" (amended September 16, 2016)	Chain-driven charbroilers at commercial cooking operations Exemptions: Charbroilers that cook less than 875 lbs of meat per week	Requires catalytic oxidizer or other control device. Catalytic oxidizers certified by South Coast AQMD are compliant.

All other rules and regulations evaluated reference South Coast AQMD's list of certified catalytic oxidizers.⁶⁷ With the exception of the applicability threshold in Rule 1138, staff did not identify any more stringent provisions in other jurisdictions' rules.

c. Conclusion

SJVAPCD Rule 4692 has a more stringent applicability threshold for chain-driven charbroilers compared to Rule 1138, which could serve as a potential contingency measure. However, as part of the control strategy in the South Coast Air Basin Attainment Plan for the 2012 Annual PM_{2.5} Standard, staff will propose to lower the Rule 1138 applicability threshold to satisfy MSM requirements. Therefore, once Rule 1138 is amended, this could no longer be considered a potential contingency measure. Staff did not identify any other potential contingency measures for this source category.

4. Other (Miscellaneous Processes)

There are no VOC or NO_x emissions from this source category.

⁶⁷ <https://www.aqmd.gov/docs/default-source/permitting/product-certification/charbroilerscatalysts.pdf?sfvrsn=0>

Indirect Source Rules

a. Overview

An indirect source is defined in CAA Section 110(a)(5)(C) as “...a facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution.” The CAA provides that any state may include in a SIP, but the U.S. EPA may not require as a condition of approval of such SIP, any indirect source review program. The U.S. EPA may approve and enforce, as part of an applicable implementation plan, an indirect source review program which the State chooses to adopt and submit as part of its plan. However, U.S. EPA may not require an indirect source review program as a condition of approval of such plan.

South Coast AQMD has adopted two indirect source rules, Rule 2202 On-Road Motor Vehicle Options and Rule 2305 Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program. Rule 2202 applies to employers with more than 250 employees at a worksite, and provides multiple options to reduce emissions from employee commute trips. Options include allowing worksites to develop and implement a rideshare program to meet an average vehicle ridership target, purchasing credits from credit vendors to meet an emission reduction goal, or paying a mitigation fee that funds a variety of emission reduction projects. Allowable strategies include reducing emissions (e.g., encouraging zero emission vehicles) or reducing trips (e.g., carpooling, parking cash-out). South Coast AQMD recently amended Rule 2202 to collect data on recent changes in teleworking patterns after the COVID-19 pandemic, along with other minor amendments. This additional data will inform a potential future amendment to Rule 2202.

Rule 2305 applies to warehouses greater than 100,000 square feet, and provides warehouse operators multiple options to reduce emissions or to facilitate emission reductions from mobile sources associated with their warehouse. Rule 2305 establishes a menu-based points system that requires warehouse operators to annually earn a specified number of points by completing actions from a menu. Menu items include acquiring or using: low NO_x and/or Zero Emissions (ZE) on-road trucks, ZE cargo handling equipment, ZE charging/fueling infrastructure, solar panels, or particulate filters for nearby sensitive land uses. Alternatively, warehouse operators could prepare and implement a custom plan specific to their site, or they could pay a mitigation fee. Funds from the mitigation fee will be used to incentivize the purchase of low NO_x or ZE trucks and ZE charging/fueling infrastructure in the communities near warehouses that paid the fee.

South Coast AQMD is currently developing additional indirect source rules for rail yards and for marine ports. Both of these rules are forecast to be brought to the South Coast AQMD Governing Board for its consideration in the second half of 2024.

The only other indirect source program that staff are aware of is Rule 9510 in SJVAPCD, which establishes a mechanism to reduce or offset emissions of NO_x and PM₁₀ from the construction and use of development projects through design features, on-site measures, and off-site measures. The rule requires

applicants of certain new development projects to reduce operational and construction equipment NOx and PM10 emissions by specific percentages, as compared to an unmitigated baseline. The rule requires applicants to incorporate design features and on-site measures into the development project or pay a mitigation fee for emissions in excess of the requirement. SJVAPCD uses the fees to fund off-site emission reduction projects.

b. Evaluation and Conclusion

Neither Rule 2202 nor Rule 2305 is currently approved into the SIP. Rule 2202 was disapproved due to allowing Executive Officer discretion for some components of the rule, and for relying on other rules and programs that are not in the SIP.⁶⁸ U.S. EPA has proposed approving Rule 2305 into the SIP, but has not yet finalized its decision.⁶⁹ U.S. EPA approved SJVAPCD's Rule 9510 into the SIP,⁷⁰ however it is only approved as a SIP strengthening measure concluding that it does not meet all the evaluation criteria for enforceability. Because of the deficiencies related to enforceability, U.S. EPA concluded that the rule should not be credited in any attainment and rate of progress/reasonable further progress demonstrations. U.S. EPA is proposing a similar SIP strengthening approach for Rule 2305.

While indirect source rules provide important mechanisms to facilitate emission reductions, and ultimately result in quantifiable emission reductions, those reductions generally cannot be credited directly to the rule itself. The emission reductions are ultimately quantified in future revisions of statewide mobile source emissions models (e.g., CARB's EMFAC) or through regional transportation modeling (e.g., Southern California Association of Governments Regional Transportation Plan) that look more holistically at mobile source activity and emissions. For similar reasons, U.S. EPA concluded in its FIP for SJVAPCD that an indirect source rule is not an appropriate contingency measure.⁷¹ We therefore conclude that no contingency measure is feasible for indirect source rules.

⁶⁸ 81 FR 4889

⁶⁹ 88 FR 70616

⁷⁰ 75 FR 28509, 86 FR 33542

⁷¹ EPA Source Category and Control Measure Assessment and Reasoned Justification Technical Support Document - Proposed Contingency Measures Federal Implementation Plan for the Fine Particulate Matter Standards for San Joaquin Valley, California (July 2023)

**Coachella Valley Contingency Measure SIP Revision for
the 2008 8-Hour Ozone Standard**

CHAPTER 5: PUBLIC PROCESS

Public Process

The Draft Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard was released on January 17, 2024 to solicit public review and comments. The public comment period closed on February 16, 2024, at which time no comment letter had been received. The public process included two public consultation meetings held on January 31 and February 1, 2024, and a briefing to South Coast AQMD's Mobile Source Committee held on February 16, 2024. The public consultation meetings were announced in both English and Spanish. Meeting materials in both English and Spanish were posted on the South Coast AQMD's website 72 hours prior to the first meeting. Real-time Spanish translation was provided during the meetings. A Public Hearing will be held at South Coast AQMD's Governing Board meeting on March 1, 2024. Notification of the public hearing was published in major newspapers in each county on January 16, 2024. Other notifications including email notifications were sent to all interested parties.

Public Comments during Public Consultation Meetings and Staff Responses

South Coast AQMD staff received the following comment on the Draft Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard during the two public consultation meetings.

The public inquired if the contingency measure could be implemented rather than waiting for a trigger. He also suggested three measures to be considered as contingency measures. They are more stringent NSR program, transitional to zero emission technologies for the categories such as diesel engines for which zero emission technologies are available, and adopting cleaner technologies like UV/EB/LED.

Staff Response: U.S. EPA requires that contingency measures be adopted rules to be triggered upon U.S. EPA finalizing a qualifying event. If a rule is already implemented, it is not qualified as contingency measure. Contingency measures need to meet the requirements included in the U.S. EPA's Draft Guidance. They are a triggering mechanism, implementation timeline, and a new measure not included in the attainment strategy or already implemented rule. The suggestions by the public do not meet those requirements set by U.S. EPA. For example, more stringent NSR would not provide an opportunity for a triggering mechanism. Transition to zero emission technology, where feasible, is relied on in the 2022 AQMP to attain the 2015 ozone NAAQS. In addition, contingency measures must be fully implemented within 2 years. It would be infeasible to turnover the existing population of stationary engines to zero emissions within that timeframe. Regarding control technologies to reduce and Chapter 4 of this SIP revision. Staff concluded that South Coast AQMD's coatings rules are the most stringent with no opportunities for contingency measures. In addition, SIP creditable reductions should use test methods recognized by U.S. EPA to verify emission reductions.

**Coachella Valley Contingency Measure SIP Revision for
the 2008 8-Hour Ozone Standard**

**CHAPTER 6: CALIFORNIA ENVIRONMENTAL QUALITY
ACT AND SOCIOECONOMIC IMPACT ASSESSMENT**

California Environmental Quality Act (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project (Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard) is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062, and 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 Planning and Research.

Socioeconomic Impact Assessment

No Socioeconomic Impact Assessment is required pursuant to Health and Safety Code Section 40440.8 or 40728.5 because these sections apply only to rules. Further, no socioeconomic impact will result from the proposed project.

**Coachella Valley Contingency Measure SIP Revision for
the 2008 8-Hour Ozone Standard**

CHAPTER 7: STAFF RECOMMENDATION

Staff Recommendation

Staff recommends adoption of the Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard and subsequent submission to U.S. EPA via CARB. If adopted, South Coast AQMD would commit to consider amending Rule 463 to include a contingency measure for the Coachella Valley 2008 8-hour ozone standard. Once the SIP Revision is submitted, U.S. EPA will need to issue a completeness determination by April 30, 2024 to avoid the stationary source permitting sanction.

Glossary

Air Toxics: A generic term referring to a harmful chemical or group of chemicals in the air. Typically, substances that are especially harmful to health, such as those considered under U.S. EPA's hazardous air pollutant program or California's AB 1807 toxic air contaminant program, are considered to be air toxics. Technically, any compound that is in the air and has the potential to produce adverse health effects is an air toxic.

Ambient Air: The air occurring at a particular time and place outside of structures. Often used interchangeably with "outdoor" air.

ATCM (Airborne Toxic Control Measure): A type of control measure, adopted by the CARB (Health and Safety Code Section 39666 et seq.), which reduces emissions of toxic air contaminants from nonvehicular sources.

APCD (Air Pollution Control District): A county agency with authority to regulate stationary, indirect, and area sources of air pollution (e.g., power plants, highway construction, and housing developments) within a given county, and governed by a district air pollution control board composed of the elected county supervisors and in most cases, representatives of cities within the district.

AQMD (Air Quality Management District): A group or portions of counties, or an individual county specified in law with authority to regulate stationary, indirect, and area sources of air pollution within the region and governed by a regional air pollution control board comprised mostly of elected officials from within the region.

AQMP (Air Quality Management Plan): A Plan prepared by an APCD/AQMD, for a county or region designated as a nonattainment area, for the purpose of bringing the area into compliance with the requirements of the national and/or California Ambient Air Quality Standards. AQMPs designed to attain national ambient air quality standards are incorporated into the SIP.

AVAPCD (Antelope Valley APCD): The Antelope Valley Air Pollution Control District.

BAAQMD (Bay Area AQMD): The San Francisco Bay Area Air Quality Management District.

BACM (Best Available Control Measure): The maximum degree of emission reduction achievable from a source or source category which is determined on a case-by-case basis, considering energy, economic and environmental impacts and other costs, which includes Best Available Control Technology. (see BACT.)

BACT (Best Available Control Technology): The most up-to-date methods, systems, techniques, and production processes available to achieve the greatest feasible emission reductions for given regulated air pollutants and processes. BACT is a requirement of NSR (New Source Review) and PSD (Prevention of Significant Deterioration). BACT as used in federal law under PSD applies to permits for sources of attainment pollutants and other regulated pollutants is defined as an emission limitation based on the maximum degree of emissions reductions allowable taking into account energy, environmental & economic impacts and other costs. [(CAA Section 169(3)]. The term BACT as used in state law means an emission limitation that will achieve the lowest achievable emission rates, which means the most stringent of either the most stringent emission limits contained in the SIP for the class

or category of source, (unless it is demonstrated that the limitation is not achievable) or the most stringent emission limit achieved in practice by that class in category of source. "BACT" under state law is more stringent than federal BACT and is equivalent to federal LAER (Lowest Achievable Emissions Rate) which applies to nonattainment NSR permit actions.

BARCT (Best Available Retrofit Control Technologies): 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.

Basin (South Coast Air Basin): Area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. It includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties.

CAA (Clean Air Act): A federal law passed in 1970 and amended in 1977 and 1990 which forms the basis for the national air pollution control effort. Basic elements of the Act include national ambient air quality standards for major air pollutants, air toxics standards, acid rain control measures, and enforcement provisions.

CAAQS (California Ambient Air Quality Standards): Standards set by the State of California for the maximum levels of air pollutants which can exist in the outdoor air without unacceptable effects on human health or the public welfare, which are often more stringent than NAAQS.

CARB (California Air Resources Board): The State's lead air quality agency, consisting of a nine-member Governor-appointed board. It is responsible for attainment and maintenance of the State and federal air quality standards, and is primarily responsible for motor vehicle pollution control. It oversees county and regional air pollution management programs.

CEQA (California Environmental Quality Act): A California law which sets forth a process for public agencies to make informed decisions on discretionary project approvals. The process aids decision makers to determine whether any environmental impacts are associated with a proposed project. It requires significant environmental impacts associated with a proposed project to be identified, disclosed, and mitigated to the maximum extent feasible.

Consumer Products: Products for consumer or industrial use such as detergents, cleaning compounds, polishes, lawn and garden products, personal care products, and automotive specialty products which are part of our everyday lives and, through consumer use, may produce air emissions which contribute to air pollution.

Contingency Measure: Contingency measures are statute-required back-up control measures to be implemented in the event of specific conditions. These conditions can include failure to meet interim milestone emission reduction targets or failure to attain the standard by the statutory attainment date. Both State and federal Clean Air Acts require that District plans include contingency measures.

CTG (Control Techniques Guidelines): Documents issued by U.S. EPA to provide recommendations for state and local air agencies on how to control the emissions of VOCs from certain types of sources in areas with smog problems. CTGs are not regulations, but they help states and areas meet the RACT requirements under the CAA. CTGs provide information on the available control technologies and their respective cost-effectiveness for reducing VOC emissions from these sources. States and areas

can use the CTGs as guidance to develop their own RACT rules or standards that are appropriate for their specific circumstances.

EMFAC: The EMISSION FACTOR model used by CARB to calculate on-road mobile vehicle emissions. The Coachella Valley Contingency Measure SIP Revision is based on the version of EMFAC2017.

Emission Inventory: An estimate of the amount of pollutants emitted from mobile and stationary sources into the atmosphere over a specific period such as a day or a year.

ICAPCD (Imperial County APCD): The County of Imperial Air Pollution Control District.

Indirect Source: Any facility, building, structure, or installation, or combination thereof, which generates or attracts mobile source activity that results in emissions of any pollutant (or precursor). Examples of indirect sources include employment sites, shopping centers, sports facilities, housing developments, airports, commercial and industrial development, and parking lots and garages.

LAER (Lowest Achievable Emission Rate): The more stringent rate of emissions for any source based on the following: the most stringent emissions limitation in which is contained in the implementation plan of any State for such class or category of sources, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable; or the most stringent emissions limitation which is achieved in practice by such class or category of stationary sources. This limitation, when applied to a modification, means the lowest achievable emissions rate for the new or modified emissions units within or stationary source. In no event shall the application of this term permit a proposed new or modified source to emit any pollutant in excess of the amount allowable under applicable new source standards of performance.

MCAQD (Maricopa County Air Quality Department): The Maricopa County Air Quality Department in Arizona.

MDAQMD (Mojave Desert AQMD): The Mojave Desert Air Quality Management District.

Mobile Sources: Moving sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats and airplanes.

MSM (Most Stringent Measures): The maximum degree of emission reduction that has been required or achieved from a source or source category in any other attainment plans or in practice in any other states and that can feasibly be implemented in the area seeking the extension. "Serious" nonattainment areas can request an extension of the attainment date under CAA Section 188(e) and are required to demonstrate that the attainment plan includes the MSM. In some cases it may be possible for the MSM requirement to result in no more controls and no more emissions reductions in an area than result from the implementation of BACM and BACT.

MVEB (Motor Vehicle Emissions Budget): The portion of the total allowable emissions allocated to highway and transit vehicles and is defined in the SIP for the purpose of demonstrating Reasonable Further Progress (RFP) for interim milestone years and attainment of the NAAQS.

NAAQS (National Ambient Air Quality Standards): Standards set by the federal U.S. EPA for the maximum levels of air pollutants which can exist in the outdoor air without unacceptable effects on human health or the public welfare.

NO_x (Nitrogen Oxides, Oxides of Nitrogen): A general term pertaining to compounds of nitric acid (NO), nitrogen dioxide (NO₂), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO₂ is a criteria air pollutant, and may result in numerous adverse health effects; it absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility.

Nonattainment Area: A geographic area identified by the U.S. EPA and/or CARB as not meeting either NAAQS or CAAQS for a given pollutant.

Ozone: A strong smelling reactive toxic chemical gas consisting of three oxygen atoms. It is a product of the photochemical process involving the sun's energy. Ozone exists in the upper atmosphere ozone layer as well as at the earth's surface. Ozone at the earth's surface causes numerous adverse health effects and is a criteria air pollutant. It is a major component of smog.

Ozone Precursors: Chemicals such as hydrocarbons and oxides of nitrogen, occurring either naturally or as a result of human activities, which contribute to the formation of ozone, a major component of smog.

Permit: Written authorization from a government agency (e.g., an air quality management district) that allows for the construction and/or operation of an emissions generating facility or its equipment within certain specified limits.

PCAPCD (Placer County APCD): The County of Placer Air Pollution Control District.

Public Consultation: A consultation held by a public agency for the purpose of informing the public and obtaining its input on the development of a regulatory action or control measure by that agency.

Public Workshop: A workshop held by a public agency for the purpose of informing the public and obtaining its input on the development of a regulatory action or control measure by that agency.

RACM (Reasonably Available Control Measures): An area-specific analysis focusing on area, mobile and non-major point sources. It considers measures that are readily implemented, are economically and technologically feasible, and contribute to the advancement of attainment in a manner that is "as expeditious as practicable."

RACT (Reasonably Available Control Technology): The lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

RFP (Reasonable Further Progress): Annual incremental reductions in emissions of the relevant air pollutant as are required by this part or may reasonably be required by the Administrator for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date, as defined in CAA Section 171(1). The goal of the RFP requirements is for areas to achieve generally linear progress toward attainment. To determine RFP for the attainment date, EPA guidance states that the plan should rely only on emission reductions achieved from sources within the nonattainment area.

RTP (Regional Transportation Plan): The long-range transportation plan developed by the Southern California Association of Governments that provides a vision for transportation investments

throughout the South Coast region. The RTP considers the role of transportation in the broader context of economic, mobility, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address regional mobility needs.

SBCAPCD (Santa Barbara County APCD): The County of Santa Barbara Air Pollution Control District.

SDAPCD (San Diego County APCD): The County of San Diego Air Pollution Control District.

SJVAPCD (San Joaquin Valley APCD): The San Joaquin Valley Air Pollution Control District.

SMAQMD (Sacramento Metro AQMD): The Sacramento Metropolitan Air Quality Management District.

SSAB (Salton Sea Air Basin): Area comprised of a central portion of Riverside County (the Coachella Valley) and Imperial County. The Riverside County portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley.

SIP (State Implementation Plan): A document prepared by each state describing existing air quality conditions and measures which will be taken to attain and maintain national ambient air quality standards. (see AQMP.)

Stationary Sources: Non-mobile sources such as power plants, refineries, and manufacturing facilities which emit air pollutants; can include area sources depending on context.

SCM (Suggested Control Measure): A model rule developed by CARB that local air districts can adopt for their architectural coatings rule. The SCM was last updated in 2020.

SCS (Sustainable Communities Strategy): Planning element in the RTP that integrates land use and transportation strategies that will achieve CARB's GHG emissions reduction targets.

U.S. EPA (United States Environmental Protection Agency): The federal agency charged with setting policy and guidelines, and carrying out legal mandates for the protection of national interests in environmental resources.

VCAPCD (Ventura County APCD): The Ventura County Air Pollution Control District.

VMT (Vehicle Miles Traveled): Total vehicle miles traveled by all or a subset of mobile sources.

VOCs (Volatile Organic Compounds): Hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and/or may themselves be toxic. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints.

**Coachella Valley Contingency Measure SIP Revision for
the 2008 8-Hour Ozone Standard**

**APPENDIX A: California Smog Check Contingency
Measure State Implementation Plan Revision**

California Smog Check Contingency Measure State Implementation Plan Revision

Released: September 15, 2023



Table of Contents

California Smog Check Contingency Measure State Implementation Plan Revision.....	1
Executive Summary.....	1
Section 1. Contingency Requirements and Litigation.....	5
Section 2. CARB’s Opportunities for Contingency Measures.....	7
Section 3. California Smog Check Program.....	13
Section 4. Smog Check Contingency Measure	15
A. Implementation	16
B. Title VI and Environmental Justice.....	17
C. Fiscal Impacts to State Programs	20
D. CEQA.....	23
Section 5. Nonattainment Area Analyses.....	24
A. Coachella Valley	24
B. Eastern Kern County.....	26
C. Mariposa County.....	28
D. Sacramento Metro Area	29
E. San Diego County	31
F. San Joaquin Valley	33
G. South Coast Air Basin	36
H. Ventura County.....	38
I. West Mojave Desert.....	39
J. Western Nevada County	41
Section 6. Staff Recommendation.....	43

Appendix A: Infeasibility Analysis	44
Infeasibility Analysis	45
Measure Analysis.....	45
Appendix B: Smog Check Contingency Measure Emissions Benefits Methodology.....	59
Smog Check Contingency Measure Emissions Benefits.....	60
Review Of Current Information	60
Approach	61
Instructions For Configuring and Running EMFAC2011.....	62
Appendix C: Carl Moyer Program Emissions Impacts Analysis Methodology.....	67
Moyer Program Emissions Reductions Estimates Methodology	68
Appendix D: California Health and Safety Code § 44011(a)(4)(A) and (B)	70

Executive Summary

The *California Smog Check Contingency Measure State Implementation Plan Revision* (Measure) addresses State Implementation Plan (SIP) contingency measure requirements of the federal Clean Air Act (Act) for certain areas designated as nonattainment of the national ambient air quality standards (NAAQS or standards) within the State. This Measure is necessary to address contingency measure requirements and respond to recent court actions to meet statutory deadlines related to contingency measures. This Measure includes an action that is triggered if a nonattainment area fails to attain by the applicable attainment date, fails to meet a reasonable further progress (RFP) milestone, fails to meet a quantitative milestone, or fails to submit a required quantitative milestone report or milestone compliance demonstration (collectively referred to as "Triggering Events").

The Motor Vehicle Inspection and Maintenance Program (Smog Check Program) is a vehicle inspection and maintenance program administered by the California Bureau of Automotive Repair (BAR) that identifies vehicles with faulty emission control components. Smog Check inspections are required biennially as a part of the vehicle registration process and/or when a vehicle changes ownership or is registered for the first time in California. In 2017, Assembly Bill (AB) 1274 added Health and Safety Code (H&SC) § 44011(a)(4)(B)(ii) which allowed vehicles eight or less model-years old to be exempt from requirements for Smog Check inspections. In lieu of an inspection, this law requires seven and eight model-year old vehicles owners to pay an annual Smog Abatement Fee of \$25, \$21 of which goes to the Air Pollution Control Fund for use to incentivize clean vehicles and equipment through the Carl Moyer Memorial Air Quality Standards Attainment Program (Moyer Program). This law also specifies that this exemption is allowed unless CARB determines that exempting these vehicles prohibits the State from meeting SIP commitments. At that time, the AB 1274 analysis¹ indicated that the emissions reductions from the increase in funding to the Moyer Program would outweigh the benefits of requiring seven and eight model-year old vehicles to obtain a Smog Check inspection.

CARB staff has now determined that removal of these exemptions may be needed to meet the contingency measure SIP requirements. CARB staff has also determined that in all of the relevant nonattainment areas, requiring a Smog Check inspection on eight model-year old vehicles provides more emission reductions than the potential loss in Moyer Program emission reductions that would result from the foregone funding. In 2017, when AB 1274 enacted this change in Smog Check exemptions, the benefit from additional funding for Moyer Program projects was estimated to outweigh the disbenefit from exempting additional vehicles. However, since 2017 the Program has successfully incentivized the

¹ *Bill Analysis - AB-1274 Smog check: exemption. (ca.gov)*

turnover of many dirty engines and equipment and Moyer Program projects are now less cost-effective than before, resulting in a net benefit from this Measure.

If a Triggering Event occurs, the Measure would:

- Change the existing smog check inspection exemptions in the California Smog Check Program in the applicable nonattainment area(s);
- Apply to the California nonattainment area(s) and standard(s) for which the Triggering Event occurs, from those listed on the next page in Table 1.; and
- Be implemented within 30 days of the effective date of a U.S. EPA finding that a Triggering Event occurred.

Seven areas in California under State jurisdiction are designated as nonattainment for the 75 parts per billion (ppb) 8-hour ozone standard, and ten areas in California under State jurisdiction are designated as nonattainment for the 70 ppb 8-hour ozone standard, with classifications of Moderate, Serious, Severe or Extreme. Additionally, the San Joaquin Valley is designated as nonattainment for the 80 ppb 8-hour ozone standard, the 12 microgram per meter cubed ($\mu\text{g}/\text{m}^3$) annual, 15 $\mu\text{g}/\text{m}^3$ annual, and 35 $\mu\text{g}/\text{m}^3$ 24-hour PM_{2.5} standards. The South Coast Air Basin is also designated as nonattainment for the 12 $\mu\text{g}/\text{m}^3$ annual PM_{2.5} standard. For all of these standards, nonattainment areas were or will be required to submit SIP revisions meeting contingency measure and other applicable requirements of the Act.

CARB staff has worked with local air districts to prepare contingency measure SIP revisions which were adopted and submitted to the U.S. Environmental Protection Agency (U.S. EPA) through CARB. Further, in 2018, CARB staff submitted the [*2018 Updates to the California State Implementation Plan*](#) (2018 SIP Update) which included a statewide contingency measure that was developed following U.S. EPA guidance available at the time. However, multiple lawsuits challenging U.S. EPA's interpretation of the Act led to U.S. EPA's determination that the previously submitted 2018 SIP Update contingency measures did not fully meet the Act's requirements. CARB staff is now proposing to submit the Measure to be consistent with U.S. EPA's current interpretation of the contingency measure provisions of the Act. The Measure as included in this SIP revision will be applicable for the California nonattainment areas and standards as listed in Table 1.

Table 1. Nonattainment Areas and Applicable Standards

Area	Applicable Standards
Coachella Valley	70 ppb Ozone, 75 ppb Ozone
Eastern Kern County	70 ppb Ozone, 75 ppb Ozone
Mariposa County	70 ppb Ozone
Sacramento Metro Area	70 ppb Ozone, 75 ppb Ozone
San Diego County	70 ppb Ozone, 75 ppb Ozone
San Joaquin Valley	70 ppb Ozone, 75 ppb Ozone, 80 ppb Ozone, 15 µg/m ³ PM2.5, 35 µg/m ³ PM2.5, 12 µg/m ³ PM2.5
South Coast Air Basin	12 µg/m ³ PM2.5, 70 ppb Ozone, 75 ppb Ozone
Ventura County	70 ppb Ozone
Western Mojave Desert	70 ppb Ozone, 75 ppb Ozone
Western Nevada	70 ppb Ozone

CARB staff initiated the public process with release of a concept document and workshop in August 2023 to solicit input from the public. The concept document and other materials were available in English and Spanish, and the workshop provided a forum in both English and Spanish for the proposed Measure to be discussed in a public setting and provide additional opportunity for public feedback, input, and ideas. CARB staff also analyzed the impacts of the Measure on vehicle owners in disadvantaged communities (DACs). CARB staff compared the proportion of the vehicles subject to the Measure if triggered to those registered in DACs to the proportion of vehicles subject to the Measure in total using DMV data. CARB staff found that, in all nonattainment areas, the proportion of vehicle owners potentially impacted by the Measure, if triggered, is not disproportionate to the population as a whole.

CARB staff has determined that the Measure meets the Act contingency measure requirements and that exercising H&SC § 44011(a)(4)(B)(ii) is needed to meet the SIP requirements.

Further, CARB staff last submitted updates to the Smog Check Program to U.S. EPA for incorporation into the California SIP in 2009 and U.S. EPA approved them on July 1, 2010.² As previously mentioned, the additional exemptions from the Smog Check Program were made by AB 1274 in 2017. As a part of this SIP revision, CARB staff is submitting H&SC § 44011(a)(4)(A) and (B) into the California SIP to incorporate these changes in the Smog Check Program.

The Board is scheduled to consider the Measure on October 26, 2023. CARB staff recommends the Board to adopt the Measure addressing contingency measure requirements for the applicable standards and nonattainment areas as listed in Table 1 and approve submittal into the California SIP of California H&SC sections 44011(a)(4)(A) and (B). If adopted, CARB staff will submit the Measure and H&SC sections 44011(a)(4)(A) and (B) to U.S. EPA as a revision to the California SIP.

² 75 Fed. Reg. 38023 (July 1, 2010)

Section 1. Contingency Requirements and Litigation

The Clean Air Act (“Act”) specifies that SIPs must provide for contingency measures, defined in section 172(c)(9) as “specific measures to be undertaken if the area fails to make reasonable further progress (RFP), or to attain the national primary ambient air quality standard by the attainment date....”³ The Act is silent though on the specific level of emission reductions that must flow from contingency measures. In the absence of specific requirements for the amount of emission reductions, in 1992, U.S. EPA conveyed that the contingency measures should, at a minimum, ensure that an appropriate level of emissions reduction progress continues to be made if attainment of RFP is not achieved and additional planning by the State is needed (57 Federal Register 13510, 13512 (April 16, 1992)). While U.S. EPA’s ozone guidance states “contingency measures should represent one year’s worth of progress amounting to reductions of 3 percent of the baseline emissions inventory for the nonattainment area”, U.S. EPA has accepted contingency measures that equal less than one year’s worth of RFP in some situations. Specifically, U.S. EPA has historically accepted lesser amounts as they see appropriate considering “U.S. EPA’s long-standing recommendation that states should consider ‘the potential nature and extent of any attainment shortfall for the area’ and that contingency measures ‘should represent a portion of the actual emissions reductions necessary to bring about attainment in the area.’”⁴

In recent years, court decisions, as described below, have excluded a category of contingency measures from what U.S. EPA may properly approve. Historically, U.S. EPA allowed contingency measure requirements to be met via excess emission reductions from ongoing implementation of adopted emission reduction programs. In the past, CARB used this method to meet contingency measure requirements. In 2016, in *Bahr v. U.S. Environmental Protection Agency*⁵ (*Bahr*), the Ninth Circuit determined U.S. EPA erred in approving a contingency measure that relied on an already-implemented measure for a nonattainment area in Arizona, thereby rejecting U.S. EPA’s longstanding interpretation of section 172(c)(9) of the Act. U.S. EPA staff interpreted this decision to mean that contingency measures must include a future action triggered by a Triggering Event. This decision was applicable to only the states covered by the Ninth Circuit. In the rest of the country, U.S. EPA still allowed contingency measures using their pre-*Bahr* stance. In January 2021, in *Sierra Club v. Environmental Protection Agency*⁶, the United States Court of Appeals for the D.C. Circuit, ruled that already implemented measures do not qualify as contingency measures for the rest of the country (*Sierra Club*).

³ 42 U.S.C. § 7502(c)(9).

⁴ See, e.g. 78 Fed.Reg. 37741, 37750 (Jun. 24, 2013), approval finalized with 78 Fed.Reg. 64402 (Oct. 29, 2013).

⁵ *Bahr v. U.S. Environmental Protection Agency*, (9th Cir. 2016) 836 F.3d 1218.

⁶ *Sierra Club v. Environmental Protection Agency*, (D.C. Cir. 2021) 985 F.3d 1055.

In response to *Bahr* and as part of the 75 ppb 8-hour ozone SIPs due in 2016, CARB staff developed the statewide Enhanced Enforcement Contingency Measure (Enforcement Contingency Measure) as a part of the *2018 Updates to the California State Implementation Plan* to address the need for a triggered action as a part of the contingency measure requirement. CARB staff worked closely with U.S. EPA regional staff in developing the contingency measure package that included the triggered Enforcement Contingency Measure, a district triggered measure and emission reductions from implementing CARB's mobile source emissions program. However, as part of the *San Joaquin Valley 2016 Ozone Plan for 2008 8-hour Ozone Standard* SIP action, U.S. EPA wrote in their final approval that the Enforcement Contingency Measure did not satisfy requirements to be approved as a "standalone contingency measure" and approved it only as a "SIP strengthening" measure⁷. U.S. EPA did approve the San Joaquin Valley Air Pollution Control District triggered measure and the implementation of the mobile reductions along with a CARB emission reduction commitment as meeting the contingency measure requirement for this SIP.

Subsequently, the Association of Irrigated Residents filed a lawsuit against the U.S. EPA for its approval of various elements within the *San Joaquin Valley 2016 Ozone Plan for 2008 8-hour Ozone Standard*, including the contingency measure. The Ninth Circuit issued its decision in *Association of Irrigated Residents v. EPA*⁸ (*AIR*) that U.S. EPA's approval of the contingency element was arbitrary and capricious and rejected the triggered contingency measure that achieves much less than one year's worth of RFP. Most importantly, the Ninth Circuit said that, in line with U.S. EPA's longstanding interpretation of what is required of a contingency measure and the purpose it serves, together with *Bahr*, all reductions needed to satisfy the Act's contingency measure requirements must come from the contingency measure itself. The Ninth Circuit also said that the amount of reductions needed for contingency should not be reduced absent U.S. EPA adequately explaining its change from its historic stance on the amount of reductions required. U.S. EPA staff has interpreted *AIR* to mean that triggered contingency measures must achieve the entirety of the amount of emission reductions needed for the contingency measure requirement on their own. In addition, surplus emission reductions from ongoing programs cannot reduce the amount of reductions needed for the contingency measure requirements.

In response to *Bahr* and *Sierra Club*, in 2021, U.S. EPA convened a nationwide internal task force to develop guidance to support states in their development of contingency measures. The draft guidance was released in March 2023 and is currently undergoing a public review process. The draft guidance proposes a new method for how to calculate one year's worth of progress for the targeted amount of contingency measures reductions and provides new clarification on the reasoned justification U.S. EPA requires to facilitate approval of contingency measures with lesser amounts of reductions. Per the draft guidance, such a

⁷ 87 Fed. Reg. 59688 (October 3, 2022)

⁸ *Association of Irrigated Residents v. U.S. Environmental Protection Agency*, (9th Cir. 2021) 10 F.4th 937

reasoned justification would need to include an infeasibility analysis detailing why there are insufficient measures to meet one year's worth of progress. U.S. EPA relied on the draft guidance when they proposed a federal implementation plan to meet the PM2.5 contingency measure requirements in the San Joaquin Valley on August 8, 2023⁹.

Section 2. CARB's Opportunities for Contingency Measures

Much has changed since U.S. EPA's 1992 guidance on contingency measures. Control programs across the country have matured as have the health-based standards. U.S. EPA strengthened ozone standards in 1997, 2008 and 2015 with attainment dates out to 2037 for areas in "extreme" nonattainment. California has the only three extreme ozone nonattainment areas in the country for the 2015 ozone NAAQS. Extreme ozone nonattainment areas are allowed to use a provision in the Act where emission reduction measures can wait for technology to advance. California also has multiple PM2.5 nonattainment areas with the highest possible classification and greatest attainment challenges. Thus, control measures are needed for meeting the NAAQS as expeditiously as possible, rather than being held in reserve.

To address contingency measure requirements given the courts' decisions and U.S. EPA's draft guidance, CARB staff and local air districts would need to develop a measure or measures that, when triggered by a Triggering Event, will achieve one year's worth of progress for the given nonattainment area unless it is determined that it is infeasible to achieve one year's worth of emission reductions. Given CARB's wide array of mobile source control programs, the relatively limited portion of emissions primarily regulated by the local air districts, and the fact that primarily-federally regulated sources are expected to account for approximately 52 percent of statewide nitrogen oxides (NOx) emissions by 2037¹⁰, finding triggered measures that will achieve the required reductions is nearly impossible. That said, even discounting the amount to reflect the proportion of sources that are primarily federally regulated, additional control measures that can be identified by CARB staff are scarce or nonexistent that would achieve the required emissions reductions needed for a contingency measure.

Adding to the difficulty of identifying available control measures, not only does the suite of contingency measures need to achieve a large amount of reductions, but they will also need to achieve these reductions in the year following the year in which the Triggering Event has been identified. Although the newly released draft guidance proposes allowing for up to two years to achieve those reductions, control measures achieving the level of reductions required often take more than two years to implement and will likely not result in immediate reductions. In California's 2022 State SIP Strategy, CARB's three largest NOx reduction

⁹ 88 Fed. Reg. 53431 (August 8, 2023)

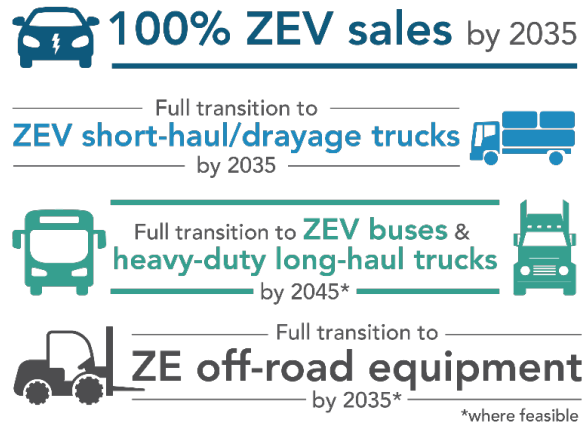
¹⁰ Source: CARB 2022 CEPAM v1.01; based on 2037 emissions totals.

measures, In-Use Locomotive Regulation, Advanced Clean Fleets, and Transportation Refrigeration Unit II, rely on accelerated turnover of older engines/trucks. The need for buildout of potential infrastructure upgrades and market-readiness of new equipment options that meet requirements limits the availability to have significant emission reductions in a short amount of time. Options for a technically and economically feasible triggered measure that can be implemented and achieve the necessary reductions in the time frame required are scarce in California.

CARB has over 50 years of experience reducing emissions from mobile sources like cars and trucks, as well as other sources of pollution under State authority. The Reasonably Available Control Measures for State Sources analysis that CARB included in all of the 70 ppb 8-hour ozone SIPs illustrates the reach of CARB's current programs and regulations, many of which set the standard nationally for other states to follow. Few sources CARB has primary regulatory authority over remain without a control measure, and all control measures that are in place support the attainment of the NAAQS. There is a lack of additional control measures that would be able to achieve the necessary reductions for a contingency measure. Due to the unique air quality challenges California faces, should such additional measures exist, CARB would pursue those measures to support expeditious attainment of the NAAQS and would not reserve such measures for contingency purposes. Nonetheless, CARB staff has continued to explore options for potential statewide contingency measures utilizing its authorities and applying draft guidance.

A central difficulty in considering a statewide contingency measure under CARB's authority, is that CARB is already fully committed to driving sources of air pollution in California to zero-emission everywhere feasible and as expeditiously as possible. In 2020, Governor Newsom signed Executive Order N-79-20 ([Figure 1](#)) that established a first-in-the-nation goal for 100 percent of California sales of new passenger cars and trucks to be zero emission by 2035. The Governor's order also set a goal to transition 100 percent of the drayage truck fleet to zero-emission by 2035, all off-road equipment where feasible to zero-emission by 2035, and the remainder of the medium and heavy-duty vehicles to zero-emission where feasible by 2045.

Figure 1 - Governor Newsom Executive Order N-79-20



California is committed to achieving these goals, and CARB is pursuing an aggressive control program in conjunction with other state and local agencies. CARB's programs not only go beyond emissions standards and programs set at the federal level, but many include zero-emissions requirements or otherwise, through incentives and voluntary programs, that drive mobile sources to zero-emissions, as listed in Table 2 below. CARB is also exploring and developing a variety of new measures to drive more source categories to zero-emissions and reduce emissions even further, as detailed in the 2022 State SIP Strategy. With most source categories being driven to zero-emissions as expeditiously as possible, opportunities for having triggered measure that could reduce NOx, reactive organic gases (ROG) and PM2.5 emissions by the amount required for contingency measures are scarce.

Table 2. Emissions Sources and Respective CARB Programs with a Zero-Emissions Requirement/Component

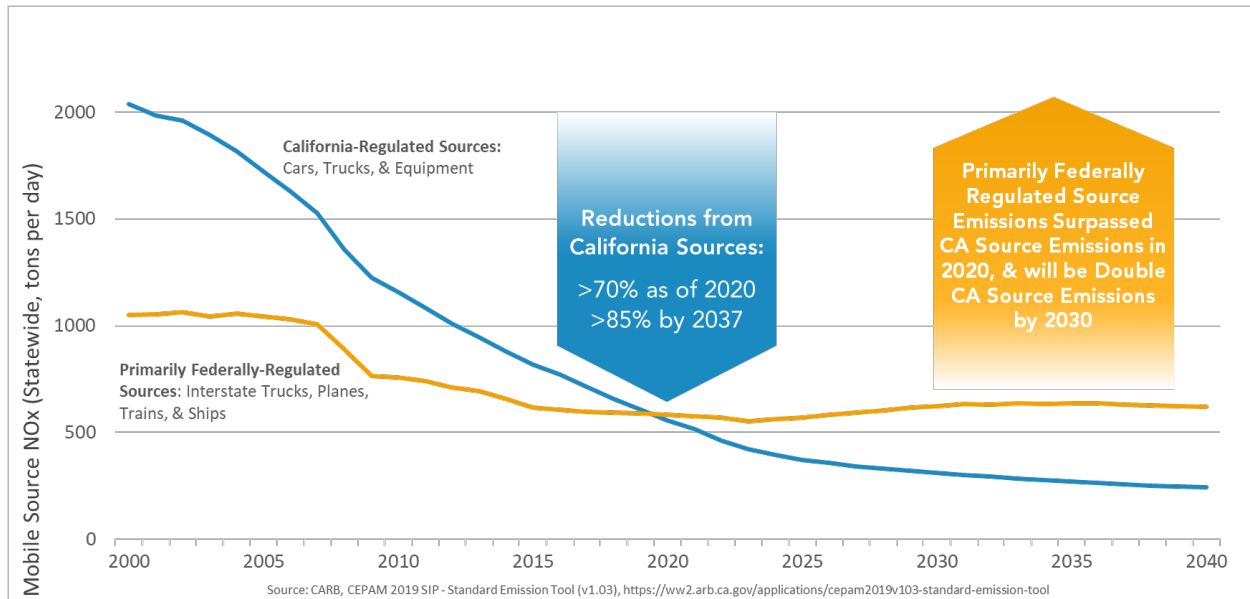
Emission Source	Regulatory Programs
Light-Duty Passenger Vehicles and Light-Duty Trucks	<ul style="list-style-type: none"> • Advanced Clean Cars Program (I and II), including the Zero Emission Vehicle Regulation • Clean Miles Standard
Motorcycles	<ul style="list-style-type: none"> • On-Road Motorcycle Regulation*
Medium Duty-Trucks	<ul style="list-style-type: none"> • Advanced Clean Cars Program (I and II), including the Zero Emission Vehicle Regulation • Zero-Emission Powertrain Certification Regulation • Advanced Clean Trucks Regulation • Advanced Clean Fleets Regulation
Heavy-Duty Trucks	<ul style="list-style-type: none"> • Zero-Emission Powertrain Certification Regulation • Advanced Clean Trucks Regulation • Advanced Clean Fleets Regulation
Heavy-Duty Urban Buses	<ul style="list-style-type: none"> • Innovative Clean Transit • Advanced Clean Fleets Regulation
Other Buses, Other Buses - Motor Coach	<ul style="list-style-type: none"> • Zero-Emission Airport Shuttle Regulation • Advanced Clean Fleets Regulation
Commercial Harbor Craft	<ul style="list-style-type: none"> • Commercial Harbor Craft Regulation
Recreational Boats	<ul style="list-style-type: none"> • Spark-Ignition Marine Engine Standards*
Transport Refrigeration Units	<ul style="list-style-type: none"> • Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (Parts I and II*)
Industrial Equipment	<ul style="list-style-type: none"> • Zero-Emission Forklifts* • Off-Road Zero-Emission Targeted Manufacturer Rule*
Construction and Mining	<ul style="list-style-type: none"> • Off-Road Zero-Emission Targeted Manufacturer Rule*
Airport Ground Support Equipment	<ul style="list-style-type: none"> • Zero-Emission Forklifts*
Port Operations and Rail Operations	<ul style="list-style-type: none"> • Cargo Handling Equipment Regulation • Off-Road Zero-Emission Targeted Manufacturer Rule*
Lawn and Garden	<ul style="list-style-type: none"> • Small Off-Road Engine Regulation • Off-Road Zero-Emission Targeted Manufacturer Rule*
Ocean-Going Vessels	<ul style="list-style-type: none"> • At Berth Regulation
Locomotives	<ul style="list-style-type: none"> • In-Use Locomotive Regulation

*Indicates program or regulation is in development

Most air pollution sources in California that are not as well controlled are primarily-federally regulated sources. (Figure 2). This includes interstate trucks, ships, locomotives, aircraft, and certain categories of off-road equipment, constituting a large source of potential emissions reductions. Since these are primarily regulated at the federal and, in some cases,

international level, options to implement a contingency measure with reductions approximately equivalent to one year's worth of progress are limited.

Figure 2 - State vs. Federal Mobile Source NOx Emissions



CARB staff has analyzed CARB’s suite of control measures for all sources under CARB authority to identify potential contingency measure options. CARB currently has programs in place or under development for most sources and have evaluated a variety of regulatory mechanisms within existing and new programs for potential contingency triggers. After conducting a full analysis of measures for contingency measure opportunities, CARB staff determined that changes in the Smog Check Program are appropriate to use to meet the Act contingency measure requirement. The Measure was found to be the most feasible option given timing and technical constraints for adoption and implementation. The full infeasibility analysis can be found in Appendix A. Further, U.S. EPA recently released their own infeasibility analysis¹¹ in which they came to the same conclusion with respect to the scarcity of available contingency measures in CARB’s mobile source control programs.

With this proposal, CARB staff would adopt and submit the Measure for the 70 ppb 8-hour ozone, 75 ppb 8-hour ozone, 80 ppb 8-hour ozone, the 12 µg/m³ and 15 µg/m³ annual PM_{2.5}, and 35 µg/m³ 24-hour PM_{2.5} standards for the relevant nonattainment areas to address the contingency measure requirements of the Act as interpreted by U.S. EPA in the draft guidance. The Measure consists of a triggered contingency measure that, if triggered,

¹¹ EPA Source Category and Control Measure Assessment and Reasoned Justification Technical Support Document; Federal Implementation Plan for Contingency Measures for the Fine Particulate Matter Standards; San Joaquin Valley, California. <https://www.regulations.gov/docket/EPA-R09-OAR-2023-0352>

would change the exemptions for motor vehicles in the California Smog Check Program for the relevant local air district and applicable standard as specified in Table 1 that, together with the local air districts' contingency measures, addresses the contingency measure requirements of the Act. A detailed description of the Measure is described in Section 4 below.

Section 3. California Smog Check Program

The Smog Check Program is a vehicle inspection and maintenance program administered by BAR. The Smog Check Program aims to reduce air pollution in the state by identifying vehicles with harmful excess emissions for repair or retirement. While BAR administers the Program, the California Department of Motor Vehicles (DMV) provides the vehicle registration and licensing information to support administration and enforcement of the Smog Check Program. Smog Check inspections are required biennially as a part of the vehicle registration process and/or when a vehicle changes ownership or is registered for the first time in California, depending on the area and severity of the air quality problem. Certain areas with worse air quality issues are subject to an enhanced version of the Program with stricter requirements. All gasoline-powered vehicles, hybrid vehicles, and alternative-fuel vehicles that are model-year 1976 and newer, as well as all diesel vehicles model-year 1998 and newer with a gross-vehicle weight rating of 14,000 pounds and less, are subject to Smog Check inspections.

However, there are several exceptions. Motorcycles and electric-powered vehicles are not subject to the Smog Check Program. Additionally, in 2017, California Assembly Bill (AB) 1274 was enacted, which amended the H&SC to exempt vehicles up to eight model -years old (MYO); previously, vehicles had been exempt up to six MYO. These seven and eight MYO vehicles that would otherwise be subject to a Smog Check inspection must pay an annual Smog Abatement Fee of \$25, \$21 of which goes to the Air Pollution Control Fund for use through the Moyer Program. Per H&SC § 44011(a)(4)(B)(ii), these motor vehicles eight or less MYO are exempted from biennial Smog Check inspection, unless CARB finds that providing an exception for these vehicles will prohibit the state from meeting the state commitments with respect to the SIP.

In 2017, when this change in Smog Check exemptions was enacted, the benefit from additional funding for Moyer Program projects was estimated to outweigh the disbenefit from exempting additional vehicles. However, since 2017, the cost-effectiveness of Moyer Program projects has increased as the program has successfully incentivized the turnover of many dirty engines and equipment. Moyer Program projects are now less cost-effective than before, resulting in a net benefit from this Measure.

As such, the ability to make the relevant finding for H&SC § 44011(a)(4)(B)(ii) purposes is within CARB's authority, and the other State agencies that implement California's Smog Check Program will be bound by it. CARB staff last submitted updates to the Smog Check Program to U.S. EPA for incorporation into the California SIP in 2009 and approved by U.S. EPA on July 1, 2010.¹² As previously mentioned, the additional exemptions from the Smog Check Program were made by AB 1274 in 2017. As a part of this SIP revision, CARB

¹² 75 Fed. Reg. 38023 (July 1, 2010)

staff is also proposing the Board approve submittal of H&SC § 44011(a)(4)(A) and (B) into the California SIP to incorporate these changes in the Smog Check Program. The H&SC sections are included in Appendix D.

Further the Smog Check Program meets federal requirements for an inspection and maintenance (I/M) program. On March 23, 2023, CARB adopted the California Smog Check Performance Standard Modeling (PSM) and Program Certification for the 70 parts per billion (ppb) 8-hour Ozone Standard (Smog Check Certification) to address I/M SIP requirements for the 70 ppb 8-hour ozone standard. CARB staff submitted it to U.S. EPA as a SIP revision. The Smog Check Certification demonstrated that the California's Smog Check Program meets the applicable federal I/M program requirements for all the 70 ppb 8-hour ozone nonattainment areas in California.

Section 4. Smog Check Contingency Measure

The Measure will consist of changing the existing Smog Check inspection exemptions in California's Smog Check Program in any applicable nonattainment area listed in Table 1. that fails to satisfy any one of the following (failures of which are collectively referred to as "Triggering Events"):

- Attain by the applicable attainment date;
- Meet a reasonable further progress (RFP) milestone;
- Meet a quantitative milestone; or
- Submit a required quantitative milestone report or milestone compliance demonstration.

The Measure will be initiated within 30 days of the effective date of a U.S. EPA determination of a Triggering Event. The exemption will change from the existing eight or less MYO to seven or less MYO in the applicable nonattainment area. If triggered, these additional vehicles would then be subject to Smog Check inspections based on the area in which the vehicle is registered (i.e., enhanced, basic, and change of ownership), resulting in additional emissions control equipment failures being identified and corrected, thereby reducing emissions that typically result when emissions control equipment is not performing as designed. The emissions reduction estimates from the Measure are detailed for each nonattainment area in Section 5 of this report. The methodology for calculating these estimates can be found in Appendix B. The Measure can be triggered a second time for a nonattainment area; if triggered a second time, the Smog Check exemption would then only apply to vehicles six or less MYO.

Implementation of the Measure will require coordination with other California State agencies. Their relevant roles and responsibilities are outlined below.

- **Bureau of Automotive Repair:** BAR, as part of the Department of Consumer Affairs, provides oversight of the automotive repair industry and administers vehicle emissions reduction and safety programs. Specifically, as it pertains to the Measure, BAR administers and enforces the Smog Check Program.
- **California Department of Motor Vehicles:** DMV administers vehicle registration and licensing and supports BAR in administering the Smog Check Program.

CARB staff will work closely with BAR and DMV staff throughout the process and leading up to a possible Triggering Event, so that both agencies have as much notice as possible for the work that will be required for full implementation of the Measure. For most potential failures to attain a relevant standard, preliminary data for the relevant ozone or PM_{2.5} season is available earlier and U.S. EPA makes their failure to attain findings six months after the attainment date, so CARB staff will be able to notify and work with BAR and DMV preemptively to ensure the Measure implementation is as smooth as possible.

CARB staff has quantified the emission reductions that would be achieved from implementation of the Measure, if triggered, and have documented the results in Section 5 of this report. The emission reductions anticipated are surplus to the current Smog Check Program in the nonattainment areas and they are not otherwise required by or assumed in a SIP-related program, or any other adopted State air quality program. The changes to Smog Check exemptions are enforceable since DMV requires a vehicle owner to obtain a Smog Check inspection certificate indicating a vehicle has passed its Smog Check inspection to renew their vehicle registration. The reductions from the Measure are permanent in that, if triggered, the vehicle will need to be repaired in order to renew their registration.

A. Implementation

Within 30 days of the effective date of U.S. EPA determining an applicable Triggering Event occurred, CARB will transmit a letter to BAR and DMV conveying its finding under H&SC § 44011(a)(4)(B)(ii) that providing the exception for certain motor vehicles from Smog Check inspection in specific nonattainment areas (defined by specified ZIP Codes) will prohibit the State from meeting commitments with respect to the SIP as required by the Act. This letter will explain that the Measure is being triggered to meet contingency measure requirements under Act section 172(c)(9) and/or 182(c)(9), and effectuating the change to the Smog Check exemptions for motor vehicles from eight or less MYO to seven or less MYO throughout the applicable nonattainment area (or six or less MYO in cases of the second trigger).

Prior to CARB staff submitting a letter to BAR and DMV, CARB staff will coordinate with BAR and DMV if there is potential for contingency to be triggered in the nonattainment areas in Table 1. CARB staff will meet regularly with BAR and DMV staff throughout the process to implement this Measure. Upon receipt of the CARB letter and the applicable ZIP Codes, CARB, BAR and DMV staff will begin implementation of the change in exemption length to Smog Check and take the following actions:

- DMV will update their Smog Check renewal programming to require a Smog Check inspection for the eight MYO vehicles (or seven MYO in the case of a second trigger) in the ZIP Codes provided by CARB staff;
- The eight to seven MYO (or seven to six MYO) exemption change will begin for registrations expiring beginning January 1st of the applicable year considering the time it takes for DMV to program this change and their registration renewal process;
- 60 days before the expiration date of the vehicle registration, DMV will send out registration renewals that include these newly impacted vehicles along with those already subject to Smog Check inspection;
- The notice will include information on the change in exemptions, reason for change, and resources for obtaining a Smog Check inspection from a certified station;

- CARB staff will work with DMV to develop and include an informational paper that will accompany the registration renewal with the information as included in the notice; and
- BAR and DMV will administer and enforce the new changes to the Smog Check Program.

B. Title VI and Environmental Justice

Title VI of the Civil Rights Act of 1964 (Title VI) provides that no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. Other relevant federal laws prohibit discrimination in the use of federal funds based on disability, sex, and age.¹³ As a recipient of federal funds, CARB must ensure it complies with Title VI and U.S. EPA's Title VI implementation regulations¹⁴ in its relevant programs and policies.

CARB's public process to engage with stakeholders in development of the Measures, its equity analysis of the Measure, and information about CARB's Civil Rights Policy and Compliant process is summarized below.

Public Process

In developing the proposed Measure, CARB staff engaged in a thorough public process that addresses the requirements of Title VI. CARB staff initiated the public process with release of a concept document and hosting a remote online workshop in August 2023 to solicit input from the public.¹⁵ The workshop was hosted through Zoom in the late afternoon to allow more community members to participate without needing to travel. The public notice for the workshop provided a contact for special accommodation requests by interested stakeholders, and CARB staff also made available on the notice and its website a staff email address to accept public questions and comments. The concept document and other materials were available in English and Spanish on the website and through emails sent to relevant email list serves, including the Environmental Justice Stakeholders Group. The workshop included translation services that provided a forum in both English and Spanish for the proposed Measure to be discussed in a public setting and provide additional opportunity for public feedback, input, and ideas. After the workshop, CARB staff

¹³ Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794; Title IX of the Education Amendments of 1972, as amended, 20 U.S.C. §§ 1681 et seq.; Age Discrimination Act of 1975, 42 U.S.C. §§ 6101 et seq.; and Federal Water Pollution Control Act Amendments of 1972, Pub. L. 92-500 § 13, 86 Stat. 903 (codified as amended at 33 U.S.C. § 1251 (1972)).

¹⁴ 40 C.F.R. Part 7.

¹⁵

has made the recording of the workshop available on its website. CARB staff considered the public feedback it received in developing the Measure. CARB staff will continue to address the requirements of Title VI in the event implementation of the Measure is triggered and provide continuing opportunities for public feedback.

Racial Equity, Environmental Justice, and Equity Analysis

Central to CARB's mission is the commitment to racial equity and environmental justice and ensuring a clean and healthy environment for all Californians. Many low-income and overburdened communities within the nonattainment areas, and across the State, continue to experience disproportionately high levels of air pollution and the resulting detrimental impacts to their health. To address longstanding environmental and health inequities from elevated levels of criteria pollutants (and toxic air contaminants), CARB prioritizes environmental justice, incorporating racial equity, and conducting meaningful community engagement in its policy and planning efforts and programs. It is imperative to optimize California's control programs to maximize emissions reductions and provide targeted near-term benefits in those communities that continue to bear the brunt of poor air quality.

Across the agency, CARB is engaged in specific localized efforts include development of community air monitoring networks to learn about local exposures, development of a racial equity assessment lens to consider benefits and burdens of CARB programmatic work in the planning stages, continuously increasing and improving community engagement efforts, and implementation of Assembly Bill (AB) 617 (C. Garcia, Chapter 136, Statutes of 2017), known as the Community Air Protection Program¹⁰. Significant progress has been made to address air pollution statewide and in local communities, and it is imperative to also ensure all Californians have access to healthy air quality.

Specific to this Measure, given the existing disproportionate impacts overburdened communities already face, CARB staff sought to evaluate whether the proposed Measure would itself impact disproportionately burden certain communities. In conducting this evaluation, CARB staff analyzed whether there would be disproportionate impact on disadvantaged communities within the affected nonattainment areas if the Measure is triggered.

CARB staff also analyzed the impacts of the Measure on vehicle owners in disadvantaged communities (DACs). CARB staff evaluated the potential impacts on owners of 8 MYO vehicles that reside in disadvantaged communities (DACs), which are defined by California Senate Bill 535¹⁶ as census tracts receiving the highest 25 percent of overall scores in *CalEnviroScreen 4.0*¹⁷. These communities face the highest air pollution and other

¹⁶ De Leon, https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB535

¹⁷ <https://oehha.ca.gov/calenviroscreen>

environmental burdens, and CARB staff is working to ensure that policy changes do not have a negative disproportionate impact on these populations.

In order to evaluate whether vehicle owners in DACs will be disproportionately impacted by this Measure if it is triggered, CARB staff compared the proportion of 8 MYO vehicles subject to the Smog Check inspection that are registered in DACs in each nonattainment area to the proportion of vehicles that are subject to the Smog Check inspection at some point in their lifetime that are registered in DACs for each nonattainment area. CARB staff used DMV data reflecting vehicle registrations as of 2021; thus, model year 2013 was used to represent 8 MYO vehicles and calculate the proportion of vehicles subject to the change. CARB staff assumes that the proportion of 8 MYO vehicles subject to the Smog Check inspection will be approximately equivalent in future attainment years. Based on this analysis for all areas in Table 1, CARB staff found that the proportion of vehicle owners potentially impacted by the Measure, if triggered, is not disproportionate to the population as a whole in each of the nonattainment areas analyzed. The proportion of people impacted with vehicles registered in DACs is about equal to the proportion of vehicle owners residing in DACs area-wide and generally represent a relatively small portion of the total population being impacted.

$$\frac{\text{8MYO vehicles registered in DACs in nonattainment area}}{\text{8MYO vehicles registered in nonattainment area}} = \frac{\text{all vehicles registered in DACs in nonattainment area}}{\text{all vehicles registered in nonattainment area}}$$

If the Measure is triggered, though, there could be other potential impacts to vehicle owners that should be considered. The main impacts to vehicle owners are the additional monetary cost and time of obtaining a Smog Check inspection and potential repairs one year earlier than previously required. The inspection and certification costs are mostly offset by the Smog Abatement Fee that exempted vehicle owners must pay. A Smog Check inspection averages \$55 and is required every other year in most areas of the State. The Smog Abatement Fee is \$25 and paid annually as a part of renewal of vehicle registration, thus two years of the Smog Abatement Fee is roughly equivalent to the average cost of a Smog Check Inspection.

Repair costs can range, but generally cost \$750 on average, which could be a significant cost burden. However, financial assistance is available through BAR's Consumer Assistance Program, which provides up to \$1,200 for repair costs. In terms of time to obtain a Smog Check inspection which can vary significantly due to location, many vehicles require regular service throughout the year, and owners may be able to schedule a Smog Check inspection concurrently. Additionally, the potential foregone dollars to the Moyer Program may reduce additional opportunities for emission reductions in districts where the local air district dedicates Moyer Program funds exclusively to disadvantaged communities. CARB staff will

continue to explore additional activities or funding opportunities to mitigate these potential disproportionate impacts.

Civil Rights Policy and Discrimination Complaint Process

Under CARB's written Civil Rights Policy and Discrimination Complaint process (Civil Rights Policy), CARB has a policy of nondiscrimination in its programs and activities and implements a process for discrimination complaints filed with CARB, which is available on CARB's website. The Civil Rights Officer coordinates implementation of CARB's nondiscrimination activities, including as the Equal Employment Opportunity (EEO) Officer for employment purposes, and who can be reached at *EEOP@arb.ca.gov*, or (279) 208-7110.¹⁸

The Civil Rights Policy and Discrimination Complaint Process provides the following information about the nondiscrimination policy and its applicability:

It is the California Air Resources Board (CARB) policy to provide fair and equal access to the benefits of a program or activity administered by CARB. CARB will not tolerate discrimination against any person(s) seeking to participate in, or receive the benefits of, any program or activity offered or conducted by CARB. Members of the public who believe they were unlawfully denied full and equal access to an CARB program or activity may file a civil rights complaint with CARB under this policy. This non-discrimination policy also applies to people or entities, including contractors, subcontractors, or grantees that CARB utilizes to provide benefits and services to members of the public. [. . .]

As described in the Civil Rights Policy and Discrimination Complaint Process, the Civil Rights Officer coordinates implementation of nondiscrimination activities:

CARB's Executive Officer will have final authority and responsibility for compliance with this policy. CARB's Civil Rights Officer, on behalf of the Executive Officer, will coordinate this policy's implementation within CARB, including work with the Ombudsman's Office, Office of Communications, and the staff and managers within a program or activity offered by CARB. The Civil Rights Officer coordinates compliance efforts, receives inquiries concerning non-discrimination requirements, and ensures CARB is complying with state and federal reporting and record retention requirements, including those required by Code of Federal Regulations, title 40, section 7.10 et seq.

¹⁸ CARB. California Air Resources Board and Civil Rights. <https://ww2.arb.ca.gov/california-air-resources-board-and-civil-rights>; Civil Rights Policy and Discrimination Compliant Process. November 1, 2016. <https://ww2.arb.ca.gov/sites/default/files/2023-01/2016-11-03%20CARB%20Civil%20Rights%20Policy%20Revised%20Final.pdf>

The Civil Rights Policy and Discrimination Complaint Process also describes in detail the complaint procedure, as follows:

A Civil rights complaint may be filed against CARB or other people or entities affiliated with CARB, including contractors, subcontractors, or grantees that CARB utilizes to provide benefits and services to members of the public. The complainant must file his or her complaint within one year of the alleged discrimination. This one-year time limit may be extended up to, but no more than, an additional 90 days if the complainant first obtained knowledge of the facts of the alleged violation after the expiration of the one-year time limit. [. . .]

The Civil Rights Officer will review the facts presented and collected and reach a determination on the merits of the complaint based on a preponderance of the evidence. The Civil Rights Officer will inform the complainant in writing when CARB has reached a determination on the merits of the discrimination complaint. Where the complainant has articulated facts that do not appear discriminatory but warrants further review, the Civil Rights Officer, in his or her discretion, may forward the complaint to a party within CARB for action. The Civil Rights Officer will inform the complainant, either verbally or in writing, before facilitating the transfer. [. . .]

CARB will not tolerate retaliation against a complainant or a participant in the complaint process. Anyone who believes that they have been subject to retaliation in violation of this policy may file a complaint of retaliation with CARB following the procedures outlined in this policy.

There is a Civil Rights Complaint Form available¹⁹ on the webpage, which should be used by members of the public to file a complaint of discrimination against CARB that an individual believes occurred during the administration of its programs and services offered to the public. As described on CARB's webpage, for all complaints submitted, the Civil Rights Officer will review the complaint to determine if there is a prima facie complaint (which means, if all facts alleged were true, would a violation of the applicable policy exist). If the Civil Rights Officer identifies a prima facie complaint in the jurisdiction of the Civil Rights Office, the Civil Rights Office will investigate and determine whether there is a violation of the policy.

The laws and regulations that CARB implements through this policy include:

- Code of Federal Regulations, Title 40 Parts 5 and 7;
- Title VI of the U.S. Civil Rights Act of 1964, as amended;

¹⁹ CARB. Civil Rights Complaint Form. July 2019. https://ww2.arb.ca.gov/sites/default/files/2023-01/eo_eeo_033_civil_rights_complaints_form.pdf

- Section 504 of the Rehabilitation Act of 1973;
- Age Discrimination Act of 1975;
- Title IX of the Education Amendments of 1972;
- California Government Code, title 2, Division 3, Part 1, Chapter 2, Article 9.5, *Discrimination*, section 11135 et seq.; and
- California Code of Regulations, title 2, section 10000 et seq.

As part of its overarching civil rights and environmental justice efforts, CARB is in the process of updating its Civil Rights Policy and will make those publicly available once complete. These updates will reflect available U.S. EPA and U.S. Department of Justice resources for Title VI and environmental justice policies. CARB encourages U.S. EPA to issue additional guidance to further clarify Title VI requirements and expectations to assist state implementation efforts.

C. Fiscal Impacts to State Programs

The Measure has some fiscal impacts. Previously exempted vehicles will no longer pay the annual Smog Abatement Fee of \$25, but instead pay the biennial Smog Check inspection certification fee of \$8.25, which is directed to BAR to fund the Smog Check Program. Of the Smog Abatement fee, \$21 is directed to the Air Pollution Control Fund to fund the Moyer Program, which will no longer be collected if the exemption changes. If the Measure is triggered, this will result in fewer funds being directed towards the Air Pollution Control Fund for the Moyer Program, but an increase in certification fees for BAR. For each nonattainment area and standard, CARB staff used the estimated number of vehicles impacted by the change in exemption model year to estimate the fiscal impact of a potential change in exemption if the Measure is triggered. The estimated loss of funding if triggered is detailed for each nonattainment area in Section 5.

The potential loss of funds resulting from the Measure being triggered in an area may result in a loss of funds for the Moyer Program, which could result in fewer Moyer Program projects and fewer opportunities for additional emission reductions. If the Measure is triggered in a nonattainment area, the monetary impacts will be statewide. The Moyer Program funds are collected statewide but allocated to each local air district according to requirements set by H&SC §44299.2. For South Coast Air Basin only, the allocation is based on human population relative to the State as a whole. For the remaining local air districts, funds are allocated based on each local air district's population, air quality, and historical allocation awarded in Fiscal Year (FY) 2002-2003. CARB staff used the statewide average cost effectiveness of Moyer Program projects to estimate the Moyer Program emission reductions impact if the Measure is triggered. Based on CARB staff analysis, the resulting potential foregone emissions reductions from fewer potential projects funded through the Moyer Program will not outweigh the emissions reductions benefit from the Measure. The

estimated loss in potential emissions reductions from the Moyer Program is detailed below in each nonattainment area section of this report. The methodology for calculating the impact of the loss of Moyer Program funds can be found in Appendix C.

D. CEQA

CARB staff has determined that the Measure is exempt from CEQA under the “general rule” or “common sense” exemption (14 CCR 15061(b)(3)). The common sense exemption states a project is exempt from CEQA if “the activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.” The Measure addresses contingency measure requirements under the Act and would remove an exemption from a Smog Check inspection for certain model year vehicles only in the event a Triggering Event occurs. The Measure would only go into effect in the area in which it is triggered. The change in exemptions for vehicles required to obtain a Smog Check inspection, only if triggered by an applicable event, would not require new equipment and has no potential to adversely affect air quality or any other environmental resource area. Based on CARB staff’s review it can be seen with certainty that there is no possibility that the Measure may result in a significant adverse impact on the environment; therefore, this activity is exempt from CEQA.

CARB staff has also determined that the Measure is categorically exempt from CEQA under the “Class 8” exemption (Cal. Code Regs., tit. 14, § 15308). Class 8 exemptions apply to “actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment.” The proposed Measure is an action by CARB, a regulatory agency, to protect the environment in the event a Triggering Event occurs. The Measure will assure the maintenance and enhancement of the environment by removing exemptions from the Smog Check Program, resulting in additional emissions control equipment failures being identified and corrected, thereby reducing emissions that typically result when emissions control equipment is not performing as designed. CARB staff analysis indicates air emission benefits exceed the disbenefits in each relevant air basin. Therefore, the Smog Check Contingency Measure is also exempt as a Class 8 exemption.

Section 5. Nonattainment Area Analyses

California's nonattainment challenge for ozone and PM2.5 NAAQS in most of the State is driven in part due to motor vehicle emissions. While CARB's regulations require motor vehicles to meet emission standards throughout their useful lives, this is not guaranteed. CARB staff recommends the Board exercise the authority under this statute and find that exempting motor vehicles that are less than 8 years old from the requirements is preventing the State from meeting its commitments under the Act related to complying with the Act's contingency measure requirements. Subjecting vehicles to the Smog Check Program to reduce emissions as a contingency measure when a Triggering Event occurs would help the State meet its contingency measure requirement under the Act. In addition to CARB's actions, each local air district has either included a complementary contingency measure or measures in their SIP or will provide a reasoned justification for why they are unable to provide contingency measures for the full amount of reductions as specified in the draft guidance. Below, for each nonattainment area listed in Table 1, CARB staff is providing the estimate of the one year's worth of progress, estimate of contingency measure reductions, equity impacts, and Moyer Program impacts.

A. Coachella Valley

The Measure complements local air district efforts to meet contingency measure requirements for the 75 ppb and 70 ppb 8-hour ozone standards. The required amount of emission reductions from contingency measures, or one year's worth (OYW) of progress based on the draft guidance, is shown in Table 3.

Table 3. Coachella Valley OYW of Progress
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx (tpd)	ROG (tpd)
75 ppb 8-hour Ozone	2031	0.34	0.14
70 ppb 8-hour Ozone	2037	0.17	0.10

Table 4 documents the emission reductions that occur after the attainment year due to implementation of the Measure if triggered.

Table 4. Coachella Valley Potential Reductions from Measure
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx Benefits (tpd)	ROG Benefits (tpd)
75 ppb 8-hour Ozone	2031	0.008	0.003
70 ppb 8-hour Ozone	2037	0.008	0.003

Equity Impacts

Table 5 documents the potential impact of the Measure on DACs as identified in *CalEnviroScreen 4.0* in the Coachella Valley. The proportion of vehicles that are registered in DACs and would be impacted if the Measure is triggered is proportional to the general population of all vehicles registered in DACs overall, about 4 percent. There is not expected to be a disproportionate impact on disadvantaged communities should the measure be triggered.

Table 5. Coachella Valley Vehicle Populations

All Vehicles	All Vehicles Population	8MYO Vehicles* (MY 2013)	8MYO Vehicles* (MY 2013) Population
Total Vehicle Population	320,375	Vehicle Population	14,622
Vehicle Population in DACs	15,492	Vehicle Population in DACs	640
Proportion DAC	4.84%	Proportion DAC	4.38%

*MY 2013 Vehicle populations were used to represent 8MYO vehicles.

Carl Moyer Impacts

Should the Measure be triggered in Coachella Valley, the potential funds lost by year is listed below in Table 6. The loss in funding would have statewide impacts as the funds are collected and redistributed to districts based on the formula H&SC § 44299.2. Based on statewide cost effectiveness and historical allocations to each local air district, the estimated loss in potential emission reduction benefits in Coachella Valley if the Measure is triggered is shown in Table 7.

Table 6. Coachella Valley 8 MYO Smog Abatement Fees

Standard	Attainment Year	Potential Dollars
75 ppb 8-hour Ozone	2031	\$ 311,468
70 ppb 8-hour Ozone	2037	\$ 325,868

Table 7. Coachella Valley Carl Moyer Program Potential Foregone Emissions Reductions

(reductions calculated on annual planning inventory consistent with Moyer Program cost-effectiveness)

Standard	Attainment Year	NOx (tpd)
75 ppb 8-hour Ozone	2031	0.0002
70 ppb 8-hour Ozone	2037	0.0002

B. Eastern Kern County

The Measure complements local air district efforts to meet contingency measure requirements for the 75 ppb and 70 ppb 8-hour ozone standards. The required amount of emission reductions from contingency measures, or OYW of progress based on the draft guidance, is shown in Table 8.

Table 8. Eastern Kern County OYW of Progress

(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx (tpd)	ROG (tpd)
75 ppb 8-hour Ozone	2026	0.30	0.08
70 ppb 8-hour Ozone	2032	0.26	0.07

Table 9 documents the emission reductions that would occur after the attainment year due to implementation of the Measure if triggered.

Table 9. Eastern Kern County Potential Reductions from Measure
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx Benefits (tpd)	ROG Benefits (tpd)
75 ppb 8-hour Ozone	2026	0.003	0.001
70 ppb 8-hour Ozone	2032	0.003	0.001

Equity Impacts

Table 10 documents the potential impact of the Measure on DACs as identified in *CalEnviroScreen 4.0* in Eastern Kern County. The proportion of vehicles that are registered in DACs and would be impacted if the Measure is triggered is proportional to the general population of all vehicles registered in DACs overall, about 4 percent. There is not expected to be a disproportionate impact on disadvantaged communities, should the measure be triggered.

Table 10. Eastern Kern County Vehicle Populations
(vehicle populations calculated from EMFAC2021 Fleet Database)

All Vehicles	All Vehicles Population	8MYO Vehicles* (MY 2013)	8MYO Vehicles* (MY 2013) Population
Total Vehicle Population	86,909	Vehicle Population	4,209
Vehicle Population in DACs	3,640	Vehicle Population in DACs	174
Proportion DAC	4.19%	Proportion DAC	4.12%

*MY 2013 Vehicle populations were used to represent 8MYO vehicles.

Carl Moyer Impacts

Should the Measure be triggered in Eastern Kern County, the potential funds lost statewide by year is listed below in Table 11. Based on statewide cost effectiveness and historical allocations to each local air district, the loss in potential emission reduction benefits in Eastern Kern County if the Measure is triggered is shown in Table 12.

Table 11. Eastern Kern County 8 MYO Smog Abatement Fees

Standard	Attainment Year	Potential Dollars
75 ppb 8-hour Ozone	2026	\$ 112,514
70 ppb 8-hour Ozone	2032	\$ 116,670

Table 12. Eastern Kern Carl Moyer Program Potential Foregone Emissions Reductions
(reductions calculated on annual planning inventory consistent with Moyer Program cost-effectiveness)

Standard	Attainment Year	NOx (tpd)
75 ppb 8-hour Ozone	2026	0.000003
70 ppb 8-hour Ozone	2032	0.000003

C. Mariposa County

The Measure complements local air district efforts to meet contingency measure requirements for the 70 ppb 8-hour ozone standard. The required amount of emission reductions from contingency measures, or OYW of progress based on the draft guidance, is shown in Table 13.

Table 13. Mariposa County OYW of Progress
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx (tpd)	ROG (tpd)
70 ppb 8-hour Ozone	2026	0.02	0.13

Table 14 documents the emission reductions that would occur after the attainment year due to implementation of the Measure if triggered.

Table 14. Mariposa County Potential Reductions from Measure
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx Benefits (tpd)	ROG Benefits (tpd)
70 ppb 8-hour Ozone	2026	0.0003	0.0001

Equity Impacts

Per scores in *CalEnviroScreen 4.0*, there are very few vehicles registered in DACs in Mariposa County. There is not expected to be a disproportionate impact on disadvantaged communities should the measure be triggered.

Carl Moyer Impacts

Should the Measure be triggered in Mariposa County, the potential funds lost by year is listed below in Table 15. Based on district allocations of Moyer Program funds per H&SC §44299.2, Mariposa County receives \$200,000 regardless of the funding available statewide. Thus, there will be no emissions disbenefit from a decrease in Moyer Funds in Mariposa County if the measure is triggered, shown in Table 16.

Table 15. Mariposa County 8 MYO Smog Abatement Fees

Standard	Attainment Year	Potential Dollars
70 ppb 8-hour Ozone	2026	\$ 8,691

Table 16. Mariposa County Carl Moyer Program Potential Foregone Emissions Reductions

(reductions calculated on annual planning inventory consistent with Moyer Program cost-effectiveness)

Standard	Attainment Year	NOx (tpd)
70 ppb 8-hour Ozone	2026	0.000

D. Sacramento Metro Area

The Measure complements the local air districts' efforts to meet contingency measure requirements for the 75 ppb and 70 ppb 8-hour ozone standards. The required amount of emission reductions from contingency measures, or OYW of progress based on the draft guidance, is shown in Table 17.

Table 17. Sacramento Metro OYW of Progress

(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx (tpd)	ROG (tpd)
75 ppb 8-hour Ozone	2024	2.20	1.78
70 ppb 8-hour Ozone	2032	1.26	0.99

Table 18 documents the emission reductions that occur after the attainment year due to implementation of the Measure if triggered.

Table 18. Sacramento Metro Area Potential Reductions from Measure
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx Benefits (tpd)	ROG Benefits (tpd)
75 ppb 8-hour Ozone	2024	0.077	0.037
70 ppb 8-hour Ozone	2032	0.047	0.015

Equity Impacts

Table 19 documents the potential impact of the Measure on DACs as identified in *CalEnviroScreen 4.0* in the Sacramento Metro area. The proportion of vehicles that are registered in DACs and would be impacted if the Measure is triggered is proportional to the general population of all vehicles registered in DACs overall, about 7 percent. There is not expected to be a disproportionate impact on disadvantaged communities should the measure be triggered.

Table 19 Sacramento Metro Area Vehicle Populations
(vehicle populations calculated from EMFAC2021 Fleet Database)

All Vehicles	8 MYO Vehicles (MY 2013)		
Total Vehicle Population	1,766,464	MY13 Vehicle Population	88,163
Vehicle Population in DACs	135,377	MY13 Vehicle Population in DACs	6,387
Proportion DAC	7.66%	Proportion DAC	7.24%

Carl Moyer Impacts

Should the Measure be triggered in the Sacramento Metro Area, the potential funds lost by year is listed below in Table 20. Based on statewide cost effectiveness and historical allocations to each local air district, the loss in potential emission reduction benefits in Sacramento Metro Area if the Measure is triggered is shown in Table 21.

Table 20. Sacramento Metro Area 8 MYO Smog Abatement Fees

Standard	Attainment Year	Potential Dollars
75 ppb 8-hour Ozone	2024	\$ 2,554,206
70 ppb 8-hour Ozone	2032	\$ 2,020,844

Table 21. Sacramento Metro Area Carl Moyer Program Potential Foregone Emissions Reductions

(reductions calculated on annual planning inventory consistent with Moyer Program cost-effectiveness)

Standard	Attainment Year	NO _x (tpd)
75 ppb 8-hour Ozone	2024	0.0009
70 ppb 8-hour Ozone	2032	0.0007

E. San Diego County

The Measure complements local air district efforts to meet contingency measure requirements for the 75 ppb and 70 ppb 8-hour ozone standards. The required amount of emission reductions from contingency measures, or OYW of progress based on the draft guidance, is shown in Table 22.

Table 22. San Diego County OYW of Progress

(reductions calculated on summer planning inventory)

Standard	Attainment Year	NO _x (tpd)	ROG (tpd)
75 ppb 8-hour Ozone	2026	2.19	1.97
70 ppb 8-hour Ozone	2032	1.26	0.89

Table 23 documents the emission reductions that occur after the attainment year due to implementation of the Measure if triggered.

Table 23. San Diego County Potential Reductions from Measure
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx Benefits (tpd)	ROG Benefits (tpd)
75 ppb 8-hour Ozone	2026	0.065	0.027
70 ppb 8-hour Ozone	2032	0.056	0.016

Equity Impacts

Table 24 documents the potential impact of the Measure on DACs as identified in *CalEnviroScreen 4.0* in San Diego County. The proportion of vehicles that are registered in DACs and would be impacted if the Measure is triggered is proportional to the general population of all vehicles registered in DACs overall, about 5.5 percent. There is not expected to be a disproportionate impact on disadvantaged communities, should the measure be triggered.

Table 24. San Diego County Vehicle Populations
(vehicle populations calculated from EMFAC2021 Fleet Database)

All Vehicles	8 MYO Vehicles (MY 2013)		
Total Vehicle Population	2,360,242	MY13 Vehicle Population	117,373
Vehicle Population in DACs	146,252	MY13 Vehicle Population in DACs	6,433
Proportion DAC	6.20%	Proportion DAC	5.48%

Carl Moyer Impacts

Should the Measure be triggered in San Diego County, the potential funds lost by year is listed below in Table 25. Based on statewide cost effectiveness and historical allocations to each local air district, the loss in potential emission reduction benefits in San Diego County if the Measure is triggered is shown in Table 26.

Table 25. San Diego County 8 MYO Smog Abatement Fees

Standard	Attainment Year	Potential Dollars
75 ppb 8-hour Ozone	2026	\$ 2,308,061
70 ppb 8-hour Ozone	2032	\$ 2,341,248

Table 26. San Diego County Carl Moyer Program Potential Foregone Emissions Reductions

(reductions calculated on annual planning inventory consistent with Moyer Program cost-effectiveness)

Standard	Attainment Year	NO _x (tpd)
75 ppb 8-hour Ozone	2026	0.001
70 ppb 8-hour Ozone	2032	0.001

F. San Joaquin Valley

The Measure complements district efforts to meet contingency measure requirements for the 80 ppb, 75 ppb and 70 ppb 8-hour ozone standards, the 15 ug/m³ and 12 ug/m³ annual PM_{2.5} standards, and the 35 ug/m³ 24-hour PM_{2.5} standard. On May 18, 2023, specific to PM_{2.5} standards, the San Joaquin Valley Air Pollution Control District adopted their *PM_{2.5} Contingency Measure SIP Revision* which was submitted to U.S. EPA by CARB staff. Further, on June 23, 2023, CARB staff committed to submit to U.S. EPA a triggered contingency measure under State authority for the PM_{2.5} standards. If adopted, the Measure will be submitted to U.S. EPA to fulfill that commitment.

The required amount of emission reductions from contingency measures, or OYW of progress based on the draft guidance, is shown in Table 27 for the 80 ppb, 75 ppb and 70 ppb 8-hour ozone standards.

Table 27. San Joaquin Valley OYW of Progress

(reductions calculated on summer planning inventory)

Standard	Attainment Year	NO _x (tpd)	ROG (tpd)
80 ppb 8-hour ozone	2023	7.57	2.40
75 ppb 8-hour Ozone	2031	4.25	1.88
70 ppb 8-hour Ozone	2037	2.35	1.73

Table 28 documents the emission reductions that occur after the attainment year due to implementation of the Measure if triggered.

Table 28. San Joaquin Valley Potential Reductions from Measure
(reductions calculated on summer planning inventory for ozone, annual planning inventory for PM2.5)

Standard	Attainment Year	NOx Benefits (tpd)	ROG Benefits (tpd)
80 ppb 8-hour Ozone	2023	0.112	0.056
15 µg/m ³ Annual PM2.5	2023	0.117	0.052
35 µg/m ³ 24-hour PM2.5	2024	0.120	0.052
12 µg/m ³ Annual PM2.5	2030	0.086	0.027
75 ppb 8-hour Ozone	2031	0.079	0.025
70 ppb 8-hour Ozone	2037	0.076	0.024

Equity Impacts

Table 29 documents the potential impact of the Measure on DACs as identified in *CalEnviroScreen 4.0* in the San Joaquin Valley. The proportion of vehicles that are registered in DACs and would be impacted if the Measure is triggered is proportional to the general population of all vehicles registered in DACs overall, about 28-29 percent, though the percentage of people residing in DACs in San Joaquin Valley is relatively higher compared to other districts. There is not expected to be a disproportionate impact on disadvantaged communities should the measure be triggered.

Table 29. San Joaquin Valley Vehicle Populations
(vehicle populations calculated from EMFAC2021 Fleet Database)

All Vehicles	8 MYO Vehicles (MY 2013)		
Total Vehicle Population	2,493,831	MY13 Vehicle Population	113,744
Vehicle Population in DACs	738,064	MY13 Vehicle Population in DACs	31,906
Proportion DAC	29.60%	Proportion DAC	28.05%

Carl Moyer Impacts

Should the Measure be triggered in San Joaquin Valley, the potential funds lost by year is listed below in Table 30. Based on statewide cost effectiveness and historical allocations to each local air district, the loss in potential emission reduction benefits in the San Joaquin Valley if the Measure is triggered is shown in Table 31.

Table 30. San Joaquin Valley 8 MYO Smog Abatement Fees

Standard	Attainment Year	Potential Dollars ²⁰
80 ppb 8-hour Ozone	2023	\$ 3,781,802
15 µg/m ³ Annual PM2.5	2023	\$ 3,781,802
35 µg/m ³ Annual PM2.5	2024	\$ 3,880,753
12 µg/m ³ Annual PM2.5	2030	\$ 3,171,435
75 ppb 8-hour Ozone	2031	\$ 3,167,124
70 ppb 8-hour Ozone	2037	\$ 3,300,289

Table 31 San Joaquin Valley Carl Moyer Program Potential Foregone Emissions Reductions

(reductions calculated on annual planning inventory consistent with Moyer Program cost-effectiveness)

Standard	Attainment Year	NO _x (tpd)
80 ppb 8-hour Ozone	2023	0.004
15 µg/m ³ Annual PM2.5	2023	0.004
35 µg/m ³ Annual PM2.5	2024	0.004
12 µg/m ³ Annual PM2.5	2030	0.003
75 ppb 8-hour Ozone	2031	0.003
70 ppb 8-hour Ozone	2037	0.003

²⁰ For years with multiple standards/ triggers in the same year, the loss in smog abatement fees would only be triggered once.

G. South Coast Air Basin

The Measure complements local air district efforts to meet contingency measure requirements for the 75 ppb and 70 ppb 8-hour ozone standards, and the 12 ug/m³ annual PM2.5 standard. The required amount of emission reductions from contingency measures, or OYW of progress based on the draft guidance, is shown in Table 32 for the 75 ppb and 70 ppb 8-hour ozone standards.

Table 32. South Coast Air Basin OYW of Progress
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx (tpd)	ROG (tpd)
75 ppb 8-hour Ozone	2031	4.12	6.38
70 ppb 8-hour Ozone	2037	2.62	3.54

Table 33 documents the emission reductions that occur after the attainment or final RFP milestone year due to implementation of the Measure if triggered.

Table 33. South Coast Air Basin Potential Reductions from Measure
(reductions calculated on summer planning inventory for ozone, annual planning inventory for PM2.5)

Standard	Attainment/RFP Year	NOx Benefits (tpd)	ROG Benefits (tpd)
75 ppb 8-hour Ozone	2029	0.295	0.096
70 ppb 8-hour Ozone	2035	0.254	0.077
12 µg/m ³ Annual PM2.5	2030	0.300	0.093

Equity Impacts

Table 34 documents the potential impact of the Measure on DACs as identified in [CalEnviroScreen 4.0](#) in the South Coast Air Basin. The proportion of vehicles that are registered in DACs and would be impacted if the Measure is triggered is lower than the proportion of the general population of all vehicles registered in DACs overall, though the percentage of people residing in DACs in the South Coast Air Basin is relatively higher compared to other local air districts. There is not expected to be a disproportionate impact on disadvantaged communities should the measure be triggered.

Table 34. South Coast Vehicle Populations
(vehicle populations calculated from EMFAC2021 Fleet Database)

All Vehicles		8 MYO Vehicles (MY 2013)	
Total Vehicle Population	11,296,609	MY13 Vehicle Population	504,562
Vehicle Population in DACs	3,324,206	MY13 Vehicle Population in DACs	129,225
Proportion DAC	29.43%	Proportion DAC	25.61%

Carl Moyer Impacts

Should the measure be triggered in the South Coast Air Basin, the potential funds lost by year is listed below in Table 35. Based on statewide cost effectiveness and historical allocations to each local air district, the loss in potential emission reduction benefits in the South Coast Air Basin if the Measure is triggered is shown in Table 36.

Table 35. South Coast 8 MYO Smog Abatement Fees

Standard	Attainment/RFP Year	Potential Dollars
75 ppb 8-hour Ozone	2029	\$ 11,273,782
70 ppb 8-hour Ozone	2035	\$ 11,195,217
12 µg/m ³ Annual PM2.5	2030	\$ 11,122,871

Table 36. South Coast Carl Moyer Program Potential Foregone Emissions Reductions
(reductions calculated on annual planning inventory consistent with Moyer Program cost-effectiveness)

Standard	Attainment/RFP Year	NOx (tpd)
75 ppb 8-hour Ozone	2029	0.024
70 ppb 8-hour Ozone	2035	0.024
12 µg/m ³ Annual PM2.5	2030	0.024

H. Ventura County

The Measure complements local air district efforts to meet contingency measure requirements for the 70 ppb 8-hour ozone standard. The required amount of emission reductions from contingency measures, or OYW of progress based on the draft guidance, is shown in Table 37.

Table 37. Ventura County OYW of Progress
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx (tpd)	ROG (tpd)
70 ppb 8-hour Ozone	2026	0.48	0.20

Table 38 documents the emission reductions that occur after the attainment year due to implementation of the Measure if triggered.

Table 38. Ventura County Potential Reductions from Measure
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx Benefits (tpd)	ROG Benefits (tpd)
70 ppb 8-hour Ozone	2026	0.013	0.005

Equity Impacts

Table 39 documents the potential impact of the Measure on DACs as identified in [CalEnviroScreen 4.0](#) in Ventura County. The proportion of vehicles that are registered in DACs and would be impacted if the Measure is triggered is proportional to the general population of all vehicles registered in DACs overall, about 3 percent. There is not expected to be a disproportionate impact on disadvantaged communities, should the measure be triggered.

Table 39. Ventura County Vehicle Populations
(vehicle populations calculated from EMFAC2021 Fleet Database)

All Vehicles		8 MYO Vehicles (MY 2013)	
Total Vehicle Population	661,147	MY13 Vehicle Population	29,970
Vehicle Population in DACs	22,466	MY13 Vehicle Population in DACs	899
Proportion DAC	3.40%	Proportion DAC	3.00%

Carl Moyer Impacts

Should the Measure be triggered in Ventura County, the potential funds lost by year is listed below in Table 40. Based on statewide cost effectiveness and historical allocations to each local air district, the loss in potential emission reduction benefits in Ventura County if the Measure is triggered is shown in Table 41.

Table 40. Ventura County 8 MYO Smog Abatement Fees

Standard	Attainment Year	Potential Dollars
70 ppb 8-hour Ozone	2026	\$ 459,328

Table 41. Ventura County Carl Moyer Program Potential Foregone Emissions Reductions

(reductions calculated on annual planning inventory consistent with Moyer Program cost-effectiveness)

Standard	Attainment Year	NOx (tpd)
70 ppb 8-hour Ozone	2026	0.00008

I. West Mojave Desert

The Measure complements local air districts efforts to meet contingency measure requirements for the 75 ppb and 70 ppb 8-hour ozone standards. The required amount of emission reductions from contingency measures, or OYW of progress based on the draft guidance, is shown in Table 42.

Table 42. West Mojave Desert OYW of Progress
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx (tpd)	ROG (tpd)
75 ppb 8-hour Ozone	2026	1.50	0.39
70 ppb 8-hour Ozone	2032	1.18	0.35

Table 43 documents the emission reductions that occur after the attainment year due to implementation of the Measure if triggered.

Table 43. West Mojave Desert Potential Reductions from Measure
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx Benefits (tpd)	ROG Benefits (tpd)
75 ppb 8-hour Ozone	2026	0.021	0.009
70 ppb 8-hour Ozone	2032	0.018	0.006

Equity Impacts

Table 44 documents the potential impact of the Measure on DACs as identified in *CalEnviroScreen 4.0* in the West Mojave Desert. The proportion of vehicles that are registered in DACs and would be impacted if the Measure is triggered is proportional to the general population of all vehicles registered in DACs overall, about 8.5 percent. There is not expected to be a disproportionate impact on disadvantaged communities, should the measure be triggered.

Table 44. West Mojave Desert Vehicle Populations
(vehicle populations calculated from EMFAC2021 Fleet Database)

All Vehicles	8 MYO Vehicles (MY 2013)		
Total Vehicle Population	665,512	MY13 Vehicle Population	23,721
Vehicle Population in DACs	56,624	MY13 Vehicle Population in DACs	2,047
Proportion DAC	8.5%	Proportion DAC	8.6%

Carl Moyer Impacts

Should the measure be triggered in West Mojave Desert, the potential funds lost by year is listed below in Table 45. Based on statewide cost effectiveness and historical allocations to each local air district, the loss in potential emission reduction benefits in West Mojave Desert if the Measure is triggered is shown in Table 46.

Table 45. West Mojave Desert 8 MYO Smog Abatement Fees

Standard	Attainment Year	Potential Dollars
75 ppb 8-hour Ozone	2026	\$ 746,890
70 ppb 8-hour Ozone	2032	\$ 752,076

Table 46. West Mojave Desert Carl Moyer Program Potential Foregone Emissions Reductions

(reductions calculated on annual planning inventory consistent with Moyer Program cost-effectiveness)

Standard	Attainment Year	NOx (tpd)
75 ppb 8-hour Ozone	2026	0.00006
70 ppb 8-hour Ozone	2032	0.00006

J. Western Nevada County

The Measure complements local air district efforts to meet contingency measure requirements for the 70 ppb 8-hour ozone standard. The required amount of emission reductions from contingency measures, or OYW of progress based on the draft guidance, is shown in Table 47.

Table 47. Western Nevada County OYW of Progress

(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx (tpd)	ROG (tpd)
70 ppb 8-hour Ozone	2026	0.09	0.08

Table 48 documents the emission reductions that occur after the attainment year due to implementation of the Measure if triggered.

Table 48. Western Nevada County Potential Reductions from Measure
(reductions calculated on summer planning inventory)

Standard	Attainment Year	NOx Benefits (tpd)	ROG Benefits (tpd)
70 ppb 8-hour Ozone	2026	0.002	0.001

Equity Impacts

Per scores in *CalEnviroScreen 4.0*, there is only one vehicle registered in a DAC within the Western Nevada County nonattainment area. There is not expected to be a disproportionate impact on disadvantaged communities, should the measure be triggered.

Carl Moyer Impacts

Should the Measure be triggered in Western Nevada County, the potential funds lost by year is listed below in Table 49. Based on district allocations of Moyer Program funds per H&SC §44299.2, Northern Sierra Air Quality Management District, the local air district for Western Nevada County, receives \$200,000 regardless of the funding available statewide. Thus, there will be no emissions disbenefit from a decrease in Moyer Funds in Western Nevada County if the measure is triggered, shown in Table 50.

Table 49. Western Nevada County 8 MYO Smog Abatement Fees

Standard	Attainment Year	Potential Dollars
70 ppb 8-hour Ozone	2026	\$ 79,262

Table 50. Western Nevada County Carl Moyer Program Potential Foregone Emissions Reductions

(reductions calculated on annual planning inventory consistent with Moyer Program cost-effectiveness)

Standard	Attainment Year	NOx Benefits (tpd)
70 ppb 8-hour Ozone	2026	0.000

Section 6. Staff Recommendation

CARB staff recommends the Board:

1. Adopt the Measure addressing contingency measure requirements for the applicable nonattainment areas and standards as listed in Table 1;
2. Approve submittal into the California SIP of H&SC sections 44011(a)(4)(A) and (B);
and
3. Direct the Executive Officer to submit the Measure, and H&SC sections 44011(a)(4)(A) and (B), to U.S. EPA as a revision to the California SIP.

Appendix A: Infeasibility Analysis

Infeasibility Analysis

Measure Analysis

CARB staff analyzed CARB's suite of control measures for all sources under CARB authority to identify potential contingency measure options. CARB control measures reduce NO_x, ROG and PM_{2.5} emissions. CARB currently has programs in place or under development for most of these sources and have evaluated a variety of regulatory mechanisms within existing and new programs for potential contingency triggers.

Criteria for Contingency Feasibility

CARB staff has evaluated potential options for a contingency measure within each of CARB's regulations (Table 51) using three criteria to determine its feasibility given the contingency measure requirements under the Act, recent court decisions and draft guidance. First, each measure was evaluated on whether it could be implemented within 30 days of being triggered and achieve the necessary reductions within 1-2 years of being triggered. Second, the technological feasibility of each option was considered to assess whether the measure would be technically feasible to implement. Measure requirements may be unavailable or cost prohibitive to implement, especially in the time frame required for contingency. Lastly, CARB staff evaluated whether the timeline for adoption would be compatible with the current consent decree deadline of September 30, 2024²¹. The contingency measure must be adopted by CARB and submitted to and fully approved by U.S. EPA by this date to resolve a San Joaquin Valley PM_{2.5} Federal Implementation Plan (FIP) published by U.S. EPA on August 7, 2023. A CARB statewide measure needing a full regulatory process typically requires five years for development and adoption by CARB and additional time for U.S. EPA's approval process including obtaining an Act waiver or authorization.

Challenges for CARB Measures

Based on CARB's feasibility analysis, there are a few common components of CARB regulations that limit the options for contingency measures. All new engine and emissions standards set by CARB require waivers or authorizations from federal preemption under the Clean Air Act; this process can take anywhere from months to several years, and then U.S. EPA must also act to approve the regulation into the California SIP. Further, CARB regulations that require fleet turnover or new engine standards require a long lead time for implementation. Engine manufacturers would need lead time to design, plan, certify, manufacture, and deploy cleaner engines to meet a new or accelerated engine standard, while fleet regulations necessitate that manufacturing is mature so that there is enough supply available to meet that demand. On the consumer side, additional time would be required for procurement implementation and there may be additional infrastructure

²¹ See 87 Fed.Reg. 71631 (Nov. 23, 2022).

needed to meet new requirements. Thus, measures that require fleet turnover or new engine standards are not appropriate to be used as a triggered contingency measure.

CARB regulations are also technology-forcing, which makes it difficult to amend regulations or pull compliance timelines forward with only 1-2 years notice as industry needs time to plan, develop, and implement these new technologies. It would be infeasible to require industry to turn over their fleets within one year if the technology is not readily available at a reasonable cost. CARB regulations are also the most stringent air quality control requirements in the country, so there are few opportunities to require additional stringency. CARB is driving sources under our authority to zero-emission everywhere feasible to ensure attainment of air quality standards across the State, and to support near-source toxics reductions and climate targets. However, the zero-emissions targets also eliminates opportunities for contingency.

Lastly, many of CARB’s options for a contingency measure would require a full rulemaking process and would not be adopted by CARB, received an Act waiver/authorization, and approved by U.S. EPA within the timeframe specified, making many of the options infeasible. Based on the U.S. EPA FIP timeline, CARB staff would need to find a measure that could realistically be adopted and approved by U.S. EPA within the next year. However, most CARB measures must go through a regulatory process for adoption that can take approximately five years from start to finish.

Table 51. Assessment of Potential CARB Contingency Measures

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
Light-Duty Passenger Vehicles and Light-Duty Trucks	Advanced Clean Cars Program (I and II), including the Zero Emission Vehicle (ZEV) Regulation	Amended 8/25/22 Requires 100% ZEV new vehicle sales by 2035 and increasingly stringent standards for gasoline cars and passenger trucks.	Pulling compliance timelines forward. Setting more stringent standards.	No; standards need years of lead time to be developed, certified, and implemented; infeasible to implement new standard or manufacturing requirements within 60 days and achieve reductions within one year.	No; current standards and requirements are technology forcing and most stringent in the nation, including a zero-emission requirement. Further stringency would not be feasible.
	Clean Miles Standard	Adopted 5/20/21 Set eVMT (electric miles traveled) and greenhouse gas (GHG) requirements for Transportation Network Companies (TNCs).	Pulling forward timeline to achieve 100% eVMT.	No; standards and fleet requirements need lead time to be implemented; infeasible to implement new standard or purchasing requirements within 60 days and achieve reductions within one year.	No; zero-emissions technology requirement is most stringent standard; TNCs are only a small portion of on-road vehicles, depending on area, may not achieve many reductions.

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
	On Board Diagnostics II (OBD)	Amended July 22, 2021 Required updates to program to address cold start emissions and diesel particulate matter (PM) monitoring. Many of the regulatory changes included phase-ins that are not 100% until 2027.	Removing or pulling phase-in timelines forward. Setting more stringent OBD requirements.	No; OBD requirements need significant lead time to be developed, adopted, and implemented; infeasible to fully implement new requirements within 60 days and achieve similar reductions within one year.	No; the OBD requirements require sufficient lead time to implement with significant development time needed for hardware/ software changes and verification/validation testing.
	California Smog Check Program	Amended 2010 via legislation Smog Check Program enhancements, including new technologies and test methods.	Change the exemptions from 8 to 7 and/or 6 model years. Require annual Smog Check. Require annual Smog Check for only high mileage vehicles.	Yes (changing the exemptions) because it is not a regulatory change; No (other options); Smog Check requirements need significant lead time to be developed, adopted, and implemented; infeasible to fully implement new requirements within 60 days and achieve similar reductions within one year.	Yes (changing the exemptions) and would not have disproportionate impacts; Yes (other options), but would disproportionately impact low-income populations and disadvantaged communities.
	Reformulated Gasoline	Amended May 2003 Required removal of methyl tert-butyl ether (MTBE) and included refinery limits and cap limits.	Require more stringent standards. Change cap limits and refinery limits.	No; fuel standards need years of lead time to be developed, certified, and implemented; infeasible to implement new standard within 60 days and achieve reductions within one year.	No; current standards and requirements are some of most stringent in the world; not feasible to require further stringency of specifications and develop or manufacture in a compressed timeline.
Motorcycles	On-Road Motorcycle Regulation*	Proposed hearing: 2023 May require exhaust emissions standards (harmonize with European standards), evaporative emissions standards, and Zero Emission Motorcycle sales thresholds.	Pulling compliance timelines forward. Require more stringent emissions standards.	No; standards need years of lead time to be developed, certified, and implemented; infeasible to implement new standard within 60 days and achieve reductions within one year.	No; Any increase to the stringency of proposed standards would require an additional 1 to 2 years of lead time for 1) CARB staff to evaluate feasibility, and 2) manufacturers to develop and certify compliant motorcycles.

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
Medium Duty-Trucks	Clean Diesel Fuel	Amended 2013 Established more stringent standards for diesel fuel.	Require more stringent fuel standard.	No; fuel standards need years of lead time to be developed, certified, and implemented; infeasible to implement new standard within 60 days and achieve reductions within one year.	No; infeasible to require more stringent standards in compressed timeline.
	Heavy-Duty Engine and Vehicle Omnibus Regulation	Adopted 8/27/20 Established new low NOx and lower PM tailpipe standards and lengthened the useful life and emissions warranty of in-use heavy-duty diesel engines.	Require more stringent standard, make optional idling standard required. Update testing requirements or corrective action procedures.	No; standards need years of lead time to be implemented; infeasible to implement new sales requirement within 60 days and achieve reductions within one year.	No; infeasible to require more stringent standards in compressed timeline.
	Advanced Clean Trucks Regulation	Adopted 6/25/20 Established manufacturer zero-emission truck sales requirement and company and fleet reporting.	Move up timeline for ZEV sales requirement. Reduce threshold for compliance.	No; manufacturer sales requirements need years of lead time to be implemented; infeasible to implement new sales requirement within 60 days. Sales requirement would not happen immediately or within one year of trigger; infeasible to achieve reductions within one year.	No; current sales requirement is technology forcing and most stringent in the nation.
	Advanced Clean Cars Program (I and II), including the Zero Emission Vehicle Regulation	Amended 8/25/22 Requires 100% ZEV new vehicle sales by 2035 and increasingly stringent standards for gasoline cars and passenger trucks.	Pulling compliance timelines forward. Setting more stringent standards.	No; standards need years of lead time to be developed, certified, and implemented; infeasible to implement new standard or manufacturing requirements within 60 days and achieve reductions within one year.	No; current standards and requirements are technology forcing and most stringent in the nation, including a zero-emission requirement. Further stringency would not be feasible.

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
	Advanced Clean Fleets Regulation	Adopted 4/27/23 Establishes zero-emission purchasing requirements for medium- and heavy-duty vehicle fleets (including state and local agencies, and drayage fleets, high priority, and federal fleets); would also require 100% zero-emission new vehicle sales starting 2040.	Pulling compliance timelines forward. Reduce threshold for compliance.	No; fleet requirements need years of lead time to be implemented; infeasible to implement new purchasing requirements within 60 days. Purchasing requirement and turnover would not happen immediately; infeasible to achieve reductions within one year. Because of near term compliance deadlines, moving forward deadlines would not result in many reductions.	No; current fleet requirements are technology forcing and most stringent in the nation, eventually requiring zero-emissions only.
Heavy-Duty Trucks	Heavy-Duty Low NOx Engine Standards	See Omnibus.	More stringent standards were set with Omnibus Regulation.	No; engine standards need years of lead time to be developed, certified, and implemented; infeasible to implement new standard or purchasing requirements within 60 days and achieve reductions within one year.	No; infeasible to require more stringent technology forcing standards in compressed timeline if technology/ alternatives are not widely available.
	Optional Low-NOx Standards for Heavy-Duty Diesel Engines	Amended 8/27/20 as a part of Omnibus to lower the optional low NOx emission standards for on-road heavy-duty engines.	Make option required.	No; engine standards need years of lead time to be developed, certified, and implemented; infeasible to implement new standard or purchasing requirements within 60 days and achieve reductions within one year.	No; infeasible to require more stringent technology forcing standards in compressed timeline if technology/ alternatives are not widely available.
	Heavy-Duty Inspection and Maintenance Regulation	Adopted 12/9/21 Requires periodic vehicle emissions testing and reporting on nearly all heavy-duty vehicles operating in California.	Increase frequency of testing.	No; increased I/M requirements need significant lead time to be developed, adopted, and implemented; infeasible to fully implement new requirements within 60 days and achieve similar reductions within one year.	Yes, but costs would disproportionately impact small businesses and low-income populations.

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
	Heavy-Duty OBD	Amended July 22, 2021 Required updates to program to address cold start emissions and diesel PM monitoring. Many of the regulatory changes included phase-ins that are not 100% until 2027.	Removing or pulling phase-in timelines forward. Setting more stringent OBD requirements.	No; OBD requirements need significant lead time to be developed, adopted, and implemented; infeasible to fully implement new requirements within 60 days and achieve similar reductions within one year.	No; the OBD requirements require sufficient lead time to implement with significant development time needed for hardware/ software changes and verification/validation testing.
	Heavy-Duty Engine and Vehicle Omnibus Regulation	Adopted 8/27/20 Established new low NOx and lower PM Standards and lengthened the useful life and emissions warranty of in-use heavy-duty diesel engines.	Require more stringent standard, make optional idling standard required. Update testing requirements or corrective action procedures.	No; standards need years of lead time to be developed, certified, and implemented; infeasible to implement new standard or sales requirements within 60 days and achieve reductions within one year.	No; infeasible to require more stringent technology forcing standards in compressed timeline.
	Cleaner In-Use Heavy-Duty Trucks (Truck and Bus Regulation)	Adopted 12/17/10 Requires heavy-duty diesel vehicles that operate in California to reduce exhaust emissions. By January 1, 2023, nearly all trucks and buses will be required to have 2010 or newer model year engines to reduce PM and NOx.	None	-	-
	Zero-Emission Powertrain Certification Regulation	Adopted 12/6/19 Establishes certification requirements for zero-emission powertrains.	None	-	-

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
	Advanced Clean Trucks Regulation	Adopted 6/25/20 Established manufacturer zero-emission truck sales requirement and company and fleet reporting.	Move up timeline for ZEV sales requirement. Reduce threshold for compliance.	No; manufacturer sales requirements need years of lead time to be implemented; infeasible to implement new sales requirement within 60 days. Sales requirement would not happen immediately or within one year of trigger; infeasible to achieve reductions within one year.	No; current sales requirement is technology forcing and most stringent in the nation.
	Advanced Clean Fleets Regulation	Adopted 4/27/23 Establishes zero-emission purchasing requirements for medium- and heavy-duty vehicle fleets (including state and local agencies, and drayage fleets, high priority, and federal fleets); would also require 100% zero-emission new vehicle sales starting 2040.	Pulling compliance timelines forward. Reduce threshold for compliance.	No; fleet requirements need years of lead time to be implemented; infeasible to implement new purchasing requirements within 60 days. Purchasing requirement and turnover would not happen immediately; infeasible to achieve reductions within one year. Because of near term compliance deadlines, moving forward deadlines would not result in many reductions.	No; current fleet requirements are technology forcing and most stringent in the nation, eventually requiring zero-emissions only.
Heavy-Duty Urban Buses	Innovative Clean Transit	Adopted 12/14/2018 Requires all public transit agencies to gradually transition to a 100% zero-emission bus fleet.	Move compliance timelines forward. Remove various exemptions or compliance options.	No; fleet requirements need years of lead time to be implemented; infeasible to implement new purchasing requirements within 60 days. Purchasing requirement and turnover would not happen immediately; infeasible to achieve reductions within one year.	No; current requirements are technology forcing and most stringent (zero-emission requirement). Further stringency is not possible; expediting timelines would not be feasible.

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
	Advanced Clean Fleets Regulation	Adopted 4/27/23 Establishes zero-emission purchasing requirements for medium- and heavy-duty vehicle fleets (including state and local agencies, and drayage fleets, high priority, and federal fleets); would also require 100% zero-emission new vehicle sales starting 2040.	Pulling compliance timelines forward. Reduce threshold for compliance.	No; fleet requirements need years of lead time to be implemented; infeasible to implement new purchasing requirements within 60 days. Purchasing requirement and turnover would not happen immediately; infeasible to achieve reductions within one year. Because of near term compliance deadlines, moving forward deadlines would not result in many reductions.	No; current fleet requirements are technology forcing and most stringent in the nation, eventually requiring zero-emissions only.
Other Buses, Other Buses - Motor Coach	Zero-Emission Airport Shuttle Regulation	Adopted 6/27/19 Requires airport shuttles to transition to zero-emission fleet.	Pull compliance timelines forward. Remove reserve airport shuttle exemption.	No; fleet requirements need years of lead time to be implemented; infeasible to implement new purchasing requirements within 60 days. Purchasing requirement and turnover would not happen immediately; infeasible to achieve reductions within one year.	No; current requirements are technology forcing and most stringent (zero-emission requirement). Further stringency is not possible. Not many shuttles in area, would not achieve many reductions.
	Advanced Clean Fleets Regulation	Adopted 4/27/23 Establishes zero-emission purchasing requirements for medium- and heavy-duty vehicle fleets (including state and local agencies, and drayage fleets, high priority, and federal fleets); would also require 100% zero-emission new vehicle sales starting 2040.	Pulling compliance timelines forward. Reduce threshold for compliance.	No; fleet requirements need years of lead time to be implemented; infeasible to implement new purchasing requirements within 60 days. Purchasing requirement and turnover would not happen immediately; infeasible to achieve reductions within one year. Because of near term compliance deadlines, moving forward deadlines would not result in many reductions.	No; current fleet requirements are technology forcing and most stringent in the nation, eventually requiring zero-emissions only.

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
Commercial Harbor Craft	Commercial Harbor Craft (CHC) Regulation	Amended 3/24/22 Established more stringent standards, all CHC required to use renewable diesel, expanded requirements, and mandates zero-emission and advanced technologies.	Set more stringent standards. Pull compliance timelines forward.	No; Technology requirements and standards need years of lead time to be developed, certified, and implemented; infeasible to implement new standard or requirements within 60 days and achieve reductions within one year.	No; standards set are technology forcing and most stringent; not technologically feasible to require increased stringency in compressed timeline.
Recreational Boats	Spark-Ignition Marine Engine Standards*	Proposed hearing: 2029 Would establish catalyst-based emission standards and percentage of zero-emission technologies for certain applications.	Set more stringent standard.	No; standards need years of lead time to be developed, certified, and implemented; infeasible to implement new standard within 60 days and achieve reductions within one year.	No; standards being set will be most stringent feasible, including zero-emission requirement); would not save a more stringent standard for contingency
Transport Refrigeration Units	Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRUs) (Parts I and II*)	Amended 2/24/22 (Part I), Part II proposed CARB hearing in 2025 Requires diesel-powered truck TRUs to transition to zero-emission, PM emission standard for newly manufactured non-truck TRUs. Part II would establish zero-emission options for non-truck TRUs.	Set more stringent standards. Pull compliance timelines forward	No; standards and fleet requirements need years of lead time to be implemented; infeasible to implement new standard or purchasing requirements within 60 days and achieve reductions within one year.	No; current requirements are technology forcing and most stringent (zero-emission requirement). Further stringency is not possible; expediting timelines would not be feasible; would not save a more stringent standard for contingency
Industrial Equipment	Large Spark-Ignition (LSI) Engine Fleet Requirements Regulation	Amended July 2016 Extended recordkeeping requirements, established labeling, initial reporting, and annual reporting requirements.	Set more stringent performance standards	No; standards and fleet requirements need years of lead time to be implemented; infeasible to implement new standard or purchasing requirements within 60 days and achieve reductions within one year.	No; Infeasible to require further stringency within one year given timeline for technology development and certification. See Zero-Emission Forklifts below.

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
	Off-Road Regulation	Amended 11/17/22 Requires phase out of oldest and highest-emitting engines, restricts addition of Tier 3 and 4i engines, mandates renewable diesel for all fleets.	Pull phase-out or compliance timelines forward	No; fleet requirements need years of lead time to be implemented; infeasible to implement new purchasing and turnover requirements within 60 days and achieve reductions within one year.	No; Infeasible to require further stringency within one year given timeline for technology development and certification.
	Zero-Emission Forklifts*	Proposed CARB hearing in 2023. Would require model-year phase-out and reporting requirements and manufacturer sales restrictions.	Pull phase-out or compliance timelines forward	No; standards requirements need years of lead time to be developed, certified, and implemented; infeasible to implement new standard within 60 days and achieve reductions within one year.	No; standards being set will be technology forcing and most stringent feasible, including zero-emission requirement; would not save a more stringent standard for contingency
	Off-Road Zero-Emission Targeted Manufacturer Rule*	Proposed CARB hearing in 2027. Would require manufacturers of off-road equipment and/or engines to produce for sale zero-emission equipment and/or powertrains as a percentage of their annual statewide sales volume.	Pull forward compliance timelines or increase percentage sales requirements	No; Manufacturing and sales requirements need years of lead time to be implemented; infeasible to pull forward standards within 60 days and achieve reductions within one year.	No; standards being set will be technology forcing and most stringent feasible, including zero-emission requirement; would not save a more stringent standard for contingency
Construction and Mining	Off-Road Zero-Emission Targeted Manufacturer Rule*	Proposed CARB hearing in 2027. Would require manufacturers of off-road equipment and/or engines to produce for sale zero-emission equipment and/or powertrains as a percentage of their annual statewide sales volume.	Pull forward compliance timelines or increase percentage sales requirements	No; Manufacturing and sales requirements need years of lead time to be implemented; infeasible to pull forward standards within 60 days and achieve reductions within one year.	No; standards being set will be technology forcing and most stringent feasible, including zero-emission requirement; would not save a more stringent standard for contingency

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
	Off-Road Regulation	Amended 11/17/22 Requires phase out of oldest and highest-emitting engines, restricts addition of Tier 3 and 4i engines, mandates renewable diesel for all fleets.	Pull phase-out or compliance timelines forward	No; fleet requirements need years of lead time to be implemented; infeasible to implement new purchasing and turnover requirements within 60 days and achieve reductions within one year.	No; Infeasible to require further stringency within one year given timeline for technology development and certification.
Airport Ground Support Equipment	Zero-Emission Forklifts*	Proposed CARB hearing in 2023. Would require model-year phase-out and reporting requirements and manufacturer sales restrictions.	Pull phase-out or compliance timelines forward	No; standards requirements need years of lead time to be developed, certified, and implemented; infeasible to implement new standard within 60 days and achieve reductions within one year.	No; standards being set will be technology forcing and most stringent feasible, including zero-emission requirement; would not save a more stringent standard for contingency
	Large Spark-Ignition (LSI) Engine Fleet Requirements Regulation	Amended July 2016 Extended recordkeeping requirements, established labeling, initial reporting, and annual reporting requirements.	Set more stringent performance standards	No; standards and fleet requirements need years of lead time to be implemented; infeasible to implement new standard or purchasing requirements within 60 days and achieve reductions within one year.	No; Infeasible to require further stringency within one year given timeline for technology development and certification.
	Off-Road Regulation	Amended 11/17/22. Requires phase out of oldest and highest-emitting engines, restricts addition of Tier 3 and 4i engines, mandates renewable diesel for all fleets.	Pull phase-out or compliance timelines forward	No; fleet requirements need years of lead time to be implemented; infeasible to implement new purchasing and turnover requirements within 60 days and achieve reductions within one year.	No; Infeasible to require further stringency within one year given timeline for technology development and certification.

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
Port Operations and Rail Operations	Cargo Handling Equipment Regulation*	Proposed CARB hearing in 2025. Amendments to transition to zero-emission technology.	None	No; Standards requirements need years of lead time to be developed, certified, and implemented; infeasible to implement new standard within 60 days and achieve reductions within one year. Fully implemented in 2017 and relies on other engine standards, making it infeasible to trigger without regulatory process changing other standards.	No; Considering regulation to move towards zero-emissions. Currently assessing availability of technologies.
	Off-Road Zero-Emission Targeted Manufacturer Rule*	Proposed CARB hearing in 2027. Would require manufacturers of off-road equipment and/or engines to produce for sale zero-emission equipment and/or powertrains as a percentage of their annual statewide sales volume.	Pull forward compliance timelines or increase percentage sales requirements	No; Manufacturing and sales requirements need years of lead time to be implemented; infeasible to pull forward standards within 60 days and achieve reductions within one year.	No; standards being set will be technology forcing and most stringent feasible, including zero-emission requirement; would not save a more stringent standard for contingency
Lawn and Garden	Small Off-Road Engine (SORE) Regulation	Amended 12/9/21 Requires most newly manufactured SORE to meet emission standards of zero starting in model year (MY) 2024.	Move up implementation on deadlines	No; Standards requirements need years of lead time to be implemented; infeasible to pull forward standards within 60 days. Purchasing would not happen immediately or within one year of trigger; infeasible to achieve reductions within one year.	No; current standards and requirements are a technology forcing zero-emission certification requirement. Further stringency would not be possible.

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
Ocean-Going Vessels	At Berth Regulation	Amended 8/27/20 Expands requirements to roll-on roll-off vessels and tankers, smaller fleets, and new ports and terminals.	Remove option to use alternate control technology or set more stringent alternate control technology requirements. Reduce threshold for 'low activity terminals' exemption.	No; control technology requirements need years of lead time to be implemented; infeasible to pull forward standards within 60 days and achieve reductions within one year.	No; regulation already requires use of shore power or alternate control technology for every visit.
	Ocean-going Vessel Fuel Regulation	Amended 2011 Extended clean fuel zone and included exemption window.	Set more stringent requirements	No; fleet requirements need years of lead time to be implemented; infeasible to implement new purchasing and turnover requirements within 60 days and achieve reductions within one year.	No; not feasible to require further stringency in a compressed timeline.
Locomotives	In-Use Locomotive Regulation	Adopted 4/27/23, Requires each operator to deposit funds into spending account for purchasing cleaner locomotive technology, sets idling limits, and requires registration and reporting. Starting in 2030, only locomotives less than 23 years old can operate in the state. Newly built passenger, switch, and industrial locomotives must operate in a zero emission configuration, and in 2035 newly built freight line haul locomotives.	Move up implementation deadlines. Set stricter idling requirements.	No; Fleet requirements need years of lead time to be implemented; infeasible to pull forward standards within 60 days and reductions within one year. No, for idling requirements.	No; current standards and requirements are technology forcing, include a zero-emission requirement. Further stringency would not be possible. No, for idling requirements, CARB is committing to re-evaluate the requirement during next assessment.

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
Areawide Sources	Zero-Emission Standard for Space and Water Heaters	Proposed CARB hearing in 2025. Beginning in 2030, 100% of sales of new space heaters and water heaters would need to meet a zero-emission standard.	Set trigger for more stringent standards or timelines.	No; Standards requirements need years of lead time to be implemented; infeasible to pull forward standards within 60 days. Purchasing would not happen immediately or within one year of trigger; infeasible to achieve reductions within one year.	No; current standards and requirements are a technology forcing zero-emission certification requirement. Further stringency would not be possible.

There were few options identified for a contingency measure based on the infeasibility analysis. As previously stated, there are limitations to utilizing CARB regulations for contingency measures and CARB currently has programs in place or under development for most of these sources to reduce NO_x, ROG and PM_{2.5} emissions. However, the analysis did result in identifying the ability to utilize provisions within the Smog Check Program for a viable contingency measure, which is now being proposed.

**Appendix B:
Smog Check Contingency Measure Emissions Benefits
Methodology**

Smog Check Contingency Measure Emissions Benefits

Table 52. List of Non-Attainment Areas and Attainment Years

Standard	Area	Attainment Year
80 ppb 8-hour Ozone	San Joaquin	2023
75 ppb 8-hour Ozone	Sac Metro	2024
	Eastern Kern	2026
	West Mojave	2026
	San Diego	2026
	South Coast	2029
	Coachella Valley	2031
	SJV	2031
70 ppb 8-hour Ozone	Ventura	2026
	Western Nevada	2026
	Mariposa	2026
	Eastern Kern	2032
	Sacramento Metro	2032
	San Diego	2032
	West Mojave	2032
	South Coast	2035
	Coachella	2037
	SJV	2037
15 ug PM2.5	San Joaquin	2023
35 ug PM2.5	San Joaquin	2024
12 ug PM2.5	San Joaquin	2030
	South Coast	2030

Review Of Current Information

The Emission FACtor (EMFAC) model is California’s official emissions inventory model for on-road mobile sources. EMFAC2021 is the latest U.S. Environmental Protection Agency (U.S. EPA) approved version for use in California for State Implementation Plan (SIP) development and transportation conformity analysis²², and reflects the most recent emission and activity updates and newly adopted regulations at the time of its release. At the present time, almost the entire California vehicle fleet is subjected to the Smog Check Program and hence, in-use testing programs that inform emission rates in EMFAC2021 implicitly incorporate the emissions benefits of California’s Smog Check Program in the model output. In addition, EMFAC2021 does not have functionality to output emissions from the light-duty

²² <https://www.govinfo.gov/content/pkg/FR-2022-11-15/pdf/2022-24790.pdf>

fleet without the effects of Smog Check Program. However, an earlier version of the model, EMFAC2011, used a different modeling framework that allows users to estimate emissions impacts of the Smog Check based on user-defined program requirements specific to each NAA.²³

Unlike the latest version of the model, EMFAC2011 baseline outputs reflect emissions from a fleet without an I/M Program. Because California's Smog Check Program began in 1984, emissions data without an I/M program in EMFAC2011 were derived from U.S. EPA data collected on approximately 7,000 vehicles in Hammond, Illinois and Ann Arbor, Michigan in the 1990s before an I/M program was in effect.²⁴ CARB staff used these data for several versions of the model, up through EMFAC2011, to inform emission rates by vehicle technology group for a theoretical California fleet without an I/M program. Using data from CARB's longstanding Light-Duty Vehicle Surveillance Program (VSP), where vehicles failing the California Smog Check Program were tested before and after repairs, CARB staff adjusted baseline emission rates to reflect the benefits of having an I/M program based on requirements for each region in the State.

Approach

Since the Measure would change the current 8 model-year exemption to 7 model-years, CARB staff applied emission benefits of the change to the calendar year when vehicles would become 8 model-years old. Using this approach, all vehicles, regardless of when annual registration is due and the initial I/M Program inspections were performed during the year the vehicles turned 7 model-years old, will reflect the impacts of being initially subject to the I/M Program requirements for a full calendar year.

CARB staff used EMFAC2011 to derive the emissions impact of an I/M Program for each pollutant and vintage of vehicle newly becoming 8 model-years old in the attainment years listed in Table 52. The emissions impact is reflected as a ratio of emissions with no I/M Program relative to a baseline with an I/M program. As a fraction, this would be: (no-I/M) / (I/M), where ratios greater than one reflect the degree of emissions benefits of having an I/M program in place. CARB staff applied the ratios calculated using EMFAC2011 to the output from EMFAC2021²⁵ because the newest model represents the current California fleetwide emissions reflecting the current model year distribution, populations, accrual rates (miles driven per year), and emissions rates. The details of EMFAC2011 setup and run are provided in in the next section.

CARB staff applied the following equation:

²³ <https://www.federalregister.gov/documents/2013/03/06/2013-05245/official-release-of-emfac2011-motor-vehicle-emission-factor-model-for-use-in-the-state-of-california>

²⁴ <https://ww2.arb.ca.gov/sites/default/files/2023-03/emfac2000-ef.pdf>

²⁵ Downloaded from EMFAC2021 web database: <https://arb.ca.gov/emfac/emissions-inventory>

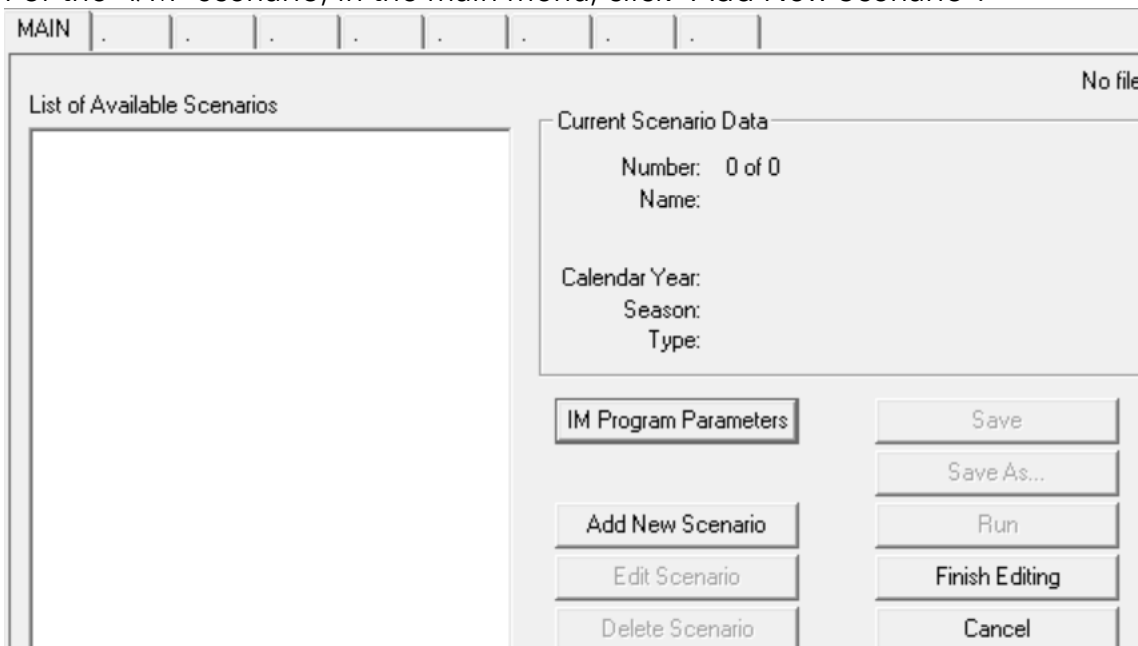
Benefits of removing 8-year exemption = Age 8 No-I/M emissions - Age 8 I/M emissions = (EMFAC2021 Age 8 Gasoline Vehicle Emissions²⁶ × EMFAC2011 Age 8 No-IM/IM Ratio²⁷) - EMFAC2021 Age 8 Gasoline Vehicle Emissions²⁶

For ozone nonattainment areas, the estimated benefits include NOx and ROG in tons per day for summer season. For PM_{2.5} nonattainment areas, because EMFAC2011 does not reflect benefits from tailpipe PM emissions from the Smog Check Program, the annual NOx and ROG emission benefits are included instead, as these are precursors to secondary PM_{2.5} formation in the atmosphere.

It should be noted that, some of CARB's recent regulations, including Advanced Clean Cars II (ACC II) and Advanced Clean Fleets (ACF) were finalized and adopted after release of EMFAC2021. Therefore, the emission benefits estimated for this Measure using EMFAC2021 do not reflect the impacts from these regulations.

Instructions For Configuring and Running EMFAC2011

1. For the "I/M" scenario, in the main menu, click "Add New Scenario".



2. Select "State", "Use Average" in "Step 1 - Geographic Area", select modeled calendar year(s) in "Step 2 - Calendar Years", Select "Summer" for ozone NAAs or "Annual" for PM NAAs in "Step 3 - Season or Month", then click "Next".

²⁶ Include all gasoline vehicle classes subject to California Smog Check Program

²⁷ Derived based on light-duty vehicle classes under 8,500 lbs. in EMFAC2011

Basic scenario data - Select Area, Calculation Method, Calendar Year(s), and Season

Step 1 - Geographic Area

Area Type: State

State

Air Basin

District

County

Step 2 - Calendar Years

Select

8 calendar years in the range 2023 to 2035 selected

Step 3 -- Season or Month

Summer

Calculation Method

By Sub-Area

Use Average

Cancel Next > Finish

- Click "Default Title" in "Step 4 - Scenario Title for Reports", select "All" in "Step 5 - Model Years", select "Modify" in "Step 6 - Vehicle Classes" and choose "PC/T1/T2/T3" from the pop-up window, select "Default" in "Step 7 - I/M Program schedule", then click "Next".

Input 1 Input 2 Mode and Output Tech/IM CYr Basis . . .

Basic scenario data - Select or Enter Scenario Title

Step 4 -- Scenario Title for Reports

Statewide totals Avg Summer 8 CYrs 2023 to 2035 Default Title Default Title

In Emfac Impact Rate reports, titles over 40 characters will be truncated!

Step 5 - Model Years

All model years selected

All

Modify

Step 6 - Vehicle Classes

MODIFIED: 4 of 21 vehicle classes selected

All

Modify

Step 7 - I/M Program Schedule

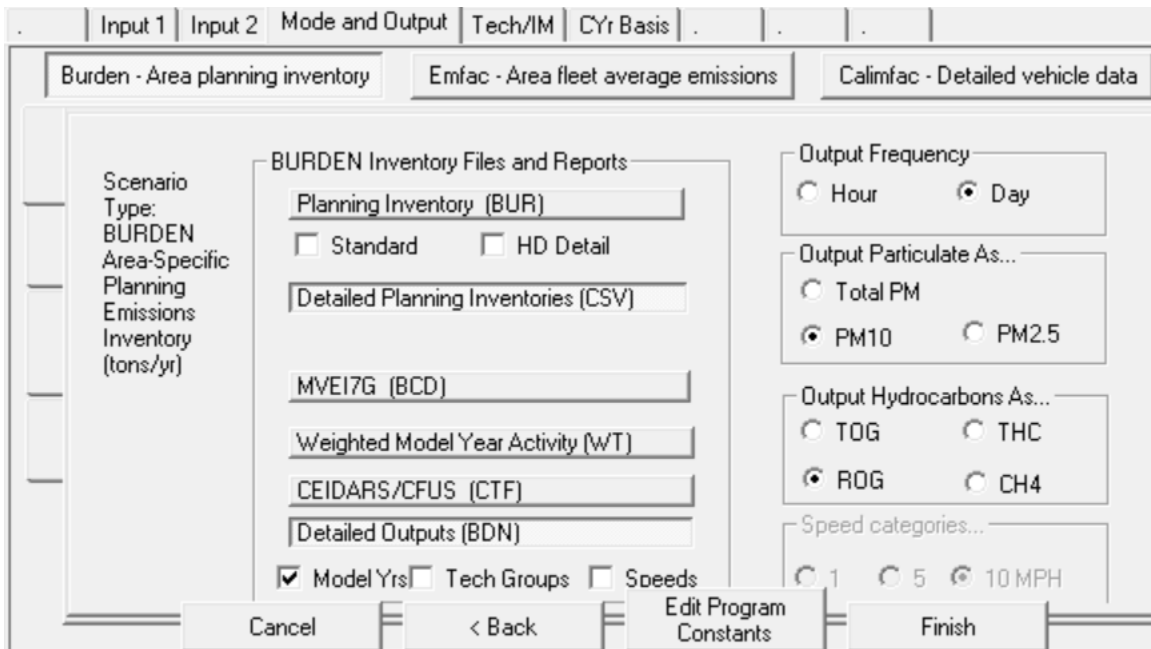
Standard I/M schedules

Default

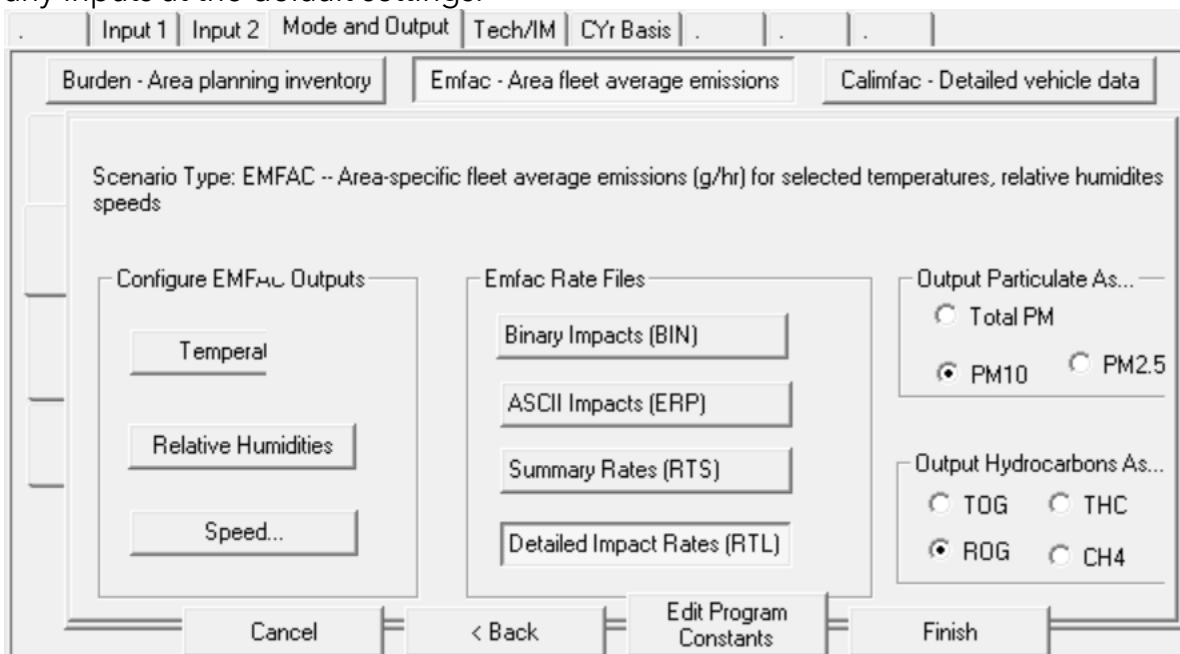
Modify

Cancel < Back Next > Finish

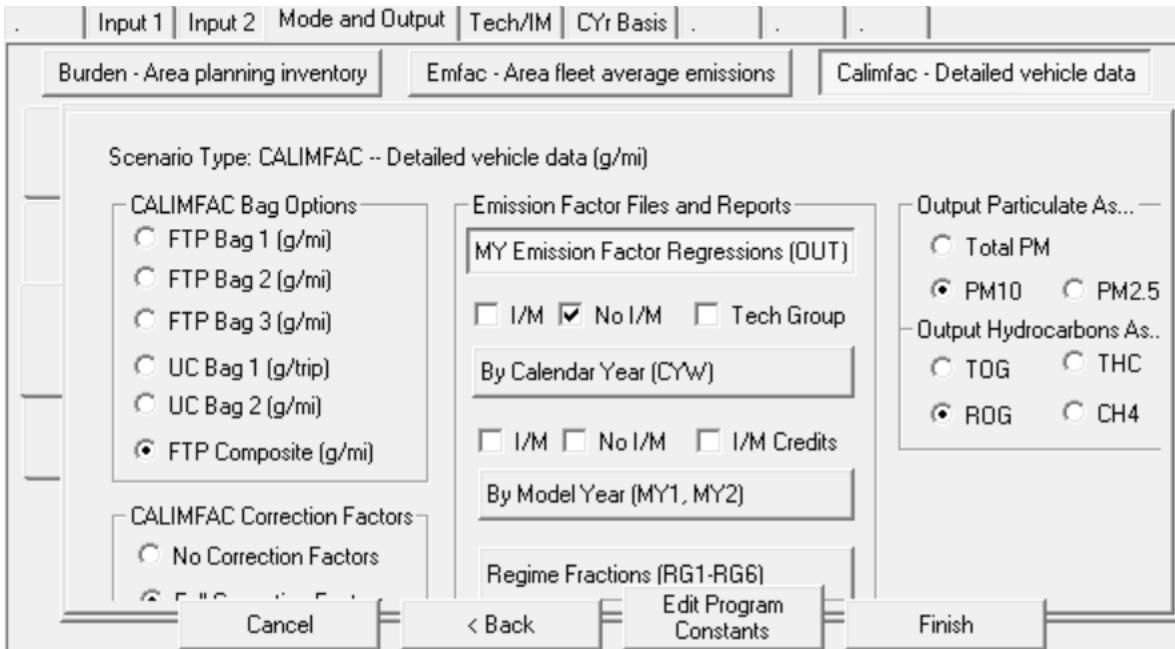
- In the tab "Burden - Area planning inventory", choose "Detailed Planning Inventories (CSV)" and click "Model Yrs". Select "Output Frequency" as "Day".



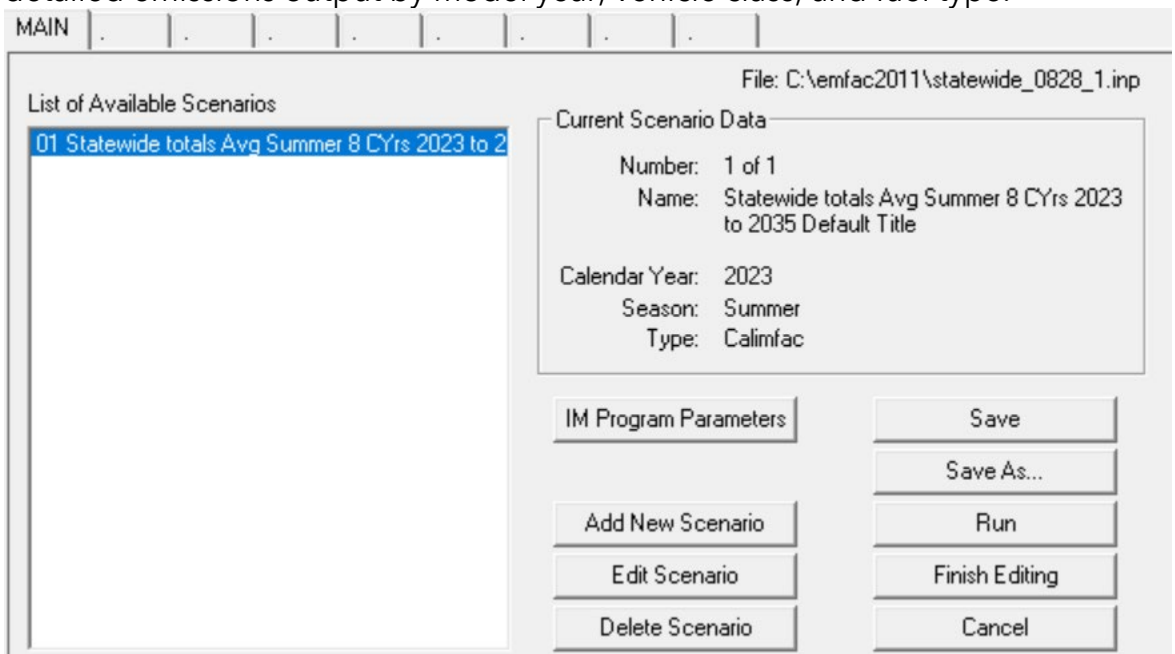
5. No need to change any inputs in tab "Emfac - Area fleet average emissions". Leave any inputs at the default settings.



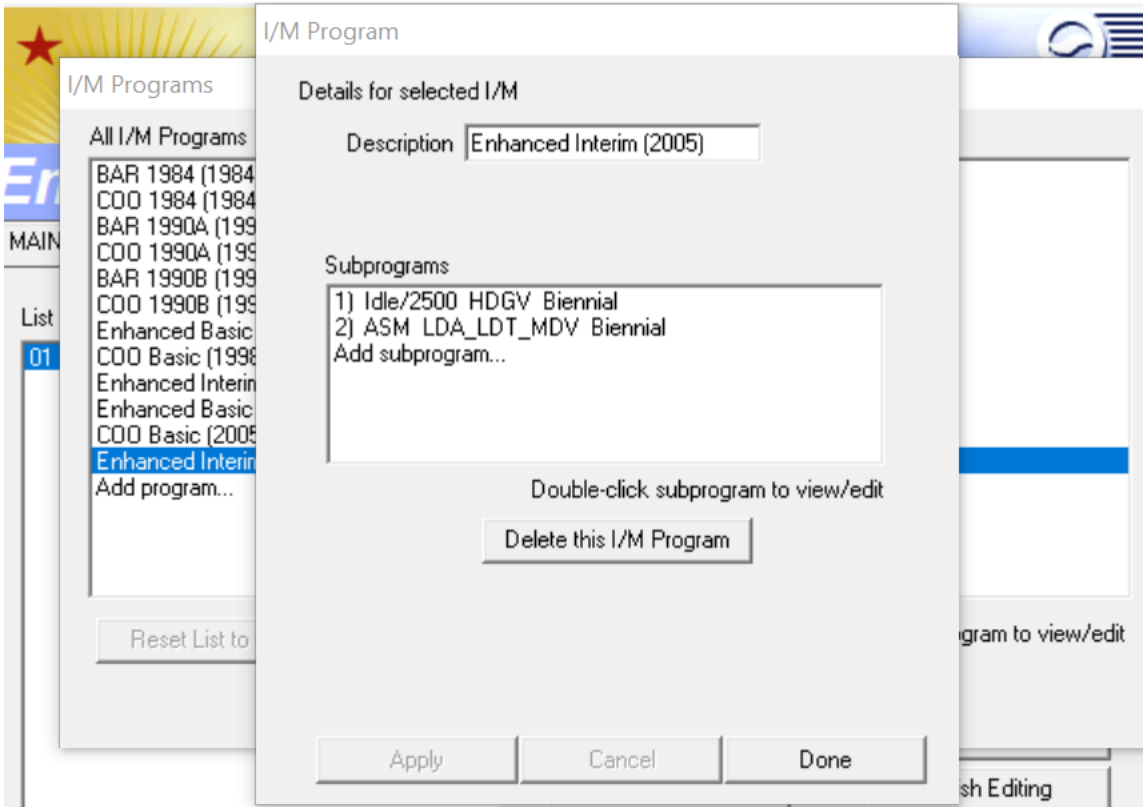
6. No need to change any inputs in tab "Calimfac - Detailed vehicle data". Leave any inputs at the default settings. Click "Finish" to go back to the main menu.



7. In the "MAIN" menu, save the current input by clicking "Save", then click "Run" to start the model run. Only the .bdn output file is needed for data analysis, which shows the detailed emissions output by model year, vehicle class, and fuel type.



8. For "No-I/M" scenario, repeat Steps 1 to 6, except that in the main menu, click "IM Program Parameters", double click each program and delete, and click "Done" to go back to the main menu. Then proceed to Step 7 to start the model run.



Appendix C:
Carl Moyer Program Emissions Impacts Analysis Methodology

Moyer Program Emissions Reductions Estimates Methodology

CARB staff conducted analysis to determine the potential disbenefit of the Measure resulting from a potential loss in funding for the Moyer Program. If the Measure is triggered, the Moyer Program would receive less funding from fewer smog abatement fees being collected, as discussed in section 4C of this document. The calculation of the potential emissions disbenefit from losing Moyer Program funding consisted of two main components:

1. Vehicle Population
2. Moyer Program Statewide NOx Cost Effectiveness

The vehicle populations were estimated using EMFAC2021 and calculated as described in Appendix B. The statewide cost effectiveness was estimated as described in Appendix H of the Fiscal Year 2022-23 Funding Plan for Clean Transportation Incentives.²⁸

The methodology for calculating the potential emissions reductions loss is as follows:

First, CARB staff calculated the potential loss in funding by multiplying the smog abatement fee directed towards the Moyer Program of \$21 by the estimated vehicle population affected in each area for their respective attainment year. This results in the statewide total potential loss in funding if triggered in the respective area. An example calculation from a theoretical area missing attainment in 2023 is shown below.

$$\text{Total potential loss in funding resulting from an area missing attainment in 2023} = \text{Portion of smog abatement fee to Moyer} * 8\text{MYO vehicle population in nonattainment area in 2023}$$

Next, to find the area-specific foregone funding and related emission reductions, CARB staff used three years of historical Moyer Program funding allocations to local air districts to calculate the average proportion of funding typically awarded to each district. This district allocation calculation is done for each nonattainment area's corresponding local air district. An example calculation for a single local air district (District X) is shown below.

$$\text{District Allocation (\%)} = \frac{\text{Historical Average allocation to District X (\$)}}{\text{Total Carl Moyer Program Funding (\$)}}$$

The local air district allocation percentage for each area is then applied to the calculated loss in funding. This results in the potential loss in funding for each specific local air district.

²⁸ https://ww2.arb.ca.gov/sites/default/files/2022-10/proposed_fy2022_23_funding_plan_final.pdf

$$\text{Loss in funding for District X (\$)} = \text{District Allocation (\%)} * \text{Total potential loss in funding}$$

Divide the total loss in funding calculated for each area by the statewide NOx cost effectiveness and convert to tons per day. Each project is assumed to have a 10-year project life.

$$\text{Loss in reductions (tpd)} = \frac{\text{Loss in funding for District X (\$)}}{\text{statewide NOx cost effectiveness}/10/365 \left(\frac{\$}{\text{ton}} \right)}$$

The result is the total loss in potential emissions reductions for each district from foregone funding for Moyer Program projects.

Appendix D:
California Health and Safety Code § 44011(a)(4)(A) and (B)

State of California

HEALTH AND SAFETY CODE

Section 44011

44011. (a) All motor vehicles powered by internal combustion engines that are registered within an area designated for program coverage shall be required biennially to obtain a certificate of compliance or noncompliance, except for the following:

[REDACTED]

(4) (A) Except as provided in subparagraph (B), all motor vehicles four or less model-years old.

(B) (i) Beginning January 1, 2005, all motor vehicles six or less model-years old, unless the state board finds that providing an exception for these vehicles will prohibit the state from meeting the requirements of Section 176(c) of the federal Clean Air Act (42 U.S.C. Sec. 7401 et seq.) or the state's commitments with respect to the state implementation plan required by the federal Clean Air Act.

(ii) Notwithstanding clause (i), beginning January 1, 2019, all motor vehicles eight or less model-years old, unless the state board finds that providing an exception for these vehicles will prohibit the state from meeting the requirements of Section 176(c) of the federal Clean Air Act (42 U.S.C. Sec. 7401 et seq.) or the state's commitments with respect to the state implementation plan required by the federal Clean Air Act.

(iii) Clause (ii) does not apply to a motor vehicle that is seven model-years old in year 2018 for which a certificate of compliance has been obtained.

[REDACTED]

[REDACTED]

(Amended by Stats. 2017, Ch. 633, Sec. 1. (AB 1274) Effective October 10, 2017.)

**Coachella Valley Contingency Measure SIP Revision for
the 2008 8-Hour Ozone Standard**

**APPENDIX B: CARB'S AREA SOURCE INFEASIBILITY
JUSTIFICATION**

Draft CARB Contingency Measure Analysis

CARB Reactive Organic Gases Area Source Measure Analysis

CARB adopted the *California Smog Check Contingency Measure* to address contingency measure requirements throughout the State. U.S. EPA proposed to approve the *California Smog Check Contingency Measure* as a contingency measure on December 20, 2023. The Smog Check Contingency Measure, if triggered in a nonattainment area, would reduce the exemption for vehicles that are 8 model years old and newer to seven model years old and newer, thereby increasing the number of vehicles subject to Smog Check. This measure, if triggered, would achieve additional NO_x and ROG reductions beyond what is currently achieved by the Smog Check Program by identifying additional emissions control equipment failures from vehicles previously exempt.

The *California Smog Check Contingency Measure* includes, in Appendix A, analysis on the feasibility of contingency measures related to CARB's mobile source control programs that target both ROG and NO_x. CARB staff are now evaluating potential options for a contingency measure achieving ROG reductions from area sources that the State has authority to regulate, including both CARB and Department of Pesticide Regulation (DPR)'s regulations (Table 2), to determine feasibility given the contingency measure requirements under the Clean Air Act, recent court decisions and U.S. EPA draft guidance. The State currently has programs in place for these area sources and has evaluated a variety of regulatory mechanisms within existing and new programs for potential contingency triggers. Each measure was evaluated on whether it could be implemented within 60 days of being triggered and achieve the necessary reductions within 1-2 years of being triggered. Additionally, the technological feasibility of each option was considered to assess whether the measure would be technologically feasible to implement. More stringent requirements may be unavailable or economically infeasible to implement, especially in the time frame required for contingency measure implementation. Some measures aim to reduce VOC emissions as opposed to ROG emissions. However, VOC and ROG emissions are virtually equivalent. Thus, both terms are used interchangeably throughout this document.

Challenges for CARB Measures

Based on CARB's feasibility analysis, which is similar to our mobile source analysis, there are a few common components of CARB area source regulations that limit the options for contingency measures. CARB regulations that require development of new emissions control technologies or new product formulations require a long lead time for implementation. Manufacturers would need lead time to research, plan, certify, manufacture, and deploy lower-emitting alternatives to meet a new or accelerated standard.

Draft CARB Contingency Measure Analysis

Additionally, consumer-based regulations necessitate that manufacturing is mature so that there is enough supply available to meet the additional demand. On the consumer side, additional time would be required for procurement implementation based on the new requirements. Thus, measures that require product turnover, new standards or reformulation are not appropriate to be used as a triggered contingency measure given the compressed timeline required for contingency.

CARB regulations are also technology-forcing, which makes it difficult to amend regulations or pull compliance timelines forward with only 1-2 years notice as industry needs time to research, plan, develop, and implement these new technologies and product formulations. It would be infeasible to require industry to purchase and install large numbers of new control technologies within one year if the technology is not readily available at a reasonable cost. CARB regulations are also the most stringent air quality control requirements in the country, so there are few opportunities to require additional stringency. CARB is driving sources under our authority to near-zero and zero-emissions everywhere feasible to provide for attainment of air quality standards across the State, and to support near-source toxics reductions and climate targets. However, these targets which are already being addressed in many CARB regulations also eliminate opportunities for a contingency measure.

Lastly, many of CARB's options for a contingency measure would require a full rulemaking process and would not be adopted by CARB and approved by U.S. EPA within the timeframe needed, making many of the options infeasible. Given U.S. EPA failure to submit and disapproval actions for the 75 ppb 8-hour ozone standard, sanction clocks have started and sanctions could be triggered in San Joaquin Valley, Coachella Valley, Mojave Desert and the Sacramento region in 2024. As such, CARB and these local air districts need to identify measure(s) that could realistically be adopted and submitted to U.S. EPA prior to that time. However, most CARB measures must go through a regulatory process that can take approximately five years from beginning development of a regulation to it being adopted by the CARB Board.

Based on CARB staff analysis, no additional measures were identified at this time to serve as a contingency measure to reduce ROG emissions beyond the California Smog Check Contingency Measure. More detail on the CARB staff analysis, including potential emission reduction options for each area source category are described in the following sections.

Consumer Products

Consumer products refer to chemically formulated products used by household and institutional consumers, such as detergents, personal care and cosmetics products, home

Draft CARB Contingency Measure Analysis

and garden products, and disinfectants. CARB regulations for consumer products aim to reduce the amount of VOCs, toxic air contaminants, and greenhouse gases that are emitted from using these consumer products.

CARB is actively seeking further emission reductions to support ozone attainment in the South Coast and elsewhere in California. Towards this end, CARB's 2022 State SIP Strategy includes a consumer products statewide emissions reduction commitment of 20 tons per day (tpd) of VOCs.

To achieve the 20 tpd VOCs emission reduction, CARB staff anticipates casting a wide net in its review of product categories. CARB staff plans to launch a survey in early 2024 to collect sales and formulation data for products sold recently in California. Survey data will identify opportunities to further reduce ozone formation from consumer products. Staff expects to bring regulatory proposals to the Board by 2027.

The Consumer Products Rulemaking Process

In granting CARB authority to regulate consumer products, which were previously regulated by local air pollution control districts and air quality management districts, it was the Legislature's intent to have a single set of regulatory requirements applicable statewide, rather than a patchwork of regulations. CARB's Consumer Products Regulation applies statewide.

For any consumer products rulemaking, proposed amendments are the culmination of a multi-year public process by CARB to identify the most promising, technically-sound strategies to effectively help California meet its air quality challenges. The recent 2021 rulemaking took close to seven years and included the following three phases of regulatory development: 1) development and implementation of the three-year survey; evaluation and publication of 2013 through 2015 Consumer and Commercial Products Survey data; 2) evaluation of potential regulatory strategies based upon the survey data; and 3) development and refinement of Proposed Amendments.

Manufacturers need lead time to reformulate existing products to meet new VOC standards. Based on previous rulemakings, five significant milestones exist and are associated with reformulating products to meet new consumer product regulatory requirements:

1) research and development; 2) efficacy testing; 3) stability testing; 4) safety testing; and 5) consumer acceptance testing. In addition, manufacturers must make modifications to product labels. While there is some opportunity for manufacturers to run these processes concurrently, often a problem in any one of these milestones require the manufacturer to start the process again.

Draft CARB Contingency Measure Analysis

When setting technology forcing standards, CARB may provide for a Technical Assessment prior to effective dates. This enables CARB to assess progress made by manufacturers in developing complying products. In cases where product development challenges result in infeasibility of timely implementation, the assessment could result in amendments to the standards or to extensions in compliance deadlines.

Additionally, technology forcing standards often require modifications to facilities, equipment, and manufacturing processes. This would be the case if a product is reformulated to use compressed gas propellant instead of liquefied gas propellant. Use of compressed gas propellant requires the purchase and installation of new equipment and modifications to facility assembly lines, necessitating sufficient lead time for implementation as well as certainty about implementation dates for the technology forcing standards. CARB staff will be evaluating increased use of compressed gas propellant for the upcoming consumer product rulemaking.

Trigger Feasibility

To provide reductions qualifying for contingency purposes, CARB would need to adopt regulatory amendments which yield emission reductions that could be implemented within a short period of time from a triggering event.

For a given product category for which CARB proposes more stringent VOC standards, CARB cannot call for earlier implementation of those standards for contingency purposes. This is because CARB already requires implementation under short timelines to maximize air quality benefits in support of expeditious attainment of ambient air quality standards.

Neither can CARB set lower limits for products that would be produced and warehoused, but not sold unless a triggering event occurred. Warehousing of “contingency” products would be cost prohibitive for manufacturers and would not provide the Consumer Products Program with the maximum feasible air quality benefits, as required by the Legislature. Some consumer products also have limited shelf life and given the uncertainty of when a triggering event may occur, such an approach is not feasible.

Technological Feasibility

The Legislature, in Health and Safety Code (H&SC) Section 41712(b)(2) and 41712(d), stipulates that CARB’s consumer product regulations must set standards which are commercially and technologically feasible. Therefore, during every consumer products rulemaking, CARB sets VOC limits that are the most technologically and commercially feasible at the time.

Draft CARB Contingency Measure Analysis

CARB's Consumer Products Regulation does not require lower VOC content products in some parts of California, which could then be required in other parts of California in need of contingency reductions.

When proposing more stringent VOC standards, CARB cannot establish two increasingly restrictive sets of VOC limits: one limit in support of attainment, which would go into place by a defined date; and a second, more stringent limit which would only be implemented if contingency needs were triggered. This is because: (1) State law, stated in H&SC section 41712(b)(1), requires CARB to adopt the most stringent feasible standards for attainment purposes; and (2) further reductions from consumer products are needed for attainment of ozone ambient air quality standards.

Neither could CARB set a single, more restrictive VOC standard, implement those requirements, and then hold back a portion of the anticipated emission reductions for contingency purposes while still dedicating the majority of accruing reductions towards attainment targets. In such a case, additional actual emission reductions would not occur if contingency requirements were triggered. This approach would therefore not satisfy requirements for contingency reduction.

Even if no further VOC reductions were needed for attainment, setting more stringent standards for contingency purposes would still not be a viable undertaking. This is because the testing and development of lower VOC products meeting more stringent standards could take years and much investment by manufacturers. Timelines would not mesh with the quick turnaround time needed for contingency reductions. In short, CARB cannot require development of new consumer products just in case additional emission reductions are needed. This means CARB cannot produce contingency reductions by setting more stringent standards for consumer product categories other than those which CARB would regulate further to secure the 20 tpd VOC emission reduction target for attainment purposes.

Further, CARB cannot, when seeking reductions in the very near-term (and consistent with contingency reduction timelines), rely on other jurisdictions whose regulations are resulting in lower-emitting consumer products which they could then offer for sale in California. California's Consumer Products Program is world-leading, cutting-edge and technology forcing. Manufacturers have not already developed products, and marketed them elsewhere, which they could direct to California in case a need for contingency reductions is triggered.

In summary, a consumer product contingency measure seeking additional emission reductions either by setting more restrictive standards, or by accelerating effective dates of standards, is infeasible.

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Oil and Gas

For decades, air districts with significant oil production have adopted and implemented rules designed to reduce criteria pollutant precursor emissions from the oil and gas sector to meet national ambient air quality standards (NAAQS) and Clean Air Act requirements. The air district rules control emissions of reactive organic gases (ROG) from tanks, separators, and compressors, and specify requirements for leak detection and repair (LDAR). The air district rules do not cover methane specific sources.

In 2017, CARB adopted the Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (also known as the Oil and Gas Methane Regulation) to address methane emissions from equipment and processes not already controlled for ROG purposes by existing air district rules. Although the Oil and Gas Methane Regulation is intended to reduce methane emissions, many of the covered sources also emit ROG as co-pollutants, and therefore the regulation also reduces ROG emissions. Only four air districts in California with nonattainment areas have oil and gas equipment subject to the regulation: Sacramento Metropolitan Air Quality Management District, San Joaquin Valley Air Pollution Control District, South Coast Air Quality Management District, and Ventura County Air Pollution Control District. The air district rules and the Oil and Gas Methane Regulation complement one another and together reduce ROG emissions from California's oil and natural gas sector.

Starting in 2012, U.S. EPA established regulations to reduce air pollution from the oil and natural gas industry consisting of new source performance standards. U.S. EPA also promulgated a Control Techniques Guideline in 2016 for the Oil and Natural Gas Industry which requires all states with applicable nonattainment areas to meet the prescribed levels of control in order to satisfy reasonably available control technology requirements. The CTG requirements are met in California via air district rules and CARB's submittal of the Oil and Gas Methane Regulation. In December 2023, U.S. EPA finalized updated regulations for the oil and natural gas industry including more stringent new source performance standards and, for the first time, Emissions Guidelines. U.S. EPA's recent Emissions Guidelines will require that CARB amend the Oil and Gas Methane Regulation to meet the more stringent requirements.

Methane and ROG emissions can originate from oil and gas infrastructure when natural gas is either intentionally released ("vented" emissions) or unintentionally leaked ("fugitive" emissions). Intentional releases can occur due to process designs (e.g., as a fluid to operate pneumatic devices), for safety or maintenance reasons, or for when no other control or disposal options exist (where allowed). Unintentional leaks can occur due to factors such as defects or wear in connections, valves, seals, and similar mechanisms, or due to process

Draft CARB Contingency Measure Analysis

upsets, system malfunctions, or human error. Vented emissions can be controlled primarily by replacing equipment with lower-emitting models or adding vapor collection systems to equipment, and the further controls that will be required under the recent U.S. EPA Emissions Guidelines represent all controls that are technologically feasible. Fugitive emissions are addressed through leak detection and repair (LDAR) to find and fix unintentional leaks. In each of these areas, there are no additional available feasible control measures that could meet the requirements of a contingency measure.

First, there are not currently any additional measures in the Oil and Gas Methane Regulation that could be triggered without undertaking amendments to the regulation. The process for amending a regulation takes years to complete and requires the development of new measures, stakeholder engagement, and the formal regulatory process itself.

Second, even if the length of the regulatory process were not a barrier, no available surplus emission reductions could reasonably be implemented within the short timeframe required upon a triggering event. Implementation of additional controls requires at least two to three years for oil and gas facilities to comply with. New controls are not easily installed on equipment and would take additional time to upgrade, which likely does not fit in the contingency timeline required. Each of the potential emission reduction mechanisms in the Oil and Gas Methane Regulation are analyzed below:

- Reduce venting through equipment replacement or vapor control (control venting emissions):
 - The Oil and Gas Methane Regulation already includes strict venting standards for most categories of equipment designed to vent natural gas as part of normal operation. The areas where further control of vented emissions may be feasible are all being addressed by U.S. EPA's Emissions Guidelines (finalized December 2023), which are standards that CARB must meet for existing sources to demonstrate compliance with the Clean Air Act; these are measures that must be implemented and cannot be held in reserve for use as triggered contingency measures. These include banning all associated gas venting, requiring all pneumatic controllers to be zero-emission, and requiring minimization of emissions from liquids unloading to the greatest extent possible.
- Expand/increase LDAR (control fugitive emissions):
 - Under the Oil and Gas Methane Regulation, LDAR is already mandated on a quarterly basis using a very sensitive methodology (U.S. EPA's Method 21). The only exemption that results in a significant number of sources not being subject to LDAR is for equipment handling exclusively heavy oil¹, which is not

¹ Oil with an API gravity of less than 20.

Draft CARB Contingency Measure Analysis

economically feasible to control based on analysis using currently available data.

In summary, there are no new technologically feasible control measures that CARB can implement in the Oil and Gas Methane Regulation that could meet the triggering timelines and other requirements, and are available to use as contingency measures.

Petroleum Marketing – Vehicle Refueling

Vapor recovery systems are installed at gasoline dispensing facilities (GDFs) to collect, contain, and return gasoline vapors that would otherwise escape into the atmosphere. Gasoline vapor emissions contain smog forming volatile organic compounds (VOCs) that are controlled in two phases at GDFs. Phase I vapor recovery collects vapors displaced from a storage tank when a cargo tank truck delivers gasoline. Phase II vapor recovery collects and stores vapors displaced during the transfer of gasoline from the GDF storage tanks into the vehicle tank. Stored gasoline vapors in the GDF tanks are then transferred into gasoline cargo tank trucks during Phase I activities and returned to gasoline terminals for processing. CARB regulations establish statewide performance standards for vapor recovery systems that must be achieved during the transfer and storage of gasoline. In addition, all vapor recovery systems must undergo CARB certification tests to demonstrate compliance with applicable performance standards before those systems can be sold, offered for sale, or installed in California.

Vapor recovery system performance standards for GDFs have become more stringent over the years. Since 2001, CARB has adopted over a dozen significant advancements as part of the Enhanced Vapor Recovery (EVR) program. Phase I EVR requires more durable and leak-tight components, along with an increased collection efficiency of 98%. Phase II EVR includes three major advancements: (1) dispensing nozzles with less spillage and required compatibility with ORVR (onboard refueling vapor recovery) vehicles, (2) a processor to manage the headspace pressure within the GDF storage tank, and (3) an in-station diagnostic (ISD) system that provides warning alarms to alert a GDF operator of potential vapor recovery system malfunctions. Phase I EVR was fully implemented in 2005 and Phase II EVR was fully implemented by 2011.

Additionally, CARB's air toxic control measure for benzene requires retail GDFs to install Phase I and Phase II systems to reduce public exposure. Exceptions to the measure include gasoline (1) dispensed from or transferred to a storage tank with a capacity less than 260 gallons, (2) dispensed to implements of animal husbandry; or (3) dispensed to vehicles with fuel tanks less than 5 gallons capacity.

Draft CARB Contingency Measure Analysis

Since the implementation of Phase I and Phase II EVR in 2011, CARB staff has made additional improvements to the vapor recovery program. For GDF equipped with underground storage tanks, a total of four regulatory amendments were completed between 2011 and 2023 to strengthen performance standards, adjust implementation dates to reflect evolving technology, clarify dimension requirements for nozzles and vehicle fill pipes, and improve cost effectiveness for system upgrade requirements. Two of the most recently implemented control measures, hose permeation and more stringent nozzle spillage standard, are described below.

- Hose Permeation Standard:

CARB adopted performance standards for gasoline dispensing hose permeation on July 26, 2012. The intent of this standard is limiting the amount of gasoline that permeates through the dispensing hose. Hose permeation performance standards only apply to hoses in which liquid gasoline contacts the outer hose wall, specifically: Phase II vacuum assist and conventional hoses (latter are installed in facilities that are exempt from Phase II because they fueled predominately vehicles equipped with ORVR). Existing facilities subject to the performance standard were allowed four years from the effective date to attain compliance. The effective date is defined as the date when the first dispensing hose meeting the performance standard is certified by CARB.

The first conventional and vacuum assist hoses that met the new permeation standard were certified by CARB on June 10, 2014, and September 24, 2014, respectively. These certification dates establish the effective dates and associated four-year periods (commonly referred to as "the four-year clock") for existing subject GDFs to comply. Existing GDFs that used conventional hoses and vacuum assist hoses had until June 10, 2018, and September 24, 2018, respectively to comply with the low permeation hose standard. New GDFs constructed after the effective dates that use vacuum assist or conventional hoses are required to install low permeation hoses at the time of construction.

- More Stringent Nozzle Spillage Standard:

In April 2015, CARB adopted new performance standards and specifications for Enhanced Conventional (ECO) nozzles that are installed at non-retail GDFs, which are exempt from Phase II requirements by district rules. These GDFs fueled predominantly vehicles that are equipped with ORVR, which collects displaced vapor during vehicle refueling.

CARB staff have compiled and evaluated mass emission factors for nozzle spillage based on CARB certification test data for three EVR nozzles and two ECO nozzles. In April 2020,

Draft CARB Contingency Measure Analysis

staff found that the mass emission factors based on certification data for all five nozzles are substantially lower than applicable performance standards. This finding demonstrated nozzles are performing much better than predicted for EVR implementation at the time CARB adopted the EVR regulations.

Consequently, in December 2020, the Board approved a more stringent performance standard of 0.05 lbs/kgal for nozzle spillage for both EVR and ECO nozzles to preserve emission reductions that are already occurring and prevent emissions from increasing.

Recent analysis indicates that CARB certified vapor recovery systems designed for use at GDFs are well over 90% effective² in reducing VOC emissions that would otherwise be emitted to the atmosphere. Given the maturity and robustness of the program and the stringency of existing control measures that have been implemented statewide, there are no available additional control measures that would be feasible to implement within the timeframes required for contingency measures. Even if more stringent control measures could be adopted, they would not be able to be implemented in the contingency timeframe required as manufacturers and retailers would need more than two years of lead-time, as has been provided in the past, to comply with new standards.

CARB staff believes future amendments will improve existing test procedures and ease the burden of compliance for GDF operators without causing any increase in emissions or costs. Further, absent any changes to vapor recovery controls, CARB staff expects that gasoline vapor emissions will track proportionally to fuel dispensed. As California transitions to more fuel-efficient vehicles, zero emission vehicles, and alternative fuel sources, gasoline consumption and associated vapor emissions are expected to decrease. However, as long as gasoline remains a major fuel source, CARB will need to maintain an active and effective vapor recovery program.

In summary, California has the most comprehensive vapor recovery program applicable to GDFs in the country, and there are no new technologically feasible control measures that could meet the triggering timelines and other requirements, and are available to use as contingency measures. California's program includes:

1. rigorous performance standards for Phase I transfer, Phase II transfer, In-Station Diagnostic systems, hose permeation, storage tank pressure management, and nozzle spillage,
2. strong enforcement of performance standards by local air districts, and

² https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2023/vapor_recovery_2023/isor.pdf

Draft CARB Contingency Measure Analysis

3. going well beyond US EPA's Stage I (Phase I in California), which is the sole focus of US-EPA's vapor recovery requirements.

Going forward, the vapor recovery program will remain an important part of California's efforts to control regional ozone levels and reduce public exposure to benzene.

Petroleum Marketing – Cargo Tanks

In California, gasoline vapor emissions are controlled to reduce emissions of air pollutants, specifically VOCs and various toxic air contaminants (TACs) such as benzene. Emissions are controlled during the transfer of gasoline from storage tanks at refineries or terminals/bulk plants to tanker trucks also called cargo tanks (CTs). Cargo tanks transport gasoline to service stations also called GDFs. The Cargo Tank Vapor Recovery Program (CTVRP) regulations require annual testing of CTs to ensure that they do not exceed the allowable leak rate. Such tests are performed by CT owner/operators or independent testing contractors. Test results are submitted to CARB CTVRP staff for review and provide the basis for issuing a certification document with a decal, which must be renewed annually. To ensure the integrity of the program, CTVRP staff monitors the testing conducted by CT owners, operators, and contractors. Additionally, CTVRP staff perform random inspections and testing of CTs. Also, loading facilities are prohibited from transferring gasoline to CTs with invalid or expired certifications. Because of the severe and unique air pollution problems facing California, CARB's gasoline vapor control standards for CTs are more stringent than comparable federal standards.

CARB first adopted the cargo tank vapor recovery certification regulations on April 18, 1977. These regulations established a five-minute static pressure test with an allowable leak rate to prevent excessive gasoline vapor emissions and a one-minute test for CARB inspectors to monitor CTs loaded with gasoline. There have been six amendments to this regulation (1984, 1995, 1998, 2013, 2017, 2023). These amendments were mostly administrative in nature. However, the 1995 amendment reduced the allowable leak rate by 50%, making the CTVRP the strictest emission standards in the nation.

Altering of a CT design to control emissions would require input and approval from federal agencies such as Department of Transportation (DoT) and U.S. EPA, along with State agencies such as State Fire Marshal and California Highway Patrol. Getting such approval to implement new controls may take years due to the cumbersome approval process. The CTVRP already requires more stringent emission standards than the U.S. EPA. The current CARB and U.S. EPA standard is measured in Inches of Water Column (WC"). As an example, a cargo tank in California is not allowed to leak more than 0.5 WC" (0.018psi) in a five-minute test. CTs are as vapor tight as the current industry standards and design allows for.

Draft CARB Contingency Measure Analysis

There is currently no design or technology that can reduce this number. Additionally, as mentioned, design alterations would require numerous and lengthy federal, State(s), and local municipalities approvals. Implementation of any new standards would also require long lead times to deploy new technologies and would likely take more than two years. As the population of zero emission vehicles increases on California roads, emissions from CTs will be reduced due to a decline in demand for gasoline.

In summary, due to the timelines involved in development of technology, altering CT designs, and anticipated drop in gasoline demand, there are no new technologically feasible control measures in the CTVRP that could meet the triggering timelines and other requirements, and are available to use as contingency measures.

Portable Fuel Containers (Gas Cans)

Portable Fuel Containers (PFCs), or gas cans, are used to fill a variety of equipment, including lawnmowers, vehicles, and personal watercraft. However, spillage and evaporative emissions can occur, which can result in ozone-forming smog and health related problems. In California, gas cans use low permeation materials and automatic sealing nozzles to minimize or eliminate spillage and evaporative emissions. All gas cans sold in California must be certified by CARB as meeting the low-emission requirements.

CARB staff analyzed PFCs to identify potential contingency measure options. It would not be possible to begin implementation of any contingency measures for PFCs within 60 days. CARB does not regulate consumer use of PFCs and must achieve emission reductions through performance requirements, including emission standards, for new PFCs. Manufacturers would need more than 1-2 years to design, certify, and manufacture PFCs that meet more stringent emission standards. Additionally, CARB regulations typically need to allow additional time for sell-through provisions to allow for consumers and retailers to transition to the new products, which further extends the implementation timeline. Adopting more stringent emission standards is not feasible to implement as a contingency measure because the regulatory process would take approximately 5 years from start to finish. The standards currently in place are also the most stringent standards across the nation.

In summary, there are no new technologically feasible control measures in the PFC regulations that could meet the triggering timelines and other requirements and are available to use as contingency measures.

Pesticides

Pesticides are used for urban and agricultural pest management across the State and are an area-wide source of ROG and other types of emissions. Pesticides are regulated under both

Draft CARB Contingency Measure Analysis

federal and state law. Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the U.S. EPA has authority to control pesticide distribution, sale, and use. The Department of Pesticide Regulation (DPR) has primary and broad authority to regulate the sale and use of pesticides in California. The pesticide element of the ozone SIP requires DPR to develop and implement regulations to reduce ROG emissions by specified amounts from agricultural and structural pesticide applications in nonattainment areas. CARB is supporting DPR to use its broad authorities to reduce ROG emissions as well as limit harmful exposures to pesticides impacting communities across the State.

DPR can generally reduce exposures to pesticides through the development and implementation of necessary restrictions on pesticide sales and use and by encouraging integrated pest management. Mitigation measures may be implemented by several methods, including regulations, local permit conditions, pesticide label changes, or product cancellation. Current regulations set limits on applications of certain pesticides and specify methods for application to protect public health. DPR regulations have been found by U.S. EPA to meet RACT, RACM, and BACM requirements as a part of past SIP submittals. Most recently, as a part of the 2022 State SIP Strategy developed to support attainment of the 70 ppb ozone standard across California, DPR committed to update their 1,3-Dichloropropene (1,3-D) regulations for health risk mitigation and volatile organic compound emissions reductions. The regulatory updates address both cancer and acute risk to non-occupational bystanders through requirements including those on applicators to use totally impermeable film tarpaulins or other mitigation measures that provide a comparable degree of protection from exposure. DPR submitted the rulemaking documents to the Office of Administrative Law on November 7, 2023, for final review and if approved will go into effect on January 1, 2024.

DPR has divided pesticide products into two groups for SIP purposes: fumigants and non-fumigants. The lead time needed to develop regulations for both groups of pesticide products may not fit in the contingency timeline required. For fumigant pesticide products, the primary measure to reduce ROG emissions is to change fumigation methods, such as deeper injection into the soil and covering fumigated areas with tarps that have low permeability. Developing new fumigation methods normally requires several years of research followed by rulemaking that usually requires two years or more to complete. For non-fumigant pesticide products, the primary measure to reduce ROG emissions is to change product formulations to reduce the ROG content. This also takes several years of research and rulemaking to complete. Additionally, changing product formulation normally requires review and registration of a new product by U.S. EPA and this takes a year or more to complete. For both fumigant and non-fumigant products, little work on contingency measures can be done beforehand due to changing pesticide use patterns. Pesticide products that contribute the most emissions currently may not be the ones that contribute

Draft CARB Contingency Measure Analysis

the most in the future due to changing cropping patterns, introduction of new pesticide products, and other factors.

Further, DPR regulations are the most stringent pesticide controls in the country and represent all measures that are technologically feasible at this time. For example, U.S. EPA's Office of Pesticide Programs also works to reduce emissions to reduce toxic exposure and their measures are implemented through nationwide product label changes. U.S. EPA has nearly completed its most recent review of 1,3-D with minimal label changes, while DPR's 1,3-D regulations include fumigation method requirements that will further reduce emissions. CARB and DPR are not aware of any other states with regulatory requirements to reduce ROG emissions from pesticide products.

At this time, no additional measures for regulating pesticides have been identified for use as a contingency measure. However, DPR has developed a process to identify possible additional control measures through its roadmap for sustainable pest management (SPM). SPM is a process of continual improvement that integrates an array of practices and products aimed at creating healthy, resilient ecosystems, farms, communities, cities, landscapes, homes, and gardens. SPM examines the interconnectedness of pest pressures, ecosystem health, and human wellbeing. Going forward, CARB will continue to partner with DPR and explore the best methods to limit pesticide exposures, while also reducing emissions of volatile organic compounds.

Summary

At this time, CARB is including a zero-emission component in most of our regulations, both those already adopted and those that are in development, and the vast majority of these regulations are statewide in scope. Beyond the wide array of sources CARB has been regulating over the last few decades, and especially considering those we are driving to zero-emission, there are few area sources of emissions left for CARB to implement additional controls upon under its authorities for contingency purposes in the Coachella Valley.

Beyond the Smog Check Contingency Measure, no additional contingency measures were identified for mobile and non-mobile sources through CARB's analysis as shown in Table 1. Considering the air quality challenges California faces, if a measure achieving such reductions were feasible, CARB would implement the measure to support expeditious attainment of the NAAQS as the Clean Air Act requires rather than withhold it for contingency measure purposes. Further, should there be a measure achieving the required emission reductions, the measure would likely take more than 1-2 years to implement

Draft CARB Contingency Measure Analysis

during which time the expected emission benefits could be reduced due to natural turnover of products and equipment.

Table 1: Assessment of Potential CARB Contingency Measures

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
Pesticides	Fumigant products ROG reduction	Effective 4/1/16; Revise existing field fumigation methods.; Effective 1/1/24; Restrict use of 1,3-D for only agricultural commodities, set limits on application rate and methods to limit exposure/ emissions.	Require more stringent limitations and stricter application methods.	No; Trigger for use limit for 4 NAAs included in existing regulations; Standards requirements need years of lead time to be implemented; infeasible to pull forward standards within 60 days. Infeasible to achieve reductions within two years.	No; Research needed to achieve additional reductions.
	Non-fumigant products ROG reduction	Effective 11/1/13; Sale and use restrictions for products that have any of 4 primary active ingredients and applied to any of 7 crops in San Joaquin Valley.	Require use of "low-VOC" products.	No; Trigger requiring "low-VOC" products that have any of 4 primary active ingredients and applied to any of 7 crops in San Joaquin Valley included in existing regulations; Standards requirements need years of lead time to be implemented; infeasible to pull forward standards within 60 days. Infeasible to achieve reductions within two years.	No; Research needed to achieve additional reductions.

Draft CARB Contingency Measure Analysis

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
Oil and Gas	Oil and Gas Methane Regulation	Adopted 3/23/17. Requires quarterly monitoring of methane emissions and some equipment will require vapor collection systems.	Reduce venting through equipment replacement or vapor control (control venting emissions). Expand/increase LDAR (control fugitive emissions).	No; Standards and requirements need years of lead time to be implemented; infeasible to pull forward standard within 60 days. Purchasing would not happen immediately or within one year of trigger; infeasible to achieve reductions within one 1-2 years.	No; only feasible controls are required to be implemented under U.S. EPA's Emissions Guidelines (finalized December 2023). No; current LDAR requirements are the most stringent in the country.
Consumer Products	Consumer Products	Amended 3/25/21. Lowered VOC standards for hair-care products, personal fragrance, manual aerosol air fresheners, and aerosol crawling bug insecticide.	Adopt and implement more stringent emission standards; pull forward compliance deadlines	No; Standards and requirements need years of lead time to be implemented; infeasible to pull forward standard within 60 days. Purchasing and manufacturing would not happen immediately or within one year of trigger; infeasible to achieve reductions within one 1-2 years.	No; cannot require manufacturers to develop new formulations and products only for contingency and to warehouse just for contingency purposes. Also, since California has the most stringent requirements, cannot bring in lower-emitting products already manufactured for other markets.
Consumer Products	Portable Fuel Container (PFC) Regulation	Amended 4/1/2017. Updated certification test fuel, established 4 year certification term, and streamlined test procedures with U.S. EPA.	Adopt and implement more stringent emission standards	No; Standards requirements need years of lead time to be implemented; infeasible to enforce more stringent standards within 60 days. Purchasing would not happen immediately or within one year of trigger; infeasible to achieve reductions within 1-2 years.	No; standards currently in place are the most stringent.

Draft CARB Contingency Measure Analysis

Emission Source	Regulatory Programs	Latest Amendment Requirements	Contingency Options	Trigger Feasibility	Technological Feasibility
Cargo Tanks (hauling gasoline)	Cargo Tank Vapor Recovery Program	Amended 10/01/23, Administrative in nature; corrected grammatical errors, removed imprecise language regarding alternative test procedures.	Setting more stringent standards	No; technology in this field has no new innovations and standards are more stringent than federal guidelines.	No; current standards and requirements are the most stringent in the nation and current technologies are most advanced.
Petroleum Marketing - Vehicle Refueling	Enhanced Vapor Recovery	<p>Adopted July 26, 2012; performance standards for gasoline dispensing hose permeation</p> <p>April 2015; New performance standards and specifications for ECO Nozzles, including a more stringent nozzle spillage standard over EVR nozzles.</p> <p>December 2020; more stringent performance standard of 0.05 lbs/kgal for nozzle spillage for both EVR and ECO nozzles</p>	Adopt and implement more stringent emission and performance standards	Standards requirements need years of lead time to be implemented; infeasible to enforce more stringent standards within 30 or 60 days. Purchasing would not happen immediately or within one year of trigger; infeasible to achieve reductions within one year.	California has the most comprehensive vapor recovery program applicable to GDFs in the country; no additional opportunities for increased stringency

**Coachella Valley Contingency Measure SIP Revision for
the 2008 8-Hour Ozone Standard**

**APPENDIX C: TRANSPORTATION CONTROL MEASURES
INFEASIBILITY JUSTIFICATION**

Transportation Control Measures (TCMs)

Transportation Control Measures (TCMs) are strategies that reduce motor vehicle emissions by decreasing vehicle trips, vehicle usage, vehicle miles traveled (VMT), vehicle idling, and traffic congestion. TCMs are either one of the 16 types listed in CAA Section 108 (refer to the list below) or any other measures aimed at reducing emissions or concentrations of air pollutants from transportation sources by decreasing vehicle usage or altering traffic flow and congestion conditions. According to the U.S. EPA's Transportation Conformity Regulations, measures based on vehicle technology, fuel, or maintenance that control emissions from vehicles under fixed traffic conditions are not considered TCMs.

List of TCMs under CAA Section 108:

- (i) Programs for improved public transit;
- (ii) Restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or high occupancy vehicles;
- (iii) Employer-based transportation management plans, including incentives;
- (iv) Trip-reduction ordinances;
- (v) Traffic flow improvement projects that achieve emission reductions;
- (vi) Fringe and transportation corridor parking facilities serving multiple occupancy vehicle programs or transit service;
- (vii) Programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during period of peak use;
- (viii) Programs for the provision of all forms of high-occupancy, shared-ride services;
- (ix) Programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of non-motorized vehicles or pedestrian use, both as to time and place;
- (x) Programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas;
- (xi) Programs to control extended idling of vehicles;
- (xii) Programs to reduce motor vehicle emissions, consistent with title II of the CAA, which are caused by extreme cold start conditions;
- (xiii) Employer-sponsored programs to permit flexible work schedules;

- (xiv) Programs and ordinances to facilities non-automotive travel, provision and utilization of mass transit, and to generally reduce the need for single-occupant vehicle travel, as part of the transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity;
- (xv) Programs for new construction and major reconstructions of paths, tracks or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest; and
- (xvi) Program to encourage the voluntary removal from use and the marketplace of pre-1980 model year light duty vehicles and pre-1980 model light duty trucks.

In terms of transportation planning and programming, Coachella Valley falls under the jurisdiction of the Southern California Association of Governments (SCAG) and the Riverside County Transportation Commission (RCTC). Consequently, TCM projects are proposed, implemented, and updated as part of the ongoing regional and county transportation planning and programming processes. SCAG serves as the Metropolitan Planning Organization (MPO) for the six-county SCAG region, which includes Riverside County, while RCTC acts as the County Transportation Commission for Riverside County, where Coachella Valley is situated.

SCAG and RCTC have established a comprehensive and formal process for identifying, evaluating, and selecting TCMs. RCTC, through an extensive project development and selection process, serves as the lead agency responsible for recommending transportation projects, including TCM projects within Riverside County, including Coachella Valley, for funding under SCAG's long-range Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

The RTP/SCS is updated every four years to incorporate changes in trends, assess progress made on projects, and adjust growth forecasts for population and employment changes. This long-range RTP/SCS integrates land use and transportation strategies aimed at achieving California Air Resources Board (CARB) greenhouse gas emissions reduction targets, providing a vision for transportation investments throughout the region. By utilizing growth forecasts and economic trends projecting over a period of more than 20 years, the RTP/SCS considers the role of transportation within the broader context of land use, the economy, the environment, and future quality-of-life goals. It identifies regional transportation strategies and a Sustainable Communities Strategy to address our mobility needs, air quality, and the challenges of climate change.

The RTP/SCS is developed through a collaborative process guided by SCAG's governing board, the Regional Council, its Policy Committees, Sub-committees, the Transportation Working Group, numerous technical advisory committees, working groups, and task forces, CTCs, subregions, local governments, state and federal agencies, environmental and business communities, tribal governments, non-profit groups, as well as the general public. Connect SoCal 2020 is the currently adopted RTP/SCS, while Connect SoCal 2024 is under development and scheduled for adoption by SCAG's Regional Council in April 2024.

In addition, the TCM projects in the Coachella Valley are programmed and updated as part of SCAG's short-term Federal Transportation Improvement Program (FTIP) development process. The FTIP implements the

RTP/SCS and is updated every two years.

SCAG develops the FTIP in partnership with the CTCs of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura, as well as the California Department of Transportation (Caltrans) Districts 7, 8, 11, and 12. The FTIP is a multimodal list of capital improvement projects to be implemented over a six-year period. It identifies specific funding sources and funding amounts for each project. The FTIP is prioritized to implement the region's overall strategy for providing mobility, improving the efficiency and safety of the transportation system, and supporting efforts to attain federal and state air quality standards by reducing transportation-related air pollution in the region. It must include all federally funded transportation projects in the region, as well as all regionally significant transportation projects requiring approval from federal funding agencies, regardless of funding source. The FTIP is developed incrementally to implement the programs and projects outlined in the RTP/SCS. The currently adopted FTIP is the 2023 FTIP, while the 2025 FTIP is under development and scheduled for adoption by SCAG's Regional Council in September 2024.

The regular RTP and FTIP public update processes ensure that the identification and implementation of TCMs are routine considerations that assist SCAG in its efforts to support attainment of applicable National Ambient Air Quality Standards (NAAQS) in Coachella Valley.

In the Coachella Valley, the following three categories of TCM projects and programs are identified and developed by the RCTC and included in SCAG's RTP/SCS and FTIP:

1. Transit and non-motorized modes;
2. High Occupancy Vehicle (HOV) Lanes their pricing alternatives; and
3. Information-based Transportation Strategies.

In addition, Rule 2202 – On-Road Motor Vehicle Mitigation Options was adopted to reduce mobile source emissions generated from employee commute trips. Rule 2202 applies to larger employers in the region with more than 250 employees and requires these employers to implement one or more emission reduction options to reduce emissions from employee commute trips into their worksite. Rule 2202 is designed to reduce emissions of Volatile Organic Compounds (VOCs), Oxides of Nitrogen (NOx), and Carbon Monoxide (CO), by an equal or greater amount to that achievable through trip reduction. Rule 2202 provides employers with a menu of emission reduction options to implement and meet an Emission Reduction Target (ERT) for their worksite. The types of vehicles included in Rule 2202 emission calculations are passenger vehicles and light-duty vehicles (LT1 and LT2). Rule 2202 applies to approximately 1,250 worksites in the region consisting of about 670,000 peak window employees (starting work between 6:00-10:00am). Of these, approximately 19 worksites are located in the Coachella Valley, including about 3,500 peak window employees. Rule 2202 was amended in August 2023 to require additional data reporting, including reporting on telework policies and behaviors that may be different today than before the COVID-19 pandemic. This data will not be reported until 2025, and potential future amendments to Rule 2202 may be considered based on this data. Finally, Rule 2202 has not been approved into the SIP, and emission reductions associated with this rule are not SIP-creditable to the rule. Rule 2202 is therefore not a feasible measure for contingency.

As documented in Attachment IV-A-4 of Appendix VI-A of the South Coast AQMD's 2022 AQMP, which was adopted by the AQMD Governing Board in December 2022, it has been determined that the TCMs being implemented in the Coachella Valley encompass all TCM RACMs. None of the candidate measures reviewed, which have not been implemented, meet the criteria for RACM implementation. Attachment IV-A-4 also includes a list of completed TCM projects and a list of TCM projects currently being implemented in the Coachella Valley.

TCMs are not suitable as candidate contingency measures because they must be developed through the area's regional and county long-range transportation planning processes, which typically operate on a four-year cycle. Furthermore, TCMs are funded by various federal, state, and increasingly, local sources, each with their respective programming requirements. Therefore, considering the significant time required to advance these projects through the planning and funding processes, TCMs are not viable options as contingency measures.

**Coachella Valley Contingency Measure SIP Revision for
the 2008 8-Hour Ozone Standard**

**APPENDIX D: EMISSION SOURCES AND APPLICABLE
RULES**

Table D-1

Applicable South Coast AQMD VOC Rules for EICs Contributing > 1% of 2031 Baseline Emissions in Coachella Valley

EIC	Source Category	Subcategory	Material	VOC (tpd)	VOC (%)	South Coast AQMD Applicable Rules	Location in Infeasibility Justification
220-204-0500-0000	DEGREASING	COLD CLEANING (BATCH - CONVEYOR - SPRAY GUN)	PETROLEUM NAPHTHA	0.21	2.78	442 – Usage of Solvents, 1122 – Solvent Degreasers, 1171 – Solvent Cleaning Operations	Cleaning and Surface Coatings, Degreasing
230-218-9000-0000	COATINGS AND RELATED PROCESS SOLVENTS	AUTO REFINISHING	COATINGS (UNSPECIFIED)	1.12	14.75	442 – Usage of Solvents, 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations	Coatings and Related Processes, Motor Vehicle Non-Assembly Line Coating Operations
230-230-9000-0000	COATINGS AND RELATED PROCESS SOLVENTS	METAL PARTS AND PRODUCTS COATINGS	COATINGS (UNSPECIFIED)	0.30	3.94	442 – Usage of Solvents, 1107 – Coating of Metal Parts and Products, 1125 – Metal Container, Closure, and Coil Coating Operations	Cleaning and Surface Coatings, Metal Products Coating Operations
250-292-8202-0000	ADHESIVES AND SEALANTS	ADHESIVES AND SEALANTS	ORGANIC SOLVENT BASED ADHESIVES AND SEALANTS (UNSPECIFIED)	0.12	1.55	442 – Usage of Solvents, 1168 – Adhesives and Sealant Applications	Adhesives and Sealants
330-319-0120-0000	PETROLEUM MARKETING	LPG TRANSFER AND DISPENSING LOSSES	LIQUIFIED PETROLEUM GAS (LPG)	0.12	1.55	1177 – Liquefied Petroleum Gas Transfer and Dispensing	Petroleum Production and Marketing, LPG Transfer and Dispensing Losses
330-395-1100-0000	PETROLEUM MARKETING	CARGO TANKS - PRESSURE RELATED FUGITIVE LOSSES	GASOLINE (UNSPECIFIED)	0.08	1.02	Subject to CARB authority	Appendix B: Petroleum Marketing – Cargo Tanks
410-404-5000-0000	CHEMICAL	PLASTICS AND PLASTIC PRODUCTS MANUFACTURING	PLASTICS (UNSPECIFIED)	0.08	1.06	442 – Usage of Solvents, 1145 – Plastic, Rubber, Leather, and Glass Coatings	Coatings and Related Process Solvents, Plastic, Rubber, Leather and Glass Coating Operations
510-506-6793-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	HAND SANITIZER	0.24	3.15	Subject to CARB authority	Appendix B: Consumer Products

Appendix D: Emission Sources and Applicable Rules

EIC	Source Category	Subcategory	Material	VOC (tpd)	VOC (%)	South Coast AQMD Applicable Rules	Location in Infeasibility Justification
510-506-6750-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	PERSONAL FRAGRANCE PRODUCT (FRAGRANCE <= 20%)	0.22	2.91	Subject to CARB authority	Appendix B: Consumer Products
510-506-6760-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	HAIR SPRAY	0.20	2.57	Subject to CARB authority	Appendix B: Consumer Products
510-506-6906-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	OTHER PERSONAL CARE PRODUCTS	0.19	2.45	Subject to CARB authority	Appendix B: Consumer Products
510-506-6780-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	RUBBING ALCOHOL	0.17	2.27	Subject to CARB authority	Appendix B: Consumer Products
510-506-6580-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	MULTI-PURPOSE SOLVENTS AND PAINT THINNERS	0.14	1.78	Subject to CARB authority	Appendix B: Consumer Products
510-506-6590-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	DISINFECTANTS	0.13	1.73	Subject to CARB authority	Appendix B: Consumer Products
510-506-6652-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	GENERAL PURPOSE CLEANERS - NON-AEROSOLS	0.13	1.65	Subject to CARB authority	Appendix B: Consumer Products
510-506-6790-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	LAUNDRY DETERGENT	0.12	1.61	Subject to CARB authority	Appendix B: Consumer Products
510-506-6741-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	HAND AND BODY LOTIONS	0.11	1.39	Subject to CARB authority	Appendix B: Consumer Products

Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard

EIC	Source Category	Subcategory	Material	VOC (tpd)	VOC (%)	South Coast AQMD Applicable Rules	Location in Infeasibility Justification
510-500-9060-0000	CONSUMER PRODUCTS	AEROSOL COATINGS	NONFLAT COATINGS (UNSPECIFIED)	0.08	1.10	Subject to CARB authority	Appendix B: Consumer Products
510-506-6713-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	LIQUID/PUMP SPRAY AIR FRESHENERS	0.08	1.06	Subject to CARB authority	Appendix B: Consumer Products
510-506-6700-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	MULTI-PURPOSE LUBRICANT	0.08	1.03	Subject to CARB authority	Appendix B: Consumer Products
510-506-6742-0000	CONSUMER PRODUCTS	CONSUMER PRODUCTS	SUN SCREEN/TANNING PRODUCTS	0.08	1.01	Subject to CARB authority	Appendix B: Consumer Products
530-530-5702-0000	PESTICIDES/FERTILIZERS	AGRICULTURAL PESTICIDES	NON - METHYL BROMIDE PESTICIDES	0.17	2.21	Subject to CARB authority	Appendix B: Pesticides

Table D-2

Applicable South Coast AQMD NOx Rules for EICs Contributing > 1% of 2031 Baseline Emissions in Coachella Valley

EIC	Source Category	Subcategory	Material	NOx (tpd)	NOx (%)	South Coast AQMD Applicable Rules	Location in Infeasibility Justification
010-005-0254-0000	ELECTRIC UTILITIES	BOILERS	WOOD/BARK WASTE	0.46	33.25	1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities, 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters, 1146.1 – Emissions of Oxide of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters	Boilers, Steam Generators, and Process Heaters
010-045-0110-0000	ELECTRIC UTILITIES	I.C. TURBINE ENGINES	NATURAL GAS	0.21	15.09	1134 – Emissions of Oxides of Nitrogen from Stationary Gas Turbines, 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities	Combustion Turbines
050-040-0110-0000	MANUFACTURING AND INDUSTRIAL	I.C. RECIPROCATING ENGINES	NATURAL GAS	0.05	3.86	1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines	Reciprocating Internal Combustion Engines
050-995-0110-0000	MANUFACTURING AND INDUSTRIAL	OTHER	NATURAL GAS	0.03	2.43	474 – Fuel Burning Equipment - Oxides of Nitrogen, 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines, 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters	Incinerators, Reciprocating Internal Combustion Engines, Boilers, Steam Generators, and Process Heaters
060-995-0120-0000	SERVICE AND COMMERCIAL	OTHER	LIQUIFIED PETROLEUM GAS (LPG)	0.10	7.23	474 – Fuel Burning Equipment - Oxides of Nitrogen, 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines, 1111 – Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces, 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional,	Boilers, Steam Generators, and Process Heaters, Residential and Commercial Fuel Combustion, Incinerators
060-995-0110-0008	SERVICE AND COMMERCIAL	OTHER	NATURAL GAS	0.04	2.54	Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional,	

Coachella Valley Contingency Measure SIP Revision for the 2008 8-Hour Ozone Standard

EIC	Source Category	Subcategory	Material	NOx (tpd)	NOx (%)	South Coast AQMD Applicable Rules	Location in Infeasibility Justification
060-995-0110-0007	SERVICE AND COMMERCIAL	OTHER	NATURAL GAS	0.02	1.47	and Commercial Boilers, Steam Generators, and Process Heaters	
060-045-0110-0000	SERVICE AND COMMERCIAL	I.C. TURBINE ENGINES	NATURAL GAS	0.02	1.21	1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines, 1134 – Emissions of Oxides of Nitrogen from Stationary Gas Turbines	Combustion Turbines
060-030-0110-0000	SERVICE AND COMMERCIAL	WATER HEATING	NATURAL GAS	0.02	1.11	1121 – Control of Nitrogen Oxides from Residential Type, Natural-Gas-Fired Water Heaters, 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters	Residential and Commercial Fuel Combustion
060-040-1200-0000	SERVICE AND COMMERCIAL	I.C. RECIPROCATING ENGINES	DIESEL/DISTILLATE OIL (UNSPECIFIED)	0.01	1.01	1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines, 474 – Fuel Burning Equipment - Oxides of Nitrogen	Reciprocating Internal Combustion Engines
099-040-1200-0000	OTHER (FUEL COMBUSTION)	I.C. RECIPROCATING ENGINES	DIESEL/DISTILLATE OIL (UNSPECIFIED)	0.07	5.04	1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines, 474 – Fuel Burning Equipment - Oxides of Nitrogen	Reciprocating Internal Combustion Engines
610-995-0110-0000	RESIDENTIAL FUEL COMBUSTION	OTHER	NATURAL GAS	0.08	6.08	No applicable rule identified, but included in control measure R-CMB-04 in the 2022 AQMP	-
610-606-0110-0000	RESIDENTIAL FUEL COMBUSTION	FUEL COMBUSTION - SPACE HEATING	NATURAL GAS	0.08	5.77	1111 – Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces	Residential and Commercial Fuel Combustion
610-608-0110-0000	RESIDENTIAL FUEL COMBUSTION	FUEL COMBUSTION - WATER HEATING	NATURAL GAS	0.06	4.14	1121 – Control of Nitrogen Oxides from Residential Type, Natural-Gas-Fired Water Heaters, 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters	Residential and Commercial Fuel Combustion
610-610-	RESIDENTIAL FUEL COMBUSTION	FUEL COMBUSTION - COOKING	NATURAL GAS	0.04	2.83	No applicable rule identified, but included in control measure R-CMB-03 in the 2022 AQMP	-

Appendix D: Emission Sources and Applicable Rules

EIC	Source Category	Subcategory	Material	NOx (tpd)	NOx (%)	South Coast AQMD Applicable Rules	Location in Infeasibility Justification
0110-0000							