ATTACHMENT I

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Subsequent Environmental Assessment for:

Proposed Amended Rule 1168 – Adhesive and Sealant Applications

October 2022

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PREFACE

This document constitutes the Final Subsequent Environmental Assessment (SEA) for Proposed Amended Rule (PAR) 1168 – Adhesive and Sealant Applications.

The Draft SEA was circulated for a 45-day public review and comment period from September 6, 2022 to October 21, 2022. No comment letters were received during the comment period.

Subsequent to the release of the Draft SEA for public review and comment, minor modifications were made to the proposed project. PAR 1168 was revised to also include delayed VOC limit effective dates for two categories of adhesives and sealants; add some definitions for new categories and remove the definition of Energy Curable Adhesives; add a weight based VOC limit for foam product categories; include a conditional Opteon 1100 exemption; update labeling and reporting requirements; allow delays for pCBtF prohibition for specialty products; remove an archaic exemption, and provide further clarification in the rule language. Therefore, some modifications have been made to the Draft SEA to make it a Final SEA which include updates to reflect the above changes made to PAR 1168 after the public notice of availability of the Draft SEA. The updates to the CEQA analysis include: 1) revising the total delayed VOC emission reductions due to delaying the VOC limit effective date for two categories of adhesives and sealants; and 2) adding further GHG emission and toxicity analysis for the conditional and limited exemption of Opteon 1100 in Two-Component Foam Sealants. To facilitate identification of the changes between the Draft SEA and the Final SEA, modifications to the document are included as underlined text and text removed from the document is indicated by ~~strikethrough text~~. To avoid confusion, minor formatting changes are not shown in underline or strikethrough mode.

South Coast AQMD staff has evaluated the modifications made to PAR 1168 after the release of the Draft SEA for public review and comment and concluded that none of the revisions constitute significant new information, because: 1) no new significant environmental impacts would result from the proposed project; 2) there is no substantial increase in the severity of an environmental impact; 3) no other feasible project alternative or mitigation measure was identified that would clearly lessen the environmental impacts of the project and was considerably different from others previously analyzed, and 4) the Draft SEA did not deprive the public from meaningful review and comment. In addition, revisions to PAR 1168 and the analysis in response to verbal or written comments during the rule development process would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft SEA pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Therefore, the Draft SEA has been revised to include the aforementioned modifications such that it is now the Final SEA.

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EXECUTIVE SUMMARY

1.0 INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (South Coast AQMD) in 1977[1] as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin and portions of the Salton Sea Air Basin and Mojave Desert Air Basin. In 1977, amendments to the federal Clean Air Act (CAA) included requirements for submitting State Implementation Plans (SIPs) for nonattainment areas that fail to meet all federal ambient air quality standards [CAA Section 172], and similar requirements exist in state law [Health and Safety Code Section 40462]. The federal CAA was amended in 1990 to specify attainment dates and SIP requirements for ozone, carbon monoxide (CO), nitrogen dioxide (NO2), and particulate matter with an aerodynamic diameter of less than 10 microns (PM10). In 1997, the United States Environmental Protection Agency (U.S. EPA) promulgated ambient air quality standards for particulate matter with an aerodynamic diameter less than 2.5 microns (PM2.5). The U.S. EPA is required to periodically update the national ambient air quality standards (NAAQS).

In addition, the California Clean Air Act (CCAA), adopted in 1988, requires the South Coast AQMD to achieve and maintain state ambient air quality standards for ozone, CO, sulfur dioxide, and NO2 by the earliest practicable date [Health and Safety Code Section 40910]. The CCAA also requires a three-year plan review, and, if necessary, an update to the SIP. The CCAA requires air districts to achieve and maintain state standards by the earliest practicable date and for extreme non-attainment areas, to include all feasible measures pursuant to Health and Safety Code Sections 40913, 40914, and 40920.5. The term "feasible" is defined in the California Environmental Quality Act (CEQA) Guidelines[2] Section 15364, as a measure "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

By statute, the South Coast AQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all federal and state ambient air quality standards for the areas under the jurisdiction of the South Coast AQMD.[3] Furthermore, the South Coast AQMD must adopt rules and regulations that carry out the AQMP.[4] The AQMP is a regional blueprint for how the South Coast AQMD will achieve air quality standards and healthful air, and the 2016 AQMP[5] contains multiple goals promoting reductions of criteria air pollutants, greenhouse gases (GHGs), and toxic air contaminants (TACs). The 2016 AQMP states that both oxides of nitrogen (NOx) and volatile organic compounds (VOC) emissions need to be addressed to reduce the formation of ozone and PM2.5. VOC is a precursor to the formation of ozone and PM2.5, and VOC emission reductions are necessary to achieve the ozone standard attainment. In particular, the 2016 AQMP includes control measure CTS-01 – Further Emission Reductions from Coatings, Solvents, Adhesives, and Sealants, which identifies Rule 1168 – Adhesive and Sealant Applications, a rule that regulates VOCs, as having the potential to achieve additional VOC emission reductions. In addition, the 2016 AQMP also includes control measure MCS-01 – Application of All Feasible Measures Assessment, which seeks to achieve emission reductions from all pollutants, including VOCs.

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1 The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., Ch. 324 (codified at Health and Safety Code Sections 40400-40540).

2 The CEQA Guidelines are codified at Title 14 California Code of Regulations Section 15000 *et seq.*

3 Health and Safety Code Section 40460(a).

4 Health and Safety Code Section 40440(a).

5 South Coast AQMD, Final 2016 Air Quality Management Plan, March 2017. https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp.

Rule 1168 includes 59 categories of adhesives, adhesive primers, sealants, and sealant primers with VOC limits and applies to products used during manufacturing at stationary sources as well as products used by consumers that are not regulated by the California Air Resources Board (CARB) in the Consumer Products Regulation (CPR). Amendments to Rule 1168 were adopted on October 6, 2017 to partially implement CTS-01 and MCS-01. The October 2017 amendments to Rule 1168 were designed to reduce emissions of VOCs, toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. Some of the key amendments focused on lowering the VOC limits for certain categories and allowing a three-year sell-through and four-year use-through; added new product categories with corresponding VOC content limits; required products marketed for use under varying categories to be subject to the lowest VOC limit; prohibited the use of Rule 102 Group II exempt solvents, except volatile methyl siloxanes; and removed, modified, or added various exemptions.

The October 2017 amendments to Rule 1168 also included a commitment to conduct a technology assessment for top and trim adhesives, roofing products, plastic welding cements, and foam sealants to determine if products for nine adhesive and sealant categories were available that could achieve the VOC limits by January 1, 2023. The technology assessment concluded that some of these product categories either needed more time beyond January 1, 2023 to meet the VOC limits or that achieving the lower VOC limits would not be technically feasible. Thus, staff has developed Proposed Amended Rule 1168 (PAR 1168) to adjust VOC limits and allow additional time for certain products to be reformulated.

In addition, due to potential toxicity concerns associated with tertiary-Butyl Acetate (t-BAc) and parachlorobenzotriflouride (pCBtF) and the uncertainty of on-site exposure modeling methodologies, the Stationary Source Committee of the South Coast AQMD Governing Board recommended a precautionary approach such that compounds with a known or suspected toxic endpoint will not be exempted from the definition of VOC in Rule 102 or other South Coast AQMD Rules. In 2017, t-BAc was identified as a carcinogen after it had been previously granted a partial exemption from the definition of a VOC in certain uses in several source specific rules, e.g., Rule 1113 – Architectural Coatings and Rule 1151 – Automotive Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations, but not Rule 1168. Further, in 2020, pCBtF was identified as a stronger carcinogen than t-BAc, after it had been previously exempted from the definition of a VOC in Rule 102 for all uses within the South Coast AQMD, including adhesives and sealants that would otherwise be subject to Rule 1168 requirements. Because of toxicity concerns with both t-BAc and pCBtF, PAR 1168 also proposes to prohibit the use of these chemicals in adhesive and sealant products.

PAR 1168 will result in foregone emission reductions; however, it will result in reducing the potential for toxic chemicals to be used in the products.

Therefore, PAR 1168 proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of volatile organic compound (VOC) emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; 4) allow Opteon 1100 (cis-1,1,1,4,4,4-hexafluoro-2-butene/HFO-1336mzz-Z) as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an evaluation by the Office of Environmental Health Hazard Assessment (OEHHA); and ~~4~~5) remove definitions, and update ~~and~~ , clarify, and streamline rule language.

PAR 1168 is expected to ~~cause~~ result in delayed and permanent foregone VOC emission reductions of 0.42 ~~0.12~~ ton per day (tpd) and 0.28 tpd, respectively, due to extending the effective dates and maintaining the existing VOC limits for certain categories of Regulated Products, while lowering the potential for toxic chemicals to be used in adhesive and sealant products. The October 2017 amendments to Rule 1168 estimated VOC emission reductions of 1.38 tpd, so even with the 0.28 tpd of permanent foregone emission reductions, the rule amendment exceeded the commitment in the 2016 AQMP.

1.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA) requires that all potential adverse environmental impacts of proposed projects be evaluated and that methods to reduce or avoid identified significant adverse environmental impacts of these projects be implemented, if feasible. The purpose of the CEQA process is to inform the South Coast AQMD Governing Board, public agencies, and interested parties of potential adverse environmental impacts that could result from implementing the proposed project and to identify feasible mitigation measures or alternatives, when an impact is significant.

Public Resources Code Section 21080.5 allows public agencies with regulatory programs to prepare a plan or other written documents in lieu of a Negative Declaration or EIR once the Secretary of the Resources agency has certified the regulatory program. The South Coast AQMD's regulatory program was certified on March 1, 1989 [CEQA Guidelines Section 15251(l)]. In addition, the South Coast AQMD adopted Rule 110 – Rule Adoption Procedures to Assure Protection and Enhancement of the Environment, which implements the South Coast AQMD's certified regulatory program. Under the certified regulatory program, the South Coast AQMD typically prepares an Environmental Assessment (EA) to evaluate the environmental impacts for rule projects proposed for adoption or amendment.

PAR 1168 is considered a "project" as defined by CEQA. PAR 1168 proposes to: 1) prohibit the use of parachlorobenzotrifluoride (pCBtF) and tertiary-Butyl Acetate (t-BAc) due to toxicity concerns; 2) delay the effective dates of volatile organic compound (VOC) emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and ~~4~~5) remove definitions, and update, ~~and~~ clarify, and streamline rule language. Implementation of the proposed project is estimated to ~~cause~~ result in delayed and permanent foregone VOC emission reductions of up to 0.42 ~~0.12~~ and 0.28 tpd, respectively, due to extending the effective dates and maintaining the existing VOC limits for certain categories of Regulated Products.

The purpose of the October 2017 amendments to Rule 1168 was to reduce emissions of VOCs by 1.38 tpd, as well as reduce toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. The October 2017 Final Environmental Assessment (EA)[6] for the October 2017 amendments to Rule 1168 was certified by the South Coast AQMD Governing Board on October 6, 2017 (referred to herein as the October 2017 Final EA for Rule 1168) and analyzed the environmental impacts associated with the activities manufacturers were anticipated to undertake to reformulate products and that these

[6] South Coast AQMD, 2017. Final Environmental Assessment (EA) for Proposed Amended Rule (PAR) 1168 – Adhesive and Sealant Applications, SCH No. 2017081031. http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2017/par1168FEA.pdf

reformulation activities could create secondary adverse environmental impacts. None of the environmental topic areas previously analyzed in the October 2017 Final EA were concluded to have significant and unavoidable impacts, including the topic of air quality and greenhouse gases (GHGs).

When comparing the types of activities and associated environmental impacts with implementing the VOC limits and compliance dates subject to the Rule 1168 amendments that were previously analyzed in the October 2017 Final EA to the currently proposed changes which comprise PAR 1168, the type and extent of the physical changes are expected to be similar and will cause similar secondary adverse environmental impacts for the same environmental topic areas that were identified and analyzed in the October 2017 Final EA for Rule 1168. Thus, the proposed project is expected to have generally the same or similar effects that were previously examined in the October 2017 Final EA for Rule 1168 but that the air quality impacts from PAR 1168 will cause some delayed and permanent VOC emission reductions foregone, which will be more severe than what was discussed in October 2017 Final EA.

Therefore, the proposed project contains new information of substantial importance which was not known and could not have been known at the time the October 2017 Final EA for Rule 1168 was certified [CEQA Guidelines Section 15162(a)(3)]. Moreover, the analysis indicates that the type of CEQA document appropriate for the proposed project is a Subsequent Environmental Assessment (SEA), which contains the environmental analysis required by CEQA Guidelines Section 15187 and tiers off of the October 2017 Final EA for Rule 1168. Thus, this SEA is a subsequent document to the October 2017 Final EA for Rule 1168.

Because this is a subsequent document, the baseline is the project analyzed in the October 2017 Final EA for Rule 1168. The SEA is a substitute CEQA document prepared in lieu of a Subsequent EIR with significant impacts [CEQA Guidelines Section 15162], pursuant to the South Coast AQMD's Certified Regulatory Program [CEQA Guidelines Section 15251(1)]; codified in South Coast AQMD Rule 110. The SEA is also a public disclosure document intended to: 1) provide the lead agency, responsible agencies, decision makers, and the general public with information on the environmental impacts of the proposed project; and 2) be used as a tool by decision makers to facilitate decision making on the proposed project.

Thus, the South Coast AQMD, as lead agency for the proposed project has prepared this SEA with significant impacts. In addition, since significant adverse impacts have been identified, an alternatives analysis is required and has been included in this SEA.

The Draft SEA ~~is being~~has been released and circulated for a 45-day public review and comment period from September 6, 2022 to October 21, 2021. No comment letters were received during the comment period. ~~Any comments on the analysis presented in this Draft SEA received during the public comment period will be responded to and included in an appendix of the Final SEA.~~

The October 2017 Final EA for Rule 1168 (State Clearinghouse No. 2017081031) upon which this SEA relies, is incorporated by reference pursuant to CEQA Guidelines Section 15150 and is available from the South Coast AQMD's website at:

October 2017 Final EA for Rule 1168:
http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2017/par1168FEA.pdf

The above document may also be obtained from the South Coast AQMD's Public Information Center by calling (909) 396-2039 or by email PICrequests@aqmd.gov, or by contacting Derrick Alatorre - Deputy Executive Officer/Public Advisor, South Coast AQMD, 21865 Copley Drive, Diamond Bar, CA 91765, (909) 396-2432, PublicAdvisor@aqmd.gov.

South Coast AQMD staff has reviewed the modifications made to PAR 1168 after the release of the Draft SEA for public review and comment and concluded that none of the revisions constitute significant new information, because: 1) no new significant environmental impacts would result from the proposed project; 2) there is no substantial increase in the severity of an environmental impact; 3) no other feasible project alternative or mitigation measure was identified that would clearly lessen the environmental impacts of the project and was considerably different from others previously analyzed, and 4) the Draft SEA did not deprive the public from meaningful review and comment. In addition, revisions to the proposed project and analysis in response to verbal or written comments during the rule development process would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft SEA pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Therefore, the Draft SEA has been revised to include the aforementioned modifications such that it is now the Final SEA.

Prior to making a decision on the adoption of the proposed project, the South Coast AQMD Governing Board must review and certify the Final SEA~~, including responses to comments,~~ as providing adequate information on the potential adverse environmental impacts that may occur as a result of adopting PAR 1168.

1.2 PREVIOUS CEQA DOCUMENTATION

South Coast AQMD rules, as ongoing regulatory programs, have the potential to be revised over time due to a variety of factors (e.g., regulatory decisions by other agencies, new data, lack of progress in advancing the effectiveness of control technologies to comply with requirements in technology forcing rules, new more stringent national ambient air quality standards, etc.).

Rule 1168 was adopted in April 1989 to reduce VOC emissions from adhesive applications. The rule has been amended 14 times with the last amendment in October 2017. PAR 1168 has been developed to delay the effective dates of or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; prohibit the use of t-BAc and pCBtF due to toxicity concerns; allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; remove definitions; and update, clarify, and streamline ~~some definitions and other~~ rule language. As allowed by CEQA Guidelines Sections 15152, 15162, and 15385, this SEA tiers off of the October 2017 Final EA for Rule 1168, which is summarized below:

Final Environmental Assessment for Proposed Amended Rule 1168 – Adhesive and Sealant Applications; October 2017: Amendments to Rule 1168 were adopted in October 2017 to reduce emissions of VOCs, toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. The amendments to Rule 1168 clarified the applicability; revised, deleted, and added various definitions; lowered the VOC limits for certain categories and allowed a three-year sell-through and use-through; added new product

categories with corresponding VOC content limits; required products marketed for use under varying categories to be subject to the lowest VOC limit; prohibited the storage of non-compliant products, unless for shipment outside of the South Coast AQMD; added test methods for analyzing VOC content; added labeling requirements; included reporting requirements for manufacturers, private labelers, big box retailers, distribution centers, and facilities that use a 55 gallon per year exemption; prohibited the use of Rule 102 Group II exempt solvents, except volatile methyl siloxanes; included a technology assessment for certain product categories; and removed, modified, or added various exemptions. Approximately 1.38 tpd of VOC emission reductions were expected to be achieved as a result of implementing the October 2017 version of Rule 1168. While the reduction of VOC emissions was expected to create an environmental benefit, the activities that manufacturers were expected to undertake to reformulate compliant products were anticipated to also create secondary adverse environmental impacts. The October 2017 Final EA for Rule 1168 analyzed the potential secondary adverse environmental impacts but none of the environmental topic areas analyzed were identified as having potentially significant adverse impacts. The South Coast AQMD Governing Board certified the Final EA and approved the amendments to Rule 1168 on October 6, 2017. The October 2017 Final EA can be obtained by visiting the South Coast AQMD website at: http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2017/par1168FEA.pdf.

1.3 INTENDED USES OF THIS DOCUMENT

In general, a CEQA document is an informational document that informs a public agency's decision-makers and the public generally of potentially significant adverse environmental effects of a project, identifies possible ways to avoid or minimize the significant effects, and describes reasonable alternatives to the project [CEQA Guidelines Section 15121]. A public agency's decision-makers must consider the information in a CEQA document prior to making a decision on the project. Accordingly, this SEA is intended to: a) provide the South Coast AQMD Governing Board and the public with information on the environmental effects of the proposed project; and b) be used as a tool by the South Coast AQMD Governing Board to facilitate decision-making on the proposed project.

Additionally, CEQA Guidelines Section 15124(d)(1) requires a public agency to identify the following specific types of intended uses of a CEQA document:

1. A list of the agencies that are expected to use the SEA in their decision-making;
2. A list of permits and other approvals required to implement the project; and
3. A list of related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies.

There are no permits or other approvals required to implement PAR 1168. Moreover, PAR 1168 is not subject to any other related environmental review or consultation requirements.

To the extent that local public agencies, such as cities, county planning commissions, etc., are responsible for making land use and planning decisions related to projects that must comply with the requirements in the proposed project, they could possibly rely on this SEA during their decision-making process. Similarly, other single purpose public agencies approving projects at facilities complying with the proposed project may rely on this SEA.

1.4 AREAS OF CONTROVERSY

CEQA Guidelines Section 15123(b)(2) requires a public agency to identify the areas of controversy in the CEQA document, including issues raised by agencies and the public. Over the course of developing PAR 1168, the predominant concerns expressed by representatives of industry and environmental groups, either in public meetings or in written comments, regarding the proposed project are highlighted in Table 1-1.

Table 1-1
Areas of Controversy

	Area of Controversy	Topics Raised by the Public	South Coast AQMD Evaluation
1.	The effect of the pCBtF prohibition on roofing products	Achieving the proposed VOC limits would not be possible without using pCBtF for formulations of some adhesives and sealants used in roofing applications	While some roofing products that were previously formulated with pCBtF will no longer allowed to be used if PAR 1168 is adopted, the following factors were considered: 1) Currently, there are other roofing products commercially available on the market that are not formulated with pCBtF but have been demonstrated to comply with the previous VOC limits in effect prior to the October 6, 2017 amendments to Rule 1168 and these are the same VOC limits which are proposed in PAR 1168. Thus, no substantial interruption in the market supply of compliant roofing adhesives is expected. 2) The long-term health benefit of prohibiting pCBtF, a toxic compound with substantial adverse carcinogenic health effects, would outweigh the short-term inconvenience associated with market shift of certain manufacturers pivoting from formulating roofing adhesives with pCBtF to those without pCBtF; 3) The proposed January 1, 2027 effective date of the prohibition for Cut Edge Single Ply Roof Membrane Sealants, EPDM/TPO Single Ply Roof Membrane Adhesive, and Roof Adhesive primers, the proposed January 1, 2025 effective date of the prohibition for Single Ply Roof Membrane ~~Adhesive~~ Sealants (Except Cut Edge), Single Ply Roof Membrane Adhesive (Except EPDM/TPO), Roof Sealant Primers, and All other Roof Sealants, and the proposed January 1, 2024 effective date for all other Regulated Products not listed above, ~~and~~ as well as the inclusion of ~~athree-year~~ sell-through and ~~four-year~~ use-through provisions ~~which~~ will provide the manufacturer(s) sufficient time to phase out pCBtF.

Table 1-1 (continued)
Areas of Controversy

	Area of Controversy	Topics Raised by the Public	South Coast AQMD Evaluation
2.	The effect of the pCBtF prohibition on Clear, Paintable, and Immediately Water-Resistant Sealants	pCBtF was utilized to reformulate Clear, Paintable, and Immediately Water-resistant Sealants to work toward meeting the 250 grams per liter (g/L) limit effective January 1, 2023	1) PAR 1168 includes a provision which delays implementation of the pCBtF prohibition by ~~one~~ three years for this product category~~sealants~~. 2) The proposed effective date of the prohibition also includes a two~~three~~-year sell through and a two~~four~~-year use-through provision, which will provide the manufacturer(s) sufficient time to phase out pCBtF. 3) Other ~~architectural sealants and all other roof sealants with water-resistant and/or water-proof capabilities~~Clear Paintable, and Immediately Water-Resistant Sealants are currently commercially available on the market that meet the 250 g/L ~~and 50 g/L~~ VOC limit, some formulated below 50 g/L, ~~respectively and~~ that could replace ~~formulations of this type of~~ sealants containing pCBtF. 4) The long-term health benefit of prohibiting pCBtF, a toxic compound with substantial adverse carcinogenic health effects, would outweigh the need to have a sealant that is both clear and paintable since these products are being used by consumers.

Table 1-1 (continued)
Areas of Controversy

	Area of Controversy	Topics Raised by the Public	South Coast AQMD Evaluation
3.	Request to exempt Opteon 1100 from the definition of VOC	The exemption of Opteon 1100 Two-Component Foam Sealant, would help expand the product options and provide relief for supply issues	1) The Office of Environmental Health Hazard Assessment (OEHHA), a specialized department within the California Environmental Protection Agency (CalEPA) with responsibility for evaluating health risks from environmental chemical contaminants, has not evaluated Opteon 1100. However, Opteon 1100 is a hydrofluoro-olefin (HFO) which may have the potential to break down into perfluoroalkyl and polyfluoroalkyl substances (PFAS), commonly referred to as forever chemicals, through atmospheric degradation, and thus could have serious health impacts. 2) PAR 1168 ~~Staff is considering the request to~~ includes a conditional and limited exemption for Opteon 1100~~in PAR 1168~~ in the definition for Exempt Compound. The exemption would be ~~allow the use of Opteon 1100~~limited to use in ~~formulations of~~ High-Pressure Two-Component Foam Sealants and Low-Pressure Two-Component Foam Sealants applied~~used~~ in an industrial or professional setting. The exemption would also be contingent on the results of an assessment conducted by OEHHA. The exemption would not go into effect unless: 1) OEHHA has sufficient information to establish a Cancer Inhalation Unit Risk Factor and does not adopt a cancer risk factor for Opteon 1100; and 2) OEHHA has sufficient information to establish an acute reference exposure level (REL) and a chronic REL of Opteon 1100 and the acute REL (or interim acute REL) and a chronic REL (or interim chronic REL) for Opteon 1100 are higher than those for the RELs for the Hydrofluoro-Olefin (HFO) it would replace.

Table 1-1 (concluded)
Areas of Controversy

	Area of Controversy	Topics Raised by the Public	South Coast AQMD Evaluation
4.	Remove the reference of ASTM Test Method D7767-11		1) Staff is proposing to delete the definition for Energy Curable Adhesives and Sealants, which was added during the 2017 rule amendment as a mechanism to include ASTM Test Method D7767-11 which is a test method for thin film Ultra Violet/Electron Beam/Light Emitting Diode (UV/EB/LED) materials, also referred to as Energy Curable materials. RadTech, the trade association that represents the UV/EB/LED industry, objects to the removal of this definition. 2) On August 22, 2022, the U.S. EPA proposed a limited disapproval of Rule 1106 - Marine and Pleasure Craft Coatings and Rule 1107 – Coating of Metal Parts and Products due to the inclusion of ASTM Test Method D7767-11, which is not approved by the U.S. EPA and therefore cannot be used to enforce a SIP-approved rule. The U.S. EPA deemed the provisions that reference ASTM Test Method D7767-11 did not satisfy the requirements of section 110 and part D of the Clean Air Act and thus prevented full approval of the rules. 3) The removal of the definition of Energy Curable Adhesives and Sealants will remove the reference to this test method to avoid a SIP disapproval. 4) Manufacturers can rely on formulation data to calculate the VOC content of their products to determine if they comply with rule limits. The South Coast AQMD developed a Test Method Guidance Document for Rule 1168 that states that formulation data is the appropriate tool for manufacturers to verify compliance for thin film UV/EB/LED curable products.

Pursuant to CEQA Guidelines Section 15131(a), "[e]conomic or social effects of a project shall not be treated as significant effects on the environment." CEQA Guidelines Section 15131(b) states further, "[e]conomic or social effects of a project may be used to determine the significance of physical changes caused by the project." Physical changes that may be caused by the proposed project have been evaluated in Chapter 4 of this Draft SEA. No direct or indirect physical changes resulting from economic or social effects have been identified as a result of implementing PAR 1168.

1.5 EXECUTIVE SUMMARY

CEQA Guidelines Section 15123 requires a CEQA document to include a brief summary of the proposed actions and their consequences. In addition, areas of controversy must also be included in the executive summary (see preceding discussion). This SEA consists of the following chapters: Chapter 1 – Executive Summary; Chapter 2 – Project Description; Chapter 3 – Existing Setting; Chapter 4 –Environmental Impacts; Chapter 5 –Alternatives; Chapter 6 – References; Chapter 7 – Acronyms; and various appendices. The following subsections briefly summarize the contents of Chapters 1 through 5.

Summary of Chapter 1 – Executive Summary

Chapter 1 includes an introduction of the proposed project and a discussion of the legislative authority that allows the South Coast AQMD to amend and adopt air pollution control rules, identifies general CEQA requirements and the intended uses of this CEQA document, and summarizes the remaining four chapters that comprise this SEA.

Summary of Chapter 2 – Project Description

Efforts to develop PAR 1168 began after the technology assessment required by the October 2017 amendments to Rule 1168 was conducted and completed for nine adhesive and sealant categories. The purpose of the technology assessment was to determine if the technology progressed to the extent that commercially available adhesive and sealant products were formulated to achieve the future VOC limits by the effective date of January 1, 2023. In addition, amendments to Rule 1168 were necessary to address the Stationary Source Committee's recommendation to take a precautionary approach when considering a new exemption for any compound with a toxic endpoint and to remove the exemption for any compound that has an established toxic endpoint.

PAR 1168 proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and 45) remove definitions, and update, ~~and~~ clarify, and streamline rule language. PAR 1168 is expected to cause delayed and permanent foregone VOC emission reductions of 0.42 ~~0.12~~ tpd and 0.28 tpd, respectively, due to extending the effective dates and maintaining the existing VOC limits for certain categories of Regulated Products. A copy of PAR 1168 can be found in Appendix A of this SEA.

Summary of Chapter 3 – Existing Setting

Pursuant to CEQA Guidelines Section 15125, Chapter 3 – Existing Setting includes a description of the existing environmental setting of the environmental topic areas that are expected to have potentially significant adverse impacts if the proposed project is implemented.

PAR 1168 has been developed to delay the effective dates of or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; prohibit the use of t-BAc and pCBtF due to toxicity concerns; allow limited exemption of Opteon 1100 for manufacturing Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and clarify some

definitions and other rule language. As allowed by CEQA Guidelines Sections 15152, 15162, and 15385, this SEA tiers off of the October 2017 Final EA for Rule 1168.

The existing environmental setting is the physical environmental conditions as they existed at the time the Notice of Preparation (NOP) and Initial Study (IS) was published, or if no NOP/IS is published, at the time the environmental analysis is commenced [CEQA Guidelines Section 15125]. For the October 2017 amendments to Rule 1168, no NOP/IS was prepared but the environmental analysis ~~was~~ commenced on August 16, 2017 when the Notice of Completion (NOC) announcing the availability of the Draft EA was released for public review and comment. The Draft EA for PAR 1168 contained an environmental checklist, the same environmental checklist used when preparing a NOP/IS, plus a detailed analysis of the environmental setting and corresponding environmental effects specifically tailored to implementing the proposed amendments at that time. When comparing the types of activities and associated environmental impacts with implementing the VOC limits and compliance dates subject to the October 2017 version of Rule 1168, which was previously analyzed in the October 2017 Final EA, to the currently proposed changes which comprise PAR 1168, the type and extent of the physical changes are expected to be similar and will cause similar secondary adverse environmental impacts for the same environmental topic areas that were identified and analyzed in the October 2017 Final EA. The analysis of the effects of PAR 1168 indicates that the topic of air quality will be affected due to delayed and permanent VOC emission reductions foregone, which will be more severe than what was previously contemplated in October 2017 Final EA. Based on the preceding discussion, the baseline that was established at the time the NOC was published for the August 2017 Draft EA directly corresponds to the currently proposed project since the affected categories of coatings and adhesives, and the nature of the physical impacts that may occur as a result of implementing PAR 1168 are the same or similar to the previous analysis in the October 2017 Final EA. Thus, the baseline for the analysis in this SEA is the project analyzed in the October 2017 Final EA.

This SEA analyzes the incremental changes that may occur subsequent to the October 2017 Final EA if PAR 1168 is implemented. In addition, the analysis in this SEA independently considered whether the proposed project would result in new significant impacts for any of the other environmental topic areas previously concluded in the October 2017 Final EA to have either no significant impacts or less than significant impacts and only the topic of air quality was identified as having potentially significant adverse impacts. A description and the basis for this conclusion is included in Chapter 4 of this SEA.

As such, Chapter 3 of this ~~Draft~~ Final SEA contains subchapters devoted to describing the existing setting for the air quality which was the only environmental topic area identified as having potentially significant adverse environmental impacts if PAR 1168 is implemented.

Summary of Chapter 4 – Environmental Impacts

CEQA Guidelines Section 15126(a) requires a CEQA document to identify and focus on the "significant environmental effects of the proposed project." Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. In addition, CEQA Guidelines Section 15126(b) requires a CEQA document to identify the significant environmental effects that cannot be avoided if the proposed project is implemented. CEQA Guidelines Section 15126(c) also requires a CEQA document to consider and discuss the significant irreversible environmental changes that would be involved if the proposed project is implemented. Further, CEQA Guidelines Section 15126(e) requires a CEQA document to consider and discuss mitigation measures

proposed to minimize the significant effects. Finally, CEQA Guidelines Section 15130 requires a CEQA document to discuss whether the proposed project has cumulative impacts. Chapter 4 considers and discusses each of these requirements.

PAR 1168 has been developed to delay the effective dates of or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; prohibit the use of t-BAc and pCBtF due to toxicity concerns; allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and clarify some definitions and other rule language. As allowed by CEQA Guidelines Sections 15152, 15162, and 15385, this SEA tiers off of the October 2017 Final EA for Rule 1168. As explained in the Summary of Chapter 3, the baseline for the analysis in this SEA is the project analyzed in the October 2017 Final EA.

This SEA is a comprehensive environmental document that programmatically analyzes potential incremental environmental impacts from implementing the proposed project relative to the existing setting established in the October 2017 Final EA for Rule 1168. The analysis examines the activities that manufacturers of adhesives and sealants would be expected to undertake to comply with PAR 1168.

Potential Environmental Impacts Found To Be Significant

This SEA tiers off of the October 2017 Final EA for Rule 1168 which concluded that no environmental topic areas, including the topic of air quality and GHGs, would be significantly adversely affected associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds.

The analysis in this SEA independently considers whether PAR 1168 would result in new significant impacts for any environmental topic areas previously concluded in the October 2017 Final EA for Rule 1168 to have either no significant impacts or less than significant impacts. Among the environmental areas examined for PAR 1168, only the topic of air quality will have new significant impacts due to the potential for delayed and permanent VOC emission reductions foregone, which will be more severe than what was discussed in October 2017 Final EA. A description and the basis for this conclusion is also included in this section.

PAR 1168 has been developed to delay the effective dates of or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; prohibit the use of t-BAc and pCBtF due to toxicity concerns; allow limited exemption of Opteon 1100 for manufacturing Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and clarify some definitions and other rule language. Compliance with PAR 1168 is expected to ~~cause~~ result in delayed VOC emission reductions for the categories of Top and Trim Adhesive, ~~and~~ Higher Viscosity CPVC Welding Cement, Clear, Paintable, Immediately Water-Resistant Sealant, and Rubber Vulcanization Adhesive due to extending the effective date to comply with VOC limits that were adopted in the October 6, 2017 version of Rule 1168. In addition, PAR 1168 is likely to

~~cause~~ result in delayed VOC emission reductions from a proposed new subcategory of foam sealants, One-Component Foam Sealant, due to a combination of increasing the VOC limit from 50 g/L to 18 percent by weight and delaying the effective date from January 1, 2023 to July 1, 2023. Permanent foregone VOC emission reductions are also expected if the proposed higher VOC contents for certain categories of Regulated Products, including One-Component Foam Sealant, CPVC Welding Cement for Life Safety Systems, All Other Roof Adhesives, Single Ply Roof Membrane Adhesive (including both subcategories of with and without Ethylene Propylene Diene Terpolymer (EPDM) and Thermoplastic Polyolefin (TPO)), and All Other Roof Sealants, are adopted.

As such, if PAR 1168 is implemented, significant and unavoidable adverse environmental impacts to the air quality during operation are expected to occur.

Potential Environmental Impacts Found Not To Be Significant

CEQA requires the SEA to identify the environmental topic areas that were analyzed and concluded to have no impacts or less than significant impacts if the proposed project is implemented. For the environmental topic areas identified as having no impacts, CEQA Guidelines Section 15128 requires the analysis to contain a statement briefly indicating the reasons that various effects of a project were determined not to have significant impacts and were therefore not discussed in detail.

As explained earlier, the October 2017 Final EA for Rule 1168 concluded that all of the environmental topic areas, including the topic of air quality and GHGs, would have either less than significant impacts or no impacts. This subchapter of the SEA identifies and summarizes these previously analyzed environmental topic areas and assesses whether the conclusions for these environmental topic areas would need to be revised if PAR 1168 is implemented. Also, since the new environmental topic area of wildfires was added to the CEQA Guidelines after the October 2017 Final EA was certified, this section analyzes whether the PAR 1168 would cause any wildfire-associated impacts.

As such, if PAR 1168 is implemented, the conclusions of no impact or less than significant impact for all of the environmental topic areas, except for air quality during operation as analyzed in the previous section of this chapter, will remain unchanged.

Other CEQA Topics

CEQA documents are also required to consider and discuss the potential for growth-inducing impacts [CEQA Guidelines Section 15126(d)] and to explain and make findings about the project's relationship between short-term and long-term environmental goals [CEQA Guidelines Section 15065(a)(2)]. Additional analysis in Chapter 4 confirms that PAR 1168 would not result in irreversible environmental changes or the irretrievable commitment of resources, foster economic or population growth, or the construction of additional housing. Further, implementation of the PAR 1168 is not expected to achieve short-term goals to the disadvantage of long-term environmental goals.

Summary Chapter 5 - Alternatives

Since significant air quality impacts during operation are associated with PAR 1168, CEQA Guidelines Section 15126(e) requires a CEQA document to consider and discuss alternatives to the proposed project. The following alternatives to the proposed project were identified and are summarized in Table 1-2: 1) Alternative A – No Project; 2) Alternative B – More Stringent

Proposed Project; 3) Alternative C – Less Stringent Proposed Project; and 4) Alternative D – Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168.

Pursuant to the requirements in CEQA Guidelines Section 15126.6(b) to mitigate or avoid the significant effects that a project may have on the environment, a comparison of the potentially significant adverse operational air quality impacts from each of the project alternatives for the individual rule components that comprise PAR 1168 is provided in Table 1-3. Aside from operational air quality impacts, no other potentially significant adverse impacts were identified for the proposed project or any of the project alternatives. The proposed project provides the best balance in achieving the project objectives while minimizing the significant adverse environmental impacts to operational air quality. Therefore, the proposed project is preferred over the project alternatives.

Table 1-2
Summary of the Proposed Project (PAR 1168) and Alternatives

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Top and Trim Adhesive	No change to existing 250 g/L limit but extend effective date to 1/1/2028	250 g/L by 1/1/2023	250 g/L by 1/1/2027	250 g/L by 1/1/2029	Same as Proposed Project
One-Component Foam Sealant (new subcategory)	18% VOC by weight, and extend effective date to 7/1/2023	50 g/L by 1/1/2023 (for general category of Foam Sealant in the October 2017 version of Rule 1168)	18% VOC by weight by 1/1/2023	18% VOC by weight by 7/1/2024	50 g/L by 1/1/2030
~~**High-Pressure Two-Component Foam Sealant (new subcategory)**~~	~~5% VOC by weight by 1/1/2023~~	~~50 g/L by 1/1/2023 (for general category of Foam Sealant in the October 2017 version of Rule 1168)~~	~~Same as Proposed Project~~	~~5% VOC by weight by 1/1/2024~~	~~50 g/L by 1/1/2030~~
~~**Low-Pressure Two-Component Foam Sealant (new subcategory)**~~	~~5% VOC by weight by 1/1/2023~~		~~Same as Proposed Project~~	~~5% VOC by weight by 1/1/2024~~	
Single Ply Roof Membrane Adhesive (including new subcategories of with and without EPDM/TPO)	250 g/L, effective upon adoption	200 g/L by 1/1/2023	Same as Proposed Project	Same as Proposed Project	200 g/L by 1/1/2030
All Other Roof Sealants	300 g/L, effective upon adoption	250 g/L by 1/1/2023	Same as Proposed Project	Same as Proposed Project	250 g/L by 1/1/2030
All Other Roof Adhesives	250 g/L limit, effective upon adoption	200 g/L by 1/1/2023	Same as Proposed Project	Same as Proposed Project	200 g/L by 1/1/2030

Table 1-2 (continued)
Summary of the Proposed Project (PAR 1168) and Alternatives

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
CPVC Welding Cement for Life Safety Systems (new subcategory)	490 g/L, effective upon adoption	400 g/L by 1/1/2023 (for general category of CPVC Welding Cement in the October 2017 version of Rule 1168)	Same as Proposed Project	Same as Proposed Project	400 g/L by 1/1/2030
Higher Viscosity CPVC Welding Cement (new subcategory)	No change to existing 400 g/L limit but extend effective date to 7/1/2024	400 g/L by 1/1/2023 (for general category of CPVC Welding Cement in the October 2017 version of Rule 1168)	400 g/L limit by 1/1/2024	400 g/L limit by 7/1/2025	Same as Proposed Project
Clear, Paintable, Immediately Water-Resistant Sealant	No change to existing 250 g/L limit but extend effective date to 1/1/2026	250 g/L by 1/1/2023	250 g/L by 1/1/2025	250 g/L by 1/1/2027	Same as Proposed Project
Rubber Vulcanization Adhesive	No change to existing 250 g/L limit but extend effective date to 1/1/2028	250 g/L by 1/1/2023	250 g/L by 1/1/2027	250 g/L by 1/1/2029	Same as Proposed Project

Table 1-2 (continued)
Summary of the Proposed Project (PAR 1168) and Alternatives

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Prohibition of Sales and Use	No use, supply, sell, or offer for sale of Regulated Products that contain more than 0.01% by weight of the following: chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene~~, or~~ and all Group II exempt ~~compounds~~ solvents except volatile methyl siloxanes (VMS) Prohibit the use of ~~t-BAc and~~ pCBtF in manufacturing Regulated Products on and after 1/1/2024 ~~(~~except for: ~~——~~Single Ply Roof Membrane - Adhesive (except EPDM/TPO), Single Ply Roof Membrane Sealants (Except Cut Edge), All Other Roof Sealants, and Roof Sealant Primer with a ~~manufacturing~~ prohibition effective date ~~on and after~~of 1/1/2025 - Clear, Paintable, and Immediately Water Resistant Sealant with a prohibition date of 1/1/2026 - Roof Adhesive Primer, Cut Edge Single Ply Roof Membrane Sealant, and EPDM/TPO Single Ply Roof Membrane Adhesive with a prohibition effective date of 1/1/2027	No use, supply, sell, or offer for sale of Group II exempt compounds No prohibition on manufacture, supply, use, sell. or offer for sale of t-BAc and pCBtF	Same as Proposed Project	Same as Proposed Project	Same as Proposed Project

Table 1-2 (concluded)
Summary of the Proposed Project (PAR 1168) and Alternatives

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Prohibition of Sales and Use (concluded)	Prohibit the use of t-BAc in manufacturing Regulated Products on and after 1/1/2024 Prohibit supply, sell, or offer for sale of Regulated Products containing pCBtF on and after: - 1/1/2028 for Clear, Paintable, and Immediately Water-Resistant Sealant, Single Ply Roof Membrane Adhesive (Except EPDM/TPO), Single Ply Roof Membrane Sealant (Except Cut Edge), EPDM/TPO Single Ply Roof Membrane Adhesive, Cut Edge Single Ply Roof Membrane Sealant, Roof Adhesive Primer, Roof Sealant Primer, and All other Roof Sealant - 1/1/2027 for all Regulated Products not listed above. Prohibit supply, sell, or offer for sale of Regulated Products containing t-BAc ~~and pCBtF three years after manufacturing prohibition effective date~~on and after 1/1/2027 for all Regulated Products. Prohibit use of Regulated Products containing t-BAc and pCBtF on and after 1/1/2028 for all Regulated Products~~four years after manufacturing prohibition effective date~~	No use, supply, sell, or offer for sale of Group II exempt compounds No prohibition on manufacture, supply, use, sell. or offer for sale of t-BAc and pCBtF	Same as Proposed Project	Same as Proposed Project	Same as Proposed Project

*The No Project alternative means retaining the VOC limits and effective dates as established in the October 2017 version of Rule 1168.

Table 1-3
Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives

Air Quality & GHGs Impact Areas	Proposed Project (PAR 1168)	Alternative A: No Project	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Construction	**No Significant Impacts** because no physical modifications involving construction required	**No Significant Impacts** Same as Proposed Project	**No Significant Impacts** Same as Proposed Project	**No Significant Impacts** Same as Proposed Project	**No Significant Impacts** Same as Proposed Project
GHGs	**No Significant Impacts** because chemicals used for reformulating compliant products do not contain any GHG compounds, except for Two-Component Foam Sealants which use foam blowing agents that contain HFOs, which are GHGs with a low GWP. Under PAR 1168, Opteon 1100 may be used as a replacement (contingent upon OEEHA's assessment for toxicity concerns) but it also uses a foam blowing agent with a low GWP.	**No Significant Impacts** Same as Proposed Project	**No Significant Impacts** Same as Proposed Project	**No Significant Impacts** Same as Proposed Project	**No Significant Impacts** Same as Proposed Project

Table 1-3 (continued)
Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives

Air Quality & GHGs Impact Areas	Proposed Project (PAR 1168)	Alternative A: No Project	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Operation – VOC Emissions	**Potentially Significant VOC Impacts** due to: 1) Delayed VOC emission reductions of 0.42 ~~0.12~~ tpd from: a) Top and Trim Adhesive - 0.1 tpd until 1/1/2028 b) One-Component Foam Sealant - 0.01 tpd until 7/1/2023 c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 7/1/2024 d) Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2026 e) Rubber Vulcanization Adhesive - 0.29 tpd until 1/1/2028 2) Permanent VOC emission reductions foregone of 0.28 tpd from: a) One-Component Foam Sealant - 0.12 tpd b) CPVC Welding Cement for Life Safety Systems - 0.01 tpd c) All Other Roof Adhesives - 0.03 tpd d) Single Ply Roof Membrane Adhesive (including both subcategories of with and without EPDM/TPO – 0.07 tpd e) All Other Roof Sealants - 0.05 tpd	**No Significant VOC Impacts** due to 1.38 tpd VOC permanent emission reductions	**Potentially Significant VOC Impacts** due to: 1) Same delayed VOC emission reductions of 0.42 ~~0.12~~ tpd but over a shorter period from: a) Top and Trim Adhesive - 0.1 tpd until 1/1/2027 b) One-Component Foam Sealant - 0.01 tpd until 1/1/2023 c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 1/1/2024 d) Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2025 e) Rubber Vulcanization Adhesive - 0.29 tpd until 1/1/2027 2) Permanent VOC emission reductions foregone of 0.28 tpd - Same as Proposed Project.	**Potentially Significant VOC Impacts** due to: 1) Same delayed VOC emission reductions of 0.42 ~~0.12~~ tpd but over a longer period from: a) Top and Trim Adhesive - 0.1 tpd until 1/1/2029 b) One-Component Foam Sealant - 0.01 tpd until 7/1/2024 c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 7/1/2025 d) Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2027 e) Rubber Vulcanization Adhesive - 0.29 tpd until 1/1/2029 2) Permanent VOC emission reductions foregone of 0.28 tpd - Same as Proposed Project	**Potentially Significant VOC Impacts** due to: 1) Greater delayed VOC emission reductions of 0.70 ~~0.40~~ tpd over a longer period from: a) Top and Trim Adhesive - 0.1 tpd until 1/1/2028 b) One-Component Foam Sealant ~~(One-Component and Two-Component)~~ - 0.13 tpd until 1/1/2030 c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 7/1/2024 d) CPVC Welding Cement for Life Safety Systems - 0.01 tpd until 1/1/2030 e) All Other Roof Adhesives – 0.03 tpd until 1/1/2030 f) Single Ply Roof Membrane Adhesive (including both subcategories of with and without EPDM/TPO) – 0.07 tpd until 1/1/2030 g) All Other Roof Sealants: 0.05 tpd until 1/1/2030 h) Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 until 1/1/2026 i) Rubber Vulcanization Adhesive – 0.29 tpd until 1/1/2028 2) No permanent VOC emission reductions foregone

Table 1-3 (concluded)
Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives

Air Quality & GHGs Impact Areas	Proposed Project (PAR 1168)	Alternative A: No Project	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Operation – Toxicity and Odor Nuisance	**Less than Significant Toxicity and Odor Nuisance Impacts** due to reduced toxicity and odor profile from prohibition of t-BAc and pCBtF.	**Potentially Significant Toxicity Impacts** from ongoing existing toxicity impacts due to no prohibition on t-BAc and pCBtF despite their carcinogenic and acute health effects. **Less than significant odor nuisance impacts.**	**Less than Significant Toxicity Impacts** due to reduced toxicity and odor profile from prohibition of t-BAc and pCBtF - Same as Proposed Project. **Less than significant odor nuisance impacts** - Same as Proposed Project**.**	**Less than Significant Toxicity Impacts** due to reduced toxicity and odor profile from prohibition of t-BAc and pCBtF - Same as Proposed Project. **Less than significant odor nuisance impacts** - Same as Proposed Project**.**	**Less than Significant Toxicity and Odor Nuisance Impacts** due to reduced toxicity and odor profile from prohibition of t-BAc and pCBtF - Same as Proposed Project.

Summary Chapter 6 - References
This chapter contains a list of the references, and the organizations and persons consulted for the preparation of this SEA.

Summary Chapter 7 - Acronyms
This chapter contains a list of the acronyms that were used throughout the SEA and the corresponding definitions.

Appendix A
This appendix contains the latest version of PAR 1168.

CHAPTER 2

PROJECT DESCRIPTION

Project Location

Project Background

Project Objectives

Project Description

Summary of Affected Adhesive and Sealant Categories

Technology Overview

2.1 PROJECT LOCATION

The South Coast AQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin (Basin), the Riverside County portion of the Salton Sea Air Basin (SSAB) and the non-Palo Verde, Riverside County portion of the Mojave Desert Air Basin (MDAB). The Basin, a subarea of South Coast AQMD's jurisdiction, is bounded by the Pacific Ocean to the west, the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east and includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. 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. A federal non-attainment area (known as the Coachella Valley Planning Area) is a subregion of Riverside County and the SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (see Figure 2-1).

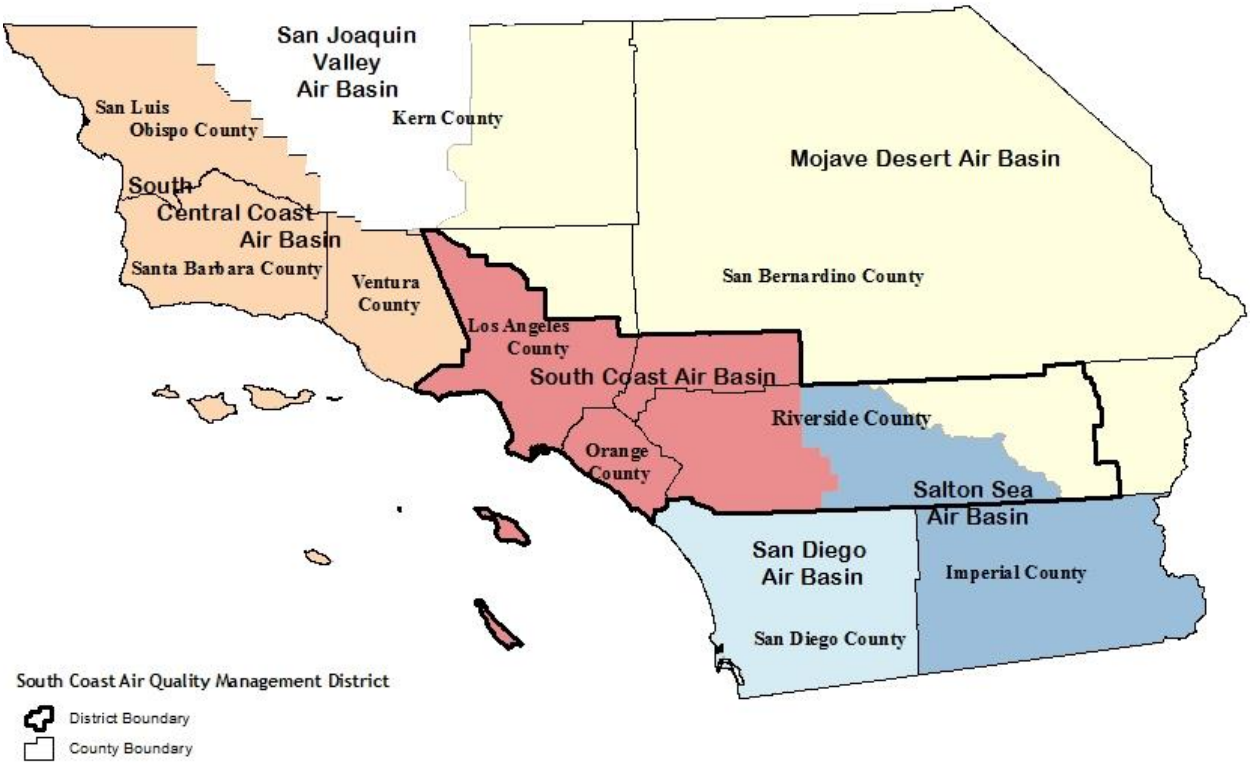

Figure 2-1
Southern California Air Basins and South Coast AQMD's Jurisdiction

2.2 PROJECT BACKGROUND

Rule 1168 was adopted in April 1989 to control VOC emissions from adhesive applications. The rule has been amended 14 times; the last amendment was in October 2017. The rule applies to products that were used during manufacturing at stationary sources and to products used by consumers that were not regulated by the CARB CPR. Currently there are VOC limits established for 59 categories of adhesives, adhesive primers, sealants, and sealant primers.

Rule 1168 requires a technology assessment to be performed in 2020 and 2022 for nine categories subject to Rule 1168 including Foam Sealants, Plastic Welding Cements, Roofing Products, and Top and Trim categories. In April 2017, the Stationary Source Committee recommended a precautionary approach when considering an exemption for any compound with a toxic endpoint and removing the exempt status for any compound that has an established toxic endpoint. Therefore, the current development of PAR 1168 has two primary goals: 1) assessing the feasibility of potential emission reductions through technology assessments and stakeholder engagement; and 2) evaluating the toxicity of exempt solvents with a focus on t-BAc and pCBtF.

2.3 PROJECT OBJECTIVES

The main objectives of the proposed project are to: 1) adjust the VOC limits and effective dates so that they are technologically feasible according to the technology assessment conducted for nine categories of adhesives and sealants; and 2) reduce the potential toxicity of product formulations and their associated health impacts by prohibiting the use of t-BAc and pCBtF.

2.4 PROJECT DESCRIPTION

PAR 1168 has been developed to delay the effective dates of or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; prohibit the use of t-BAc and pCBtF due to toxicity concerns; allow a limited exemption for Opteon 1100 contingent upon OEHHA's evaluation for toxicity impacts; and clarify some definitions and other rule language.

As such, staff is proposing the following amendments to Rule 1168. Appendix A of this Draft SEA contains a copy of PAR 1168.

Purpose – subdivision (a) and Applicability – subdivision (b)

The purpose and applicability are currently both under subdivision (a). Staff proposes to separate the applicability to a new subdivision for a more streamlined rule structure. In addition, staff proposes to extend the applicability by adding the stationary sources, which has been intended by the rule. The proposed change would provide clarity.

Definitions – subdivision (c)

The primary proposed revision to this subdivision will be the addition of several new definitions. Staff proposes to establish new categories and subcategories and VOC content limits to reflect the results of the technology assessment. Accordingly, the following definitions for those new categories and subcategories will be added:

- CPVC Welding Cement for Life Safety Systems
- Cut Edge Single Ply Roof Membrane Sealant

- EPDM/TPO Single Ply Roof Membrane Adhesive
- High-Pressure Two-Component Foam Sealant
- Higher Viscosity CPVC Welding Cement
- Hot Applied Modified Bitumen/Built Up Roof Adhesive
- Low-Pressure Two-Component Foam Sealant
- One-Component Foam Sealant
- Shingle Laminating Adhesive
- Roof Adhesive Primers
- Roof Sealant Primers

Other revisions are proposed to this subdivision which include removing the definition for Energy Curable Adhesives and Sealants. This definition references ASTM Test Method 7767 to measure volatiles from the category of radiation curable acrylate monomers, oligomers, and blends and thin coatings made from them. On August 22, 2022, U.S. EPA issued a partial SIP disapproval of other South Coast AQMD Rules 1106 and 1107 for ASTM Test Method D7767-11, which is not an U.S. EPA approved test method and cannot be used to enforce a SIP-approved rule. Staff is proposing to remove this definition to avoid a SIP disapproval.

Another revision is proposed to the definition of Exempt Compound which references Rule 102 for VOC exempt compounds. For the purpose of PAR 1168, Opteon 1100 shall only be considered exempt as a VOC for High-Pressure Two-Component Foam Sealants and Low-Pressure Two-Component Foam Sealants when used in an industrial or professional setting by workers trained with procedures and guidelines to reduce potential risk of exposure, if OEHHA has sufficient information to establish a Cancer Inhalation Unit Risk Factor, an acute reference exposure level (REL) and a chronic REL of Opteon 1100 and, upon completion of its assessment: 1) does not adopt a Cancer Inhalation Unit Risk Factor for Opteon 1100; 2) develops an acute reference exposure level (REL) or interim acute REL for Opteon 1100, which is higher than or equal to the acute REL or interim acute REL for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd); and 3) develops a chronic REL or interim chronic REL for Opteon 1100, which is higher than or equal to the chronic REL or interim chronic REL for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd).

Requirements – subdivision (d)

This subdivision contains the requirements for VOC limits and effective dates for adhesives and sealants by categories and subcategories, presented in PAR 1168 Table 1 – Regulated Product Categories and VOC Limits. Revisions to this table are proposed so as to reflect the revised VOC limits and effective dates for some existing categories and proposed new subcategories. Another proposed revision to Table 1 is to provide weight-based VOC limits for foam product categories, with a conversion of 0.1 weight percent for one gram per liter (g/L). Those foam product categories include Foam Insulation, One-Component Foam Sealants, High-Pressure Two-Component Foam Sealants, and Low-Pressure Two-Component Foam Sealants.

Additionally, staff is proposing a clarification to paragraph (d)(2) for the most restrictive clause. By the clarification, a product of specialty category with VOC limit is not subject to VOC limit of the default "All Other" category. For example, the category of All Clear, Paintable, and Immediately Water-Resistant Sealant is subject to the 380 g/L limit for this category, and it is not subject to the 300 g/L limit for the All Other Roof Sealants category.

Table 2-1 contains a summary of proposed changes as compared with the current requirements. There will be no revision to other requirements included in this provision, such as sell-through, transfer efficiency, and control devices.

Table 2-1
Comparison of Proposed VOC Limits and Effective Dates to VOC Limits in October 2017 Version of Rule 1168

Category	Current VOC Limit with 1/1/2023 Effective Date	Proposed Subcategory	Proposed VOC Limit	Proposed Effective Date
Top and Trim Adhesive	250 g/L	N/A	250 g/L	1/1/2028
Foam Sealant	50 g/L	One Component	18 % -by weight	7/1/2023
		High-Pressure Two-Component	5 % by weight	1/1/2023
		Low-Pressure Two-Component	5 % -by weight	1/1/2023
PVC Welding Cement	425 g/L	N/A	425 g/L	1/1/2023
CPVC Welding Cement	400 g/L	CPVC Welding Cement	400 g/L	1/1/2023
		CPVC Welding Cement for Life Safety Systems	490 g/L	Upon Adoption
		Higher Viscosity CPVC Welding Cement	400 g/L	7/1/2024
All Other Roof Adhesives	200 g/L	All Other Roof Adhesives	250 g/L	Upon Adoption
		Shingle Laminating Adhesive	30 g/L	1/1/2023
		Hot Applied Modified Bitumen/Built Up Roof Adhesive	30 g/L	1/1/2023
Single Ply Roof Membrane Adhesive	200 g/L	~~N/A~~ EPDM/TPO Single Ply Roof Membrane Adhesive	250 g/L	Upon Adoption
		Single Ply Roof Membrane Adhesive (Except EPDM/TPO)	250 g/L	Upon Adoption
All Other Roof Sealants	250 g/L	N/A	300 g/L	Upon Adoption
Single Ply Roof Membrane Sealant	250 g/L	~~N/A~~Cut Edge Single Ply Roof Membrane Sealant	250 g/L	1/1/2023
		Single Ply Roof Membrane Sealant (Except Cut Edge)	250 g/L	1/1/2023
Clear, Paintable, Immediately Water-Resistant Sealant	250 g/L	N/A	250 g/L	1/1/2026
Rubber Vulcanization Adhesive	250 g/L	N/A	250 g/L	1/1/2028
All Other Adhesive Primers	250 g/L	Roof Adhesive Primers	250 g/L;	Upon Adoption
		All Other Adhesive Primers	250 g/L;	Upon Adoption
All Other Sealant Primers	750 g/L	Roof Sealant Primers	750 g/L	Upon Adoption
		All Other Sealant Primers	750 g/L	Upon Adoption

Reporting and Recordkeeping Requirements – subdivision (e)

The October 2017 version of Rule 1168 includes two specific recordkeeping provisions which are addressed in subdivisions (f) and (d), respectively: 1) manufacturers, big box retailers, and distributors must retain records to support the data reported in the QERs; and 2) owners or operators of stationary sources that use adhesives or sealants to manufacture products must maintain records pursuant to Rule 109 – Recordkeeping for Volatile Organic Compound Emissions. Neither subdivision (f) nor subdivision (d) explains that Rule 109 only applies to stationary sources. For streamlining and clarification, PAR 1168 merges the reporting and recordkeeping requirements under subdivision (e) which ~~will~~ specifies the following required information:

- General Quantity and Emission Reporting (QER)
- Aerosol QER
- Private labeler requirements (as related to QER)
- Big box retailer or distribution center QER
- QER reporting timeline
- Facilities Using the 55 Gallon Exemption
- Recordkeeping for QER
- Rule 109 recordkeeping; and
- Confidentiality of Information

Staff is also proposing to add QER reporting requirements ~~in QER~~ for any products containing more than 0.01 weight percent of t-BAc or/and pCBtF. This reporting requirement would apply to manufacturers and private labelers under subparagraphs (e)(1)(G) and (e)(2)(J). This reporting requirement would begin with the next reporting cycle in 2025. Table 2-2 shows the QER reporting schedule adopted in the October 2017 version of Rule 1168:

Table 2-21
QER Reporting Schedule

Reporting Deadlines		Reported Years
Manufacturers & Private Labelers	Big Box Retailers & Distribution Centers	
September 1, 2019	May 1, 2019	2017, 2018
September 1, 2022	May1, 2022	2020, 2021
September 1, 2025	May 1, 2025	2023, 2024
September 1, 2030	May 1, 2030	2028, 2029
September 1, 2035	May 1, 2035	2033, 2034
September 1, 2040	May 1, 2040	2038, 2039

Administrative Requirements – subdivision (g)

~~The October 2017 version of Rule 1168 of this subdivision includes labeling and QER requirements but PAR 1168 proposes to move the QER requirements to subdivision (e). PAR 1168 also proposes to add labeling requirements for Foam Insulation, One-Component Foam Sealant, High-Pressure Two-Component Foam Sealant, and Low-Pressure Two-Component Foam Sealant that will be required to comply with a weight percent limit which will be required to display the VOC as percent VOC by weight. PAR 1168 also proposes to add labeling requirements for two new CPVC subcategories, CPVC Welding Cement for Life Safety Systems and Higher Viscosity CPVC Welding Cement to subdivision (g) along with the following statement which will be required to be displayed on the container, effective July 1, 2023:~~

This subdivision included labeling and QER requirements; however, PAR 1168 moved the QER requirements to subdivision (e) for consistency with other South Coast AQMD rules. With the reporting requirements moved, this subdivision now only includes labeling requirements; therefore, subparagraphs (g)(1)(A) through (g)(1)(G) have been promoted to paragraphs (g)(1) through (g)(7). Staff also proposes to add labeling requirements for two new CPVC subcategories, CPVC For Life Safety Systems and Higher Viscosity CPVC Welding Cement. The following statement will be required to be displayed on the container, effective July 1, 2023:

- Each container of CPVC For Life Safety Systems shall include the statement "For CPVC Life Safety System Uses Only" prominently displayed.
- Each container of Higher Viscosity CPVC Welding Cement shall include a statement prominently displayed on the label to indicate if the product is formulated for "Medium" or "Heavy" or "Extra Heavy" applications.

Staff also proposes to amend the labeling requirement to address Regulated Products subject to weight percent VOC limits; the following statement has been added:

- Effective January 1, 2026, Foam Insulation, One-Component Foam Sealants, High-Pressure Two-Component Foam Sealants, and Low-Pressure Two-Component Foam Sealants shall display the VOC as percent VOC by weight.

Prohibition of Sales and Use – subdivision (h)

The October 2017 version of Rule 1168 prohibits the sale and use of Regulated Products that contain chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene and all Group II exempt solvents except volatile methyl siloxanes (VMS). Small, but non-negligible, quantities of VMS are widely used in silicone-based sealants. The Group II exempt solvent prohibition was included in the October 2017 version of Rule 1168 along with an effective date of January 1, 2019 which has since lapsed. PAR 1168 combines the prohibition into one paragraph and removes the lapsed effective date.

This subdivision proposes to prohibit the use of t-BAc and pCBtF~~.effective January 1, 2025 for Single Ply Roof Membrane Adhesive and prohibit t-BAc and pCBtF January 1, 2024 for all other regulated products, which~~ This proposal is based on staff's assessment of t-BAc and pCBtF health risk and the Stationary Source Committee's direction to take a precautionary approach when considering expanding or including an exemption for any compound with a toxic endpoint. The proposal also includes a sell-through and use-through provision for products manufactured prior to the effective date of the t-BAc and pCBtF prohibition. Sell-through and use-through provisions are already included in Rule 1168 when there is a VOC limit change for a Regulated Product, and the amendment includes the same consideration for the new prohibitions. Based on stakeholder feedback and evaluation of reported data, staff proposed some delays of pCBtF prohibition for

specialty products that rely on pCBtF as well as shorter sell-through and use-through periods to help offset the delays. The prohibition effective dates based on the categories of products are illustrated in Table 2-3, and are included in PAR 1168.

Table 2-32
Prohibition Effective Dates

Category	Prohibition Effective Date	Sell-through End Date	Use-through End date
	pCBtF Prohibition Effective Dates		
Cut Edge Single Ply Roof Membrane Sealant	January 1, 2027	January 1, 2028	January 1, 2028
EPDM/TPO Single Ply Roof Membrane Adhesive			
Roof Adhesive Primer			
Single Ply Roof Membrane Adhesive (Except EPDM/TPO)	January 1, 2025	January 1, 2028	January 1, 2028
Single Ply Roof membrane Sealants (Except Cut Edge)			
All Other Roof Sealants			
Roof Sealant Primer			
Clear, Paintable, and Immediately Water-Resistant Sealant	January 1, 2026	January 1, 2028	January 1, 2028
All Regulated Products not listed above	January 1, 2024	January 1, 2027	January 1, 2028
	t-BAc Prohibition Effective Dates		
All Regulated Products	January 1, 2024	January 1, 2027	January 1, 2028

Exemptions – subdivision (j)

For Regulated Products with a VOC content no more than 20 g/L, the October 2017 version of Rule 1168 provides an exemption from subdivision (c) which includes the VOC emission limits and subdivision (d) which includes the Rule 109 recordkeeping requirements. However, the October 2017 version of Rule 1168 includes some limits as low as 20 g/L, making the reason behind the 20 g/L exemption unclear. This subdivision contains a proposal to revise the exemption to only apply to products with a VOC content no more than 5 g/L and clarify that the recordkeeping exemption is only for stationary sources. In addition, staff is proposing to remove paragraph (j)(9) which allowed for the continued use of methylene chloride, a prohibited compound, in solvent welding formulation until January 1, 2021. The paragraph is being removed since that date has passed and those formulations can no longer use methylene chloride.

2.5 SUMMARY OF AFFECTED ADHESIVE AND SEALANT CATEGORIES

The following categories will be impacted by the required technology assessment defined in the October 2017 version of Rule 1168 or by the proposed prohibition of pCBtF: 1) Top and Trim Adhesive; 2) Foam Sealants; 3) All Other Roof Adhesives; 4) Single Ply Roof Membrane Adhesive; 5) All Other Roof Sealants 6) Single Ply Roof Membrane Sealants; 7) PVC Welding Cement; 8) CPVC Welding Cement; ~~and~~ 9) ABS TO PVC Welding Cement; 10) Clear, Paintable, Immediately Water-Resistant Sealant; and 11) Rubber Vulcanization Adhesives. Table 2-~~4~~2 provides a summary of the affected categories and the total sales of products with the Sales Weighted Average (SWA) VOC content.

Table 2-~~4~~2
Adhesive and Sealant Categories Affected by PAR 1168

Sales Year	2017		2018	
Emission Source	**Total Sales**	**SWA (g/L)**	**Total Sales**	**SWA (g/L)**
Tope and Trim	75,000	424	60,000	337
Foam Sealant	107,000	154	105,000	148
All Other Roof Adhesives[1,2]	80,000	188	80,000	188
Single Ply Roof Membrane Adhesive	230,000	120	270,000	125
All Other Roof Sealants[2]	45,000	198	45,000	198
Single Ply Roof Membrane Sealants	13,000	81	13,000	82
PVC Welding Cement	155,000	480	155,000	480
CPVC Welding Cement	6,700	383	8,200	469
ABS To PVC Welding Cement	1,800	377	2,000	390
Clear, Paintable, Immediately Water-Resistant Sealant	8,700	420	6,800	322
Rubber Vulcanization Adhesives	Protected Data	653	Protected Data	710
Total Sales in Table	733,500		747,400	
Total PAR 1168	**14,000,000 ~~14,090,169~~**		**16,000,000 ~~16,122,432~~**	

1 Non-asphaltic All Other Roof Adhesives
2 Same data reported for 2017 and 2018

2.6 TECHNOLOGY OVERVIEW

Compliance with PAR 1168 is expected to be met with manufacturers reformulating Regulated Products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The manufacturers will have flexibility to use any compliant alternative reformulation in order for their product to meet the VOC limits in PAR 1168. Physical modifications to or new installations of manufacturing equipment, including the installation of control equipment, would not be expected to be needed in order to reformulate products. For certain categories, there are existing products that meet the proposed lower VOC content limits, so reformulation is practicable. Finally, end-users can comply with the rule using alternative options such as the 55 gallon per year exemption; control devices, such as emission collection systems; or an Alternative Emission Control Plan.

CHAPTER 3

EXISTING SETTING

3.0 INTRODUCTION

To determine the significance of the impacts associated with a proposed project, it is necessary to evaluate the proposed project's impacts against the backdrop of the environment as it exists at the time the environmental analysis is commenced. CEQA Guidelines Section 15360 defines environment as "the physical conditions that exist within the area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance." [*See also* Public Resources Code Section 21060.5]. Furthermore, a CEQA document must include a description of the physical environment in the vicinity of the proposed project, as it exists at the time the environmental analysis is commenced, from both a local and regional perspective. [CEQA Guidelines Section 15125]. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to provide an understanding of the significant effects of the proposed project and its alternatives.

The existing setting is the physical environmental conditions as they existed at the time the NOP was published, or if no NOP is published, at the time the environmental analysis is commenced. [CEQA Guidelines Section 15125].

3.1 EXISTING SETTING

The proposed project is comprised of PAR 1168, which has been developed to delay VOC limit effective dates or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the proposed effective dates or limits in the October 2017 version of Rule 1168 are not feasible; create further subcategories of Regulated Products to better characterize and refine VOC limits; prohibit the use of pCBtF and t-BAc due to toxicity concerns; allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and clarify some definitions and rule language.

As allowed by CEQA Guidelines Sections 15152, 15162, and 15385, the proposed project is designed to amend and tier off of the previous CEQA assessment conducted in the October 2017 Final EA which was certified by the South Coast AQMD Governing Board on October 6, 2017.

The October 2017 amendments to Rule 1168 were adopted with the goal of reducing emissions of VOCs, toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. The October 2017 version of Rule 1168 clarified the applicability; revised, deleted, and added various definitions; lowered the VOC limits for certain categories and allowed a three-year sell-through and use-through; added new product categories with corresponding VOC content limits; required products marketed for use under varying categories to be subject to the lowest VOC limit; prohibited the storage of non-compliant products, unless for shipment outside of the South Coast AQMD; added test methods for analyzing VOC content; added labeling requirements; included reporting requirements for manufacturers, private labelers, big box retailers, distribution centers, and facilities that use a 55 gallon per year exemption; prohibited the use of Rule 102 Group II exempt solvents, except volatile methyl siloxanes; included a technology assessment for certain product categories; and removed, modified, or added various exemptions. The October 2017 version of Rule 1168 estimated VOC emission reductions of approximately 1.38 tpd.

While the estimated reduction of VOC emissions from the October 2017 amendments to Rule 1168 were expected to create an environmental benefit, the October 2017 Final EA, which is the certified regulatory program equivalent to a Negative Declaration under CEQA, analyzed the environmental impacts associated with the activities manufacturers were anticipated to undertake to reformulate products and that these reformulation activities could create secondary adverse environmental impacts. However, none of the environmental topic areas previously analyzed in the October 2017 Final EA were concluded to have significant and unavoidable impacts, including the topic of air quality and greenhouse gases (GHGs).

CEQA Guidelines Section 15125 defines the existing setting as the physical environmental conditions as they existed at the time the Notice of Preparation (NOP) was published, or if no NOP is published, at the time the environmental analysis is commenced. For the October 2017 amendments to Rule 1168, no NOP was prepared but the environmental analysis ~~was~~ commenced on August 16, 2017 when the Notice of Completion (NOC) announcing the availability of the Draft EA was released for public review and comment. The Draft EA for PAR 1168 contained a detailed analysis of the environmental setting and corresponding environmental effects specifically tailored to implementing the proposed amendments at that time.

When comparing the types of activities and associated environmental impacts with implementing the VOC limits and compliance dates subject to the October 2017 version of Rule 1168 as previously analyzed in the October 2017 Final EA to the currently proposed changes which comprise PAR 1168, the type and extent of the physical changes are expected to be similar and will cause similar secondary adverse environmental impacts for the same environmental topic areas that were identified and analyzed in the October 2017 Final EA.

Thus, the proposed project is expected to have generally the same or similar effects that were previously examined in the October 2017 Final EA but ~~that~~ the air quality impacts from PAR 1168 will ~~cause~~ result in some delayed VOC emission reductions and permanent VOC emission reductions foregone, which will be more severe than what was discussed in October 2017 Final EA. The analysis of these impacts is presented in Chapter 4.

Based on the preceding discussion, the baseline that was established at the time the NOC was published for the August 2017 Draft EA directly corresponds to the currently proposed project since the affected categories of coatings and adhesives, and the nature of the physical impacts that may occur as a result of implementing PAR 1168 are the same as or similar to the previous analysis in October 2017 Final EA.

For this reason, the baseline is the project analyzed in the October 2017 Final EA. As such, this SEA analyzes the incremental changes that may occur subsequent to the project analyzed in the October 2017 Final EA if PAR 1168 is implemented.

In addition, the analysis in this SEA independently considered whether the proposed project would result in new significant impacts for any of the environmental topic areas previously concluded in the October 2017 Final EA to have either no significant impacts or less than significant impacts and only the topic of air quality was identified as having potentially significant adverse impacts. A description and the basis for this conclusion is included in Chapter 4 of this SEA.

The baseline for the analysis in this SEA is the project analyzed in the October 2017 Final EA, which concluded that no environmental topic area would have potentially significant adverse

environmental impacts. As analyzed in Chapter 4, PAR 1168 is anticipated to have significant adverse air quality impacts. As such, the following subchapter is devoted to describing the regional existing setting for the air quality which was the only environmental topic area identified as having potentially significant adverse environmental impacts if PAR 1168 is implemented.

3.2 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Ambient air quality standards have been adopted at the state and federal levels for criteria air pollutants. In addition, both the state and federal government regulate the release of toxic air contaminants and GHG emissions. Projects within South Coast AQMD's jurisdiction are subject to the rules and regulations imposed by the South Coast AQMD as well as regulations adopted by CARB and U.S. EPA. Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized in this section.

3.2.1 CRITERIA AIR POLLUTANTS

South Coast AQMD has the responsibility to ensure that state and federal ambient air quality standards (AAQS or standards) are achieved and maintained in its geographical jurisdiction. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), particulate matter (PM, which includes PM10 and PM2.5), sulfur dioxide (SO2), and lead (Pb). These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are sometimes more stringent than the federal standards, and in the case of PM10 and SO2, far more stringent. However, for ozone, the current 8-hour California Ambient Air Quality Standard (CAAQS) and the 2015 8-hour National Ambient Air Quality Standard (NAAQS) are at an equivalent level and for PM2.5, the current annual CAAQS and the 2012 annual NAAQS are also at an equivalent level. As a result, the South Coast AQMD relies on the same measures to meet both federal and state ozone and PM2.5 standards. California has also established standards for sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. The state and federal standards for each of these pollutants and their effects on health are summarized in Table 3-1.

South Coast AQMD monitors levels of various criteria pollutants at 38 monitoring stations. The 2020 air quality data (the latest data available) from South Coast AQMDs monitoring stations are presented in Tables 3-2 through 3-8 for the individual criteria air pollutants monitored by South Coast AQMD.

Table 3-1
State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	State Standard[a]	Federal Primary Standard[b]	Most Relevant Effects
Ozone (O_3)	1-hour	0.09 ppm (180 μg/m^3)	0.12 ppm	(a) Short-term exposures: 1) Pulmonary function decrements and localized lung edema in humans and animals; and 2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; and (d) Property damage.
	8-hour	0.070 ppm (137 μg/m^3)	0.070 ppm (137 μg/m^3)	
Suspended Particulate Matter (PM10)	24-hour	50 μg/m^3	150 μg/m^3	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; and (b) Excess seasonal declines in pulmonary function, especially in children.
	Annual Arithmetic Mean	20 μg/m^3	No Federal Standard	
Suspended Particulate Matter (PM2.5)	24-hour	No State Standard	35 μg/m^3	(a) Increased hospital admissions and emergency room visits for heart and lung disease; (b) Increased respiratory symptoms and disease; and (c) Decreased lung functions and premature death.
	Annual Arithmetic Mean	12 μg/m^3	12 μg/m^3	
Carbon Monoxide (CO)	1-Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
	8-Hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	

Table 3-1 (concluded)
State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	State Standard[a]	Federal Primary Standard[b]	Most Relevant Effects
Nitrogen Dioxide (NO_2)	1-Hour	0.18 ppm (339 μg/m^3)	0.100 ppm (188 μg/m^3)	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)	0.053 ppm (100 μg/m^3)	
Sulfur Dioxide (SO_2)	1-Hour	0.25 ppm (655 μg/m^3)	75 ppb (196 μg/m^3)	Broncho-constriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
	24-Hour	0.04 ppm (105 μg/m^3)	No Federal Standard	
Sulfates	24-Hour	25 μg/m^3	No Federal Standard	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage.
Hydrogen Sulfide (H_2S)	1-Hour	0.03 ppm (42 μg/m^3)	No Federal Standard	Odor annoyance.
Lead (Pb)	30-Day Average	1.5 μg/m^3	No Federal Standard	(a) Increased body burden; and (b) Impairment of blood formation and nerve conduction.
	Calendar Quarter	No State Standard	1.5 μg/m^3	
	Rolling 3-Month Average	No State Standard	0.15 μg/m^3	
Visibility Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when relative humidity is less than 70 percent.	No Federal Standard	The statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. This is a visibility-based standard not a health-based standard. Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent.
Vinyl Chloride	24-Hour	0.01 ppm (26 μg/m^3)	No Federal Standard	Highly toxic and a known carcinogen that causes a rare cancer of the liver.

ppb = parts per billion parts of air, by volume
ppm = parts per million parts of air, by volume
μg/m3 = micrograms per cubic meter
mg/m3 = milligrams per cubic meter

[a] The California ambient air quality standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM10, and PM2.5 are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

[b] The national ambient air quality standards, other than O_3 and those based on annual averages are not to be exceeded more than once a year. The O_3 standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standards is equal to or less than one.

Carbon Monoxide

CO is a primary pollutant, meaning that it is directly emitted into the air, not formed in the atmosphere by chemical reaction of precursors, as is the case with ozone and other secondary pollutants. Ambient concentrations of CO in the Basin exhibit large spatial and temporal variations due to variations in the rate at which CO is emitted and in the meteorological conditions that govern transport and dilution. Unlike ozone, CO tends to reach high concentrations in the fall and winter months. The highest concentrations frequently occur on weekdays at times consistent with rush hour traffic and late night during the coolest, most stable portion of the day.

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise and electrocardiograph changes indicative of worsening oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs but exerts its effect on tissues by interfering with oxygen transport by competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes. Reductions in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include preterm births and heart abnormalities.[7,8,9]

On August 12, 2011, U.S. EPA issued a decision to retain the existing NAAQS for CO, determining that those standards provided the required level of public health protection. However, U.S. EPA added a monitoring requirement for near-road CO monitors in urban areas with population of one million or more, utilizing stations that would be implemented to meet the 2010 NO_2 near-road monitoring requirements. The two new CO monitors are at the I-5 near-road site, located in Orange County near Anaheim, and the I-10 near-road site, located near Etiwanda Avenue in San Bernardino County near Ontario, Rancho Cucamonga, and Fontana.

As summarized in Table 3.2-2, CO concentrations were measured at 23 locations in the South Coast Air Basin and neighboring Salton Sea Air Basin in 2020 but did not exceed the state or federal standards in 2020. The highest 1-hour average CO concentration recorded was 4.5 parts per million (ppm) at the South Central Los Angeles County station, less than the federal and state 1-hour CO standards of 35 ppm and 20 ppm, respectively. The highest 8-hour average CO concentration recorded was 3.1 ppm at the South Central Los Angeles County station, less than the federal and state 8-hour CO standards of 9.0 ppm. All areas within the South Coast AQMD's jurisdiction are in attainment for both the federal and state 1-hour and 8-hour CO standards.

[7] U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants. https://www.epa.gov/criteria-air-pollutants, accessed on June 10, 2022.

[8] South Coast AQMD. 2015. Health Effects of Air Pollution. http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf, accessed on June 10, 2022.

[9] South Coast AQMD. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document, accessed on June 10, 2022.

Table 3-2
South Coast AQMD – 2020 Air Quality Data – CO[10]

CARBON MONOXIDE (CO)[a]				
Source Receptor Area No.	**Location of Air Monitoring Station**	**No. Days of Data**	**Max. Conc. in ppm 1-hour**	**Max. Conc. in ppm, 8-hour**
LOS ANGELES COUNTY				
1	Central Los Angeles	359	1.9	1.5
2	Northwest Coastal Los Angeles County	365	2.0	1.2
3	Southwest Coastal Los Angeles County	364	1.6	1.3
6	West San Fernando Valley	363	2.0	1.7
8	West San Gabriel Valley	361	2.6	2.2
9	East San Gabriel Valley 1	349	2.4	2.0
9	East San Gabriel Valley 2	310	2.3	1.9
10	Pomona/Walnut Valley	363	1.5	1.1
11	South San Gabriel Valley	362	3.1	1.7
12	South Central Los Angeles County	364	4.5	3.1
13	Santa Clarita Valley	363	1.2	0.8
ORANGE COUNTY				
16	North Orange County	347	2.1	1.2
17	Central Orange County	361	2.3	1.7
17	I-5 Near Road[##]	359	2.4	2.0
19	Saddleback Valley	366	1.7	0.8
RIVERSIDE COUNTY				
23	Metropolitan Riverside County 1	361	1.9	1.4
23	Metropolitan Riverside County 3	359	1.8	1.5
25	Elsinore Valley	358	0.9	0.7
30	Coachella Valley 1**	365	0.8	0.5
SAN BERNARDINO COUNTY				
32	Northwest San Bernardino Valley	364	1.5	1.1
33	I-10 Near Road[##]	363	1.5	1.2
34	Central San Bernardino Valley 1	358	1.7	1.2
34	Central San Bernardino Valley 2	360	1.9	1.4
DISTRICT MAXIMUM[(b)]			**4.5**	**3.1**
SOUTH COAST AIR BASIN[(c)]			**4.5**	**3.1**

ppm = parts per million of air, by volume **Salton Sea Air Basin

[##] Four near-road sites measuring one or more of the pollutants PM2.5, CO, and/or NO_2 are operating near the following freeways: I-5, I-10, CA-60, and I-710.

[a] The federal 8-hour standard (8-hour average CO > 9 ppm) and state 8-hour standard (8-hour average CO > 9.0 ppm) were not exceeded. The federal and state 1-hour standards (35 ppm and 20 ppm) were not exceeded either.

[b] District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction.

[c] Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.

[10] South Coast AQMD, 2021. "2020 Air Quality - South Coast Air Quality Management District – CO," Historical Air Quality Data for Year 2020 at locations where CO was monitored; http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf, accessed on June 10, 2022.

Ozone

Ozone (O_3), a colorless gas with a sharp odor, is a highly reactive form of oxygen. High ozone concentrations exist naturally in the stratosphere. Some mixing of stratospheric ozone downward through the troposphere to the earth's surface does occur; however, the extent of ozone transport is limited. At the earth's surface in sites remote from urban areas ozone concentrations are normally very low (e.g., from 0.03 ppm to 0.05 ppm).

Ozone is highly reactive with organic materials, causing damage to living cells and ambient ozone concentrations in the Basin are frequently sufficient to cause health effects. Ozone enters the human body primarily through the respiratory tract and causes respiratory irritation and discomfort, makes breathing more difficult during exercise, and reduces the respiratory system's ability to remove inhaled particles and fight infection. Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term exposures (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in high ozone communities. Elevated ozone levels are also associated with increased school absences. Ozone exposure under exercising conditions is known to increase the severity of the previously mentioned observed responses. Animal studies suggest that exposures to a combination of pollutants which include ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.[11,12,13]

As summarized in Table 3.2-3, O_3 concentrations were measured at 29 locations in the South Coast Air Basin and the Coachella Valley portion of the Salton Sea Air Basin in 2020. Maximum ozone concentrations for all areas monitored were below the stage 1 episode level (0.20 ppm) and below the health advisory level (0.15 ppm). All counties in the Basin, as well as the Coachella Valley, exceeded the level of the 2015 federal 8-hour O_3 standard (0.070 ppm), the state 1-hour O_3 standard (0.09 ppm), and the state 8-hour O_3 standard (0.070 ppm) in 2020. All but one monitoring station (Southwest Coast LA County) exceeded the former 2008 federal 8-hour O_3 standard (0.075 ppm).

Maximum 1-hour average and 4th highest 8-hour average ozone concentrations were 0.185 ppm and 0.125 ppm, respectively (at the Central LA station and East San Bernardino Valley station, respectively), which are greater than the federal 1-hour and 8-hour ozone NAAQS of 0.12 ppm and 0.070 ppm, respectively. The federal 8-hour standard is met at an air quality monitor when the 3-year average of the annual fourth-highest daily maximum 8-hour average is less than 0.070 ppm. The maximum 1-hour concentration also exceeded the state 1-hour ozone standard of 0.09 ppm. All areas within South Coast AQMD's jurisdiction are in nonattainment for both the federal and state 1-hour and 8-hour ozone standards.

[11] U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants https://www.epa.gov/criteria-air-pollutants, accessed on June 10, 2022.

[12] South Coast AQMD. 2015. Health Effects of Air Pollution. http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf, accessed on June 10, 2022.

[13] South Coast AQMD. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document, accessed on June 10, 2022.

Table 3-3
South Coast AQMD – 2020 Air Quality Data – O_3[14]

OZONE (O_3)[(a)]										
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. in ppm 1-hr	Max. Conc. in ppm 8-hr	4th High Conc. ppm 8-hr	No. Days Standard Exceeded				
						Federal (ppm)			State (ppm)	
						Old > 0.124 1-hr	Current > 0.070 8-hr*	2008 > 0.075 8-hr	Current > 0.09 1-hr	Current > 0.070 8-hr
LOS ANGELES COUNTY										
1	Central LA	332	0.185	0.118	0.093	1	22	16	14	22
2	Northwest Coastal LA County	357	0.134	0.092	0.078	1	8	5	6	8
3	Southwest Coastal LA County	350	0.117	0.074	0.066	0	2	0	1	2
4	South Coastal LA County 4	332	0.105	0.083	0.071	0	4	2	4	4
6	West San Fernando Valley	345	0.142	0.115	0.097	0	49	23	14	49
7	East San Fernando Valley	359	0.133	0.108	0.102	5	49	33	31	49
8	West San Gabriel Valley	354	0.163	0.115	0.108	9	60	44	41	60
9	East San Gabriel Valley 1	347	0.168	0.125	0.105	11	61	43	53	61
9	East San Gabriel Valley 2	348	0.173	0.138	0.124	17	97	71	76	97
10	Pomona/Walnut Valley	353	0.180	0.124	0.106	10	84	53	51	84
11	South San Gabriel Valley	356	0.169	0.114	0.089	3	23	15	20	23
12	South Central LA County	354	0.152	0.115	0.072	1	4	3	3	4
13	Santa Clarita Valley	348	0.148	0.122	0.106	10	73	56	44	73
ORANGE COUNTY										
16	North Orange County	340	0.171	0.133	0.088	3	23	19	15	23
17	Central Orange County	356	0.142	0.097	0.079	2	15	4	6	15
19	Saddleback Valley	364	0.171	0.122	0.090	1	32	25	20	32
RIVERSIDE COUNTY										
23	Metropolitan Riverside County 1	348	0.143	0.115	0.102	6	81	59	46	81
23	Metropolitan Riverside County 3	350	0.140	0.117	0.103	7	89	62	51	89
24	Perris Valley	358	0.125	0.106	0.097	1	74	48	34	74
25	Elsinore Valley	355	0.130	0.100	0.093	1	52	30	18	52
26	Temecula Valley	364	0.108	0.091	0.084	0	37	20	5	37
29	San Gorgonio Pass	358	0.150	0.115	0.104	3	68	48	29	68
30	Coachella Valley 1**	360	0.119	0.094	0.089	0	49	28	9	49
30	Coachella Valley 2**	358	0.097	0.084	0.081	0	42	17	2	42
SAN BERNARDINO COUNTY										
32	Northwest San Bernardino Valley	360	0.158/	0.123	0.116	15	114	87	82	114
34	Central San Bernardino Valley 1	348	0.151	0.111	0.105	8	89	65	56	89
34	Central San Bernardino Valley 2	359	0.162	0.128	0.122	15	128	110	89	128
35	East San Bernardino Valley	361	0.173	0.136	0.125	16	141	127	104	141
37	Central San Bernardino Mountains	364	0.159	0.139	0.117	7	118	97	69	118
DISTRICT MAXIMUM[(b)]			**0.185**	**0.139**	**0.125**	**17**	**141**	**127**	**104**	**141**
SOUTH COAST AIR BASIN[(c)]			**0.185**	**0.139**	**0.125**	**27**	**157**	**142**	**132**	**157**

ppm = parts per million of air, by volume **Salton Sea Air Basin

[a] The current (2015) O_3 federal standard was revised effective December 28, 2015.

[b] District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction.

[c] Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.

[14] South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where O_3 was monitored; http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf, accessed on June 10, 2022.

Nitrogen Dioxide

NO_2 is a reddish-brown gas with a bleach-like odor. Nitric oxide (NO) is a colorless gas, formed from the nitrogen (N_2) and oxygen (O_2) in air under conditions of high temperature and pressure which are generally present during combustion of fuels; NO reacts rapidly with the oxygen in air to form NO_2. NO_2 is responsible for the brownish tinge of polluted air. The two gases, NO and NO_2, are referred to collectively as NOx. In the presence of sunlight, NO_2 reacts to form nitric oxide and an oxygen atom. The oxygen atom can react further to form O_3, via a complex series of chemical reactions involving hydrocarbons. Nitrogen dioxide may also react to form nitric acid (HNO_3) which reacts further to form nitrates, components of PM2.5 and PM10.

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO_2 at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma and/or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these subgroups. More recent studies have found associations between NO_2 exposures and cardiopulmonary mortality, decreased lung function, respiratory symptoms, and emergency room asthma visits. In animals, exposure to levels of NO_2 considerably higher than ambient concentrations result in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO_2.[15,16,17]

With the revised NO_2 federal standard in 2010, near-road NO_2 measurements were required to be phased in for larger cities. The four near-road monitoring stations are: 1) I-5 near-road, located in Orange County near Anaheim; 2) I-710 near-road, located at Long Beach Blvd. in Los Angeles County near Compton and Long Beach; 3) State Route 60 (SR-60 or CA-60) near-road, located west of Vineyard Avenue near the San Bernardino/Riverside County border near Ontario, Mira Loma, and Upland; and 4) I-10 near-road, located near Etiwanda Avenue in San Bernardino County near Ontario, Rancho Cucamonga, and Fontana.

As summarized in Table 3.2-4, NO_2 concentrations were measured at 27 locations in the South Coast Air Basin and neighboring Salton Sea Air Basin in 2020 with one station (CA-60 Near Road) exceeding the federal 1-hour standard in 2020. There have been exceedances of the peak 1-hour standard at the I-710 near-road station in 2017, and the CA-60 near-road in 2020; however, the 98^{th} percentile value has not exceeded the standard.[18] The highest annual average NO_2 concentration recorded was 29.1 ppb (at the CA-60 Near Road station), which is less than the federal and state annual NO_2 standards of 53 ppb and 30 ppb, respectively. All areas within South Coast AQMD's jurisdiction are in attainment for both the federal and state 1-hour and annual NO_2 standards.

[15] U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants, https://www.epa.gov/criteria-air-pollutants, accessed on June 10, 2022.

[16] South Coast AQMD. 2015. Health Effects of Air Pollution. http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf, accessed on June 10, 2022.

[17] South Coast AQMD. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document

[18] South Coast AQMD, 2022. 2022 Draft Air Quality Management Plan, p. 2-49. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/05-ch2.pdf.

Table 3-4
South Coast AQMD – 2020 Air Quality Data – NO_2[19]

NITROGEN DIOXIDE (NO_2)[a]					
Source Receptor Area No.	**Location of Air Monitoring Station**	**No. Days of Data**	**Max. Conc. in ppb 1-hour**	**98th Percentile Conc. in ppb 1-hour**	**Annual Average AAM Conc. ppb**
LOS ANGELES COUNTY					
1	Central LA	364	61.8	54.7	16.9
2	Northwest Coastal LA County	360	76.6	43.9	10.6
3	Southwest Coastal LA County	364	59.7	50.9	9.5
4	South Coastal LA County 4	357	75.3	56.3	12.8
4	I-710 Near Road##	355	90.3	79.1	22.3
6	West San Fernando Valley	365	57.2	50.1	12.1
7	East San Fernando Valley	357	60.4	52.4	14.5
8	West San Gabriel Valley	354	61.2	49.7	13.6
9	East San Gabriel Valley 1	347	64.8	54.1	13.6
9	East San Gabriel Valley 2	366	50.4	41.9	8.5
10	Pomona/Walnut Valley	355	67.9	59.8	18.3
11	South San Gabriel Valley	365	69.2	573.8	17.8
12	South Central LA County	362	72.3	60.5	14.5
13	Santa Clarita Valley	361	46.3	35.9	9.4
ORANGE COUNTY					
16	North Orange County	347	57.2	50.1	12.7
17	Central Orange County	364	70.9	52.1	13.3
17	I-5 Near Road##	365	69.9	52.6	18.8
RIVERSIDE COUNTY					
23	Metropolitan Riverside County 1	359	66.4	54.1	13.6
23	Metropolitan Riverside County 3	352	58.1	49.9	12.3
25	Elsinore Valley	345	43.6	37.9	7.4
29	San Gorgonio Pass	363	51.1	47.1	8.5
30	Coachella Valley 1**	365	47.4	34.3	6.6
SAN BERNARDINO COUNTY					
32	Northwest San Bernardino Valley	364	55.4	44.8	13.9
33	I-10 Near Road##	345	94.2	75.1	28.7
33	CA-60 Near Road##	346	101.6	78.0	29.1
34	Central San Bernardino Valley 1	360	66.4	57.9	18.7
34	Central San Bernardino Valley 2	35	54.0	45.6	14.9
DISTRICT MAXIMUM[(b)]			**101.6**	**86.3**	**29.1**
SOUTH COAST AIR BASIN[(c)]			**101.6**	**86.3**	**29.1**

ppb = parts per billion
AAM = Annual Arithmetic Mean
*Incomplete data
**Salton Sea Air Basin
-- Pollutant not monitored
Four near-road sites measuring one or more of the pollutants PM2.5, CO, and/or NO2 are operating near the following freeways: I-5, I-10, CA-60, and I-710.
a The NO2 federal 1-hour standard is 100 ppb and the annual standard is annual arithmetic mean NO2 > 0.0534 ppm (53.4 ppb). The state 1-hour and annual standards are 0.18 ppm (180 ppb) and 0.030 ppm (30 ppb).
b District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction.
c Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.

[19] South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where NO_2 was monitored; http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf, accessed on June 10, 2022.

Sulfur Dioxide

SO_2 is a colorless gas with a sharp odor. It reacts in the air to form sulfuric acid (H_2SO_4), which contributes to acid precipitation, and sulfates, which are components of PM10 and PM2.5. Most of the SO_2 emitted into the atmosphere is produced by burning sulfur-containing fuels.

Exposure of a few minutes to low levels of SO_2 can result in airway constriction in some asthmatics. All asthmatics are sensitive to the effects of SO_2. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, is observed after acute higher exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2. Animal studies suggest that despite SO_2 being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.[20,21,22]

As summarized in Table 3.2-5, SO_2 concentrations were measured at five locations in 2020. No exceedances of 1-hour federal or state standards of 75 ppb and 250 ppb respectively, for SO_2 occurred in 2020 at any of the five locations monitored the Basin. The maximum 1-hour SO_2 concentration was 6.0 ppb (recorded at the Southwest Coast LA County station). The 99th percentile of 1-hour SO_2 concentration was 9.4 ppb (recorded at the South Coastal Los Angeles County 3 station). Though SO_2 concentrations remain well below the standards, SO_2 is a precursor to sulfate, which is a component of fine particulate matter, PM10, and PM2.5. Historical measurements showed concentrations to be well below standards and monitoring has been discontinued at other stations. All areas within South Coast AQMD's jurisdiction are in attainment for both the federal and state 1-hour SO_2 standards.

[20] U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants, https://www.epa.gov/criteria-air-pollutants, accessed on June 10, 2022.

[21] South Coast AQMD. 2015. Health Effects of Air Pollution. http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf, accessed on June 10, 2022.

[22] South Coast AQMD. 2005. May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document, accessed on June 10, 2022.

Table 3-5
South Coast AQMD – 2020 Air Quality Data – SO_2[23]

SULFUR DIOXIDE (SO_2)[a]				
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Maximum Conc. ppb, 1-hour	99th Percentile Conc. ppb, 1-hour
LOS ANGELES COUNTY				
1	Central LA	333	3.8	3.3
3	Southwest Coastal LA County	361	6.0	3.3
4	South Coastal LA County 3	--	--	9.4
RIVERSIDE COUNTY				
23	Metropolitan Riverside County 1	356	2.2	1.7
34	Central San Bernardino Valley 1	363	2.5	1.7
DISTRICT MAXIMUM[(b)]			**6.0**	**3.3**
SOUTH COAST AIR BASIN[(c)]			**6.0**	**3.3**

ppb = parts per billion -- = Pollutant not monitored

[a] The SO_2 federal 1-hour standard is 75 ppb. The state 1-hour and 24-hour standards are 0.25 ppm (250 ppb) and 0.04 ppm (40 ppb), respectively.
[b] District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction.
[c] Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.

Particulate Matter (PM10 and PM2.5)

Of great concern to public health are the particles small enough to be inhaled into the deepest parts of the lung. Respirable particles (particulate matter less than about 10 micrometers in diameter (PM10)) can accumulate in the respiratory system and aggravate health problems such as asthma, bronchitis, and other lung diseases. Children, the elderly, exercising adults, and those suffering from asthma are especially vulnerable to adverse health effects of particulate matter.

A consistent correlation between elevated ambient fine particulate matter (PM2.5) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. Studies have reported an association between long-term exposure to air pollution dominated by PM2.5 and increased mortality, reduction in lifespan, and an increased mortality from lung cancer. Daily fluctuations in PM2.5 concentrations have also been related to hospital admissions for acute respiratory conditions, to school and kindergarten absences, to a decrease in respiratory function in normal children, and to increased medication use in children and adults with asthma. Studies have also shown lung function growth in children is reduced with long-term exposure to particulate matter. In addition to children, the elderly and people with preexisting respiratory and/or cardiovascular disease appear to be more susceptible to the effects of PM10 and PM2.5.[24,25,26]

As summarized in Table 3.2-6, PM10 concentrations were measured at 23 locations in 2020. While the Coachella Valley Portion of the Salton Sea Air Basin is in nonattainment, the South Coast Air

[23] South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where SO_2 was monitored; http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf, accessed on June 10, 2022.
[24] U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants, https://www.epa.gov/criteria-air-pollutants, accessed on June 10, 2022.
[25] South Coast AQMD. 2015. Health Effects of Air Pollution. http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf, accessed on June 10, 2022.
[26] South Coast AQMD. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document, accessed on June 10, 2022.

Basin has remained in attainment for the federal 24-hour PM10 standard (150 µg/m^3) since 2006, and it was not exceeded in 2020. The maximum 24-hour PM10 concentration of 259 µg/m^3 was recorded at the Coachella Valley 3 station, but this high reading was attributed to high winds and is excluded in accordance with the U.S. EPA Exceptional Event Rule. Also, due to rounding considerations, the federal standard is technically 155 µg/m^3. The state 24-hour PM10 (50 µg/m^3) standard was exceeded at several of the monitoring stations. All areas within South Coast AQMD's jurisdiction are in nonattainment for the state 24-hour PM10 standard, which was exceeded at 19 of the monitoring stations in 2020.

The maximum annual average PM10 concentration of 52.2 µg/m^3 was recorded at the Metropolitan Riverside County 3 station. The federal annual PM10 standard has been revoked. The state annual PM10 standard (20 µg/m^3) was exceeded in most stations in each county in the Basin and in the Coachella Valley. All areas within South Coast AQMD's jurisdiction are in nonattainment for the state annual PM10 standard, which was exceeded at most stations in each county in the South Coast Air Basin and in the Coachella Valley in 2020.

On December 14, 2012, U.S. EPA strengthened the annual NAAQS for PM2.5 to 12 µg/m^3 and, as part of the revisions, a requirement was added to monitor near the most heavily trafficked roadways in large urban areas. Particle pollution is expected to be higher along these roadways because of direct emissions from cars and heavy-duty diesel trucks and buses. South Coast AQMD installed the two required PM2.5 monitors at locations selected based upon the heavy-duty diesel traffic, which are: 1) I-710, located at Long Beach Blvd. in Los Angeles County near Compton and Long Beach; and 2) SR-60 near-road, located west of Vineyard Avenue near the San Bernardino/Riverside County border near Ontario, Mira Loma, and Upland.

As summarized in Table 3.2-7, PM2.5 concentrations were measured at 19 locations in 2020. While the Coachella Valley Portion of the Salton Sea Air Basin is in attainment, the South Coast Air Basin is in nonattainment for federal and state PM2.5 standards. The maximum 98th percentile 24-hour PM2.5 concentration of 34.7 µg/m^3 was recorded at the Metropolitan Riverside County station, less than the federal 24-hour PM2.5 standard of 35 µg/m^3. There is no state 24-hour standard for PM2.5. The maximum annual average PM2.5 concentration of 14.36 µg/m^3 was recorded at the CA-60 Near Road station, greater than the federal and state annual PM2.5 standard of 12 µg/m^3.

Table 3-6
South Coast AQMD – 2020 Air Quality Data – PM10[27]

SUSPENDED PARTICULATE MATTER PM10[a+]						
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. µg/m³, 24-hour	No. (%) Samples Exceeding Standard		Annual Average AAM Conc.[b] µg/m³
				Federal > 150 µg/m³, 24-hour	State > 50 µg/m³, 24-hour	
LOS ANGELES COUNTY						
1	Central LA	337	77	0	24 (7%)	23.0
3	Southwest Coastal LA County	37	43	0	0	22.3
4	South Coastal LA County 2	42	59	0	2 (5%)	24.9
4	South Coastal LA County 3	12	54	0	2 (17%)	27.8
9	East San Gabriel Valley 1	43	95	0	8 (19%)	37.7
9	East San Gabriel Valley 2	333	105	0	9 (3%)	25.2
13	Santa Clarita Valley	36	48	0	0	22.5
ORANGE COUNTY						
17	Central Orange County	329	120	0	13 (4%)	23.9
19	Saddleback Valley	42	53	0	1 (2%)	16.8
RIVERSIDE COUNTY						
22	Corona/Norco Area	44	100	0	10 (23%)	39.1
23	Metropolitan Riverside County 1	320	104	0	110 (34%)	30.0
23	Metropolitan Riverside County 3	304	124	0	154 (51%)	52.2
24	Perris Valley	37	77	0	6 (16%)	35.9
25	Elsinore Valley	334	84	0	7 (2%)	22.0
29	San Gorgonio Pass	42	46	0	0	19.2
30	Coachella Valley 1**	251	48	0	0	20.4
30	Coachella Valley 2**	317	77	0	8 (3%)	29.1
30	Coachella Valley 3**	320	259	1 (0%)	69 (22%)	38.0
SAN BERNARDINO COUNTY						
32	Northwest San Bernardino Valley	305	63	0	12 (4%)	30.5
34	Central San Bernardino Valley 1	40	61	0	6 (15%)	35.8
34	Central San Bernardino Valley 2	320	80	0	81 (25%)	38.7
35	East San Bernardino Valley	40	57	0	1 (3%)	23.4
37	Central San Bernardino Mountains	40	51	0	1 (3%)	18.1
DISTRICT MAXIMUM[(c)]			**259**	**1**	**154**	**52.2**
SOUTH COAST AIR BASIN[(d)]			**124**	**0**	**173**	**52.2**

µg/m^3= micrograms per cubic meter of air
AAM = Annual Arithmetic Mean
**Salton Sea Air Basin

\+ High PM10 (≥ 155 µg/m³) data recorded in Coachella Valley (due to high winds) and the Basin (due to Independence Day fireworks) are excluded in accordance with the U.S. EPA Exceptional Event Rule.

[a] PM10 statistics listed above are based on combined Federal Reference Method (FRM) and Federal Equivalent Method (FEM) data. Filter-based measurements for PM10 from March 28, 202 to June 2, 2020 are not available due to COVID-19 Pandemic.

[b] State annual average (AAM) PM10 standard is > 20 µg/m^3. Federal annual PM10 standard (AAM > 50 µg/m^3) was revoked in 2006.

[c] District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction.

[d] Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.

[27] South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where PM10 was monitored; http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf, accessed on June 10, 2022.

Table 3-7
South Coast AQMD – 2020 Air Quality Data – PM2.5[28]

SUSPENDED PARTICULATE MATTER PM2.5 [a]						
Source Receptor Area No.	**Location of Air Monitoring Station**	**No. Days of Data**	**Max. Conc. µg/m³, 24-hour**	**98th Percentile Conc. in µg/m³ 24-hr**	**No. (%) Samples Exceeding Federal Std > 35 µg/m³, 24-hour**	**Annual Average AAM Conc.[b] µg/m³**
LOS ANGELES COUNTY						
1	Central LA	353	47.30	28.00	2 (1%)	12.31
4	South Coastal LA County 1	117	28.10	26.10	0	11.26
4	South Coastal LA County 2	357	39.00	28.00	1 (0%)	11.38
4	I-710 Near Road##	356	44.00	31.50	2 (1%)	12.93
6	West San Fernando Valley	116	27.60	26.40	0	10.13
8	West San Gabriel Valley	117	34.90	31.20	0	11.06
9	East San Gabriel Valley 1	116	33.00	25.80	0	11.13
11	South San Gabriel Valley	116	35.40	30.50	0	13.22
12	South Central LA County	352	43.20	34.10	7 (2%)	13.57
ORANGE COUNTY						
17	Central Orange County	355	41.40	27.10	1 (0%)	11.27
19	Saddleback Valley	120	35.00	32.70	0	8.81
RIVERSIDE COUNTY						
23	Metropolitan Riverside County 1	357	41.00	29.60	4 (1%)	12.63
23	Metropolitan Riverside County 3	358	38.70	34.70	5 (1%)	14.03
30	Coachella Valley 1**	122	23.90	16.90	0	6.42
30	Coachella Valley 2**	121	25.60	20.20	0	8.41
SAN BERNARDINO COUNTY						
33	CA-60 Near Road##	356	53.10	3.70	4 (1%)	14.36
34	Central San Bernardino Valley 1	117	46.10	27.40	1 (1%)	11.95
34	Central San Bernardino Valley 2	115	25.70	24.70	0	11.66
38	East San Bernardino Mountains	58	24.30	20.40	0	7.62
DISTRICT MAXIMUM[(c)]			**53.1**	**34.1**	**7**	**14.36**
SOUTH COAST AIR BASIN[(d)]			**53.1**	**34.1**	**13**	**14.36**

µg/m³ = micrograms per cubic meter of air AAM = Annual Arithmetic Mean
**Salton Sea Air Basin

[a] PM2.5 statistics listed above are for the FRM data only with the exception of Central Orange County, I-710 Near Road, Metropolitan Riverside County 1 and 3, CA-60 Near Road, and South Coastal LA Count 2 where FEM PM2.5 measurements are used to supplement missing FRM measurements because they pass the screening criteria for the South Coast AQMD Continuous Monitor Comparability Assessment and Request for Waiver dated July 1, 2021.
[b] Federal and State standards are annual average (AAM) > 12.0 µg/m³.
[c] District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction.
[d] Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.

Lead

Under the federal Clean Air Act, lead is classified as a "criteria pollutant." Lead causes observed adverse health effects at ambient concentrations. Lead is also deemed a carcinogenic toxic air contaminant (TAC) by the Office of Environmental Health Hazard Assessment (OEHHA). Lead in the atmosphere is a mixture of several lead compounds. Leaded gasoline and lead smelters have been the main sources of lead emitted into the air. Due to the phasing out of leaded gasoline, there was a dramatic reduction in atmospheric lead in the Basin over the past three decades. In fact, there were no violations of the lead standards at South Coast AQMD's regular air monitoring stations from 1982 to 2020, primarily due to the removal of lead from gasoline.

[28] South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where PM2.5 was monitored; http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf, accessed on June 10, 2022.

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death. It appears that there are no direct effects of lead on the respiratory system. Lead can be stored in the bone from early-age environmental exposure, and elevated blood lead levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland), and osteoporosis (breakdown of bone tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of previous environmental lead exposure of their mothers.[29, 30 31]

As summarized in Table 3.2-8, South Coast AQMD monitored lead concentrations at eight monitoring stations in 2020. The South Coast Air Basin (Los Angeles County area) is currently in nonattainment for lead. This nonattainment designation was due to the operations of specific stationary sources of lead emissions. The Mojave Desert Air Basin and Salton Sea Air Basin are both in attainment for lead. The South Coast AQMD has petitioned U.S. EPA for a redesignation to attainment for the federal lead standard for the Los Angeles County nonattainment area. Stringent South Coast AQMD rules governing lead-producing sources will help to ensure that there are no future violations of the federal standard. At the time of this report, South Coast AQMD has not yet received a response from U.S. EPA regarding the petition. The current lead concentrations in Los Angeles County are below the federal 3-month rolling average standard of 0.15 µg/m^3. Further, the state 30-day standard of 1.5 µg/m^3 was not exceeded in any areas under the jurisdiction of the South Coast AQMD in 2020.

[29] U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants, https://www.epa.gov/criteria-air-pollutants, accessed on June 10, 2022.

[30] South Coast AQMD. 2015. Health Effects of Air Pollution. http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf, accessed on June 10, 2022.

[31] South Coast AQMD. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document, accessed on June 10, 2022.

Table 3-8
South Coast AQMD – 2020 Air Quality Data – Lead and Sulfates[32]

		LEAD[a++]		SULFATES[b]	
Source Receptor Area No.	**Location of Air Monitoring Station**	**Max. Monthly Average Conc. [m] µg/m³**	**Max. 3-Month Rolling Average [m] µg/m³**	**No. Days of Data**	**Max. Conc. µg/m³, 24-hour**
LOS ANGELES COUNTY					
1	Central LA	0.013	0.011	45	3.3
3	Southwest Coastal LA County	0.008	0.005	--	--
4	South Coastal LA County 2	0.008	0.006	--	--
4	South Coastal LA County 3	--	--	14	2.3
9	East San Gabriel Valley 1	0.010	0.007	45	3.1
11	South San Gabriel Valley	0.012	0.011	--	--
12	South Central LA County	0.010	0.009	--	--
ORANGE COUNTY					
17	Central Orange County	--	--	44	3.3
RIVERSIDE COUNTY					
23	Metropolitan Riverside County 1	0.016	0.010	84	5.2
30	Coachella Valley 2**	--	--	89	2.7
SAN BERNARDINO COUNTY					
34	Central San Bernardino Valley 1	--	--	44	3.0
34	Central San Bernardino Valley 2	0.010	0.09	--	--
DISTRICT MAXIMUM[(c)]		**0.016**	**0.011**		**5.2**
SOUTH COAST AIR BASIN[(d)]		**0.016**	**0.011**		**5.2**

µg/m³ = micrograms per cubic meter of air
-- Pollutant not monitored
** Salton Sea Air Basin

++ Higher lead concentrations were recorded at near-source monitoring sites immediately downwind of stationary lead sources. Maximum monthly and 3-month rolling averages recorded were 0.96 µ/m³ and 0.059 µ/m³.

[a] Federal lead standard is 3-months rolling average > 0.15 µg/m³; state standard is monthly average ≥ 1.5 µg/m³. Lead standards were not exceeded.
[b] State sulfate standard is 24-hour ≥ 25 µg/m³. There is no federal standard for sulfate.
[c] District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction.
[d] Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.

Sulfates

Sulfates are chemical compounds which contain the sulfate ion and are part of the mixture of solid materials which make up PM10. Most of the sulfates in the atmosphere are produced by oxidation of SO_2. Oxidation of sulfur dioxide yields sulfur trioxide (SO_3), which reacts with water to form sulfuric acid, which then contributes to acid deposition. The reaction of sulfuric acid with basic substances such as ammonia yields sulfates, a component of PM10 and PM2.5.

Most of the health effects associated with fine particles and SO_2 at ambient levels are also associated with sulfates. Thus, both mortality and morbidity effects have been observed with an increase in ambient sulfate concentrations. However, efforts to separate the effects of sulfates from the effects of other pollutants have generally not been successful.[33,34,35]

[32] South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where lead and sulfates were monitored; http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf.
[33] U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants, . https://www.epa.gov/criteria-air-pollutants, accessed on June 10, 2022.
[34] South Coast AQMD. 2015. Health Effects of Air Pollution. http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf, accessed on June 10, 2022.
[35] South Coast AQMD. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document, accessed on June 10, 2022.

As summarized in Table 3.2-8, South Coast AQMD monitored sulfate at seven monitoring stations in 2020. The state 24-hour sulfate standard of 25 μg/m^3 was not exceeded in the South Coast Air Basin, which is in attainment for sulfate. The Mojave Desert Air Basin and Salton Sea Air Basin are also in attainment for sulfate. There are no federal sulfate standards.

Vinyl Chloride

Vinyl chloride is a colorless, flammable gas at ambient temperature and pressure. It is also highly toxic and is classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as A1 (confirmed carcinogen in humans) and by the International Agency for Research on Cancer (IARC) as 1 (known to be a human carcinogen).[36] At room temperature, vinyl chloride is a gas with a sickly-sweet odor that is easily condensed. However, it is stored as a liquid. Due to the hazardous nature of vinyl chloride to human health there are no end products that use vinyl chloride in its monomer form. Vinyl chloride is a chemical intermediate, not a final product. It is an important industrial chemical chiefly used to produce polymer polyvinyl chloride (PVC). The process involves vinyl chloride liquid fed to polymerization reactors where it is converted from a monomer to a polymer PVC. The final product of the polymerization process is PVC in either a flake or pellet form. Billions of pounds of PVC are sold on the global market each year. From its flake or pellet form, PVC is sold to companies that heat and mold the PVC into end products such as PVC pipe and bottles.

In the past, vinyl chloride emissions have been associated primarily with sources such as landfills. Risks from exposure to vinyl chloride are considered to be localized impacts rather than regional impacts. Because landfills in the South Coast AQMD are subject to Rule 1150.1 – Control of Gaseous Emissions from Municipal Solid Waste Landfills, which contain stringent requirements for landfill gas collection and control, potential vinyl chloride emissions are expected to be below the level of detection. Therefore, South Coast AQMD does not monitor for vinyl chloride at its monitoring stations.

Volatile Organic Compounds

There are no state or NAAQS for VOCs because they are not classified as criteria pollutants. VOCs are regulated, however, because VOCs are a precursor to the formation of ozone in the atmosphere. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM10 and lower visibility levels.

Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOCs because of interference with oxygen uptake. In general, ambient VOC concentrations in the atmosphere are suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis, even at low concentrations. Some hydrocarbon components classified as VOC emissions are thought or known to be hazardous. Benzene, for example, one hydrocarbon component of VOC emissions, is known to be a human carcinogen.

Non-Criteria Pollutants

Although South Coast AQMD's primary mandate is attaining the state and NAAQS for criteria pollutants within the Basin, South Coast AQMD also has a general responsibility pursuant to Health and Safety Code Section 41700 to control emissions of air contaminants and prevent

[36] International Agency for Research on Cancer. Vinyl Chloride Exposure Data, https://monographs.iarc.who.int/wp-content/uploads/2018/06/mono100F-31.pdf, accessed on June 10, 2022.

endangerment to public health. Additionally, state law requires South Coast AQMD to implement ATCMs adopted by CARB and to implement the Air Toxics "Hot Spots" Act. As a result, South Coast AQMD has regulated pollutants other than criteria pollutants such as TACs, GHGs, and stratospheric ozone depleting compounds. South Coast AQMD has developed several rules which are designed to control non-criteria pollutants from both new and existing sources. These rules originated through state directives, CAA requirements, or the South Coast AQMD rulemaking process.

In addition to promulgating non-criteria pollutant rules, South Coast AQMD has been evaluating control measures in the 2016 AQMP as well as existing rules to determine whether they would affect, either positively or negatively, emissions of non-criteria pollutants. For example, rules which target the VOC components of coating materials and that allow for the replacement of the VOC components with a non-photochemically reactive chlorinated substance would reduce the impacts resulting from ozone formation but could increase emissions of toxic compounds or other substances that may have adverse impacts on human health.

Carcinogenic Health Risks from TACs: One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. The carcinogenic potential of TACs is a public health concern because it is currently believed by many scientists that there is no 'safe' level of exposure to carcinogens. Any exposure to a carcinogen poses some risk of causing cancer. It is currently estimated that about one in four deaths in the United States is attributable to cancer. The proportion of cancer deaths attributable to air pollution has not been estimated using epidemiological methods.

Non-cancer Health Risks from TACs: Unlike carcinogens, for most non-carcinogens it is believed that there is a threshold level of exposure to the compound below which it will not pose a health risk. CalEPA's OEHHA develops Reference Exposure Levels (RELs) for TACs are health-conservative estimates of the levels of exposure at or below which health effects are not expected. The non-cancer health risk due to exposure to a TAC is assessed by comparing the estimated level of exposure to the REL. The comparison is expressed as the ratio of the estimated exposure level to the REL, called the hazard index (HI).

Multiple Air Toxics Exposure Study (MATES): In 1986, South Coast AQMD conducted the first MATES report to determine the risks associated with major airborne carcinogens in the South Coast Air Basin. The most current version (MATES V[37]) consists of a monitoring program, an updated emissions inventory of TACs, and a modeling effort to characterize risk across the South Coast Air Basin. The study focuses on the carcinogenic risk from exposure to air toxics but does not estimate mortality or other health effects from criteria pollutant exposures which are conducted as part of the 2016 AQMP. Two key updates were implemented in MATES V. First, cancer risk estimations now take into account multiple exposure pathways. Previous MATES studies quantified the cancer risks based on the inhalation pathway only; a cumulative cancer risk accounting for inhalation and non-inhalation pathways is approximately eight percent higher than the inhalation-only calculation for the MATES V data. Second, along with cancer risk estimates, MATES V includes information on the chronic non-cancer health impacts from inhalation and non-inhalation pathways for the first time. The cumulative chronic hazard index accounting for the inhalation and non-inhalation pathways is approximately twice the inhalation-only calculation for the MATES V data.

[37] South Coast AQMD, MATES V, Multiple Air Toxics Exposure Study in the South Coast AQMD, Final Report, August 2021. http://www.aqmd.gov/docs/default-source/planning/mates-v/mates-v-final-report.pdf, accessed on June 10, 2022.

3.2.2 GREENHOUSE GAS EMISSIONS

Greenhouse gases (GHGs) trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The latter, anthropogenic sources of GHGs, is the focus of impacts under CEQA. Traditionally, GHGs and other global warming pollutants are perceived as solely global in their impacts, and that increasing emissions anywhere in the world contributes to climate change anywhere in the world. A study conducted on the health impacts of CO_2 'domes' that form over urban areas showed that they cause increases in local temperatures and local criteria pollutants, which have adverse health effects.[38]

3.2.2.1 Climate Change

Global climate change is a change in the average weather of the Earth, which can be measured by wind patterns, storms, precipitation, and temperature. Historical records have shown that temperature changes have occurred in the past, such as during previous ice ages. Data indicates that the current temperature record differs from previous climate changes in rate and magnitude.

Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs), comparable to a greenhouse, which captures and traps radiant energy. GHGs are emitted by natural processes and human activities. The accumulation of greenhouse gases in the atmosphere regulates the earth's temperature. Global warming is the observed increase in average temperature of the earth's surface and atmosphere. The primary cause of global warming is an increase of GHGs in the atmosphere. The six major GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbon (PFCs). The GHGs absorb longwave radiant energy emitted by the Earth, which warms the atmosphere. The GHGs also emit longwave radiation both upward to space and back down toward the surface of the Earth. The downward part of this longwave radiation emitted by the atmosphere is known as the "greenhouse effect." Emissions from human activities such as fossil fuel combustion for electricity production and vehicles have elevated the concentration of these gases in the atmosphere.

- **Carbon dioxide (CO_2)** is an odorless, colorless greenhouse gas. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human caused) sources of CO_2 include burning coal, oil, gasoline, natural gas, and wood.
- **Methane (CH_4)** is a flammable gas and is the main component of natural gas.
- **Nitrous Oxide (N_2O)**, also known as laughing gas, is a colorless greenhouse gas. Some industrial processes such as fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions also contribute to the atmospheric load of N_2O.
- **Sulfur hexafluoride (SF_6)** is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.
- **Hydrofluorocarbons (HFCs)** are synthetic man-made chemicals composed of hydrogen, fluorine, and carbon that are used as a substitute for chlorofluorocarbons (whose production

[38] Jacobsen, Mark Z. "Enhancement of Local Air Pollution by Urban CO_2 Domes," Environmental Science and Technology, as described in Stanford University press release on March 16, 2010 available at: http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html, accessed on June 10, 2022.

was stopped as required by the Montreal Protocol) for use in automobile air conditioners and refrigerants.

- **Perfluorocarbons (PFCs)** are synthetic man-made chemicals composed of fluorine and carbon that are used as a substitute for chlorofluorocarbons in producing aluminum and manufacturing semiconductors

Scientific consensus, as reflected in recent reports issued by the United Nations Intergovernmental Panel on Climate Change, is that the majority of the observed warming over the last 50 years can be attributable to increased concentration of GHGs in the atmosphere due to human activities. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants. In the past, gradual changes in temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but in a human's lifetime. Industrial activities, particularly increased consumption of fossil fuels (gasoline, diesel, coal, etc.), have heavily contributed to the increase in atmospheric levels of GHGs. The United Nations Intergovernmental Panel on Climate Change constructed several emission trajectories of greenhouse gases needed to stabilize global temperatures and climate change impacts. It concluded that a stabilization of greenhouse gases at 400 to 450 ppm carbon dioxide-equivalent (CO_2eq) concentration is required to keep global mean warming below two degrees Celsius, which has been identified as necessary to avoid dangerous impacts from climate change.[39]

The potential health effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme events, air quality impacts, and sea level rise. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems (e.g., heat rash and heat stroke). In addition, climate sensitive diseases may increase, such as those spread by mosquitoes and other insects. Those diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding, hurricanes, and wildfires can displace people and agriculture, which would have negative consequences. Drought in some areas may increase, which would decrease water and food availability. Global warming may also contribute to air quality problems from increased frequency of smog and particulate air pollution.[40]

The impacts of climate change will also affect projects in various ways. Effects of climate change are rising sea levels and changes in snowpack.[41] The extent of climate change impacts at specific locations remains unclear.

Federal, state, and local agencies are working towards more precisely quantifying impacts in various regions. As an example, the California Department of Water Resources is expected to formalize a list of foreseeable water quality issues associated with various degrees of climate change. Once state government agencies make these lists available, they could be used to more precisely determine to what extent a project creates global climate change impacts.

[39] Intergovernmental Panel on Climate Change (IPCC). 2014. *Fifth Assessment Report: Climate Change 2014*. New York: Cambridge University Press, https://issuu.com/unipcc/docs/syr_ar5_final_full_wcover, accessed on June 10, 2022.

[40] Center for Disease Control. 2016. Climate Change Decreases the Quality of the Air We Breathe. https://www.cdc.gov/climateandhealth/pubs/AIR-QUALITY-Final_508.pdf, accessed on June 10, 2022.

[41] Office of Environmental Health Hazards Assessment, 2018. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf, accessed on June 10, 2022.

3.2.2.1.1 Statewide Inventory

GHG emissions in the state have been inventoried by CARB. As shown in Figure 3-1, CO_2 accounts for 83 percent of the total 418.2 million metric tons (MT) of CO_2eq emissions in the state in 2019. Figure 3-2 illustrates that transportation (primarily on-road travel) is the single largest source of CO_2 emissions in the state. Upstream transportation emissions from the refinery and oil and gas sectors are categorized as CO_2 emissions from industrial sources and constitute about 50 percent of the industrial source emissions. When these emissions sources are attributed to the transportation sector, the emissions from the transportation sector amount to approximately half of statewide GHG emissions. In addition to transportation, electricity production, and industrial and residential sources also are important contributors to CO_2 emissions. Figures 3-1 and 3-2 show state GHG emission contributions by GHG and sector based on the 2019 Greenhouse Gas Emission Inventory. The emissions presented in Figure 3-2 are depicted by Scoping Plan sector, which includes separate categories for high-global warming potential (GWP) and recycling/waste emissions that are otherwise typically included within other economic sectors.

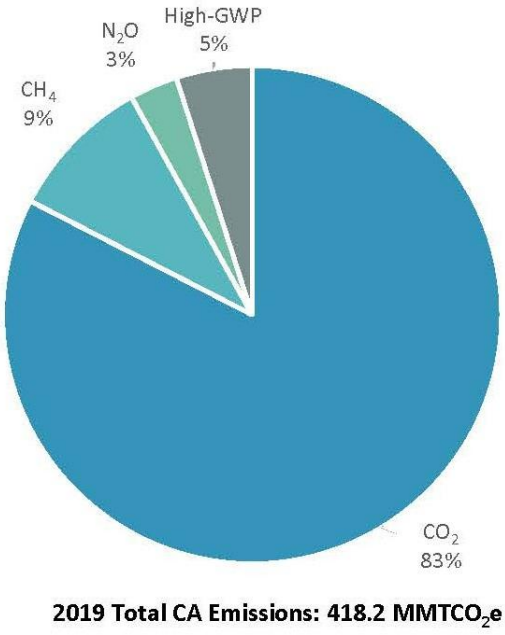

Figure 3-1
2019 Statewide GHG Emission Contributions by GHG[42]

[42] CARB, 2022. Draft 2022 Scoping Plan Update, Figure 1-7, page 33, https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf, accessed on June 10, 2022.

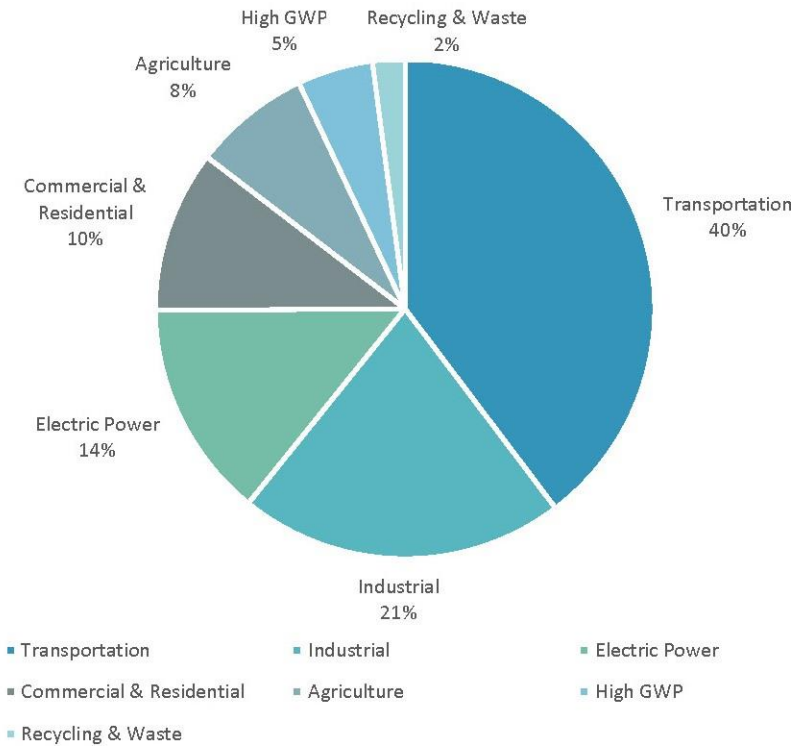

Figure 3-2
2019 Statewide GHG Emission Contributions by Scoping Plan Sector[43]

The GHG emission inventory encompasses emission sources within the state's border, as well as imported electricity consumed in the state. Statewide GHG emissions calculations use many data sources, including data from other state and federal agencies. However, the primary source of data comes from reports submitted to CARB through the CARB Regulation for the Mandatory Reporting of GHG Emissions, which requires facilities and entities with more than 10,000 metric tons of CO_2eq to report emissions directly to CARB. Reported emissions greater than 25,000 metric tons are required to be verified by a CARB-accredited third-part verification body.

3.2.2.2 Regulatory Setting

3.2.2.2.1 Federal

Greenhouse Gas Endangerment Findings: On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding greenhouse gases pursuant to the federal Clean Air Act (CAA) Section 202(a). The Endangerment Finding stated that CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 taken in combination endanger both the public health and the public welfare of current and future generations. The *Cause or Contribute Finding* stated that the combined emissions from motor vehicles and motor vehicle engines contribute to the greenhouse gas air pollution that endangers public health and welfare. These findings were a prerequisite for implementing GHG standards for vehicles. The U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) finalized emission standards for light-duty vehicles in May 2010 and for heavy-duty vehicles in August of 2011. Subsequently, the U.S. EPA rolled back the light duty GHG standards, a decision which is currently under litigation. In August 2021, the U.S. EPA proposed replacement GHG standards for light-duty vehicles and announced plans to reduce GHG emissions from heavy-

[43] CARB, 2022. Draft 2022 Scoping Plan Update, Figure 1-8, page 34, https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf, accessed on June 10, 2022.

duty trucks through a series of major rulemakings over the next three years with the first to be finalized in 2022.[44] On March 7, 2022, the U.S. EPA proposed the first step in the U.S. EPA's "Clean Trucks Plan" that would revise existing GHG standards for model year 2027 and beyond trucks in subsectors where electrification is advancing at a more rapid pace. The sectors include school buses, transit buses, commercial delivery trucks, and short-haul tractors.

Renewable Fuel Standard: The Renewable Fuel Standard (RFS) program was established under the Energy Policy Act (EPAct) of 2005 and required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the Energy Independence and Security Act (EISA) of 2007, the RFS program was expanded to include diesel, required that the volume of renewable fuel blended into transportation fuel be increased from nine billion gallons in 2008 to 36 billion gallons by 2022, established new categories of renewable fuel, and required U.S. EPA to apply lifecycle GHG performance threshold standards so that each category of renewable fuel emits fewer greenhouse gases than the petroleum fuel it replaces. In a separate measure, the U.S. EPA will be setting new GHG emission standards for heavy-duty vehicles as soon as model year 2030, which will more comprehensively address the long-term trend towards zero emission vehicles across the heavy-duty sector.[45]

GHG Tailoring Rule: On May 13, 2010, U.S. EPA finalized the GHG Tailoring Rule to phase in the applicability of the Prevention of Significant Deterioration (PSD) and Title V operating permit programs for GHGs. The GHG Tailoring Rule was tailored to include the largest GHG emitters, while excluding smaller sources (restaurants, commercial facilities and small farms). The first phase (from January 2, 2011 to June 30, 2011) addressed the largest sources that contributed 65 percent of the stationary GHG sources. Title V GHG requirements were triggered only when affected facility owners/operators were applying, renewing or revising their permits for non-GHG pollutants. PSD GHG requirements were applicable only if sources were undergoing permitting actions for other non-GHG pollutants and the permitted action would increase GHG emission by 75,000 metric tons of CO_2 equivalent emissions (CO_2eq) per year or more. The Tailoring Rule originally included a second phase for sources that were not otherwise major sources but had the potential to emit 100,000 metric tons of CO_2eq per year. In 2014, the U.S. Supreme Court held that U.S. EPA was limited to phase 1.

GHG Reporting Program: U.S. EPA issued the Mandatory Reporting of Greenhouse Gases Rule (40 CFR Part 98) under the 2008 Consolidated Appropriations Act. The Mandatory Reporting of Greenhouse Gases Rule requires reporting of GHG data from large sources and suppliers under the Greenhouse Gas Reporting Program. Suppliers of certain products that would result in GHG emissions if released, combusted or oxidized; direct emitting source categories; and facilities that inject CO_2 underground for geologic sequestration or any purpose other than geologic sequestration are included. Facilities that emit 25,000 metric tons or more per year of GHGs as CO_2eq are required to submit annual reports to U.S. EPA.

Ozone-Depleting Substances: Under the CAA Title VI, the U.S. EPA is assigned responsibility for implementing programs that protect the stratospheric ozone layer. 40 CFR Part 82 contains U.S. EPA's regulations specific to protecting the ozone layer. These U.S. EPA regulations phase

[44] U.S. EPA, 2021. EPA to Overhaul Pollution Standards for Passenger Vehicles and Heavy-Duty Trucks, Paving Way for Zero-Emission Future, News Release, August 5, 2021. https://www.epa.gov/newsreleases/epa-overhaul-pollution-standards-passenger-vehicles-and-heavy-duty-trucks-paving-way, accessed on June 10, 2022.

[45] U.S. EPA, 2022. EPA Proposes Stronger Standards for Heavy-Duty Vehicles to Promote Clean Air, Protect Communities, and Support Transition to Zero-Emissions Future, News Release, March 7, 2022. https://www.epa.gov/newsreleases/epa-proposes-stronger-standards-heavy-duty-vehicles-promote-clean-air-protect, accessed on June 10, 2022.

out the production and import of ozone-depleting substances (ODSs) consistent with the Montreal Protocol.[46] ODSs are typically used as refrigerants or as foam-blowing agents. ODS are regulated as Class I or Class II controlled substances. Class I substances have a higher ozone-depleting potential and have been completely phased out in the United States, except for exemptions allowed under the Montreal Protocol. Class II substances are HCFCs, which are transitional substitutes for many Class I substances and are being phased out.

3.2.2.2.2 State

Statewide GHG Reduction Targets

Executive Order S-3-05: In June 2005, Governor Schwarzenegger signed Executive Order S-3-05, which established emission reduction targets. The goals would reduce GHG emissions to 2000 levels by 2010, then to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Assembly Bill (AB) 32 – Global Warming Solutions Act: On September 27, 2006, AB 32, the California Global Warming Solutions Act of 2006, was signed by Governor Schwarzenegger. AB 32 expanded on Executive Order S-3-05. The California legislature stated that "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." AB 32 represented the first enforceable statewide program in the U.S. to cap all GHG emissions from major industries that includes penalties for non-compliance. While acknowledging that national and international actions will be necessary to fully address the issue of global warming, AB 32 laid out a program to inventory and reduce GHG emissions in California and from power generation facilities located outside the state that serve California residents and businesses.

Consistent with the requirement to develop an emission reduction plan, CARB prepared a Scoping Plan indicating how GHG emission reductions will be achieved through regulations, market mechanisms, and other actions. The 2008 Scoping Plan called for reducing GHG emissions to 1990 levels by 2020. This means cutting approximately 30 percent from business-as-usual (BAU) emission levels projected for 2020, or about 15 percent from 2005 to 2008 levels.[47] However, as of January 1, 2020, SB 32 became the guiding GHG regulation.

Senate Bill (SB) 32 and AB 197: In September 2016, Governor Brown signed Senate Bill 32 and Assembly Bill 197, making the Executive Order goal of reducing GHG emissions to 40 percent below 1990 levels by 2030 into a statewide, mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direct emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources. CARB prepared a 2017 Climate Change Scoping Plan Update, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 million $MTCO_2eq$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.[48] On May 10, 2022, CARB released the Draft 2022 Scoping Plan Update for public

[46] The Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol) is an international treaty designed to phase out halogenated hydrocarbons such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), which are considered ODSs. The Montreal Protocol was first signed on September 16, 1987 and has been revised seven times. The U.S. ratified the original Montreal Protocol and each of its revisions.

[47] California Air Resources Board. 2008, December. Climate Change Scoping Plan, A Framework for Change.

[48] CARB, 2017, California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed on June 10, 2022.

review and assessed progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045.

The major elements of the Draft 2022 Scoping Plan Update include: 1) "the aggressive reduction of fossil fuels wherever they are currently used in California, building on and accelerating carbon reduction programs that have been in place here for a decade and a half; and 2) re-envisioning of our forests, shrublands/chaparral, croplands, wetlands, and other lands (referred to as Natural and Working Lands) to ensure that they play as robust a role as possible in incorporating and storing more carbon in the trees, plants, soil, and wetlands that cover 90 percent of the state's 105 million acres. Specifically, the Draft 2022 Scoping Plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 or earlier.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as a driving principle throughout the document.
- Incorporates the contribution of natural and working lands to the state's GHG emissions, as well as its role in achieving carbon neutrality.
- Relies on the most up to date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration as well a direct air capture.
- Evaluates multiple options for achieving our GHG and carbon neutrality targets, as well as the public health benefits and economic impacts associated with each.[49]

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero emission and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conserve agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and TACs emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the stringency of the standards for the various strategies covered under the Mobile Source Strategy, which include increasing ZE buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).

[49] CARB 2022, Draft 2022 Scoping Plan Update, May 10, 2022, Executive Summary, https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf, accessed on August 5, 2022.

- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency and utilizes near-zero emission technology and deployment of ZE trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.[50]

In addition to the statewide strategies listed above, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the state's long-term GHG reduction goals and recommended local actions to reduce GHG emissions—for example, statewide targets of no more than six $MTCO_2eq$ or less per capita by 2030 and two $MTCO_2eq$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt robust and quantitative locally appropriate goals that align with the statewide per capita targets and sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the state's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population) consistent with the Scoping Plan and the state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from VMT, and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.[51]

The Scoping Plan scenario is set against what is called the business-as-usual (BAU) yardstick—that is, what would the GHG emissions look like if the state did nothing at all beyond the existing policies that are required and already in place to achieve the 2020 limit. It includes the existing renewables requirements, advanced clean cars, the LCFS, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. The known commitments are expected to result in emissions that are 60 million $MTCO_2eq$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

[50] CARB, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed on June 10, 2022.
[51] CARB, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed on June 10, 2022.

Mobile Sources

AB 1493 Vehicular Emissions: Prior to the U.S. EPA and NHTSA joint rulemaking, Governor Schwarzenegger signed Assembly Bill AB 1493 (2002). AB 1493 requires that CARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the state." CARB originally approved regulations to reduce GHGs from passenger vehicles in September 2004, with the regulations to take effect in 2009 (see amendments to CCR Title 13 Sections 1900 and 1961 (13 CCR 1900, 1961), and the adoption of CCR Title 13 Section 1961.1 (13 CCR 1961.1)). California's first request to the U.S. EPA to implement GHG standards for passenger vehicles was made in December 2005 and subsequently denied by the U.S. EPA in March 2008. The U.S. EPA then granted California the authority to implement GHG emission reduction standards for new passenger cars, pickup trucks, and sport utility vehicles on June 30, 2009. On April 1, 2010, CARB filed amended regulations for passenger vehicles as part of California's commitment toward the national program to reduce new passenger vehicle GHGs from 2012 through 2016. In 2012, CARB approved the Low-Emission Vehicle (LEV) III regulations which include increasingly stringent emission standards for both criteria pollutants and greenhouse gases for new passenger vehicles of manufacture years 2017 through 2025.[52]

Low Carbon Fuel Standard (LCFS): In the 2008 Scoping Plan, CARB identified the LCFS as one of the nine discrete early action GHG reduction measures. The LCFS is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits. CARB approved the LCFS regulation in 2009 and began implementation on January 1, 2011 and has been amended several times since adoption. In 2018, CARB approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector. The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. The LCFS standards are expressed in terms of the 'carbon intensity' of gasoline and diesel fuel and their respective substitutes. The program is based on the principle that each fuel has 'lifecycle' greenhouse gas emissions that include CO_2, CH_4, N_2O, and other GHG contributors. This lifecycle assessment examines the GHG emissions associated with the production, transportation, and use of a given fuel. The lifecycle assessment includes direct emissions associated with producing, transporting, and using the fuels, as well as significant indirect effects on GHG emissions, such as changes in land use for some biofuels. The carbon intensity scores assessed for each fuel are compared to a declining carbon intensity benchmark for each year. Low carbon fuels below the benchmark generate credits, while fuels above the carbon intensity benchmark generate deficits. Providers of transportation fuels must demonstrate that the mix of fuels they supply for use in California meets the LCFS carbon intensity standards, or benchmarks, for each annual compliance period. A deficit generator meets its compliance obligation by ensuring that the quantity of credits it earns or otherwise acquires from another party is equal to, or greater than, the deficits it has incurred.

[52] CARB, Low-Emission Vehicle Greenhouse Gas Program, https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/lev-program/low-emission-vehicle-greenhouse-gas, accessed on June 10, 2022.

EO S-1-07: Governor Schwarzenegger signed Executive Order S-1-07 in 2007 which established the transportation sector as the main source of GHG emissions in California. Executive Order S-1-07 proclaims that the transportation sector accounts for over 40 percent of statewide GHG emissions. Executive Order S-1-07 also establishes a goal to reduce the carbon intensity of transportation fuels sold in California by a minimum of 10 percent by 2020. Executive Order S-1-07 established the LCFS and directed the Secretary for Environmental Protection to coordinate the actions of the CEC, CARB, the University of California, and other agencies to develop and propose protocols for measuring the 'life-cycle carbon intensity' of transportation fuels. The analysis supporting development of the protocols was included in the State Alternative Fuels Plan adopted by CEC on December 24, 2007 and was submitted to CARB for consideration as an 'early action' item under AB 32. CARB adopted the LCFS on April 23, 2009.

EO B-16-2012: Executive Order B-16-2012 establishes long-term targets of reaching 1.5 million zero emission vehicles on California's roadways by 2025 and sets zero emission vehicle purchasing requirements for state government fleets. Executive Order B-16-2012 also sets a target for 2050 to achieve a reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels. In February 2013, an interagency working group developed the "Zero-Emission Vehicle Action Plan," which identified specific strategies and actions that state agencies needed to take to meet the milestones of this Executive Order. The Zero-Emission Vehicle Action Plan states: "*Zero-Emission Vehicles are crucial to achieving the state's 2050 greenhouse gas goal of 80 percent emission reductions below 1990 levels, as well as meeting federal air quality standards. Achieving 1.5 million Zero-Emission Vehicles by 2025 is essential to advance the market and put the state on a path to meet these requirements."*

EO N-79-20: On September 23, 2020, Governor Newsom signed Executive Order N-79-20 which included the following goals to have: 1) 100 percent of in-state sales of new passenger cars and trucks transition to zero emission vehicles by 2035; 2) 100 percent of drayage trucks transition to zero emission vehicles by 2035; 3) 100 percent of medium- and heavy-duty vehicles transition to zero emission vehicles by 2045 for all operations in California, where feasible; and 4) 100 percent of off-road vehicles and equipment to transition to zero emission vehicles and equipment by 2035, where feasible.

SB 44: The California Legislature passed SB 44, acknowledging the ongoing need to evaluate opportunities for mobile source emissions reductions and requires CARB to update the 2016 Mobile Source Strategy by January 1, 2021, and every five years thereafter. Specifically, SB 44 requires CARB to update the 2016 Mobile Source Strategy to include a comprehensive strategy for the deployment of medium- and heavy-duty vehicles for meeting air quality standards and reducing GHG emissions. It also directs CARB to set reasonable and achievable goals for reducing emissions by 2030 and 2050 from medium- and heavy-duty vehicles that are consistent with the California's overall goals and maximizes the reduction of criteria air pollutants.

SB 375: SB 375, signed into law in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. As part of the alignment, SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) which prescribes land use allocation in that MPO's Regional Transportation Plan (RTP). CARB, in consultation with MPOs, is required to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions

technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned GHG emission reduction targets. If MPOs do not meet the GHG reduction targets, transportation projects located in the MPO boundaries would not be eligible for funding programmed after January 1, 2012.

CARB appointed the Regional Targets Advisory Committee (RTAC), as required under SB 375, on January 23, 2009. The RTAC's charge was to advise CARB on the factors to be considered and methodologies to be used for establishing regional targets. The RTAC provided its recommendation to CARB on September 29, 2009. CARB was required to adopt final targets by September 30, 2010.[53]

CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018.[54,55] The updated targets became effective on October 1, 2018. The targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies, and any potential future state strategies, such as statewide road user pricing. The targets also call for greater per-capita GHG emission reductions from SB 375 than what were previously in place, which for 2035 translate into targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCS to achieve the SB 375 targets. For the next round of SCS updates, CARB's updated targets for the SCAG region are an eight percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent).[56] CARB adopted the updated targets and methodology on March 22, 2018. All SCSs adopted after October 1, 2018, are subject to these revised targets.

SCAG's Regional Transportation Plan / Sustainable Communities Strategy: SB 375 requires each MPO to prepare a sustainable communities strategy in its regional transportation plan. SCAG released the draft 2020-2045 RTP/SCS (Connect SoCal) on November 7, 2019. On September 3, 2020, SCAG's Regional Council unanimously voted to approve and fully adopt the Connect SoCal Plan.[57] In general, the SCS outlines a development pattern for the region that, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

Connect SoCal focuses on the continued efforts of the previous RTP/SCSs to integrate transportation and land uses strategies in development of the SCAG region through horizon year 2045. Connect SoCal forecasts that the SCAG region will meet its GHG per capita reduction

[53] California Air Resources Board 2010, August. Staff Report Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375.

[54] California Air Resources Board, 2018, SB 375 Regional Greenhouse Gas Emissions Reduction Targets https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375_Final_Targets_2018.pdf, accessed on June 10, 2022.

[55] California Air Resources Board, 2018, Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emissions Reduction Targets, https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375_Updated_Final_Target_Staff_Report_2018.pdf, accessed on June 10, 2022.

[56] California Air Resources Board. 2018, February. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf, accessed on June 10, 2022.

[57] Southern California Association of Governments (SCAG). 2020, September. Adopted Final Connect SoCal. https://scag.ca.gov/read-plan-adopted-final-plan, accessed on June 10, 2022.

targets of eight percent by 2020 and 19 percent by 2035. Additionally, Connect SoCal also forecasts that implementation of the plan will reduce VMT per capita in year 2045 by 4.1 percent compared to baseline conditions for that year. Connect SoCal includes a 'Core Vision' that centers on maintaining and better managing the transportation network for moving people and goods while expanding mobility choices by locating housing, jobs, and transit closer together, and increasing investments in transit and complete streets.

Adaptation

EO S-13-08: Governor Schwarzenegger signed Executive Order S-13-08 on November 14, 2008 which directed California to develop methods for adapting to climate change through preparation of a statewide plan. Executive Order S-13-08 directed OPR, in cooperation with the Resources Agency, to provide land use planning guidance related to sea level rise and other climate change impacts by May 30, 2009. Executive Order S-13-08 also directed the Resources Agency to develop a state Climate Adaptation Strategy by June 30, 2009 and to convene an independent panel to complete the first California Sea Level Rise Assessment Report. The assessment report was required to be completed by December 1, 2010 and required to meet the following four criteria:

1. Project the relative sea level rise specific to California by considering issues such as coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates;
2. Identify the range of uncertainty in selected sea level rise projections;
3. Synthesize existing information on projected sea level rise impacts to state infrastructure (e.g., roads, public facilities, beaches), natural areas, and coastal and marine ecosystems; and
4. Discuss future research needs relating to sea level rise in California.

Energy

SB 1078, SB 107 and EO S-14-08: SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date from 2017 to 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Portfolio Standard from 20 percent by 2010 to 33 percent renewable power by 2020.

SB X-1-2: SB X1-2 was signed by Governor Brown in April 2011. SB X1-2 created a new Renewables Portfolio Standard (RPS), which pre-empted CARB's 33 percent Renewable Electricity Standard. The new RPS applies to all electricity retailers in the state including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. These entities must adopt the new RPS goals of 20 percent of retails sales from renewables by the end of 2013, 25 percent by the end of 2016, and the 33 percent requirement by the end of 2020.

SB 1368: SB 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 required the CPUC to establish a GHG emission performance standard for baseload generation from investor-owned utilities (IOUs) by February 1, 2007. The California Energy Commission (CEC) was also required to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the greenhouse gas

emission rate from a baseload combined-cycle natural gas fired power plant. The legislation further required that all electricity provided to California, including imported electricity, must be generated from power plants that meet the standards set by the Public Utilities Commission (PUC) and CEC.

SB 350: Senate Bill 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS with 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

SB 100: On September 10, 2018, Governor Brown signed SB 100. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. Additionally, SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

EO B-55-18: Executive Order B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive Order B-55-18 directed CARB to work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2eq from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

AB 2127: This bill requires the California Energy Commission (CEC), working with CARB and the California Public Utilities Commission (CPUC), to prepare and biennially update a statewide assessment of the electric vehicle charging infrastructure needed to support the levels of electric vehicle adoption required for the state to meet its goals of putting at least five million zero emission vehicles on California roads by 2030 and of reducing emissions of greenhouse gases to 40 percent below 1990 levels by 2030. The bill requires the CEC to regularly seek data and input from stakeholders relating to electric vehicle charging infrastructure.[58]

California Building Code – Building Energy Efficiency Standards: Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The CEC updates building energy efficiency standards in Title 24 (Parts 6 and 11) every three years to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and went into effect on January 1, 2020. The 2019 standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multifamily

[58] California Legislative Information, September 14, 2018, AB-2127 Electric Vehicle Charging Infrastructure: Assessment, https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB2127, accessed on June 10, 2022.

buildings of three stories and less. The 2019 standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements.[59]

In addition, the CEC adopted the 2022 Building Energy Efficiency Standards adopted on August 11, 2021 but they do not go into effect until January 1, 2023. The 2022 Energy Code encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code.

California Building Code – CALGreen: On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR Part 11, known as 'CALGreen') was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[60] The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011 and were last updated in 2019. The 2019 CALGreen standards became effective January 1, 2020. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

Short-Lived Climate Pollutants

SB 1383: On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and methane. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 required CARB, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030, as specified. On March 14, 2017, CARB adopted the "Final Proposed Short-Lived Climate Pollutant Reduction Strategy," which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s despite the tripling of diesel fuel use. In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

Ozone Depleting Substances (ODSs)

Refrigerant Management Program: As part of implementing AB 32, CARB also adopted a Refrigerant Management Program in 2009. The Refrigerant Management Program is designed to

[59] California Energy Commission (CEC). 2018. News Release: Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. https://www.energy.ca.gov/news/2018-05/energy-commission-adopts-standards-requiring-solar-systems-new-homes-first, accessed on June 10, 2022.

[60] The green building standards became mandatory in the 2010 edition of the code.

reduce GHG emissions from stationary sources through refrigerant leak detection and monitoring, leak repair, system retirement and retrofitting, reporting and recordkeeping, and proper refrigerant cylinder use, sale, and disposal.

HFC Emission Reduction Measures for Mobile Air Conditioning – Regulation for Small Containers of Automotive Refrigerant: The Regulation for Small Containers of Automotive Refrigerant applies to the sale, use, and disposal of small containers of automotive refrigerant with a GWP greater than 150. Emission reductions are achieved through implementation of four requirements: 1) use of a self-sealing valve on the container; 2) improved labeling instructions; 3) a deposit and recycling program for small containers; and 4) an education program that emphasizes best practices for vehicle recharging. This regulation went into effect on January 1, 2010 with a one-year sell-through period for containers manufactured before January 1, 2010. The target recycle rate is initially set at 90 percent and rose to 95 percent beginning January 1, 2012.

3.2.2.2.3 South Coast AQMD

The South Coast AQMD adopted a "Policy on Global Warming and Stratospheric Ozone Depletion" on April 6, 1990. The policy commits the South Coast AQMD to consider global impacts in rulemaking and in drafting revisions to the AQMP. In March 1992, the South Coast AQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include support of the adoption of a California GHG emission reduction goal.

Basin GHG Policy and Inventory: The South Coast AQMD has established a policy, adopted by the South Coast AQMD Governing Board at its September 5, 2008 meeting, to actively seek opportunities to reduce emissions of criteria, toxic, and climate change pollutants. The policy includes the intent to assist businesses and local governments implementing climate change measures, decrease the agency's carbon footprint, and provide climate change information to the public.

3.2.2.2.3.1 Ozone Depleting Substances (ODSs)

Policy on Global Warming and Stratospheric Ozone Depletion: The South Coast AQMD adopted a "Policy on Global Warming and Stratospheric Ozone Depletion" on April 6, 1990. The policy targeted a transition away from CFCs as an industrial refrigerant and propellant in aerosol cans. In March 1992, the South Coast AQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives for ODSs:

- Phase out the use and corresponding emissions of CFCs, methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995.
- Phase out the large quantity use and corresponding emissions of HCFCs by the year 2000.
- Develop recycling regulations for HCFCs.
- Develop an emissions inventory and control strategy for methyl bromide.

CHAPTER 4

ENVIRONMENTAL IMPACTS

4.0 INTRODUCTION AND BACKGROUND

The CEQA Guidelines require environmental documents to identify significant environmental effects that may result from a proposed project. [CEQA Guidelines Section 15126.2(a)]. Direct and indirect significant effects of a project on the environment should be identified and described, with consideration given to both short- and long-term impacts. The discussion of environmental impacts may include, but is not limited to, the following: resources involved; physical changes; alterations of ecological systems; health and safety problems caused by physical changes; and other aspects of the resource base, including water, scenic quality, and public services. If significant adverse environmental impacts are identified, the CEQA Guidelines require a discussion of measures that could either avoid or substantially reduce any adverse environmental impacts to the greatest extent feasible. [CEQA Guidelines Section 15126.4].

The categories of environmental impacts to be studied in a CEQA document are established by CEQA (Public Resources Code Section 21000 et seq.), and the CEQA Guidelines, as codified in Title 14 California Code of Regulations Section 15000 et seq. Under the CEQA Guidelines, there are approximately 18 environmental categories in which potential adverse impacts from a project are evaluated. The South Coast AQMD, as lead agency, has taken into consideration the Appendix G environmental checklist form, but has tailored the 21 environmental topic areas to emphasize air quality assessment primarily by combining the "air quality" and "greenhouse gas emissions" areas into one section, combining the "cultural resources" and "tribal cultural resources" areas into one section, separating the "hazards and hazardous materials" factor into two sections: "hazards and hazardous materials" and "solid and hazardous waste," and folding the "utilities/service systems" area into other environmental areas such as "energy," "hydrology and water quality" and "solid and hazardous waste." For each environmental topic area, per CEQA Guidelines Section 15064.7(a), "a threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant." The South Coast AQMD has developed unique thresholds of significance for the determination of significance in accordance with CEQA Guidelines Section 15064.7(b).

Proposed Project and Focus of Environmental Effects and Analysis

As explained in Chapter 2, PAR 1168 has been developed to delay the effective dates of or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; ~~and~~ prohibit the use of t-BAc and pCBtF due to toxicity concerns; and allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation. All of these key components of PAR 1168 may involve physical modifications which could cause adverse air quality impacts. However, other changes are proposed for PAR 1168 which are administrative in nature, such as the proposal to remove definitions, and update, ~~and~~ clarify, and streamline rule language associated with recordkeeping and reporting requirements. As such, these administrative components of PAR 1168 are not expected to require physical modifications that would create any secondary adverse environmental impacts for air quality or any other environmental topic area. Thus, the analysis in this SEA focuses on only the portion of PAR 1168

that would be expected to require physical modifications and the corresponding environmental effects.

The October 2017 Final EA previously analyzed the environmental impacts associated with establishing more stringent VOC limits for several product categories with an effective date of January 1, 2023. Therefore, affected categories of Regulated Products, and the nature of the physical impacts that may occur as a result of implementing PAR 1168 are expected to be the same or similar and will cause similar secondary adverse environmental impacts for the same environmental topic areas that were identified and analyzed in the October 2017 Final EA for Rule 1168. The key difference between the October 2017 version of Rule 1168 and PAR 1168 is that PAR 1168 will be relaxing some of the VOC limits and extending the corresponding effective date due to the lack of available technology on the market.

The purpose of the October 2017 amendments to Rule 1168, the project upon which the currently proposed project, PAR 1168, is based, was to reduce emissions of VOCs by 1.38 tpd, as well as reduce toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. The October 2017 Final EA for Rule 1168 analyzed the environmental impacts associated with the activities manufacturers were anticipated to undertake to reformulate products and that these reformulation activities could create secondary adverse environmental impacts. None of the environmental topic areas previously analyzed in the October 2017 Final EA for Rule 1168 were concluded to have significant and unavoidable impacts, including the topic of air quality and greenhouse gases (GHGs).

However, while PAR 1168 is expected to have generally the same or similar effects that were previously examined in the October 2017 Final EA for Rule 1168, PAR 1168 will ~~cause~~ result in some delayed and permanent VOC emission reductions foregone, which were not previously contemplated that will make the previously analyzed air quality impacts more severe than what was discussed in October 2017 Final EA for Rule 1168. Thus, PAR 1168 contains new information of substantial importance relative to the topic of air quality which was not known and could not have been known at the time the October 2017 Final EA for Rule 1168 was certified. [CEQA Guidelines Section 15162(a)(3)].

The purpose of this SEA, and this chapter in particular, is to compare the types of activities and associated environmental impacts with implementing the VOC limits and effective dates subject to the Rule 1168 amendments that were previously analyzed in the October 2017 Final EA for Rule 1168 to the currently proposed changes which comprise PAR 1168. The CEQA Guidelines indicate that the degree of specificity required in a CEQA document depends on the type of project being proposed. [CEQA Guidelines Section 15146]. However, the detail of the environmental analysis for certain types of projects cannot be as great as for others. For this SEA, the baseline is the project analyzed in the October 2017 Final EA for Rule 1168 and the SEA tiers off of that previously conducted analysis. Lastly, because PAR 1168 proposes to amend an existing rule, this SEA is required to contain the environmental analysis required by CEQA Guidelines Section 15187 which specifically pertains to the environmental review of rules and regulations.

Because PAR 1168 contains changes that would only adversely impact the topic of air quality, this SEA analyzes the potentially significant impacts specific to air quality. The analysis of the

potentially significant air quality impacts in this chapter incorporates a "worst-case" approach. This approach entails the premise that whenever the analysis requires that assumptions be made, those assumptions that result in the greatest adverse impacts are typically chosen. This method ensures that all potential effects of PAR 1168 are documented for the decision-makers and the public.

In addition, this chapter independently considers whether the proposed project would result in new significant impacts for any of the other environmental topic areas previously concluded in the October 2017 Final EA for Rule 1168 to have either no significant impacts or less than significant impacts; however, none were identified. See Section 4.3 of this chapter for a description and the basis for this conclusion.

4.1 POTENTIAL SIGNIFICANT AIR QUALITY AND GREENHOUSE GAS IMPACTS AND MITIGATION MEASURES

This chapter independently considers the currently proposed project (PAR 1168) and analyzes the incremental changes, if any, relative to the baseline established in the October 2017 Final EA for Rule 1168. The October 2017 Final EA for Rule 1168 previously analyzed environmental impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA analyzed the environmental topic of air quality and GHGs and concluded that less than significant adverse impacts to air quality and GHG emissions would occur.

Thus, this section evaluates the potential air quality and GHG emission impacts for PAR 1168 and compares the previous air quality and GHG emission impacts analysis conducted in the October 2017 Final EA for Rule 1168.

4.1.1 Significance Criteria

To determine whether air quality and GHG impacts from adopting and implementing the proposed project are significant, impacts will be evaluated and compared to the significance criteria on the following page. The significance thresholds for criteria pollutant emissions: the mass daily thresholds, were developed in 1993, and a full discussion can be found in the South Coast AQMD CEQA Handbook. Significance thresholds for toxic air contaminants and odor are based on requirements under Rules 1401 and 212, and 402 respectively. In December 2008, the Governing Board approved an interim GHG significance threshold for projects where the South Coast AQMD is the lead agency. There has been ongoing development of the significance thresholds, and detailed discussion is available on the South Coast AQMD website.[89] A discussion regarding feasible mitigation measures is also included in this section. Significance determinations for construction impacts are based on the maximum or peak daily emissions during the construction period, which provides a "worst-case" analysis of the construction emissions. Similarly, significance determinations for operational emissions are based on the maximum or peak daily emissions during the operational phase.

The proposed project will have significant adverse air quality impacts if any one of the thresholds in Table 4-1 are equaled or exceeded.

[89] South Coast AQMD, 1993. http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook.

Table 4-1
South Coast AQMD Air Quality Significance Thresholds

Mass Daily Thresholds [a]		
Pollutant	**Construction** [b]	**Operation** [c]
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to South Coast AQMD Rule 402	
GHG	10,000 MT/yr CO_2eq for industrial facilities	
Ambient Air Quality Standards for Criteria Pollutants[d]		
NO_2 1-hour average annual arithmetic mean	South Coast AQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM_{10} 24-hour average annual average	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation) 1.0 μg/m^3	
$PM_{2.5}$ 24-hour average	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation)	
SO_2 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 μg/m^3 (state)	
CO 1-hour average 8-hour average	South Coast AQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day Average Rolling 3-month average	1.5 μg/m^3 (state) 0.15 μg/m^3 (federal)	

[a] Source: South Coast AQMD CEQA Handbook (South Coast AQMD, 1993)
[b] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).
[c] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.
[d] Ambient air quality thresholds for criteria pollutants based on South Coast AQMD Rule 1303, Table A-2 unless otherwise stated.
[e] Ambient air quality threshold based on South Coast AQMD Rule 403.

KEY: lbs/day = pounds per day ppm = parts per million μg/m^3 = microgram per cubic meter ≥ = greater than or equal to
MT/yr CO_2eq = metric tons per year of CO_2 equivalents > = greater than

Revision: April 2019

Project-Specific Air Quality Impacts During Construction

PAR 1168 proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and 4~~5~~) remove definitions, and update ~~and~~ , clarify, and streamline rule language. However, PAR 1168 does not require construction of new buildings, or relocation of existing manufacturing facilities or equipment. Instead, for certain categories of adhesives and sealants that currently contain pCBtF and/or t-BAc, PAR 1168 will prohibit products containing these compounds from being manufactured, supplied, sold and used within South Coast AQMD's jurisdiction. Thus, replacement products will need to be formulated with other compounds in order to comply with the applicable VOC limit by the prescribed effective date. The manufacture of products reformulated to comply with the VOC limits in PAR 1168 is expected to use the same or similar equipment currently utilized to manufacture products formulated to comply with the VOC limits contained in the October 2017 version of Rule 1168. Therefore, compliance with PAR 1168 is not expected to require physical changes or modifications that would involve construction activities. As a result, no construction air quality impacts are expected from PAR 1168. **Based upon these considerations, no significant adverse air quality impacts relating to construction are expected from implementing the proposed project.**

Project-Specific Air Quality Impacts During Operation

~~Criteria~~ Air Pollutants

The purpose of Rule 1168 is to minimize VOC emissions, a precursor to the criteria air pollutant ozone, from area sources, specifically adhesives and sealants, by establishing VOC limits and effective dates for the various product categories. PAR 1168 has been developed to delay the effective dates of and/or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; ~~and~~ prohibit the use of t-BAc and pCBtF due to toxicity concerns; allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and update, clarify, and streamline rule language.

Table 4-2 presents a summary of all the proposed changes in PAR 1168 to the various categories and subcategories of adhesives and sealants which include revised VOC content limits, and revised effective dates. Table 4-2 also presents the corresponding delayed and permanent foregone VOC emission reductions due to the implementation of these proposed changes relative to the October 2017 version of Rule 1168. It should be noted that the delayed VOC emission reductions and permanent VOC emission reductions foregone are estimated using the scaled sales volume data collected from the Quantity and Emission Report (QER) 2017 and 2018, the proposed VOC limits, and the current VOC limits from the October 2017 version of Rule 1168 for different categories of Regulated Products. The manufacturer and private labelers submitted the first QERs for the 2017 and 2018 period on September 1, 2019.

Table 4-2
Proposed Changes to PAR 1168 and Estimated Delayed and Foregone VOC Emission Reductions

Adhesive and Sealant Category	VOC Limit (g/L) Prior to 2017	VOC Limit (g/L) Amended in 2017	VOC emission reductions (tpd) after 2017	Proposed Subcategory in PAR 1168	PAR 1168 VOC Limit	Proposed Effective Date	Delayed VOC Emission Reductions Foregone (tpd)	Permanent VOC Emission Reductions Foregone (tpd)
Top and Trim Adhesive	540	250	0.2	N/A	250 g/L	1/1/2028	0.1 for 60 months	--
Foam Sealant	250	50	0.23	One-Component	18% VOC by weight	7/1/2023	0.01 for 6 months	0.12
				High-Pressure Two-Component	5% VOC by weight	1/1/2023	--	--
				Low-Pressure Two-Component	5% VOC by weight	1/1/2023	--	--
PVC Welding Cement	510	425	0.18	N/A	425 g/L	1/1/2023	--	--
CPVC Welding Cement	490	400	0.01	CPVC Welding Cement	400 g/L	1/1/2023	--	--
				CPVC Welding Cement for Life Safety Systems	490 g/L	N/A	--	0.01
				Higher Viscosity CPVC Welding Cement	400 g/L	7/1/2024	0.01 for 18 months	--
All Other Roof Adhesives	250	200	0.04	All Other Roof Adhesives	250 g/L	Upon Adoption	--	0.03
				Shingle Laminating Adhesive	30 g/L	1/1/2023	--	--
				Hot Applied Modified Bitumen/Built Up Roof Adhesive	30 g/L	1/1/2023	--	--
Single Ply Roof Membrane Adhesive	250	200	0.05	EPDM/TPO Single Ply Roof Membrane Adhesive ~~N/A~~	250 g/L	Upon Adoption	--	0.07
				Single Ply Roof Membrane Adhesive (Except EPDM/TPO)				
All Other Roof Sealants	300	250	0.14	N/A	300 g/L	Upon Adoption	--	0.05
Clear, Paintable, Immediately Water-Resistant Sealant	380	250	0.02	N/A	250 g/L	1/1/2026	0.007	--

Table 4-2 (concluded)
Proposed Changes to PAR 1168 and Estimated Delayed and Foregone VOC Emission Reductions

Adhesive and Sealant Category	VOC Limit (g/L) Prior to 2017	VOC Limit (g/L) Amended in 2017	VOC emission reductions (tpd) after 2017	Proposed Subcategory in PAR 1168	PAR 1168 VOC Limit	Proposed Effective Date	Delayed VOC Emission Reductions Foregone (tpd)	Permanent VOC Emission Reductions Foregone (tpd)
Rubber Vulcanization Adhesive	850	250	0.06	N/A	250 g/L	1/1/2028	0.29	--
Single Ply Roof Membrane Sealant	450	250	0.003	Cut Edge Single Ply Roof Membrane Sealant ~~N/A~~ Single Ply Roof Membrane Sealant (Except Cut Edge)	250 g/L	1/1/2023	--	--
						TOTAL	**0.42 ~~0.12~~**	**0.28**

Conclusion – ~~Criteria~~ Air Pollutants: As shown in Table 4-2, both the delayed 0.42 ~~0.12~~ tpd (equivalent to ~~240~~ 840 pounds per day) of VOC emission reductions from extending the final effective dates of the VOC limits and the permanent VOC emission reductions foregone of 0.28 tpd (equivalent to 560 pounds per day) from reverting to the higher VOC limit in place prior to the October 2017 amendments to Rule 1168 for certain categories of Regulated Products would exceed the South Coast AQMD's daily VOC operational significance threshold of 55 pounds per day. **Thus, the peak daily VOC operational impacts associated with both the delayed and permanent foregone VOC emission reductions from implementing PAR 1168 are significant. PAR 1168 is expected to generate significant adverse air quality impacts during operation.**

It is important to note that because the focus of PAR 1168 is the VOC content of adhesive and sealants, emissions of other criteria pollutants that are typically associated with combustion activities (e.g., NOx, CO, SOx, PM10, and PM2.5) are not affected by PAR 1168. **Thus, PAR 1168 will have no significant air quality impacts associated with NOx, CO, SOx, PM10, and PM2.5 emissions.**

Project-Specific Mitigation: If significant adverse environmental impacts are identified, the CEQA document shall describe feasible measures that could minimize the significant adverse impacts of the proposed project. [CEQA Guidelines Section 15126.4]. Therefore, feasible mitigation measures for reducing VOC impacts are required. However, the reason PAR 1168 is proposing to revise the VOC content limits and/or effective dates for certain categories of adhesives and sealants is because there are currently no other products available that can feasibly attain the current VOC limits by the effective dates adopted in the October 2017 version of Rule 1168. **Based upon these technological limitations, there are no feasible mitigation measures that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels**.

Since no significant operational air quality impacts relating to NOx, CO, SOx, PM10, and PM2.5 emissions were identified, no mitigation measures are necessary or required for these pollutants.

Remaining ~~Criteria~~ Air Pollutant Impacts: While operational air quality impacts for VOC emissions are expected significant, no feasible mitigation measures have been identified that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels. **Therefore, operational air quality impacts for VOC emissions are significant and unavoidable**.

Toxic Air Contaminants

The purpose of Rule 1168 is to minimize VOC emissions, a precursor to the criteria air pollutant ozone, from area sources, specifically adhesives and sealants, by establishing VOC limits and effective dates for the various product categories. PAR 1168 has been developed to delay the effective dates of and/or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; ~~and~~ prohibit the use of t-BAc and pCBtF due to toxicity concerns; and allow Opteon 1100 as a VOC exempt compound

for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation.

Relative to toxic air contaminants, some manufacturers of adhesives and sealants currently use compounds in their product formulations that are VOCs but that also may be considered a toxic air contaminant (e.g., benzene, toluene, ethylbenzene and xylene). For any formulations that contain any toxic compounds that are also classified as a VOC, the VOC limits in Rule 1168 serve to limit the overall toxicity of product formulations. However, other toxics, such as t-BAc and pCBtF, which are currently exempt from the definition of what qualifies as a VOC as set forth in Rule 102, if relied upon to reformulate products capable of meeting particular VOC limits could result in a formulation with a low VOC content but ~~a~~ high toxicity. This is especially true if t-BAc or pCBtF are relied upon as a non-VOC substitute because these compounds are both carcinogenic with very high cancer potency factors. The cancer potency factors for t-BAc and pCBtF are 0.0047 and 0.03 $(mg/kg\text{-}day)^{-1}$, respectively which are higher or within the same order of the cancer potency factor for some Group II compounds such as dimethyl carbonate (0.0035) and perchloroethylene (0.021). It should be noted that Group II compounds are those that are already restricted or will be restricted in the future because they are either toxic, potentially toxic, upper atmospheric ozone depleters, or cause other environmental impacts. Therefore, these results confirm the carcinogenic effects of t-BAc and pCBtF.

While the purpose of Rule 1168 is to minimize VOC emissions from adhesive and sealant products, because of toxicity concerns associated with t-BAc and pCBtF, PAR 1168 proposes to prohibit the use of t-BAc and pCBtF so as to also minimize consumer exposure to air toxics during the application of adhesives and sealants.

In February 2022, staff surveyed adhesive and sealant manufacturers and suppliers regarding product formulations made with pCBtF and t-BAc so as to assess the extent of pCBtF and t-BAc currently used in these products. The results of the survey indicated that pCBtF was primarily used in roofing products but that pCBtF-formulated products did not dominate the market. In addition, staff conducted an online search of Safety Data Sheets (SDSs) for all non-asphalt roofing sealant and adhesives to get another perspective as to whether pCBtF and t-BAc is commonly used in roofing products. Table 4-3 presents a comparison of the total number of roofing products commercially available and the portion of which have been formulated with pCBtF according to the survey and online search of SDSs. It should be noted that both survey and online search of SDSs indicated negligible use of t-BAc in adhesives and sealants and therefore, data relative to t-BAc is not included in Table 4-3.

Table 4-3
Summary of Survey and online SDSs Search Results for Roofing Products Formulated with pCBtF

Category of Roofing Products	Number of Products Reported in Survey	Number of Products Formulated With pCBtF from Survey (Percentage)	Number of Products Formulated With pCBtF from Online Search of SDSs (percentage)
Single Ply Roof Membrane Adhesive	64	6 (9.4)	11 (17)
Single Ply Roof Membrane Sealants	37	1 (2.7)	1 (2.7)
All Other Roof Sealants	58	2 (3.4)	2 (3.4)
All Other Roof Adhesives	54	0 (0)	0 (0)
TOTAL	**213**	**9 (4.2 %)**	**14 (6.6 %)**

Overall, the analysis and the data in Table 4-3 confirms that widespread reformulation of roofing products will not be necessary if PAR 1168 is implemented because there is a wide variety of other products commercially available and currently in-use that do not contain pCBtF and t-BAc. Based on these considerations, implementation of PAR 1168 is expected to reduce overall toxic profile of roofing products when compared to the October 2017 version of Rule 1168. Moreover, the prohibition of pCBtF and t-BAc due to their toxicity concerns will result in an air quality benefit.

Lastly, PAR 1168 only allows Opteon 1100 as a VOC-exempt compound for High-Pressure Two-Component Foam Sealants and Low-Pressure Two-Component Foam Sealants when used in an industrial or professional setting by workers trained with procedures and guidelines to reduce potential risk of exposure, if OEHHA has sufficient information to establish a Cancer Inhalation Unit Risk Factor, an acute reference exposure level (REL) and a chronic REL of Opteon 1100 and, upon completion of its assessment: 1) does not adopt a Cancer Inhalation Unit Risk Factor for Opteon 1100; 2) develops an acute reference exposure level (REL) or interim acute REL for Opteon 1100, which is higher than or equal to the acute REL or interim acute REL for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd) as a currently used HFO in Two-Component Foam Sealants; and 3) develops a chronic REL or interim chronic REL for Opteon 1100, which is higher than or equal to the chronic REL or interim chronic REL for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd). Therefore, potential future replacement of currently used HFOs in Two-Component Foam Sealants (e.g., HFO-1233zd) with Opteon 1100 is not expected to increase overall toxic profile of these products.

Conclusion – Toxic Air Contaminants: Due to prohibiting t-BAc and pCBtF, two toxic air contaminants with high cancer potency factors, the overall amount of toxic air contaminants used in adhesives and sealants (mainly roofing products) will be reduced. **Therefore, less than significant impacts from toxic air contaminants during operation are expected.**

Project-Specific Mitigation: Since no significant operational air quality impacts relating to emissions of toxic air contaminants were identified, **no mitigation measures are necessary or required.**

Remaining Toxic Air Contaminant Impacts: Operational air quality impacts for toxic air contaminants are expected to be less than significant such that no mitigation measures are necessary or required. **Therefore, operational air quality impacts for toxic air contaminants remain less than significant**.

Odor Impacts

The CEQA significance threshold for odor is whether the project creates an odor nuisance pursuant to South Coast AQMD Rule 402. Odor problems depend on individual circumstances. For example, individuals can differ quite markedly from the populated average in their sensitivity to odor due to any variety of innate, chronic or acute physiological conditions. This includes olfactory adaptation or smell fatigue (i.e., continuing exposure to an odor usually results in a gradual diminution or even disappearance of the smell sensation).

As explained in the previous section which analyzed potential air quality impacts from toxic air contaminants, PAR 1168 is not expected to cause a widespread reformulation of adhesives and sealants due to prohibiting pCBtF and t-BAc because a substantial number of other products are commercially available and in-use that are not formulated with pCBtF and t-BAc. In addition, even if manufacturers elect to reformulate certain adhesive and sealant products, it is unknown what chemicals would be used in lieu of the current formulations available. As such it would be speculative to say whether there would be any new odor impacts from reformulated products, if any, relative to the existing odor profile of the current products on the market. Furthermore, reverting to the pre-2017 VOC limits for some categories of adhesives and sealants essentially means that manufacturers, suppliers and distributors would revert back to having products that were commercially available on the market at that time and continue to be available and in use elsewhere outside of South Coast AQMD's jurisdiction. Therefore, no change or less than significant changes in odor profiles of adhesives and sealants in response to PAR 1168 are expected such that PAR 1168 will not be expected to create objectionable odors affecting a substantial number of people. Local governments also typically have ordinances that are intended to protect the public from adverse odors. South Coast AQMD Rule 402 – Nuisance, also protects the public from adverse odor impacts. In manufacturing, ventilation systems connected to air pollution control equipment as well as employees being required to wear personal protective equipment are two common ways to protect on-site and off-site receptors from odors. However, compliance with PAR 1168 is not expected to require physical changes or modifications that would involve construction activities.

Conclusion – Odors: Since PAR 1168 is not expected to involve construction activities, no impacts to odors during construction will occur. **During operation, less than significant odor impacts are expected from PAR 1168.**

Project-Specific Mitigation: Since no significant odor impacts were identified for construction and less than significant odor impacts were identified for operation, no mitigation measures are necessary or required.

Remaining Odor Impacts: With no odor impacts identified during construction and less than significant odor impacts identified during operation such that no mitigation measures are necessary or required, **air quality impacts relative to odors remain less than significant**.

4.1.2 Cumulative Air Quality Impacts

Pursuant to CEQA Guidelines Section 15130(a), the SEA shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. In general, the preceding analysis concluded that air quality impacts from operation activities would be significant from implementing the proposed project because the South Coast AQMD's significance thresholds for operation will be exceeded for VOC emissions. In addition, there are no feasible mitigation measures that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels. Thus, the air quality impacts due to operations are cumulatively considerable pursuant to CEQA Guidelines Section 15064(h)(1) and therefore, generate significant adverse cumulative air quality impacts.

The analysis also indicates that the proposed project will not involve any construction activities and emissions. Moreover, there will be less than significant increases to health risk and odor impacts. Pursuant to CEQA Guidelines Section 15130(a)(2), when the combined cumulative impact associated with the project's incremental effect is not significant, the SEA must indicate why the cumulative impact is not significant. Because construction emissions, odor impacts, and health risks do not exceed the air quality significance thresholds, which also serve as the cumulative significance thresholds, they are not considered to be cumulatively considerable [CEQA Guidelines Section 15064 (h)(1)].

This identical standard is appropriate because the South Coast AQMD air quality significance thresholds for criteria pollutants were set by evaluating the effect an individual project may have on the ability of the South Coast Air Basin to attain the NAAQS established by the U.S. EPA, and are therefore, cumulative in nature. Specifically, the South Coast AQMD Governing Board adopted 1993 CEQA Air Quality Handbook, which identified that the thresholds for criteria pollutants are based on the emissions levels in the Clean Air Act for a major source in an area designated as extreme non-attainment for ozone. [1993 CEQA Handbook, Chapter 6]. So, for example, a major source of VOCs, a precursor for ozone, is defined as a source that has a potential to emit at least 10 tons per year of VOCs [Clean Air Act section 182(e)]. The South Coast AQMD converted the 10 tons per year in terms of pounds per day, which resulted in a significance threshold of 55 pounds per day for operational emissions. The 1993 CEQA Handbook also explains that this approach is appropriate because the regulatory framework to establish the state and federal ambient air quality standards, and the method to achieve attainment of those standards, are intended to be protective of public health.

Conclusion – Cumulative Air Quality Impacts: The operational air quality impacts relative to VOCs are cumulatively considerable because: 1) the peak daily VOC operational impacts associated with both the delayed and permanent foregone VOC emission reductions exceed the South Coast AQMD's significance threshold for VOC during operation; and 2) there are no feasible mitigation measures that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels.

Cumulative Mitigation: No feasible mitigation measures are available that would eliminate or reduce the cumulatively considerable operational air quality impacts for VOC emissions to less than significant levels.

Remaining Cumulative Air Quality Impacts: While operational air quality impacts for VOC emissions are cumulatively significant, no feasible mitigation measures have been identified that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels. **Therefore, the cumulative operational air quality impacts for VOC emissions remain significant and unavoidable**.

4.1.3 Greenhouse Gas Impacts and Mitigation Measures

Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of GHG emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities, appears to be closely associated with global warming. State law defines GHG to include the following: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6) (Health and Safety Code Section 38505(g)). The most common GHG that results from human activity is CO2, followed by CH4 and N2O.

Traditionally, GHGs and other global warming pollutants are perceived as solely global in their impacts and that increasing emissions anywhere in the world contributes to climate change anywhere in the world. A study conducted on the health impacts of CO2 "domes" that form over urban areas cause increases in local temperatures and local criteria pollutants, which have adverse health effects.[62]

The analysis of GHGs is a different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, the significance thresholds are based on daily emissions because attainment or non-attainment is primarily based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health (e.g., one-hour and eight-hour standards). Since the half-life of CO2 is approximately 100 years, for example, the effects of GHGs occur over a longer term which means they affect the global climate over a relatively long time-frame. As a result, the South Coast AQMD's current position is to evaluate the effects of GHGs over a longer timeframe than a single day (i.e., annual emissions). GHG emissions are typically considered to be cumulative impacts because they contribute to global climate effects.

The South Coast AQMD convened a "Greenhouse Gas CEQA Significance Threshold Working Group" to consider a variety of benchmarks and potential significance thresholds to evaluate GHG impacts. On December 5, 2008, the South Coast AQMD adopted an interim CEQA GHG Significance Threshold for projects where South Coast AQMD is the lead agency (South Coast AQMD, 2008). This interim threshold is set at 10,000 metric tons of CO2 equivalent emissions (MT/yr of CO2eq). The South Coast AQMD prepared a "Draft Guidance Document – Interim CEQA GHG Significance Thresholds" that outlined the approved tiered approach to determine GHG significance of projects (South Coast AQMD, 2008, pg. 3-10). The first two tiers involve: 1) exempting the project because of potential reductions of GHG emissions allowed under CEQA;

[62] Jacobsen, Mark Z. "Enhancement of Local Air Pollution by Urban CO2 Domes," Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at: http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html.

and 2) demonstrating that the project's GHG emissions are consistent with a local general plan. Tier 3 proposes a limit of 10,000 MT/yr CO2eq as the incremental increase representing a significance threshold for projects where South Coast AQMD is the lead agency (South Coast AQMD, 2008, pp. 3-11). Tier 4 (performance standards) is yet to be developed. Tier 5 allows offsets that would reduce the GHG impacts to below the Tier 3 brightline threshold. Projects with incremental increases below this threshold will not be cumulatively considerable.

The purpose of Rule 1168 is to reduce emissions of VOCs, toxic air contaminants, and stratospheric ozone-depleting compounds from the application of adhesives, adhesive primers, sealants, and sealant primers because formulations of these products contain compounds that are primarily comprised of VOCs but can also contain toxics and stratospheric ozone-depleting compounds. However, adhesives and sealants are not known to contain GHG compounds such as HFCs, PFCs, and SF6 because these chemicals are typically used in refrigeration and fire suppression application and PAR 1168 does not contain any proposed limitations on the use of GHG compounds.

The only known GHG compound in adhesives and sealants subject to Rule 1168 is hydrofluoroolefin (HFO) which is a category of foam blowing agents that are currently being used in formulations of pressurized two-part urethane foams or adhesives. Because PAR 1168 considers a limited exemption for Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns, Opteon 1100, which also contains a foam blowing agent which is GHG compound, could potentially replace currently used HFOs (e.g., HFO-1234ze and HFO-1233zd) in these products. Since Opteon 1100, HFO-1234ze, and HFO-1233zd are products which all have similar, low global warming potentials (GWP), the potential reformulation of Two-Component Foam Sealants with a different foam blowing agent, such as what is used in Opteon 1100, would not be expected to substantially change the overall GHG emissions associated with the use of these products. Therefore, no significant GHG impacts are expected.

The main focus of PAR 1168 is to revise VOC limits and/or their corresponding effective dates for certain adhesive and sealant categories, which as explained earlier in this chapter, will result in potentially significant operational air quality impacts for VOC emissions. PAR 1168 also proposes to prohibit the manufacture, supply, sale and use of adhesives and sealants containing t-BAc and pCBtF but neither of these compounds are considered a GHG pollutant. Further, PAR 1168 does not contain any proposed revisions that would require any additional reductions of stratospheric ozone-depleting compounds.

As previously explained in the ~~criteria~~ air pollutants impacts discussion earlier in this chapter, adhesives and sealants are products which are typically applied onto various surfaces and are not utilized in combustion activities whatsoever. Thus, for the same reasons no construction or operation emissions of combustion-generated criteria air pollutants (e.g., NOx, CO, SOx, PM10, and PM2.5) are expected to be created if PAR 1168 is implemented, combustion-generated GHG pollutants (e.g., CO2, CH4, N2O) would also not be created if PAR 1168 is implemented.

Conclusion – GHG Impacts: The proposed revisions to VOC limits and/or their corresponding effective dates for certain adhesive and sealant categories along with the proposed prohibition of t-BAc and pCBtF to reduce toxics contained in certain adhesives and sealants, and the conditional limited exemption of Opteon 1100 in Two-Component Foam Sealants will have no significant impact on GHG emissions. Therefore, PAR 1168 is not expected to generate GHG emissions either

directly or indirectly, that may have a significant impact on the environment. Further, implementation of PAR 1168 would not be expected to conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions since GHG emissions would not be impacted in any way by PAR 1168. **Thus, PAR 1168 will have no significant GHG impacts.**

Project-Specific Mitigation: Since no significant GHG emissions impacts were identified, no mitigation measures are necessary or required.

Conclusion – Cumulative GHG Impacts: Since PAR 1168 will have no significant GHG impacts, GHG impacts are not also cumulatively considerable.

Remaining Cumulative GHG Impacts: Since GHG impacts are not expected from PAR 1168 and thus, are not considered to be cumulative considerable, there are no remaining cumulative GHG impacts.

4.2 SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

CEQA Guidelines Section 15126(c) requires an environmental analysis to consider "any significant irreversible environmental changes which would be involved if the proposed action should be implemented." This Final SEA identified the topic of air quality during operation due to delayed and permanent foregone VOC emission reductions of 0.42 ~~0.12~~ tpd and 0.28 tpd, respectively, as the only environmental area with significant environmental effects. The air quality effects from the operation could not be feasibly mitigated and would result in a significant and unavoidable air quality impact if PAR 1168 is implemented.

4.3 POTENTIAL ENVIRONMENTAL IMPACTS FOUND NOT TO BE SIGNIFICANT

CEQA requires this section of the SEA to identify the environmental topic areas that were analyzed and concluded to have no impacts or less than significant impacts if the proposed project is implemented. For the effects of a project that were determined not to be significant, CEQA Guidelines Section 15128 requires the analysis to contain a statement briefly indicating the reasons that various effects of a project were determined not to have significant impacts and were therefore not discussed in detail.

This subchapter of the SEA identifies the environmental topic areas that were previously analyzed in the October 2017 Final EA for Rule 1168 and concluded to have either less than significant impacts or no impacts (e.g., aesthetics, agriculture and forestry resources; air quality and GHG emissions, biological resources; cultural resources; energy, geology and soils; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; noise; population and housing; public services; recreation; solid and hazardous waste; and transportation and traffic). For all environmental topics except air quality and GHG emissions which is discussed and further analyzed in Sections 4.1 and 4.2 of this chapter, this section assesses whether these previously evaluated environmental topic areas in the October 2017 Final EA for Rule 1168 would be affected by PAR 1168. Also, since two new environmental topic areas of tribal cultural resources and wildfires were added to the CEQA Guidelines after the October 2017 Final EA for Rule 1168 was certified, this section examines whether the PAR 1168 would contribute to any impacts on tribal cultural resources and wildfires.

Environmental Topic Areas Previously Concluded In the October 2017 Final EA To Have No Impacts

The following environmental topic areas were previously analyzed and concluded in the October 2017 Final EA for Rule 1168 to have no impacts: aesthetics; agriculture and forestry resources; biological resources; cultural resources; energy; geology and soils; land use and planning; mineral resources; noise; population and housing; and recreation.

This SEA independently considers the PAR 1168 and analyzes the incremental changes, if any, relative to the baseline which is the project analyzed in the October 2017 Final EA for Rule 1168. When comparing the types of activities and associated environmental impacts with implementing the VOC limits and the corresponding effective dates in the October 2017 version of Rule 1168 as previously analyzed in the October 2017 Final EA for Rule 1168 to the currently proposed project (PAR 1168), similar impacts to the same environmental topic areas that were previously analyzed are expected to occur for all of the environmental topics analyzed except air quality and GHG emissions which are discussed in Sections 4.1 and 4.2 of this chapter. For this reason, the incremental changes associated with implementing the proposed project will not be expected to alter the previous conclusions reached in the October 2017 Final EA for Rule 1168 for the environmental topic areas which were identified as having no impacts (aesthetics; agriculture and forestry resources; biological resources; cultural resources; energy; geology and soils; land use and planning; mineral resources; noise; population and housing; recreation; solid and hazardous waste; and transportation and traffic). Therefore, since no impacts to these environmental topic areas would occur if the PAR 1168 implemented, they are not further evaluated in this SEA. A brief summary of the previous conclusions reached as well as the reasoning why the no impact conclusions would remain the same for PAR 1168 is provided for each of the aforementioned environmental topic areas.

Aesthetics

The October 2017 Final EA for Rule 1168 previously analyzed aesthetics impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no aesthetics impacts would occur because: 1) no construction would be required to install new or modify existing structures that would obstruct or degrade scenic resources; 2) no light generating equipment would be required that would adversely affect day or nighttime views; and 3) any changes to the manufacturing process would occur inside the facility's buildings and do not affect the exterior of the structure. The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF~~)~~ and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. As with the October 2017 version of Rule 1168 and as explained in Section 4.1 of this chapter, PAR 1168 will also not require construction activities to install new or modify existing structures which means that PAR 1168 will also not require new light generating equipment or cause any changes in the visual profile of the facility structures. Therefore, the previous conclusion of no impact to aesthetics reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Agriculture and Forestry Resources

The October 2017 Final EA for Rule 1168 previously analyzed agriculture and forestry resources impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no agriculture and forestry resources impacts would occur since compliance with the October 2017 version of Rule 1168 would not result in the loss of forest land, conversion of farmland to non-agricultural use or conflict with zoning for agriculture use. The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF~~)~~ and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, manufacturing of the adhesive and sealant products formulated to achieve the applicable VOC limits by their effective dates will occur within the confines of the same existing facilities as previously analyzed in October 2017 Final EA for Rule 1168 and these ongoing manufacturing activities will not require the use of forest land, conversion of farmland to non-agricultural use or conflict with zoning for agriculture use. Therefore, the previous conclusion of no impact to agriculture and forestry resources reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Biological Resources

The October 2017 Final EA for Rule 1168 previously analyzed biological resources impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no biological resources impacts would occur because these activities would occur inside the boundaries of established industrial manufacturing facilities which have been previously cleared of vegetation and have already been paved for safety and fire prevention reasons and as such, would not result in or have the potential to result in the removal of vegetation with potential to support wildlife. The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF~~)~~ and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. As with the October 2017 version of Rule 1168, the manufacture of adhesive and sealant products will continue to occur within the boundaries of existing industrial facilities which have been previously cleared of vegetation and have already been paved for safety and fire prevention reasons. Thus, PAR 1168 would not be expected to result in or have the potential to result in the removal of vegetation with potential to support wildlife. Therefore, the previous conclusion of no impact to biological resources reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Cultural Resources

The October 2017 Final EA for Rule 1168 previously analyzed cultural and tribal cultural resource impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no cultural resources impacts would occur because there would be no construction-related activities to existing manufacturing facilities, and therefore no impacts to historical, cultural, paleontological, and archaeological resources. The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF~~)~~ and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, formulation of the adhesive and sealant products will not require any construction-related activities to existing manufacturing facilities, and there will be no expected impacts to historical or cultural resources, and no paleontological, archaeological, or historical resources disturbance. Therefore, the previous conclusion of no impact to cultural resources reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Energy

The October 2017 Final EA for Rule 1168 previously analyzed energy impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA concluded that no energy impacts would occur because manufacturing and reformulation of adhesive and sealant products would comply with any relevant existing energy conservation plans, create no need for new or substantially altered power or natural gas utility systems, create no significant adverse effects on peak and base period demands for electricity or other forms of energy, and cause no adverse effect on energy production or distribution infrastructures. The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF~~)~~ and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168. Thus, the same reasoning for why the October 2017 Final EA for Rule 1168 concluded that no energy impacts would occur in also applies to PAR 1168. Therefore, the previous conclusion of no impact to energy reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Geology and Soils

The October 2017 Final EA for Rule 1168 previously analyzed geology and soil impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-

depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no geology and soil impacts would occur because reformulation of products would take place at existing manufacturing facilities without involving construction activities and therefore the October 2017 version of Rule 1168 would not:

1) Alter the exposure of people or property to geological and natural hazards;

2) Disrupt soil, change topography, erode beach sand or change existing siltation rates;

3) Require groundwork, earth moving activities, or cause new landslide effects or changes to unique geologic features; and

4) Require the installation of a new or modified septic tank, or alternative wastewater disposal system.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168. Thus, the same reasoning for why the October 2017 Final EA for Rule 1168 concluded that no geological and soils impacts would occur in also applies to PAR 1168. Further, since no construction activities would be needed to implement PAR 1168, the same reasoning for why no geological and soils impacts would occur as listed in items 1) through 4) also apply to the proposed project. Therefore, the previous conclusion of no impact to geology and soil reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Land Use and Planning

The October 2017 Final EA for Rule 1168 previously analyzed land use and planning impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no impacts to present or planned land uses in the region would occur because reformulation of adhesives and sealant to meet the VOC limits would occur within the boundary of existing manufacturing facilities and:

1) Physical division of an established community would not be expected, no construction activities would be needed and no new developments in undeveloped areas would occur.

2) There would be no conflict with any applicable land use plan, policy, or regulation due to the absence of an agency with jurisdiction over the Rule 1168.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the

effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168. Thus, the same reasoning for why the October 2017 Final EA for Rule 1168 concluded that no land use and planning impacts would occur as listed in items 1) and 2) also applies to PAR 1168. Therefore, the previous conclusion of no impact to land use and planning reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Mineral Resources

The October 2017 Final EA for Rule 1168 previously analyzed mineral resources impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no impacts to mineral resources would occur because compliance with the October 2017 version of Rule 1168 would not result in the loss of availability of a known mineral resource of value to the region and the residents of the state such as gravel, asphalt, bauxite, gypsum, et cetera, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168. Thus, the same reasoning for why the October 2017 Final EA for Rule 1168 concluded no impacts on the demand or use of important minerals, such as those described above, also applies to PAR 1168. Therefore, the previous conclusion of no impact to mineral resources reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Noise

The October 2017 Final EA for Rule 1168 previously analyzed noise impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no noise impacts would occur because the October 2017 version of Rule 1168 would:

1) Not alter the manufacturing, distribution, or application of adhesives and sealants in any substantial way that would alter existing noise profile at the manufacturing facilities;

2) Comply with noise standards that have been established by Occupational Safety and Health Administration (OSHA) and California-OSHA to protect worker health at distribution and retail locations;

3) Not expose persons to or generate excessive ground borne vibration or ground borne noise level since no construction activities are expected; and

4) Not cause an increase periodic or temporary ambient noise levels in the vicinity of affected manufacturing facilities since compliance would neither require construction-related activities nor change the existing activities currently performed by persons who utilize adhesives and sealants subject to Rule 1168.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168 with no expected changes in manufacturing, distribution, application, and noise profile characteristics. Since PAR 1168 would not require physical modifications involving construction, no new periodic or temporary ambient noise levels increases in the vicinity of affected facilities, excessive ground borne vibration, and ground borne noise level would be expected. Thus, the same reasoning for why the October 2017 Final EA for Rule 1168 concluded no noise impacts would occur, such as those described above, also applies to PAR 1168. Therefore, the previous conclusion of no impact to noise reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Population and Housing

The October 2017 Final EA previously analyzed population and housing impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA concluded that no population and housing impacts would occur because:

1) No additional work was required since adhesive and sealant products would be reformulated using the same equipment that was previously used to manufacture those products.

2) No additional workers were expected to be needed to apply the reformulated products since the usage amount of the reformulated products would not be expected to substantially change.

3) The October 2017 version of Rule 1168 would not create any industry that would affect population growth, directly or indirectly induce the construction of housing units, or require the displacement of persons or housing elsewhere in the South Coast AQMD.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the

effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168 with no expected changes in manufacturing, distribution, and application. Since PAR 1168 would not require physical modifications involving construction or new housing, the same reasoning for why no population and housing impacts would occur as listed in items 1) through 3) also applies to PAR 1168. Therefore, the previous conclusion of no impact to population and housing reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Recreation

The October 2017 Final EA for Rule 1168 previously analyzed recreation impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA concluded that no recreation impacts would occur because the reformulation of adhesive and sealant products would not:

1) directly or indirectly increase or redistribute population;
2) affect or increase the demand for or use of existing neighborhood and regional parks or other recreational facilities; and
3) require the construction of new or the expansion of existing recreational facilities that might have an adverse physical effect on the environment.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168 with no expected changes in manufacturing, distribution, and application. Since PAR 1168 would not require physical modifications involving construction or new housing associated with population growth, additional recreation resources would also not be needed. Consistent with the previous conclusion in the October 2017 Final EA for Rule 1168, PAR 1168 would not result in any recreation impacts as summarized in items 1) through 3). Therefore, the previous conclusion of no impact to recreation reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Solid and Hazardous Waste

The October 2017 Final EA for Rule 1168 previously analyzed solid and hazardous waste impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric

ozone-depleting compounds. The October 2017 Final EA concluded that no solid and hazardous waste impacts would occur because:

1) Compliance with the October 2017 version of Rule 1168 would not change the disposal practices and would not increase the volume of solid or hazardous wastes that cannot be handled by existing municipal or hazardous waste disposal facilities or require additional waste disposal capacity.
2) Implementation of the October 2017 version of Rule 1168 was not expected to interfere with any affected distributors' or retailers' ability to comply with applicable local, state, or federal waste disposal regulations.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168 with no expected changes in manufacturing, distribution, and application. ~~PAR 1168 would include a three-year sell through and a four-year use through provision for products manufactured prior to the effective date of the t-BAc and pCBtF prohibition (effective January 1, 2024, except for Single Ply Roof Membrane Adhesives with an effective prohibition date of January 1, 2025).~~ The sell-through and use-through provisions in PAR 1168 will allow manufacturers and suppliers to deplete Regulated Products in the warehouse or on the shelf and allows users to use up any remaining product rather than disposing of them. The sell-through and use-through effective dates also accommodate the typical three-year shelf life of these Regulated Products. Of course, when there is unused material under the current version of Rule 1168, contractors and businesses using Regulated Products either dispose of waste material according to the specifications in the manufacturer's product data sheets or recycle the waste material. Under PAR 1168, the disposal practices and the total amount of materials (hazardous and non-hazardous) disposed of would not be expected to change. Therefore, implementation of PAR 1168 would not be expected to create a new need to dispose of unused materials that do not comply with PAR 1168 upon adoption. Consistent with the previous conclusion, the proposed project would not result in the impacts summarized in items 1) and 2) and the previous conclusion of no impact to solid and hazardous waste reached in the October 2017 Final EA will continue to apply to the proposed project.

Transportation and Traffic

The October 2017 Final EA for Rule 1168 previously analyzed transportation and traffic impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no transportation and traffic impacts would occur because:

1) Reformulation of adhesive and sealant products would not change the delivery and circulation pattern of Regulated Products. Thus, transportation demands related to

transporting substitute chemicals or new formulations of materials was not expected to increase.

2) No additional worker trips to distribution or retail facilities were expected.

3) No changes in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks, would be expected since product reformulation would occur within the existing manufacturing facilities and regulated/reformulated products were typically shipped via ground transportation.

4) No new roadway hazards or incompatible roadway uses or alteration of the existing long-term circulation patterns due to no expected increases in transportation-related demands would be expected.

5) No requirements specific to emergency access points to adversely affect existing emergency access plans were imposed.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants are expected to be manufactured, formulated, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168 with no expected changes in modes of transportation, delivery, recirculation, and distribution of adhesive and sealants. Consistent with the previous conclusion in the October 2017 Final EA for Rule 1168, PAR 1168 would not be expected to result in the impacts summarized in items 1) through 5). Therefore, the previous conclusion of no impact to transportation and traffic reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Wildfires and Tribal Cultural Resources

At the time the October 2017 Final EA for Rule 1168 was certified, the environmental checklist did not include tribal cultural resources and wildfires as environmental topic areas to be evaluated. However, in 2019, two new environmental topic areas, tribal cultural resources and wildfires, were added to the environmental checklist in the CEQA Guidelines. To make the analysis of environmental impacts consistent with these changes to the environmental checklist, Tables 4-4 and 4-5 provide the new environmental checklist questions for both of these additional topic areas and an analysis of whether the proposed project would be expected to contribute to impacts on tribal cultural resources and wildfires, respectively.

Table 4-4
Evaluation of Wildfire Impacts

WILDFIRE: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	**ANALYSIS AND CONCLUSION**
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	**No Impact.** Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in industrial zoned areas within and outside of South Coast AQMD's jurisdiction and California. Manufacturing facilities are typically not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. In the October 2017 Final EA for Rule 1168, the response to question f) in Section VIII – Hazards and Hazardous Materials, poses the same question and the analysis concluded that the project analyzed in October 2017 Final EA for Rule 1168 would have no impact on any adopted emergency response plan or emergency evacuation plan. Because the previous conclusion of no impact to hazard and hazardous materials reached in the October 2017 Final EA for Rule 1168 will continue to apply to the proposed project, implementation of the proposed project would also not be expected to substantially impair an adopted emergency response plan or emergency evacuation plan.
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	**No Impact.** Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in industrial zoned areas within and outside of South Coast AQMD's jurisdiction and California. Manufacturing facilities are not typically located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The manufacturing facilities are typically located in existing industrial, commercial or mixed land use areas and are not located near wildlands. In the event of a wildfire, no exacerbation of wildfire risks, and no consequential exposure of the project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, or other factors would be expected to occur.

Table 4-4 (continued)
Evaluation of Wildfire Impacts

WILDFIRE: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	**ANALYSIS AND CONCLUSION**
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	**No Impact.** Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in industrial zoned areas within and outside of South Coast AQMD's jurisdiction and California. Manufacturing facilities are not typically located in or near state responsibility areas or lands classified as very high fire hazard severity zones. As noted previously, PAR 1168 is not expected to require physical changes or modifications that would involve construction activities. Thus, PAR 1168 would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	**No Impact.** Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in industrial zoned areas within and outside of South Coast AQMD's jurisdiction and California. Manufacturing facilities are not typically located in or near state responsibility areas or lands classified as very high fire hazard severity zones. In the October 2017 Final EA for Rule 1168, the response to question c) in Section VII – Geology and Soils, poses a similar question relative to landslides and the analysis concluded that the project analyzed in the October 2017 Final EA for Rule 1168 would have no impact. Also, the response to question f) in Section IX – Hydrology and Water Quality of the same document, poses a similar question relative to flooding and the analysis concluded that the project analyzed in October 2017 Final EA for Rule 1168 would have no impact. Because the previous conclusion of no impact to geology and soils and hydrology and water quality reached in the October 2017 Final EA for Rule 1168 will continue to apply to the proposed project, PAR 1168 would also not be expected to expose people or structures to new significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Table 4-4 (concluded)
Evaluation of Wildfire Impacts

WILDFIRE: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	**ANALYSIS AND CONCLUSION**
e) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildfires?	**No Impact.** Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in industrial zoned areas within and outside of South Coast AQMD's jurisdiction and California. Manufacturing facilities are not typically located in or near state responsibility areas or lands classified as very high fire hazard severity zones. In the October 2017 Final EA for Rule 1168, the response to question g) in Section VIII – Hazards and Hazardous Materials, poses essentially the same question and the analysis concluded that the project analyzed in the October 2017 Final EA for Rule 1168 would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. Thus, implementation of PAR 1168 would also not be expected to expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildfires.

Based on the analysis presented in Table 4-4, PAR 1168 would not be expected to have any impacts on wildfires.

Table 4-5
Evaluation of Tribal Cultural Resources Impacts

Tribal Cultural Resources: Would the project:	ANALYSIS AND CONCLUSION
Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code §21074, as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is either: • Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code §5020.1(k)? • A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code §5024.1(c)? (In applying the criteria set forth in Public Resources Code §5024.1(c), the lead agency shall consider the significance of the resource to a California Native American tribe.)	**No Impact.** Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in industrial zoned areas within and outside of South Coast AQMD's jurisdiction and California. The proposed project is not expected to require physical changes to a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American Tribe. However, as part of releasing the October 2017 Final EA for Rule 1168 for public review and comment, South Coast AQMD provided a formal notice to all California Native American Tribes (Tribes) that requested to be on the Native American Heritage Commission's (NAHC) notification list per Public Resources Code Section 21080.3.1(b)(1). Furthermore, the proposed project is not expected to result in a physical change to a resource determined to be eligible for inclusion or listed in the California Register of Historical Resources or included in a local register of historical resources. Similarly, the proposed project is not expected to result in a physical change to a resource determined by the South Coast AQMD to be significant to any tribe. For these reasons, the proposed project is not expected to cause any substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074.

Based on the analysis presented in Table 4-5, PAR 1168 would not be expected to have any impacts on tribal cultural resources.

Environmental Topic Areas Previously Concluded In the October 2017 Final EA To Have Less Than Significant Impacts

The following environmental topic areas were previously analyzed in the October 2017 Final EA for Rule 1168 to have less than significant impacts: air quality and greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; and public services.

The following discussion independently considers the currently proposed project and analyzes the incremental changes, if any, relative to the baseline which is the project analyzed in the October 2017 Final EA for Rule 1168, in order to determine if the previous conclusions of less than significant impacts for the environmental topic areas of air quality and greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; and public services need to be changed.

Air Quality and Greenhouse Gas Emissions

The October 2017 Final EA for Rule 1168 previously concluded that air quality and greenhouse gas emissions impacts would be less than significant due to operational VOC emission reductions associated with reformulating adhesives and sealants with less VOC containing chemicals, less or no toxics, and no stratospheric ozone-depleting compounds. However, the analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns.

Sections 4.1 and 4.2 of this SEA analyzes the proposed project's air quality and GHG impacts and concludes significant operational air quality impacts since the daily delayed and permanent VOC emission reductions foregone would exceed the South Coast AQMD's daily VOC operational significance threshold with no feasible mitigation measures.

Hazards and Hazardous Materials

The October 2017 Final EA for Rule 1168 previously concluded less than significant hazards and hazardous materials impacts associated with reformulating adhesives and sealants with less VOC containing chemicals, less or no toxics, and no stratospheric ozone-depleting compounds. The analysis in the October 2017 Final EA for Rule 1168 concluded that there would be:

1) No significant hazard to the public or environment through the routine transport, use, and disposal of hazardous materials; no new significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment; no new hazardous emissions, or new or increased handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school; or no significant increase in fire hazard in areas with flammable materials.

2) No change in how these facilities comply with their current hazardous waste handling practices for any adhesive and sealant manufacturing facilities are identified on lists of California Department of Toxics Substances Control hazardous waste facilities per

Government Code Section 65962.5. In fact, any facility that is subject to the requirements in Government Code Section 65962.5 would still be required need to comply with any regulations relating to that code section.

3) No new safety hazards would be expected to people working or residing in the vicinity of public/private airports.

4) No impairment of the implementation of or physically interference with an adopted emergency response plan or emergency evacuation plan.

5) No significant exposure to people or structures to risk of loss, injury or death involving wildland fires.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns.

As previously discussed in Section 4.1, results of the survey and online SDSs search for adhesives and sealants indicated that pCBtF was primarily used in roofing products but that pCBtF-formulated products did not dominate the market (Table 4-3). Indeed, there is a wide variety of other products commercially available and currently in-use that do not contain pCBtF and t-BAc. Thus, based upon these considerations, PAR 1168 is not expected to drive reformulation of many categories of adhesives and sealants in order to meet the VOC limits. Further, the extensive and comprehensive regulatory requirements regarding flammable and otherwise hazardous materials will not be affected by PAR 1168 because manufacturers will mostly continue to handle and work with the same solvents, which include some hazardous or toxic materials that will continue to have potential hazard impacts. As with the October 2017 version of Rule 1168, PAR 1168 is not expected to increase or create any new hazardous emissions which would adversely affect existing or proposed schools. Instead, PAR 1168 could benefit the schools by decreasing people's exposure to t-BAc and pCBtF as a result of their proposed prohibition. In addition, PAR 1168 would not change the regulatory requirements for manufacturing facilities that are identified on lists of California Department of Toxics Substances Control hazardous waste facilities per Government Code Section 65962.5. PAR 1168 also contains no requirements that would pertain to or alter any adopted emergency response plans or emergency evacuation plans that may be in place at facilities that manufacture or use the Regulated Products. Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in existing industrial, commercial or mixed land use areas within and outside of South Coast AQMD's jurisdiction and California. These manufacturing facilities are not typically located in or near wildlands to expose people or structures to risk of loss, injury or death involving wildland fires. Finally, PAR 1168 would not change the existing requirements and permit conditions for the proper handling of flammable materials. Further, PAR 1168 does not contain any requirements that would prompt facility owners/operators to begin using new flammable materials. Thus, consistent with the previous conclusion in the October 2017 Final EA for Rule 1168 relative to hazards and hazardous materials, the proposed project would not result in the impacts

summarized in items 1) through 5). Therefore, the previous conclusion of less than significant hazards and hazardous materials impacts reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

Hydrology and Water Quality

The October 2017 Final EA for Rule 1168 previously analyzed the hydrology and water quality impacts associated with reformulating adhesives and sealants with less VOC containing chemicals, less or no toxics, and no stratospheric ozone-depleting compounds. The analysis in the October 2017 Final EA for Rule 1168 concluded that the October 2017 version of Rule 1168 would not violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality. Further, implementation of the October 2017 version of Rule 1168 would also not be expected to result in a determination by the wastewater treatment provider which serves or may serve the manufacturers and users of the reformulated Regulated Products that there is not adequate existing capacity to serve any additional wastewater that may be generated from using water for cleaning up.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. PAR 1168 would not change the current product practices or alter the product formulations to be more detrimental to water quality. Further, the sell-through and use-through provision in the proposed project would not create a new need to dispose of unused materials. If not being used, contractors and businesses using products would either dispose of waste material according to the specifications in the manufacturer's product data sheets or recycle the waste material, such that unused materials are not disposed of via wastewater. While PAR 1168 would not specify or dictate the type of solvent for formulation, wastewater from cleaning up water-borne formulations could be disposed of into the public sewer system, in lieu of disposal as hazardous waste. However, PAR 1168 is not expected to cause significant adverse effects to water quality, wastewater treatment, or wastewater treatment capacity since such effects were not previously observed as a result of reformulating coatings with water-borne technology in response to other rules targeting reductions in VOC emissions from area sources such as Rule 1113 – Architectural Coatings, Rule 1107 – Coating of Metal Parts and Products, and Rule 1151– Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations. Therefore, the previous conclusion of less than significant impacts relating to water quality standards, waste discharge requirements, wastewater treatment and capacity reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

The analysis in the October 2017 Final EA also concluded less than significant impacts to ground water and water supplies because:

1) Unless being treated properly, the quality of groundwater is not suitable for usage in the manufacturing of Regulated Products and manufacturers typically use potable water for water-borne formulations of Regulated Products.

2) The CEQA evaluations for previous amendments to other VOC-based rules (e.g., Rules 1107, 1113, and 1151) concluded no significant impacts to water and groundwater supplies as a result of reformulation with waterborne technologies.

The same reasoning for why no significant impacts relating to water and groundwater supplies would occur as listed in items 1) and 2) also apply to PAR 1168. Therefore, similar to the October 2017 version of Rule 1168, PAR 1168 is not expected to substantially deplete groundwater or water supplies and substantially interfere with groundwater recharge.

Finally, the October 2017 Final EA for Rule 1168 concluded that the October 2017 version of Rule 1168 would not:

1) Substantially alter the existing drainage pattern of the site or area where reformulated Regulated Products manufactured or used, including through alteration of the course of a stream or river;
2) Substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site or flooding on- or off-site;
3) Create new or contribute to existing runoff water which would exceed the capacity of existing or planned storm water drainage systems;
4) Place housing or other structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
5) Expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow; and
6) Result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or the expansion of existing facilities.

Under PAR 1168, adhesives and sealants will continue to be manufactured at existing facilities whose process lines operate within enclosed buildings. Similarly, new or revised formulations of adhesives and sealants are expected to be applied and used in the same manner as the adhesives and sealants currently subject to the requirements in the October 2017 version of Rule 1168. Further, unused Regulated Products will be recycled or properly disposed according to the specifications in the manufacturer's product safety data sheets and according to local and state requirements for proper handling and disposal. Therefore, the same reasoning for why no impacts relating to drainage patterns of the area, run off water, exposing people and structures to flooding hazards, and constructing new water or wastewater treatments would occur as listed in items 1) through 6) also apply to PAR 1168.

Public Services

The October 2017 Final EA for Rule 1168 previously analyzed public services impacts associated with reformulating adhesives and sealants with less VOC containing chemicals, less or no toxics, and no stratospheric ozone-depleting compounds and concluded that less than significant impacts would occur because:

1) Implementation of the October 2017 version of Rule 1168 might result in an accidental or emergency release of hazardous or flammable materials that are being used during

the reformulation process. While unpredictable and with a low probability of occurring, it would require the assistance of public services personnel.

2) Police and fire department personnel may be needed since they are typically first responders to emergency situations and may assist local hazmat teams with containing hazardous materials, putting out fires, and controlling crowds to reduce public exposure to releases of hazardous materials in the event of a spill. However, no substantial increases in police attendance are anticipated due to the low probability of such incidences.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesive and sealant products are expected to be manufactured within the boundary of existing manufacturing facilities with the same equipment. The same reasoning for why less than significant public service impacts relating to fire and police protection services would occur as listed in items 1) and 2) also apply to the proposed project.

The analysis in the October 2017 Final EA for Rule 1168 also concluded no impacts to public services from schools and other facilities because reformulation of adhesive and sealant products would not cause an increase in the local population such that:

1) additional personnel at local schools would not be needed; and
2) no new or physically altered government facilities would be needed in order to maintain acceptable service ratios, response times, or other performance objectives.

Since no increase in local population would be anticipated as a result of implementing PAR 1168, the same reasoning for why no public service impacts relating to schools and other facilities would occur as listed in items 1) and 2) also apply to the proposed project. Therefore, the previous conclusion of less than significant public services impacts relating to fire and police protection services and the no impacts conclusion relating to schools and other facilities reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

4.4 POTENTIAL GROWTH-INDUCING IMPACTS

CEQA Guidelines Section 15126(d) requires an environmental analysis to consider the "growth-inducing impact of the proposed action." CEQA defines growth-inducing impacts as those impacts of a proposed project that "could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects, which would remove obstacles to population growth." [CEQA Guidelines Section 15126.2(d)].

To address this issue, potential growth-inducing effects are examined through the following considerations:

- Facilitation of economic effects that could result in other activities that could significantly affect the environment;
- Expansion requirements for one or more public services to maintain desired levels of service as a result of the proposed project;
- Removal of obstacles to growth through the construction or extension of major infrastructure facilities that do not presently exist in the project area or through changes in existing regulations pertaining to land development;
- Adding development or encroachment into open space; and/or
- Setting a precedent that could encourage and facilitate other activities that could significantly affect the environment.

4.4.1 Economic and Population Growth, and Related Public Services

A project would be considered to directly induce growth if it would directly foster economic or population growth or the construction of new housing in the surrounding environment (e.g., if it would remove an obstacle to growth by expanding existing infrastructure such as new roads or wastewater treatment plants).

The project evaluated in the October 2017 Final EA was concluded to not remove barriers to population growth, since implementation of the October 2017 version of Rule 1168 involved no changes to a General Plan, zoning ordinance, or a related land use policy.

The proposed project evaluated in this SEA contains incremental changes to the project previously evaluated in the October 2017 Final EA. The proposed project would also not be expected to remove barriers to population growth, since implementation of the proposed project does not involve any changes to a General Plan, zoning ordinance, or a related land use policy.

Further, the proposed project, as with the project evaluated in the October 2017 Final EA, does not include policies that would encourage the development of new housing or population-generating uses or infrastructure that would directly encourage such uses. The proposed project, as with the project evaluated in the October 2017 Final EA, does not change jurisdictional authority or responsibility concerning land use or property issues. Land use authority falls solely under the purview of the local governments. The South Coast AQMD is specifically excluded from infringing on existing city or county land use authority (Health and Safety Code Section 40414). Therefore, PAR 1168 would not directly trigger new residential development in the area.

PAR 1168 would not directly or indirectly stimulate substantial population growth, remove obstacles to population growth, or necessitate the construction of new community facilities that would lead to additional growth within South Coast AQMD's jurisdiction. Due to no expected construction activities, PAR 1168 would not require relocation of any workers. Further, PAR 1168 would not be expected to result in an increase in local population, housing, or associated public services (e.g., fire, police, schools, recreation, and library facilities) since no increase in population or the number of workers is expected. Likewise, PAR 1168 would not create new demand for secondary services, including regional or specialty retail, restaurant or food delivery, recreation, or entertainment uses. As such, the proposed project would not foster economic or population growth in the surrounding area in a manner that would be growth-inducing.

Thus, implementing PAR 1168 will not, by itself, have any direct or indirect growth-inducing impacts on businesses in the South Coast AQMD's jurisdiction because it is not expected to foster economic or population growth or the construction of additional housing and primarily affects existing facilities.

4.4.2 Removal of Obstacles to Growth

The facilities which manufacture adhesives and sealants that will be regulated by PAR 1168 are already established entities located within and outside of South Coast AQMD's jurisdiction and outside of California. Under PAR 1168, adhesives and sealants are expected to be manufactured, reformulated (as applicable), used, and applied in a similar fashion as adhesives and sealants subject to the October 2017 version of Rule 1168. Further, PAR 1168 will not cause any substantial changes in transportation type, delivery, recirculation, and distribution of adhesive and sealants. Therefore, PAR 1168 would not employ activities or uses that would result in growth inducement, such as the development of new infrastructure (e.g., new roadway access or utilities) that would directly or indirectly cause the growth of new populations, communities, or currently undeveloped areas. Likewise, PAR 1168 would not require or result in an expansion of existing public service facilities (e.g., police, fire, libraries, and schools) or the development of public service facilities that do not already exist.

4.4.3 Development or Encroachments into Open Space

Development can be considered growth-inducing when it is not contiguous to existing urban development and introduces development into open space areas. PAR 1168 applies to all adhesive and sealants manufactured, supplied, distributed, sold and used within South Coast AQMD's jurisdiction but does not contain any requirements that would trigger new land use developments. Moreover, as discussed in Section 4.1.1, PAR 1168 is not expected to require physical changes or modifications that would involve construction activities. Therefore, PAR 1168 would not require or result in development within or encroachment into an open space area.

4.4.4 Precedent Setting Action

Rule 1168 was adopted in April 1989 to reduce VOC emissions from adhesive applications. The rule has been amended 14 times with the last amendment in October 2017. The purpose of the October 2017 amendments to Rule 1168 was to reduce emissions of VOCs by 1.38 tpd, as well as reduce toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. The October 2017 amendments to Rule 1168 also included a commitment to conduct a technology assessment for top and trim adhesives, roofing products, plastic welding cements, and foam sealants to determine if products for nine adhesive and sealant categories were available that could achieve the VOC limits by January 1, 2023. The technology assessment concluded that some of these product categories either needed more time beyond January 1, 2023 to meet the VOC limits or that achieving the lower VOC limits would not be technically feasible. Thus, PAR 1168 proposes to adjust VOC limits and allow additional time for certain products to be reformulated. In addition, PAR 1168 proposes to prohibit t-BAc and pCBtF due to their toxicity concerns. By prohibiting t-BAc and pCBtF as strong carcinogens, PAR 1168 will set a precedent for future rule making activities aiming to reduce VOCs and toxic compounds. However, it is unlikely that the precedent set by prohibiting these carcinogenic compounds would cause other significant environmental effects, because the prohibition on t-BAc and pCBtF is intended to promote public health – a benefit with no significant impacts.

4.4.5 Conclusion

PAR 1168 is not expected to foster economic or population growth or result in the need to construct additional housing or other infrastructure, either directly or indirectly, that would further encourage growth. PAR 1168 would also not result in an increase in production of resources or cause a progression of growth that could significantly affect the environment either individually or cumulatively.

4.5 RELATIONSHIP BETWEEN SHORT-TERM AND LONG-TERM ENVIRONMENTAL GOALS

CEQA documents are required to explain and make findings about the relationship between short-term uses and long-term productivity. [CEQA Guidelines Section 15065(a)(2)]. An important consideration when analyzing the effects of a proposed project is whether it will result in short-term environmental benefits to the detriment of achieving long-term goals or maximizing productivity of these resources. Implementing the proposed project is not expected to achieve short-term goals at the expense of long-term environmental productivity or goal achievement. The purpose and long-term environmental goals of Rule 1168 is to reduce emissions of VOCs, toxic air contaminants, and stratospheric ozone-depleting compounds from the application of adhesives, adhesive primers, sealants, and sealant primers because formulations of these products contain compounds that are primarily comprised of VOCs but can also contain toxics and stratospheric ozone-depleting compounds.

PAR 1168 contains a proposal to permanently prohibit the use of pCBtF and t-BAc due to toxicity concerns, and this portion of PAR 1168 directly supports the long-term goal of reducing toxic air contaminants which will result in a long-term environmental benefit. However, due to technological issues with the inability to achieve the VOC limits and effective dates in the October 2017 version of Rule 1168 for of certain adhesives and sealants, the short-term goal of PAR 1168 is to revert to the higher VOC limits that were in place prior to the October 2017 amendments to Rule 1168 and to extend the effective dates for certain categories of adhesives and sealants to allow manufacturers additional time to develop products with fewer VOCs, which will eventually lead to achieving VOC emission reductions for these categories of adhesives and sealants over the long-term. PAR 1168 will result in delayed VOC emission reductions foregone of 0.42 ~~0.12~~ tpd over the short-term and permanent VOC emission reductions foregone of 0.28 tpd over the long-term and these delayed and permanent emission reductions foregone were concluded to have significant and unavoidable operational air quality impacts. It is important to note that the majority of the VOC limits in PAR 1168 will remain unchanged such that the long-term goal of reducing VOCs from adhesives and sealants will prevail.

Of the potential environmental impacts discussed in Chapter 4, only those related to operational air quality are considered significant.

CHAPTER 5

ALTERNATIVES

5.0 INTRODUCTION

This SEA provides a discussion of alternatives to the proposed project as required by CEQA. The alternatives discussion includes measures for attaining the objectives of the proposed project and provide a means for evaluating the comparative merits of each alternative. A 'no project' alternative must also be evaluated. The range of alternatives must be sufficient to permit a reasoned choice but need not include every conceivable project alternative. CEQA Guidelines Section 15126.6(c) specifically notes that the range of alternatives required in a CEQA document is governed by a 'rule of reason' and only necessitates that the CEQA document set forth those alternatives necessary to permit a reasoned choice. The key issue is whether the selection and discussion of alternatives fosters informed decision making and public participation. A CEQA document need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative. In addition, South Coast AQMD's certified regulatory program pursuant to Public Resources Code Section 21080.5, CEQA Guidelines Section 15125(l), and South Coast AQMD Rule 110 does not impose any greater requirements for a discussion of project alternatives in a SEA than is required for an EIR under CEQA.

5.1 METHODOLOGY FOR DEVELOPING PROJECT ALTERNATIVES

The alternatives typically included in CEQA documents for proposed South Coast AQMD rules, regulations, or plans are developed by breaking down the project into distinct components (e.g., emission limits, compliance dates, applicability, exemptions, pollutant control strategies, etc.) and varying the specifics of one or more of the components. Different compliance approaches that generally achieve the objectives of the project may also be considered as project alternatives. CEQA Guidelines Section 15126.6(b) states that the purpose of alternatives is to identify ways to mitigate or avoid significant effects that a project may have on the environment.

The initial analysis of the proposed project determined that, of the amendments proposed, only the components in PAR 1168 that pertain to the proposed revisions to the VOC limits for certain categories of adhesives and sealants, and the delayed effective dates could have potentially significant adverse air quality impacts during operation. As such, alternatives to the proposed project were crafted by varying the VOC limits and/or varying the corresponding effective dates for certain categories of adhesives and sealants.

5.2 DESCRIPTION OF ALTERNATIVES TO THE PROPOSED PROJECT

Four alternatives to the proposed project are summarized in Table 5-1: Alternative A – No Project, Alternative B – More Stringent Proposed Project, Alternative C – Less Stringent Proposed Project, and Alternative D – Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168. The primary components of the proposed alternatives which have been modified are effective dates and the manner in which compliance with the VOC emission limits in PAR 1168 or in current version of Rule 1168 may be achieved. Unless otherwise specifically noted, all other components of the project alternatives are identical to the components of the proposed project.

The following subsections provide a brief description of the alternatives.

5.2.1 Alternative A – No Project

CEQA requires the specific alternative of "No Project" to be evaluated. A No Project Alternative consists of what would occur if the proposed project (PAR 1168) was not approved; in this case, not proposing amendments to Rule 1168. Alternative A, the no project alternative, means that the October 2017 version of Rule 1168 would remain in effect. Under Alternative A, adhesives, sealants, sealant primers and adhesive primers would have to comply with the VOC emission limits in the October 2017 version of Rule 1168. Moreover, under Alternative A, t-BAc and pCBtF would continue to be classified as VOC-exempt solvents and as such, could continue to be used in formulating adhesives and sealants that would be subject to the October 2017 version of Rule 1168.

5.2.2 Alternative B – More Stringent Proposed Project

There are some elements in PAR 1168 that could be adjusted to create a more stringent proposed project. To be more stringent would be to impose more requirements, reduce the emission standards to be achieved, or provide less flexibility or relief to those subject to PAR 1168. Under Alternative B, more stringent means the required effective date to meet the proposed VOC limits would need to occur six months earlier than the proposed project for the categories of One-Component Foam Sealant and Higher Viscosity CPVC Welding Cement while the effective date to meet the proposed VOC limit for Top and Trim Adhesive, Clear, Paintable, Immediately Water-Resistant Sealant, and Rubber Vulcanization Adhesive would need to occur 12 months earlier than PAR 1168~~by January 1, 2027~~.

5.2.3 Alternative C – Less Stringent Proposed Project

By contrast to Alternative B, there are a number of elements in PAR 1168 that could be adjusted to create a less stringent proposed project. To be less stringent would be to impose fewer requirements, increase the VOC emission limits to be achieved, or provide more flexibility or relief to the adhesives and sealants subject to PAR 1168. Under Alternative C, the categories of Top and Trim Adhesive, One-Component Foam Sealant~~, High-Pressure Two-Component Foam Sealant, Low-Pressure Two-Component Foam Sealant, and~~ Higher Viscosity CPVC Welding Cement, Clear, Paintable, Immediately Water-Resistant Sealant, and Rubber Vulcanization Adhesive would have an additional 12 months to meet the proposed VOC limits in PAR 1168.

5.2.4 Alternative D – Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168

PAR 1168 would allow higher VOC limits for certain categories of adhesives and sealants which have been identified as unable to meet the VOC limits in the October 2017 version of Rule 1168 by the effective date of January 1, 2023. Unlike the proposed project, Alternative D would require the following categories of adhesives and sealants to meet the VOC limits in the October 2017 version of Rule 1168: One-Component Foam Sealant, ~~High-Pressure Two-Component Foam Sealant, Low-Pressure Two-Component Foam Sealant ,~~ Single Ply Roof Membrane Adhesive (including both subcategories with and without EPDM/TPO)~~,~~, All Other Roof Sealants, All Other Roof Adhesives, and CPVC Welding Cement for Life Safety

Systems. In addition, under Alternative D, the effective date would be postponed by seven years from January 1, 2023 to January 1, 2030, providing industries with sufficient additional time to meet the VOC limits.

5.3 ALTERNATIVES ANALYSIS

Each key component of PAR 1168 has been identified to only affect operational air quality. As such, for this alternatives analysis, the key components with the potential to create operational air quality impacts are evaluated for each alternative and compared to the effects of PAR 1168. Therefore, the following section describes the potential operational air quality impacts that may occur for each alternative and identifies which of the key components may have significant or less than significant impacts, as applicable. Potentially significant adverse operational air quality impacts are quantified where sufficient data are available. A comparison of the environmental impacts for each project alternative is provided in Table 5-2. The following subsections also re-summarize impacts and significance conclusions from the proposed project before discussing each alternative.

5.3.1 Air Quality and Greenhouse Gas Emissions

5.3.1.1 Proposed Project

Potential direct and indirect air quality and GHG emissions impacts from the proposed project are summarized in the following subsection. For the complete analysis, refer to Section 4.1 - Air Quality and Greenhouse Gas Emissions.

As explained previously, PAR 1168 is not expected to require physical changes or modifications that would involve construction activities. Furthermore, the types of chemicals that are used for manufacturing adhesives and sealants subject to Rule 1168 are not known to contain any GHG compounds and any future reformulations with GHG compounds as a result of implementing PAR 1168 would not be expected. Therefore, PAR 1168 would neither generate significant adverse construction air quality impact nor generate GHG impacts during construction or operation.

PAR 1168 proposes to delay the effective dates or revise the VOC limits for certain categories of Regulated Products and these proposed changes are considered operational activities which are expected to generate significant air quality impacts. Implementation of PAR 1168 is expected to result in 0.41 ~~0.11~~ tpd of delayed VOC emission reductions from the categories of Top and Trim Adhesive, ~~and~~ Higher Viscosity CPVC Welding Cement, Clear, Paintable, Immediately Water-Resistant Sealant, and Rubber Vulcanization Adhesive from extending the effective date to meet the applicable VOC limits from the October 2017 version of Rule 1168. An additional 0.01 tpd of delayed VOC emission reductions are expected from delaying the effective date to comply with the proposed VOC limit (18 percent VOC by weight) for One-Component Foam Sealant ~~-~~for six months. In total, PAR 1168 is expected to result in 0.42 ~~0.12~~ tpd of delayed VOC emission reductions foregone.

PAR 1168 is also expected to result in 0.28 tpd of permanent VOC emission reductions foregone from allowing higher VOC limits for the following categories of adhesives and

sealants: One-Component Foam Sealant, CPVC Welding Cement for Life Safety Systems, All Other Roof Adhesives, Single Ply Roof Membrane Adhesive (including both subcategories with and without EPDM/TPO), and All Other Roof Sealants.

5.3.1.2 Alternative A – No Project

Under Alternative A, manufacturers would be allowed to continue to formulate adhesives and sealants for sale and use within South Coast AQMD's jurisdiction that meet the VOC limits established in the October 2017 version of Rule 1168. Compliance with these VOC limits was projected to result in approximately 1.38 tpd of VOC emission reductions. However, manufacturers of certain adhesives and sealants have indicated that they need more time to develop compliant products or cannot meet the applicable VOC limits by the January 1, 2023 effective date due to technological limitations, creating potential compliance issues, and likely resulting in the originally projected VOC emission reductions not being fully achieved.

Moreover, under Alternative A, t-BAc and pCBtF would continue to be classified as VOC-exempt solvents and as such, could continue to be used in formulating adhesives and sealants that would be subject to the October 2017 version of Rule1168 and manufacturers would have the opportunity in the future to develop additional products formulated with these toxic compounds. Thus, under Alternative A, the potential for new formulations of adhesives and sealants containing t-BAc and pCBtF could increase the existing toxicity impacts and associated health risks compared to PAR 1168, which would eliminate the existing and future toxicity impacts through the prohibition of products formulation with t-BAc and pCBtF.

5.3.1.3 Alternative B – More Stringent Proposed Project

PAR 1168 proposes revisions to the VOC limits and corresponding effective dates for certain categories of adhesives and sealants which are based on the recommendations from the technology assessment that was conducted and Alternative B proposes the same VOC limits but with earlier effective dates for the following categories of adhesives and sealants: Top and Trim Adhesive (by January 1, 2027 instead of January 1, 2028), One-Component Foam Sealant (by January 1, 2023 instead of July 1, 2023), ~~and~~ Higher Viscosity CPVC Welding Cement (January 1, 2024 instead of July 1, 2024), Clear, Paintable, Immediately Water-Resistant Sealant (January 1, 2025 instead of January 1, 2026), and Rubber Vulcanization Adhesive (by January 1, 2027 instead of January 1, 2028). ~~.~~ When compared to PAR 1168, Alternative B may be infeasible at worst or difficult to achieve at best due to technological limitations and time constraints associated with developing and testing new formulations prior to making them commercially available for use.

Alternative B would result in 0.42 ~~0.12~~ tpd VOC of delayed emission reductions foregone, but the delay would be for a shorter period of time (i.e., six to 12 months less) when compared to PAR 1168. Alternative B, however, would result in the same amount of permanent VOC emission reductions foregone (0.28 tpd) as PAR 1168. Thus, Alternative B would result in significant operational air quality impacts.

Since the analysis concluded that there would be no significant impacts on construction air quality and construction/operation GHG emissions for PAR 1168, and since Alternative B is

only focused on imposing more stringent compliance dates than what would occur under PAR 1168, Alternative B would also be expected to have no significant impacts on construction air quality and construction/operation GHG emissions.

5.3.1.4 Alternative C – Less Stringent Proposed Project

Alternative C adjusts some elements in PAR 1168 to create a less stringent proposed project by further delaying the potential to achieve VOC emission reductions to the fullest extent possible. Specifically, Alternative C proposes delayed effective dates by one year for the following categories of adhesives and sealants: Top and Trim Adhesive (by January 1, 2029 instead of January 1, 2028), One-Component Foam Sealant (by July 1, 2024 instead of July 1, 2023), ~~High-Pressure Two-Component Foam Sealant (by January 1, 2024 instead of January 1, 2023), Low-Pressure Two-Component Foam Sealant (by January 1, 2024 instead of January 1, 2023) and~~ Higher Viscosity CPVC Welding Cement (by July 1, 2025 instead of July 1, 2024), Clear, Paintable, Immediately Water-Resistant Sealant (by January 1, 2027 instead of January 1, 2026), and Rubber Vulcanization Adhesive (by January 1, 2029 instead of January 1, 2028) to comply with the same proposed VOC limits as in PAR 1168. Alternative C would result in 0.42 ~~0.12~~ tpd of delayed VOC emission reductions foregone, the same as PAR 1168, but the delay would occur over a longer period of time (e.g., twelve months longer) when compared to the proposed project. Alternative C, however, would result in the same amount of permanent foregone VOC emission reductions (0.28 tpd) as PAR 1168. Thus, Alternative C would result in significant operational air quality impacts.

Since the analysis concluded that there would be no significant impacts on construction air quality and construction/operation GHG emissions for PAR 1168, and since Alternative C is only focused on imposing less stringent compliance dates than what would occur under PAR 1168, Alternative C would also be expected to have no significant impacts on construction air quality and construction/operation GHG emissions.

5.3.1.5 Alternative D – Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168

Alternative D proposes that the following categories of adhesives and solvents would meet the VOC limits in the October 2017 version of Rule 1168, but with an effective date of January 1, 2030 instead of January 1, 2023: One-Component Foam Sealant~~, High-Pressure Two-Component Foam Sealant, Low-Pressure Two-Component Foam Sealant~~, Single Ply Roof Membrane Adhesive (including both subcategories with and without EPDM/TPO)~~,~~, All Other Roof Sealants, All Other Roof Adhesives, and CPVC Welding Cement for Life Safety Systems. Unlike PAR 1168, Alternative D would only result in delayed VOC emission reductions foregone of 0.70 ~~0.40~~ tpd, without resulting in any permanent VOC emission reductions foregone because manufacturers will have an additional seven years to develop and formulate adhesives and sealants for the aforementioned categories that will be capable of meeting the VOC limits from the October 2017 version of Rule 1168. Thus, Alternative D would result in significant operational air quality impacts.

Since the analysis concluded that there would be no significant impacts on construction air quality and construction/operation GHG emissions for PAR 1168, and since Alternative D is

only focused on imposing less stringent compliance dates than what would occur under PAR 1168, Alternative D would also be expected to have no significant impacts on construction air quality and construction/operation GHG emissions.

5.4 COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT

Pursuant to CEQA Guidelines Section 15126.6(d), a CEQA document "shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project." A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed." Accordingly, Table 5-1 provides a matrix displaying the major differences in characteristics between the proposed project and each alternative, and Table 5-2 compares the environmental impacts between the proposed project and each alternative.

Table 5-1
Summary of the Proposed Project (PAR 1168) and Alternatives

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Top and Trim Adhesive	No change to existing 250 g/L limit but extend effective date to 1/1/2028	250 g/L by 1/1/2023	250 g/L by 1/1/2027	250 g/L by 1/1/2029	Same as Proposed Project
One-Component Foam Sealant (new subcategory)	18% VOC by weight, and extend effective date to 7/1/2023	50 g/L by 1/1/2023 (for general category of Foam Sealant in the October 2017 version of Rule 1168)	18% VOC by weight by 1/1/2023	18% VOC by weight by 7/1/2024	50 g/L by 1/1/2030
~~**High-Pressure Two-Component Foam Sealant (new subcategory)**~~	~~5% VOC by weight by 1/1/2023~~	~~50 g/L by 1/1/2023 (for general category of Foam Sealant in the October 2017 version of Rule 1168)~~	~~Same as Proposed Project~~	~~5% VOC by weight by 1/1/2024~~	~~50 g/L by 1/1/2030~~
~~**Low-Pressure Two-Component Foam Sealant (new subcategory)**~~	~~5% VOC by weight by 1/1/2023~~		~~Same as Proposed Project~~	~~5% VOC by weight by 1/1/2024~~	
Single Ply Roof Membrane Adhesive (including new subcategories of with and without EPDM/TPO)	250 g/L, effective upon adoption	200 g/L by 1/1/2023	Same as Proposed Project	Same as Proposed Project	200 g/L by 1/1/2030
All Other Roof Sealants	300 g/L, effective upon adoption	250 g/L by 1/1/2023	Same as Proposed Project	Same as Proposed Project	250 g/L by 1/1/2030
All Other Roof Adhesives	250 g/L limit, effective upon adoption	200 g/L by 1/1/2023	Same as Proposed Project	Same as Proposed Project	200 g/L by 1/1/2030

Table 5-1 (continued)
Summary of the Proposed Project (PAR 1168) and Alternatives

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
CPVC Welding Cement for Life Safety Systems (new subcategory)	490 g/L, effective upon adoption	400 g/L by 1/1/2023 (for general category of CPVC Welding Cement in the October 2017 version of Rule 1168)	Same as Proposed Project	Same as Proposed Project	400 g/L by 1/1/2030
Higher Viscosity CPVC Welding Cement (new subcategory)	No change to existing 400 g/L limit but extend effective date to 7/1/2024	400 g/L by 1/1/2023 (for general category of CPVC Welding Cement in the October 2017 version of Rule 1168)	400 g/L limit by 1/1/2024	400 g/L limit by 7/1/2025	Same as Proposed Project
Clear, Paintable, Immediately Water-Resistant Sealant	No change to existing 250 g/L limit but extend effective date to 1/1/2026	250 g/L by 1/1/2023	250 g/L by 1/1/2025	250 g/L by 1/1/2027	Same as Proposed Project
Rubber Vulcanization Adhesive	No change to existing 250 g/L limit but extend effective date to 1/1/2028	250 g/L by 1/1/2023	250 g/L by 1/1/2027	250 g/L by 1/1/2029	Same as Proposed Project

Table 5-1 (continued)
Summary of the Proposed Project (PAR 1168) and Alternatives

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Prohibition of Sales and Use	No use, supply, sell, or offer for sale of Regulated Products that contain more than 0.01% by weight of the following: chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene~~, or~~ and all Group II exempt ~~compounds~~ solvents except volatile methyl siloxanes (VMS) Prohibit the use of ~~t-BAc and~~ pCBtF in manufacturing Regulated Products on and after 1/1/2024 ~~(~~except for: ~~——~~Single Ply Roof Membrane ~~-~~ Adhesive (except EPDM/TPO), Single Ply Roof Membrane Sealants (Except Cut Edge), All Other Roof Sealants, and Roof Sealant Primer with a ~~manufacturing~~ prohibition effective date ~~on and after~~of 1/1/2025 - Clear, Paintable, and Immediately Water Resistant Sealant with a prohibition date of 1/1/2026 - Roof Adhesive Primer, Cut Edge Single Ply Roof Membrane Sealant, and EPDM/TPO Single Ply Roof Membrane Adhesive with a prohibition effective date of 1/1/2027	No use, supply, sell, or offer for sale of Group II exempt compounds No prohibition on manufacture, supply, use, sell. or offer for sale of t-BAc and pCBtF	Same as Proposed Project	Same as Proposed Project	Same as Proposed Project

Table 5-1 (concluded)
Summary of the Proposed Project (PAR 1168) and Alternatives

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Prohibition of Sales and Use (concluded)	Prohibit the use of t-BAc in manufacturing Regulated Products on and after 1/1/2024 Prohibit supply, sell, or offer for sale of Regulated Products containing pCBtF on and after: - 1/1/2028 for Clear, Paintable, and Immediately Water-Resistant Sealant, Single Ply Roof Membrane Adhesive (Except EPDM/TPO), Single Ply Roof Membrane Sealant (Except Cut Edge), EPDM/TPO Single Ply Roof Membrane Adhesive, Cut Edge Single Ply Roof Membrane Sealant, Roof Adhesive Primer, Roof Sealant Primer, and All other Roof Sealant - 1/1/2027 for all Regulated Products not listed above. Prohibit supply, sell, or offer for sale of Regulated Products containing t-BAc ~~and pCBtF three years after manufacturing prohibition effective date~~on and after 1/1/2027 for all Regulated Products. Prohibit use of Regulated Products containing t-BAc and pCBtF on and after 1/1/2028 for all Regulated Products~~four years after manufacturing prohibition effective date~~	No use, supply, sell, or offer for sale of Group II exempt compounds No prohibition on manufacture, supply, use, sell. or offer for sale of t-BAc and pCBtF	Same as Proposed Project	Same as Proposed Project	Same as Proposed Project

*The No Project alternative means retaining the VOC limits and effective dates as established in the October 2017 version of Rule 1168.

Table 5-2
Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives

Air Quality & GHGs Impact Areas	Proposed Project (PAR 1168)	Alternative A: No Project	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Construction	**No Significant Impacts** because no physical modifications involving construction required	**No Significant Impacts** Same as Proposed Project	**No Significant Impacts** Same as Proposed Project	**No Significant Impacts** Same as Proposed Project	**No Significant Impacts** Same as Proposed Project
GHGs	**No Significant Impacts** because chemicals used for reformulating compliant products do not contain any GHG compounds, except for Two-Component Foam Sealants which use foam blowing agents that contain HFOs, which are GHGs with a low GWP. Under PAR 1168, Opteon 1100 may be used as a replacement (contingent upon OEHHA's assessment for toxicity concerns) but it also uses a foam blowing agent with a low GWP.	**No Significant Impacts** Same as Proposed Project	**No Significant Impacts** Same as Proposed Project	**No Significant Impacts** Same as Proposed Project	**No Significant Impacts** Same as Proposed Project

Table 5-2 (continued)
Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives

Air Quality & GHGs Impact Areas	Proposed Project (PAR 1168)	Alternative A: No Project	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Operation – VOC Emissions	**Potentially Significant VOC Impacts** due to: 1) Delayed VOC emission reductions of 0.42 ~~0.12~~ tpd from: a) Top and Trim Adhesive - 0.1 tpd until 1/1/2028 b) One-Component Foam Sealant - 0.01 tpd until 7/1/2023 c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 7/1/2024 d) Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2026 e) Rubber Vulcanization Adhesive - 0.29 tpd until 1/1/2028 2) Permanent VOC emission reductions foregone of 0.28 tpd from: a) One-Component Foam Sealant - 0.12 tpd b) CPVC Welding Cement for Life Safety Systems - 0.01 tpd c) All Other Roof Adhesives - 0.03 tpd d) Single Ply Roof Membrane Adhesive (including both subcategories of with and without EPDM/TPO – 0.07 tpd e) All Other Roof Sealants - 0.05 tpd	**No Significant VOC Impacts** due to 1.38 tpd VOC permanent emission reductions	**Potentially Significant VOC Impacts** due to: 1) Same delayed VOC emission reductions of 0.42 ~~0.12~~ tpd but over a shorter period from: a) Top and Trim Adhesive - 0.1 tpd until 1/1/2027 b) One-Component Foam Sealant - 0.01 tpd until 1/1/2023 c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 1/1/2024 d) Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2025 e) Rubber Vulcanization Adhesive - 0.29 tpd until 1/1/2027 2) Permanent VOC emission reductions foregone of 0.28 tpd - Same as Proposed Project.	**Potentially Significant VOC Impacts** due to: 1) Same delayed VOC emission reductions of 0.42 ~~0.12~~ tpd but over a longer period from: a) Top and Trim Adhesive - 0.1 tpd until 1/1/2029 b) One-Component Foam Sealant - 0.01 tpd until 7/1/2024 c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 7/1/2025 d) Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2027 e) Rubber Vulcanization Adhesive - 0.29 tpd until 1/1/2029 2) Permanent VOC emission reductions foregone of 0.28 tpd - Same as Proposed Project	**Potentially Significant VOC Impacts** due to: 1) Greater delayed VOC emission reductions of 0.70 ~~0.40~~ tpd over a longer period from: a) Top and Trim Adhesive - 0.1 tpd until 1/1/2028 b) One-Component Foam Sealant ~~(One-Component and Two-Component)~~ - 0.13 tpd until 1/1/2030 c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 7/1/2024 d) CPVC Welding Cement for Life Safety Systems - 0.01 tpd until 1/1/2030 e) All Other Roof Adhesives – 0.03 tpd until 1/1/2030 f) Single Ply Roof Membrane Adhesive (including both subcategories of with and without EPDM/TPO) – 0.07 tpd until 1/1/2030 g) All Other Roof Sealants: 0.05 tpd until 1/1/2030 h) Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 until 1/1/2026 i) Rubber Vulcanization Adhesive – 0.29 tpd until 1/1/2028 3) No permanent VOC emission reductions foregone

Table 5-2 (concluded)
Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives

Air Quality & GHGs Impact Areas	Proposed Project (PAR 1168)	Alternative A: No Project	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Operation – Toxicity and Odor Nuisance	**Less than Significant Toxicity and Odor Nuisance Impacts** due to reduced toxicity and odor profile from prohibition of t-BAc and pCBtF.	**Potentially Significant Toxicity Impacts** from ongoing existing toxicity impacts due to no prohibition on t-BAc and pCBtF despite their carcinogenic and acute health effects. **Less than significant odor nuisance impacts.**	**Less than Significant Toxicity Impacts** due to reduced toxicity and odor profile from prohibition of t-BAc and pCBtF - Same as Proposed Project. **Less than significant odor nuisance impacts** - Same as Proposed Project**.**	**Less than Significant Toxicity Impacts** due to reduced toxicity and odor profile from prohibition of t-BAc and pCBtF - Same as Proposed Project. **Less than significant odor nuisance impacts** - Same as Proposed Project**.**	**Less than Significant Toxicity and Odor Nuisance Impacts** due to reduced toxicity and odor profile from prohibition of t-BAc and pCBtF - Same as Proposed Project.

5.5 ALTERNATIVES REJECTED AS INFEASIBLE

In accordance with CEQA Guidelines Section 15126.6(c), a CEQA document should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Section 15126.6(c) also states that among the factors that may be used to eliminate alternatives from detailed consideration in a CEQA document are: 1) failure to meet most of the basic project objectives; 2) infeasibility; or 3) inability to avoid significant environmental impacts.

As noted in Section 5.1, the range of feasible alternatives to the proposed project is limited by the nature of PAR 1168 and associated legal requirements. Similarly, the range of alternatives considered, but rejected as infeasible is also relatively limited. This subsection identifies Alternative A, as being rejected due to infeasibility, for the reasons explained in the following discussion.

5.5.1 Alternative A - No Project

CEQA documents typically assume that the adoption of a No Project alternative would result in no further action on the part of the project proponent or lead agency. For example, in the case of a proposed land use project such as a housing development, adopting the No Project alternative terminates further consideration of that housing development or any housing development alternative identified in the associated CEQA document. In that case, the existing setting would typically remain unchanged.

However, by not adopting PAR 1168, Alternative A would require certain categories of adhesives and sealants to meet the VOC limits established in the October 2017 version of Rule 1168 by the effective date of January 1, 2023 even though the technology assessment concluded that it is technologically infeasible to do so. Thus, implementation of Alternative A would create potential compliance issues for some categories of adhesives and sealants because manufacturers and distributers would be prevented from supplying products containing higher quantities of VOCs to consumers for use in South Coast AQMD's jurisdiction.

The main objectives of the proposed project are to: 1) adjust the VOC limits and effective dates so that they are technologically feasible according to the technology assessment conducted for nine categories of adhesives and sealants; and 2) reduce the potential toxicity of product formulations and their associated health impacts by prohibiting the use of t-BAc and pCBtF.

Alternative A is rejected as infeasible because it neither meets the objectives of the project nor takes into consideration the conclusions of the technology assessment and the Stationary Source Committee's direction to take a precautionary approach evaluating existing or proposed exemptions for any compound with a toxic endpoint.

5.6 LOWEST TOXIC AND ENVIRONMENTALLY SUPERIOR ALTERNATIVE

5.6.1 Lowest Toxic Alternative

In accordance with South Coast AQMD's policy document: Environmental Justice Program Enhancements for FY 2002-03, Enhancement II-1 recommends for all South Coast AQMD CEQA documents which are required to include an alternatives analysis, the alternative analysis shall also include and identify a feasible project alternative with the lowest air toxics emissions. In other words, for any major equipment or process type under the scope of the proposed project that creates a significant environmental impact, at least one alternative, where feasible, shall be considered from a "least harmful" perspective with regard to hazardous or toxic air contaminants.

Relative to toxic air contaminants, some manufacturers of adhesives and sealants currently use compounds in their product formulations that are VOCs but that also may be considered a toxic air contaminant (e.g., benzene, toluene, ethylbenzene and xylene). For any formulations that contain any toxic compounds that are also classified as a VOC, the VOC limits in the October 2017 version Rule 1168, PAR 1168 and the alternatives serve to limit the overall toxicity of product formulations. However, other toxics, such as t-BAc and pCBtF, which are currently exempt from the definition of what qualifies as a VOC as set forth in Rule 102, if relied upon to reformulate products capable of meeting particular VOC limits, could result in a formulation with a low VOC content but a high toxicity. This is especially true if t-BAc or pCBtF ~~are~~ is relied upon as a non-VOC substitute because these compounds are both carcinogenic with very high cancer potency factors.

While the purpose of Rule 1168 is to minimize VOC emissions from adhesive and sealant products, because of toxicity concerns associated with t-BAc and pCBtF, PAR 1168 and Alternatives B, C and D propose to prohibit the use of t-BAc and pCBtF so as to also minimize consumer exposure to air toxics during the application of adhesives and sealants

Alternative A would allow manufacturers of adhesives and sealants to continue to develop and provide products formulated with t-BAc and pCBtF even though these compounds are toxic and their use could contribute to adverse health effects. Thus, of all of the project alternatives, Alternative A is the most harmful relative to toxic air contaminants. On the other hand, PAR 1168 and Alternatives B, C, and D are equally beneficial in terms of reducing the public exposure to acute and carcinogenic toxic impacts of t-BAc and pCBtF due to prohibiting their usage in adhesives and sealants ~~after January 1, 2024, except for Single Ply Roof Membrane Adhesives for which the prohibition of pCBtF would be effective January 1, 2025~~.

Additionally, Alternative D would specifically allow seven more years for certain categories of adhesives and sealants which currently are technologically unable to meet the VOC limits in the October 2017 version of Rule 1168 by January 1, 2023 to meet the same VOC limits by January 1, 2030 instead. Under Alternative D, manufacturers would be required to reformulate certain categories of adhesives and sealants with overall lower VOC emissions and potentially fewer toxic compounds in the long-term.

Thus, when considering all of the alternatives from toxic impacts perspective, Alternative D is the lowest toxic alternative because certain categories of adhesives and sealants will need to be reformulated to have lower VOC contents with fewer toxic compounds by January 1, 2030.

5.6.2 Environmentally Superior Alternative

Pursuant to CEQA Guidelines Section 15126.6(e)(2), if the environmentally superior alternative is the No Project alternative, the CEQA document shall also identify an alternate environmentally superior alternative from among the other alternatives.

Alternative A is equivalent to the October 2017 version of Rule 1168, which was originally expected to result in 1.38 tpd of VOC emission reductions. However, the technological infeasibility of certain categories of adhesives and solvents being able to meet the VOC limits means that the actual VOC emission reductions achieved would be fewer than originally projected. Also, as explained in Section 5.6.1, Alternative A (No Project) is the most harmful alternative because it would allow manufacturers of adhesives and sealants to continue to develop and provide products formulated with t-BAc and pCBtF even though these compounds are toxic, and their use could contribute to adverse health effects. Based upon these considerations, Alternative A is not the environmentally superior alternative.

Of the remaining alternatives, Alternatives B and C were concluded to have the same quantity of permanent VOC emission reductions foregone as PAR 1168 (0.28 tpd). Unlike Alternatives B and C, Alternative D is not expected to cause any permanent VOC emission reductions foregone because Alternative D would specifically allow seven more years for certain categories of adhesives and sealants which currently are technologically unable to meet the VOC limits in the October 2017 version of Rule 1168 by January 1, 2023 to meet the same VOC limits by January 1, 2030 instead.

Alternative D was concluded to have a larger quantity of delayed VOC emission reductions foregone (0.70 ~~0.40~~ tpd) over a longer period of time (e.g., seven years) when compared to Alternatives B and C which were concluded to have the same quantity of delayed VOC emission reductions foregone (0.42 ~~0.12~~ tpd). Under Alternative B, the delay would occur over a shorter period of time (i.e., six to twelve months) while the delay for Alternative C would occur over a longer period of time (i.e., twelve months) when compared to PAR 1168.

Over the long-term, since Alternative D would result in no permanent VOC emission reductions foregone with the least amount of potential for adhesives and sealant to be formulated with toxic compounds, relative to PAR 1168 and the other feasible alternatives, Alternative D would be considered the environmentally superior alternative.

5.7 CONCLUSION

As discussed previously, Alternative A was dismissed as infeasible because it would not fulfill the objectives of PAR 1168. Alternatives B and C would both be expected to generate equivalent delayed and permanent VOC emission reductions foregone, but with varying timelines, and similar benefits when it comes to reducing the overall toxicity of adhesive and sealant formulations. When compared to PAR 1168, Alternative B would delay 0.42 ~~0.12~~ tpd of VOC emission reductions foregone over a shorter period of time (e.g., six to twelve months earlier) while Alternative C

would delay 0.42 ~~0.12~~ tpd of VOC emission reductions foregone over a longer period of time (e.g., twelve months later). Unlike PAR 1168 and Alternatives B, and C, Alternative D would not result in any permanent VOC emission reductions foregone and with the least amount of potential for adhesives and sealant to be formulated with toxic compounds, relative to PAR 1168 and the other feasible alternatives. Due to uncertainties associated with the ability of manufacturers to formulate certain categories of adhesives and sealants to meet the low VOC limits established in the October 2017 version of Rule 1168 by January 1, 2030, Alternative D depends on future technological improvements in order to achieve the desired VOC emission reductions and the outcome of these future efforts are unknown. **Thus, when comparing the environmental effects of the project alternatives with PAR 1168 and evaluating the effectiveness of achieving the project objectives, the proposed project provides the best balance in achieving the project objectives while minimizing the significant adverse environmental impacts to operational air quality.**

CHAPTER 6

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CHAPTER 7

ACRONYMS

7.0 Acronyms

µg/m= micrograms per cubic meter

APS = Alternative Planning Strategy (APS)

AQMP = Air Quality Management Plan

ATCM = Airborne Toxic Control Measure

Basin = South Coast Air Basin

BAU = business-as-usual

CAA = Clean Air Act

CalEPA = California Environmental Protection Agency

CARB = California Air Resources Board

CCR = California Code of Regulations

CEC = California Energy Commission

CEQA = California Environmental Quality Act

CFR = Code of Federal Regulations

CH4 = methane

CO = carbon monoxide

CO2 = carbon dioxide

CO2eq = carbon dioxide equivalent

COHb = carboxyhemoglobin

CPR = Consumer Products Regulation

CPUC = California Public Utilities Commission

CPVC = Chlorinated Poly (Vinyl Chloride)

EA = Environmental Assessment

EIR = Environmental Impact Report

EISA = Energy Independence and Security Act

EJ = Environmental Justice

gal = gallons

GHG = greenhouse gases

GWP = global warming potential

H2S = hydrogen sulfide

H2SO4 = sulfuric acid

HCFC = hydrochlorofluorocarbon

HF = hydrofluoric acid

HFC = hydrofluorocarbons

HI = hazard index

HSC = Health and Safety Code

IOUs = investor-owned utilities (IOUs)

IS = Initial Study

LCFS = Low Carbon Fuel Standard

MATES = Multiple Air Toxics Exposure Studies

MDAB = Mojave Desert Air Basin

MPOs = Metropolitan Planning Organizations

N2O = nitrous oxide

NAAQS = National Ambient Air Quality Standards

ND = Negative Declaration

NHTSA = National Highway Traffic and Safety Administration

NO = nitric oxide

NO2 = nitrogen dioxide

NOC = Notice of Completion

NOP/IS = Notice of Preparation/Initial Study

NOx = oxides of nitrogen

O2 = oxygen

O3 = ozone

ODS = ozone depleting substance

OEHA = Office of Environmental Health Hazard Assessment

OES = Office of Emergency Services

OPR = Office of Planning and Research

OSHA = Occupational Safety and Health Administration

PAR = Proposed Amended Rule

pCBtF = parachlorobenzotriflouride

PFAS = perfluoroalkyl and polyfluoroalkyl substances

PFC = perfluorocarbon

PM = particulate matter

PM10 = particulate matter with an aerodynamic diameter of 10 microns or less

PM2.5 = particulate matter with an aerodynamic diameter of 2.5 microns or less

ppb = parts per billion

ppm = parts per million

PRDI = Planning, Rule Development, and Implementation

PV = photovoltaic

RELs = Reference Exposure Levels

RFS = renewable fuel standard

RPS = renewables portfolio standard

RTAC = Regional Target Advisory Committee

RTP = Regional Transportation Plan

SCAB = South Coast Air Basin

SCAG = Southern California Association of Governments

South Coast AQMD = South Coast Air Quality Management District

SCS = sustainable communities strategy

SEA = Subsequent Environmental Assessment

SF6 = sulfur hexafluoride

SIP = State Implementation Plan

SO2 = sulfur dioxide

SO3 = sulfur trioxide

SOx = oxides of sulfur

SSAB = Salton Sea Air Basin

TACs = toxic Air Contaminants

t-BAc = tertiary-Butyl Acetate

tpd = ton or tons per day

U.S. EPA = United States Environmental Protection Agency

Vehicle Mile Traveled = VMT

VOC = volatile organic compound(s)

WDR = waste discharge requirements

ZE/NZE = zero emission and near-zero emission

APPENDIX A

Proposed Amended Rule (PAR) 1168 – Adhesive and Sealant Applications

In order to save space and avoid repetition, please refer to the latest version of PAR 1168 located elsewhere in the Governing Board Agenda for the public hearing scheduled on November 4, 2022. The version of PAR 1168 that was circulated with the Draft SEA for a 45-day public review and comment period from September 6, 2022 to October 21, 2022 was identified as the "Preliminary Draft Rule PAR 1168, revision date August 19, 2022," which is available from the South Coast AQMD's website at: http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1168/par-1168---preliminary-draft-rule---081922-(004).pdf. An original hard copy of the Draft SEA, which included the draft version of PAR 1168 listed above, can be obtained through the South Coast AQMD Public Information Center by phone at (909) 396-2001 or by email at PICrequests@aqmd.gov.