SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Staff Report

Proposed Amended Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations

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EXECUTIVE SUMMARY

Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations was adopted in July 1988 to limit Volatile Organic Compound (VOC) emissions, toxic air contaminants, stratospheric ozone-depleting compounds, and global-warming compound emissions from automotive coating operations performed on motor vehicles, mobile equipment and associated parts or components for motor vehicles and mobile equipment. Rule 1151 includes 12 categories of automotive coatings with VOC limits and applies to any person who supplies, sells, offers for sale, markets, manufactures, blends, repackages, possesses or distributes any automotive coating or associated solvent for use within the South Coast Air Quality Management District (South Coast AQMD), as well as any person who uses, applies, or solicits the use or application of any automotive coating or associated solvent within the South Coast AQMD.

The current proposed rule amendments partially implements the 2022 Air Quality Management Plan (AQMP) control measure CTS-01 to address two exempt compounds that were determined to have toxic end points, including potential carcinogenicity, by the Office of Environmental Health Hazard Assessment (OEHHA): *tert*-Butyl Acetate (t-BAc), which is exempt from the definition of a VOC for certain categories of products in a few source specific rules, including Rule 1151, and para-chlorobenzotrifluoride (pCBtF), which is considered exempt from the definition of a VOC for all uses within the South Coast AQMD, including Rule 1151 products. These exempt compounds are utilized by automotive coating manufacturers to formulate coatings and coating components that comply with Rule 1151 VOC content limits. The proposed prohibition of pCBtF and t-BAc is based on the Stationary Source Committee directive on April 21, 2017, to prioritize lowering the toxicity of coatings and solvents, even if it means increasing VOC levels. Additionally, in 2017, Assembly Bill 617 (AB 617) was signed into state law and required strategy development to reduce toxic air contaminants and criteria pollutants in overburdened communities. During the development of the AB 617 Community Emission Reductions Program (CERP)[1] for the South Los Angeles (SLA) community, community members expressed concern about the impacts from autobody shops.

The current rule development has two primary goals: 1) to propose a phase-out timeline for pCBtF and t-BAc, and 2) to assess the feasibility of emission reductions through technology assessments and stakeholder engagement. To expedite the transition away from pCBtF and t-BAc, staff is proposing a temporary period of a few years to allow coatings formulated to meet the National U.S. Environmental Protection Agency (U.S. EPA) VOC content limits to be used in the South Coast AQMD provided the formulations do not include pCBtF or t-BAc. This temporary period provides time for those coatings to be reformulated to meet future lower-VOC content limits without pCBtF or t-BAc.

During the Phase I period, which will span from the date of rule adoption to January 1, 2028, for most coating categories, coatings formulated to meet U.S. EPA VOC content limits will be allowed to be used. U.S. EPA VOC content limits are less stringent and therefore coating manufacturers do not utilize pCBtF or t-BAc in their formulations to comply with these limits. The transition

[1] South Coast AQMD AB 617 CERP for South Los Angeles (SLA) : http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/south-la/final-cerp.pdf?sfvrsn=18

away from pCBtF- and t-BAc-containing coatings will result in a temporary increase in VOC emissions during the Phase I period.

The Phase II period begins on January 1, 2028, for most coating categories. During this period, facilities will begin to transition away from the higher-VOC coatings to reformulated, low-VOC coatings that do not contain pCBtF or t-BAc. This transition will result in a decrease in VOC emissions that resulted from the temporary emissions increase during the Phase I period.

There are approximately 3,000 automotive refinishing facilities in the South Coast AQMD subject to Rule 1151, including: autobody repair and paint shops; production autobody paint shops; new car dealer repair and paint shops; fleet operator repair and paint shops; custom-made car fabrication facilities, and truck body builders. This rule amendment will result in a temporary increase in VOC emissions of 4.82 tons per day (tpd) and overall emission reductions of 0.19 tpd at full implementation. The rule amendments will also result in permanently lowering the toxicity of the coatings and protecting public health.

The current rule amendment process began in September 2023. Staff conducted four working group meetings and multiple individual meetings with industry stakeholders and representatives. In addition, staff distributed a survey to the coating manufacturers requesting product data for each automotive coating category.

CHAPTER 1: BACKGROUND

INTRODUCTION
REGULATORY HISTORY
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Introduction

Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations is a source-specific rule adopted on July 8, 1988, to reduce Volatile Organic Compound (VOC) emissions, toxic air contaminants, stratospheric ozone-depleting compounds, and global-warming compound emissions from automotive coating operations performed on motor vehicles, mobile equipment and associated parts or components for motor vehicles and mobile equipment. The rule applies to 12 categories of automotive coatings with VOC limits and applies to any person who supplies, sells, offers for sale, markets, manufactures, blends, repackages, possesses or distributes any automotive coating or associated solvent for use within the South Coast AQMD, as well as any person who uses, applies, or solicits the use or application of any automotive coating or associated solvent within the South Coast AQMD.

To reduce the VOC emissions from automotive coatings, many coatings manufacturers have relied on the use of solvents that are exempt from the definition of a VOC because they have low reactivity and therefore do not significantly contribute to the formation of ground-level ozone. In April 2017, the South Coast AQMD Stationary Source Committee recommended a precautionary approach when considering exempt compounds with a toxic endpoint and removing the exempt status for any compound that has an established toxic endpoint. The California Office of Environmental Health Hazard Assessment (OEHHA) has determined that two exempt compounds used in automotive coatings, pCBtF and t-BAc, have toxic endpoints. Therefore, the current rule development has two primary goals: 1) to propose a phase-out timeline for pCBtF and t-BAc, and 2) to assess the feasibility of emission reductions through technology assessments and stakeholder engagement.

Regulatory History

Rule 1151 was adopted on July 8, 1988, and has been subsequently amended 13 times. The most recent amendment was on September 5, 2014, which sought to make administrative changes to the rule to enhance the understanding of current applicable rule requirements by removing obsolete rule language and making minor revisions and editorial corrections. The 2014 amendment also added new definitions to promote clarity and consistency, and further aligned the transfer efficiency equivalency section with the state Suggested Control Measure (SCM). This amendment was administrative in nature and did not affect current VOC limits or existing work practices and did not yield VOC reductions or increases.

Prior to the 2014 amendment, Rule 1151 was amended in December 2005 and included a partial exemption from the definition of a VOC for t-BAc for Automotive Coatings, except for color and clear coatings. Staff held a Toxics Symposium in October 2014 and developed the draft "t-BAc Assessment White Paper," which was released in April 2017. As a result of that work, the Stationary Source Committee recommended a precautionary approach—that compounds with a known or suspected toxic endpoint will not be exempted from the definition of VOC—and directed staff to prioritize toxicity over VOC emissions. In addition, the Stationary Source Committee further directed staff to request OEHHA to perform an assessment of pCBtF, a compound that is exempted for all uses in Rule 102 – Definition of Terms (Rule 102) as a Group I Exempt Solvent. In 2018, OEHHA finalized a draft Health Risk Assessment (HRA) of t-BAc, concluding that it poses a potential cancer risk to humans. In 2020, OEHHA finalized the assessment of pCBtF, and determined it to be a stronger carcinogen than t-BAc.

2022 Air Quality Management Plan

The 2022 AQMP adopted on December 2, 2022, set forth a path for improving air quality and meeting federal air pollution standards by striving for zero-NOx emission technologies across all sectors and lower VOC emissions where feasible. The 2022 AQMP included Control Measure CTS-01 Further Emission Reductions From Coatings, Solvents, Adhesives, and Lubricants, which seeks further VOC emission reductions from automotive refinishing coatings. The control strategy included short term goal of reduce the toxic impact of pCBtF and t-BAc with a longer term goal seeking additional VOC emission reductions. PAR 1151 partially implements the 2022 AQMP Control Measure CTS-01.

Assembly Bill 617

AB 617 was signed into state law in 2017 and requires strategy development to reduce toxic air contaminants and criteria pollutants in overburdened communities. During the development of the AB 617 CERP for the South Los Angeles (SLA) community, community members expressed concern about the impacts from autobody shops, many of which are located close to residents and can be clustered within the community. PAR 1151 addresses the air quality commitment objectives related to autobody refinishing coatings by quickly reducing toxic air emissions with the phase out of pCBtF and t-BAc and the long-term VOC emission reductions that will occur with future product reformulations.

Affected Industries

Rule 1151 is applicable to Automotive Coatings and applies to any person who supplies, sells, offers for sale, markets, manufactures, blends, repackages, possesses or distributes any automotive coating or associated solvent for use within the South Coast AQMD, as well as any person who uses, applies, or solicits the use or application of any automotive coating or associated solvent within the South Coast AQMD. To determine how many facilities are affected by Rule 1151, staff researched the Clean Air Support System (CLASS) database using Standard Industrial Classification code (SIC) 7532 – Top, Body, and Upholstery Repair Shops and Paint Shops; North American Industry Classification System code (NAICS) 811121 – Automotive Body, Paint and Interior Repair and Maintenance; and South Coast AQMD Control Equipment Category (CCAT) codes 60 and 65 – Spray Booth, Paint and Solvent; and Automotive Refinishing Spray Booth as the search criteria. The CLASS database contains approximately 3,000 active Rule 1151 facilities. This database research identified required air permits that are for paint spray booths.

The 3,000 active facilities in the South Coast AQMD that apply automotive coatings to motor vehicles fall into six broad categories: 1) motor vehicle assembly lines; 2) autobody repair and paint shops; 3) production autobody paint shops; 4) new car dealer repair and paint shops; 5) fleet operator repair and paint shops; and 6) truck-body builders. These categories are further described as:

1. Motor Vehicle Assembly Lines
   Motor vehicle assembly line operations are where the original equipment manufacturer (OEM) builds new vehicles. VOC emissions from the application of coatings on motor vehicle assembly lines are subject to Rule 1115, not Rule 1151.

2. Autobody Repair and Paint Shops
   Autobody repair and paint shops are the largest component of the motor vehicle refinishing industry. They are usually small to medium-sized shops, owner operated and specialize in collision repair work. They are found throughout the South Coast AQMD within business, commercial, and residential districts. These shops are subject to Rule 1151.

3. Production Paint Shops
   Production paint shops are high-volume retail auto paint shops where a large portion of the paint jobs are complete vehicles. These facilities are generally able to offer lower prices than small autobody shops and are subject to Rule 1151.

4. New Car Dealer Repair and Paint Shops
   Many new car dealers operate paint shops to touch-up new cars damaged during delivery, refurbish used cars before resale, and provide a full-service facility for customers. These shops are generally moderate in size and have operating characteristics between production paint shops and neighborhood autobody, repair, and paint shops, and are subject to Rule 1151.

5. Fleet Operator Repair and Paint Shops
   Some companies maintain motor vehicle paint shops for maintenance of their fleet vehicles and equipment. These facilities are generally similar to new car dealer shops and are subject to Rule 1151.

6. Truck-Body Builders
   Truck-body builders are facilities where old truck-bodies are modified or repainted. These facilities are subject to Rule 1151.

Process Description

Rule 1151 is applicable to all automotive and mobile equipment (such as trains, railcars, and truck trailers) refinishing operations that are not a part of a motor vehicle assembly line coating operation. Rule 1151 should not be confused with Rule 1115 – Motor Vehicle Assembly Line Coating Operations, which is applicable to assembly line coating operations conducted during the manufacturing of new motor vehicles.

Automotive refinishing products are used during the repair process to address damage during manufacture, transit, or the service life of the vehicle, and are also used in the restoration, color change, and customization of the vehicle. Automotive coatings are used in automotive refinishing operations to form a film that serves to beautify, preserve, repair, or protect the surface of a motor vehicle, mobile equipment, or associated parts and components.

Automotive coatings are typically grouped into two different classes, undercoats and topcoats. Undercoats primarily prepare the substrate for subsequent coatings. Undercoats include adhesion promoters for plastic parts, pretreatment coatings for bare metal surface etching, and primers, primer sealers, primer surfacers, and weld-through primers, which are used to undercoat the surface prior to application of the topcoat(s). Topcoats are typically applied onto prepared primed surfaces and include single-stage coatings and color and clear coat coating systems. Other coatings include:

- Uniform finish coatings, which are used for blending a spot repair into the surrounding areas for proper color match;
- Underbody coatings, which are used on the underside of the exterior body such as inner fender-well and chassis paint which is typically used on floorboards and frame rails; and
- Bed liner coatings, which are used to coat the beds of pick-up trucks.

Public Process

The current rule amendment process began in September 2023. Staff conducted four working group meetings and multiple individual meetings with industry stakeholders and representatives. In addition, staff distributed a survey to the coating manufacturers requesting product data for each automotive coating category. Table 1-1 summarizes the key topics discussed at each of the Working Group Meetings, which ranged from one to three hours and included presentations that are posted on the South Coast AQMD's website.[2]

Table 1-1: Summary of Working Group Meetings

Meeting title	Date	Highlights
Working Group Meeting #1	November 7, 2023	• Rule background • Key amendment objectives • Exempt solvent background • Preliminary technology assessments • Coating manufacturer survey
Working Group Meeting #2	March 7, 2024	• Amendment progress update • Anticipated PAR 1401 impacts to 1151 facilities • Coating manufacturer survey update • Initial rule concepts
Working Group Meeting #3	May 21, 2024	• Amendment progress update • Coating manufacturer survey data analysis • BARCT Assessment progress • Initial rule concepts
Working Group Meeting #4	July 11, 2024	• Amendment progress update • Cost-Effectiveness and Incremental Cost-Effectiveness • Proposed Interim Limits • Initial Preliminary Draft Rule Language

[2] http://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1151

Meeting title	Date	Highlights
Public Workshop	August 30, 2024	• Amendment progress update • Preliminary Draft Rule Language • Staff considerations and proposed changes to Preliminary Draft Rule Language • Cost-Effectiveness • Emission Reductions

Staff also met with industry stakeholders and their representatives throughout the rule development process. The following table summarizes stakeholder meetings during the rulemaking:

Table 1-2: Meetings with Stakeholders

Date	Stakeholder
January 2, 2024	SMC Global
January 2, 2024	PPG
January 10, 2024	Axalta
January 23, 2024	BASF
January 23, 2024	Cal OSHA
January 24, 2024	U.S. EPA
January 30, 2024	W.M. Barr
January 30, 2024	American Coatings Association (ACA)
January 31, 2024	Allnex
January 31, 2024	PPG
February 6, 2024	CARB
February 8, 2024	Transtar
February 20, 2024	Axalta
March 14, 2024	CAPCOA
March 21, 2024	W.M. Barr
March 28, 2024	AB617 SLA CSC
April 2, 2024	AkzoNobel
April 10, 2024	Axalta
June 5, 2024	AkzoNobel
June 13, 2024	Axalta
June 14, 2024	PPG
June 14, 2024	BASF
June 21, 2024	Covestro
June 26, 2024	California Autobody Association
July 12, 2024	U.S. EPA
July 17, 2024	AkzoNobel
July 24, 2024	W.M. Barr

Date	Stakeholder
July 30, 2024	PPG
August 1, 2024	CARB
August 2, 2024	Axalta
August 6, 2024	PPG
August 16, 2024	PPG
August 20,2024	AkzoNobel
August 21, 2024	BASF
August 23, 2024	Axalta
September 13, 2024	Axalta
September 25, 2024	BASF

CHAPTER 2: TECHNOLOGY ASSESSMENT

VOC Control Technology and Exempt Compounds

VOC emissions in automotive coatings can be controlled by modifying the chemistry of the coatings to reduce the VOC content; examples of different coating technologies are shown in the following figure. The most widely used method for controlling VOC emissions for automotive coatings is to transition to water-based systems or to formulate with exempt solvents. To meet the low VOC limits in Rule 1151, manufacturers relied heavily on pCBtF and, to a lesser extent, t-BAc.

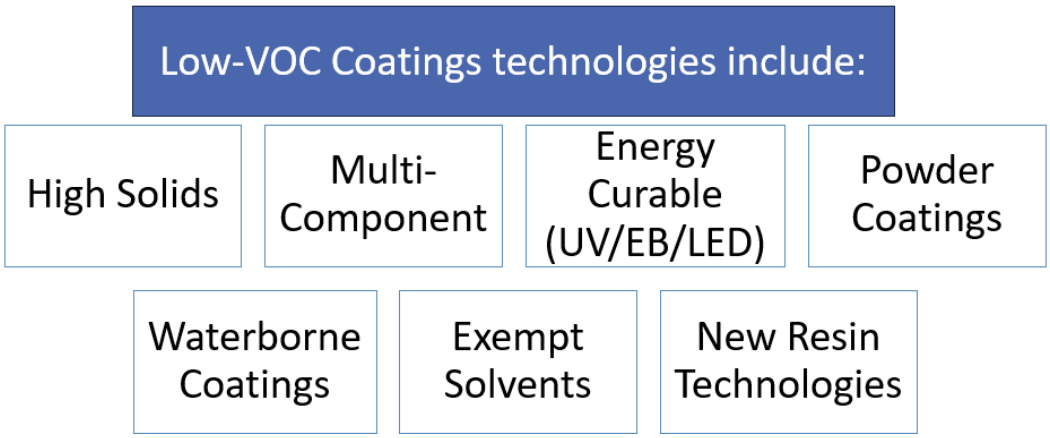

Figure 2-1: Coating Technologies

Ultraviolet, electron beam, light-emitting diode (UV/EB/LED) technologies have the potential to reduce VOC emissions from coatings, although these technologies are not widely implemented in automotive coatings at this time. Improvement in application methods to improve transfer efficiency can also reduce VOC emissions; however, Rule 1151 already requires facilities to use efficient high-volume, low-pressure (HVLP) spray guns for coating applications. The use of add-on controls, such as thermal oxidizers, is another method for VOC reduction that has been used in some surface coating applications.

Background on pCBtF and t-BAc

In 1994, the U.S. EPA exempted pCBtF from the definition of a VOC, and, in 2004, South Coast AQMD added pCBtF as an exempt VOC compound in Rule 102. The Rule 102 VOC exemption for pCBtF means it is not considered a VOC for any application within the South Coast AQMD.

In 2004, the U.S. EPA exempted t-BAc from the definition of a VOC, but due to toxicity concerns, the South Coast AQMD did not allow for an unlimited Rule 102 exemption but, instead, allowed for several limited exemptions in source specific rules, e.g., Rules 1113 and 1151. In 2013, the Rule 1113 amendment included a resolution that directed staff to review the exemption for t-BAc due to renewed toxicity concerns. The California Office of Environmental Health Hazard Assessment (OEHHA) finalized their t-BAc assessment in 2017, concluding that it had a higher cancer potency than previously estimated. In 2018, staff presented the preliminary t-BAc assessment and expressed concerns regarding pCBtF because OEHHA had yet to assess its toxicity. Based on staff recommendations, the Stationary Source Committee directed staff to: remove existing t-BAc exemption in Rules 1113 and 1151 when the rules are amended, and request that OEHHA review the potential toxicity of pCBtF and remove the exemption, as resources allow,

if pCBtF is deemed a potential carcinogen. In 2020, the pCBtF cancer inhalation unit risk factor document was adopted by OEHHA, which indicated pCBtF is a potential carcinogen.

Comparing pCBtF and t-BAc toxicity to Other Compounds

Staff considered several approaches to address the toxicity concerns for pCBtF and t-BAc from removing the exempt status to a complete prohibition of use. To inform that decision, staff considered how other compounds with potential toxic endpoints have historically been addressed. Rule 102 defines exempt compounds as being Group I or Group II compounds; Group II compounds are prohibited from use in some rules, including Rule 1151. Cancer Potency Factor is a measure used to estimate the risk of cancer associated with exposure to a carcinogenic substance and represents the increased cancer risk per unit of exposure over a lifetime. Reference Exposure Level (REL) is the maximum concentration level of a substance in the air that is not expected to have adverse health effects in humans over a specified exposure duration; RELs can be acute (short-term), 8-hour, or chronic (long-term). Four compounds and their Cancer Potency Factors and Reference Exposure Levels (REL) are listed in Table 2-1 and 2-2 for comparison.

Table 2-1: Cancer Potency Factor Comparison

Compound	Cancer Potency Factor (Slope Factor)
perchloroethylene (perc)	0.021
Dimethyl Carbonate (DMC)	0.0035
t-BAc	0.0047
pCBtF	0.03

For the four compounds shown in the Table 2-1, pCBtF has the highest Cancer Potency Factor. The Cancer Potency Factor of pCBtF is almost 50 percent higher than perchloroethylene's, a prohibited Group II Exempt Compound.

Table 2-2 shows the available Acute RELs for the same four compounds. t-BAc has the lowest REL, meaning the highest risk among the compounds. The Cancer Potency Factor for pCBtF is much higher than t-BAc, perc, and DMC, but it has no established Acute REL.

Table 2-2: Acute REL Comparison

Compound	Acute REL
perc	20,000
DMC	14,000
t-BAc	10,000
pCBtF	N/A

Staff Recommendations on pCBtF and t-BAc

The preceding comparison of pCBtF and t-BAc to other toxic compounds that are prohibited from use in VOC rules, including Rule 1151, supports a future prohibition of pCBtF and t-BAc. OEHHA's assessment of pCBtF and t-BAc shows these compounds to be as toxic as many chemicals currently prohibited; therefore, staff recommends prohibiting the use of pCBtF and t-BAc.

Automotive Coating Manufacturer pCBtF and t-BAc Survey

To understand the extent of the use of pCBtF and t-BAc to comply with the VOC limits in Rule 1151, staff conducted a survey, in December 2023, of manufacturers who sell automotive coatings and products subject to Rule 1151. The main exempt compounds of interest of the survey were pCBtF and t-BAc. The results of the survey were used to help evaluate VOC content limits, VOC emissions, a potential prohibition timeline, and future effective VOC content limits. Table 2-3 shows the survey questions.

Table 2-3: pCBtF and t-BAc December 2023 Survey Questions

	Requested Information
1.	Company name, contact person, and an email address
2.	Do you sell automotive coatings into or within the South Coast AQMD?
3.	Do any of the automotive coatings sold into or within the South Coast AQMD contain para-chlorobenzotrifluoride (pCBtF), also known as Oxsol 100, or t-BAc?
4.	Information regarding each automotive coating categories that include pCBtF or t-BAc in formulation
5.	Information regarding reducers and solvent cleaning product that include pCBtF or t-BAc in formulation
6.	The approximate weight percent of pCBtF or t-BAc in formulations
7.	The VOC content of each individual product
8.	Total annual volume sold or used in South Coast AQMD percent of California sales for each automotive coating category

In total, five of the seven major automotive coating manufacturers responded to the survey. Most reported that a large portion of the automotive coatings categories meet the current Rule 1151 VOC limits using pCBtF and t-BAc. The following summarizes the major findings of the survey:

- 62 percent of the reported automotive coatings contain pCBtF and less than one percent contain t-BAc;
- 71 percent of the reported automotive coatings are solvent-based and 29 percent are water-based;
- Only two automotive categories reported using t-BAc: adhesion promoters and truck bedliners, and these two categories also reported using quantities of pCBtF ranging from 16 to 34 percent;
- Seven automotive coating categories reported only containing pCBtF in their formulation: clear coatings, color coatings, pretreatment coatings, primers, single-stage, uniform finish coatings, and underbody coatings;
- The remaining two categories: multi-color coatings and temporary protective coatings, were not reported in the survey.

Automotive Refinishing Products and Use of pCBtF and t-BAc

There are two main classes of automotive coatings: undercoats and topcoats. Undercoats, including pretreatment wash primers, primer surfacers, and primer sealers, prepare the exterior surfaces by providing corrosion resistance, adhesion, and a smooth foundation for subsequent topcoats. Pretreatment wash primers are applied directly to bare metal surfaces to provide corrosion resistance and adhesion. Pretreatment wash primers also contain a minimum of 0.5 percent acid by weight to provide surface etching and no more than 16 percent solids by weight. Similarly, primer surfacers are coatings applied to a substrate to facilitate bonding between subsequent topcoats and can be sanded to provide a smooth uniform finish. Primer sealers, on the other hand, have a lower solids content than surfacers and are intended to provide a smooth substrate surface for subsequent topcoat(s) and are not intended to be sanded. Topcoats are applied to provide color, gloss, and a protective finish. Topcoats can be classified into two main categories: 1) single-stage coatings; and 2) multi-stage systems. Single-stage topcoats consist of only one final coating, which is applied over undercoats to provide color, gloss, and protection.

Multi-stage coatings, unlike the single-stage coatings, consist of two or more layers, each contributing separately to the final finish's characteristics. The initial layer, or basecoat layer, contains the pigmentations and metallic flakes that provide the final color and color effects. The final coatings in multi-stage systems are non-pigmented clear coats that provide hardness and durability to the final glossy finish. One special form of clear coat that is typically found on high-end vehicles is a low gloss or matted clear coat; these specialty clear coats contain flattening agents or additives that disperse light to give a flat matted finish. Multi-stage coatings include two-stage systems as well as three-stage systems. Three-stage coatings differ from the two stage-systems in that they include a mid-coat layer that provides additional color effects, such as a pearlized light effect resulting from mica flakes. The nature of both the coating systems requires that all coating components be used to refinish the vehicle to provide the required appearance and performance.

The main difference in the application of coatings in a manufacturing setting compared to a refinishing environment are the curing characteristics of the coatings. Automotive original equipment manufacturing (OEM) coatings are typically cured using baking ovens that operate at

high temperatures. The types of coatings used in refinishing operations are typically air dried or by forced-air spray booths. Refinishing shops cannot use high-temperature ovens due to the potential damage to other automobile components made of plastic or other sensitive materials. Therefore, automotive coatings are formulated for faster drying times.

Table 2-4: General Automotive Coating Categories

Automotive Coating Type	
Undercoats	**Topcoats**
Pretreatment Wash Primer	Solid Color Coating
Primer Surfacer	Metallic Color Coating
Primer Sealer	Single-Stage Color Coating
Adhesion Promoter	Glass and Matte Clear Coatings

During staff meetings with automotive coating industry stakeholders, the manufacturers indicated they primarily rely on pCBtF to meet the current Rule 1151 VOC limits and there is no suitable drop-in replacement. Based on the survey responses, color coatings, primers, and clear coatings account for approximately 80 percent of the automotive coating sales in California. pCBtF use is prevalent across these three categories, most significantly in primers and clear coats. Primers account for approximately 20 percent of the total California sales with 45 percent containing pCBtF. Clear coats account for approximately 38 percent of the total California sales with 60 percent of the products containing pCBtF. Color coatings account for approximately 22 percent of the total California sales and have a significant number of water-based formulations available in the market. Figure 2-2 shows the percentage of automotive coatings sales in California.

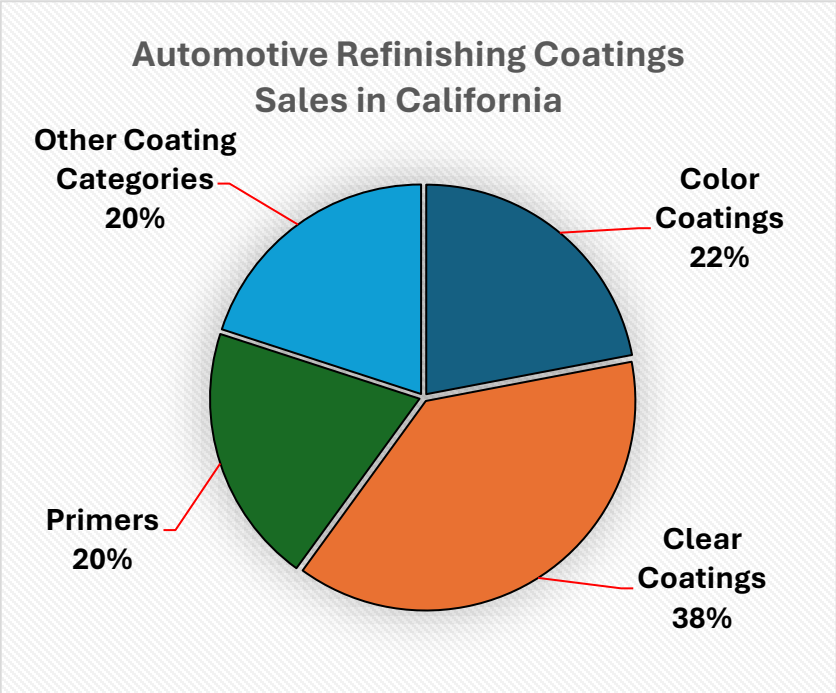

Figure 2-2: Automotive Coating Sales in California by Category.

Table 2-5 summarizes the weight percent usage of pCBtF in the automotive coatings sold within the South Coast AQMD according to the survey and range of pCBtF reported.

Table 2-5: pCBtF Weight Percent Survey Response by Category

Coating Category	pCBtF (wt %)	Average pCBtF (wt %)
Adhesion Promoter	Up to 88%	34%
Pretreatment Coating	Up to 71%	18%
Primer	Up to 68%	23%
Color Coating	Up to 60%	21%
Single Stage Coating	Up to 65%	36%
Clear Coating	Up to 65%	33%
Uniform Finishing Coasting	Up to 60%	32%
Truck Bed Liner Coating	Up to 25%	16%
Reducer	Up to 100%	55%

Based on the survey data that was submitted by the manufacturers, the use of pCBtF is prevalent in nearly all automotive coating categories, and t-BAc to a much lesser extent, to meet Rule 1151 limits. Due to the toxic risk associated with pCBtF and t-BAc, staff is proposing an expedited

phase-out approach for the usage of pCBtF and t-BAc for automotive coatings by allowing higher VOC limits (Phase I limits) upon rule adoption and then transitioning to future effective lower limits (Phase II limits); this will provide sufficient time for coating manufacturers to develop suitable replacement products that will meet the lower future limits.

Automotive refinish coatings that are formulated to comply with the higher VOC limits in the National Rule or European limits do not utilize pCBtF and t-BAc in their formulation and are readily available outside of the South Coast AQMD. Table 2-6 compares current Rule 1151 VOC limits with the National Rule and European limits for automotive refinish coatings.

Table 2-6: National Rule and European Limits Compared to Rule 1151 Limits by Category

Coating Category	VOC Content Less Water and Exempts		
	Rule 1151 (g/L)	European Limits (g/L)	National Rule (g/L)
Adhesion Promoter	540	840	840
Color Coating	420	420	600
Clear Coating	250	420	600
Pretreatment Coating	660	780	780
Primer	250	540	550-580
Single-Stage Coating	340	420	600
Truck Bed Liner Coating	310	840	420
Uniform Finish Coating	540	840	840
Specialty Coating	--	840	840
Any Other Coating Type	250	--	840

Staff's analysis of the survey data and feedback from coating manufacturers indicate additional potential subcategories will be needed with higher VOC limits to avoid market disruptions. PAR 1151 includes the following new sub-categories: matte clear coats, epoxy primers, primer sealers, and primer surfacers. To streamline the categories and the table of standards, several main category names have been created to group and clarify the different subcategories of automotive coatings.

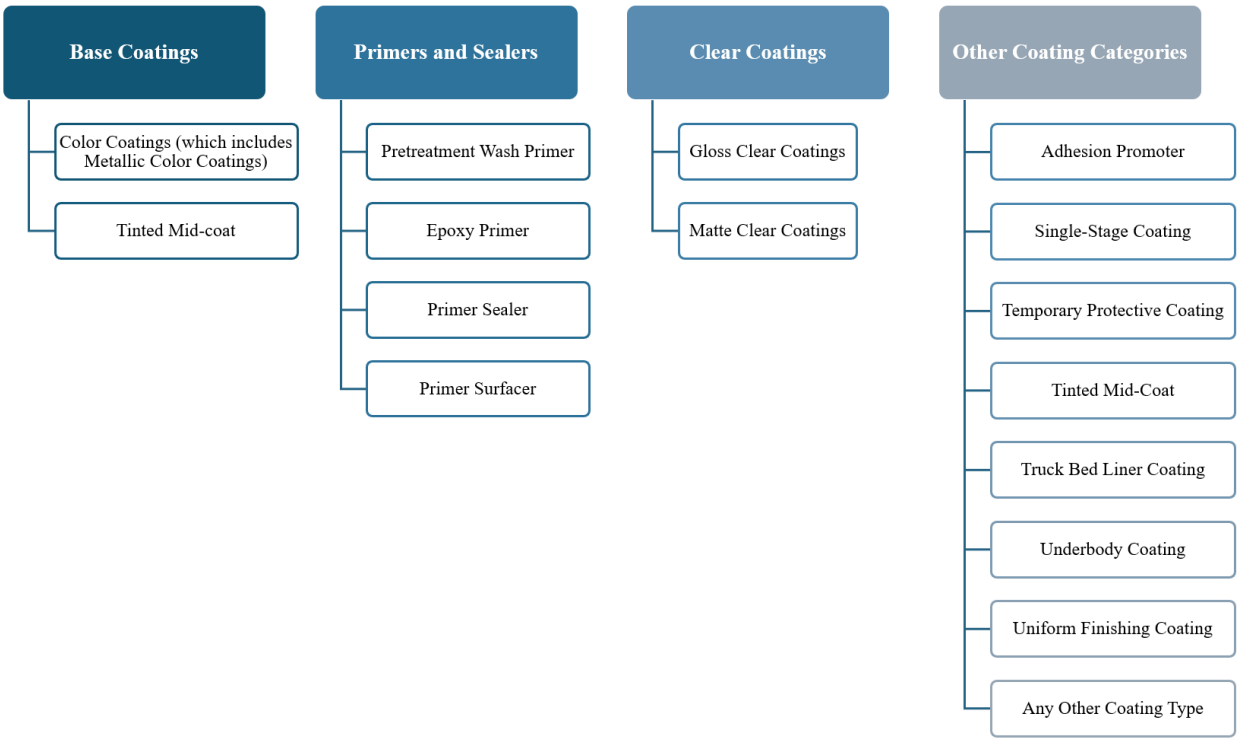

Figure 2-3: PAR 1151 Categories and Subcategories

The separation by primer type is consistent with the National Rule which differentiates between three types of primers: 1) pretreatment wash or "etch" primers, 2) primer sealers, and 3) primer surfacers. Staff also carved out an epoxy primer that has a slightly higher Phase II VOC limit based on stakeholder feedback that higher VOC levels are needed to formulate epoxy primers. The subcategories for each coating is discussed as part of their respective categories in the BARCT assessment section. In the case where the BARCT assessment concluded the subcategories could achieve the same VOC limit in the same timeframe, subcategories were combined.

Initially, staff proposed using the European limits as the Phase I limits since they are lower than the National Rule limits for several coating categories and the lower limits would minimize the temporary VOC emission increase in Phase I. However, transitioning to European coatings would delay the transition out of pCBtF and t-BAc due to potential supply chain challenges, product registration requirements for the raw material(s) used in the European formulation, and additional OEM testing and approvals. The delayed transition timeline does not align with staff's priority for an expedited transition out of pCBtF and t-BAc. PAR 1151 will instead rely on the National Rule limits as the basis for the Phase I limits, unless lower limits for the applicable coating category are already being achieved. Use of the National Rule limits will allow for a rapid phase-out of pCBtF and t-BAc since most of the replacement products are currently available in nearby states and will also allow manufacturers to direct resources towards meeting the future effective lower Phase II limits.

According to the manufacturer survey and feedback received, clear coats are already less than the National Rule limit with existing formulations at or less than 520 g/L. Matte clear coats, however, will need a slightly higher VOC limit because of the flattening agent used to achieve the low-gloss matte appearance. Most color coats are also currently formulated at 420 g/L which is much less

than the National Rule limit of 600 g/L. Table 2-7 lists staff's proposed Phase I limits for each automotive coating category.

Table 2-7: Phase I Limits

Automotive Coating Categories	Phase I Limits (g/L)	U.S. EPA National Rule Limits (g/L)
Adhesion Promoter	**840**	**840**
Gloss Clear Coating	**520**	**600**
Matte Clear Coating	**550**	**840**
Color Coating	**420**	**600**
Pretreatment Wash Primer	**780**	**780**
Epoxy Primer	**580**	**580**
Primer Sealer	**550**	**550**
Primer Surfacer	**580**	**580**
Single-Stage Coatings	**340**	**600**
Temporary Protective Coating	**60**	**N/A**
Tinted Mid-Coat	**750**	**750**
Truck Bed Liner Coating	**310**	**N/A**
Underbody Coating	**430**	**840**
Uniform Finishing Coat	**540**	**840**
Any Other Coating Type	**250**	**N/A**

Three categories were either not reported in the survey or were reported as not containing any pCBtF or t-BAc in their formulation:

- Multi-color coatings were not reported, and no coatings could be identified that meet the definition of a multi-color coating; therefore, that category is proposed to be removed from PAR 1151;
- Temporary protective coatings were not reported, but were later identified and did not contain pCBtF or t-BAc; therefore, staff is proposing to maintain the VOC limit for that category;
- Underbody coatings were not reported as containing any pCBtF or t-BAc; therefore, staff is proposing to maintain the VOC limit for that category.

The BARCT assessment will focus on nine categories and subcategories that utilize an average of 16 percent or more pCBtF or t-BAc. The adhesion promoter and truck bed liner category were the only two categories that reported t-BAc use. Table 2-8 lists the categories the BARCT assessment will evaluate and the corresponding pCBtF weight percent by category. Note: the manufacturer's survey was based on current Rule 1151 categories and subcategories; therefore,

the data does not reflect the newly proposed subcategories. Primer sealers, primer surfacers, and epoxy primers were all reported as primers; color coatings, metallic coatings, and midcoats were all reported as base coats (they were referred to as color coatings based on current rule language); and matte and gloss clear coatings were reported as clear coatings.

Table 2-8: BARCT Assessment Categories and Corresponding pCBtF weight percent

Automotive Coating Category	pCBtF wt %	Average pCBtF wt %
Adhesion Promoter	Up to 88%	34 %
Pretreatment Coating	Up to 71%	18%
Primer	Up to 68%	23%
Base Coating	Up to 60%	21%
Single Stage Coating	Up to 65%	36%
Clear Coating	Up to 65%	33%
Uniform Finish Coating	Up to 60%	32%
Truck Bed Liner Coating	Up to 25%	16%
Reducer	Up to 100%	55%

BARCT Assessments

In the following sections, the data, feedback provided by stakeholders, and staff proposal for each category included in the technology assessment will be discussed. Most automotive coatings are multi-component products that may require a hardener, activator, or reducer for proper application and curing, thus VOC limits are as applied. The purpose of a BARCT assessment is to assess potential VOC control options to establish future effective emission limits for each automotive coating category. Under Health and Safety Code Section 40406, BARCT is defined as:

> "an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source."

The BARCT assessment follows a framework through the rule development process and includes public participation. Figure 2-3 shows the overall BARCT assessment approach.

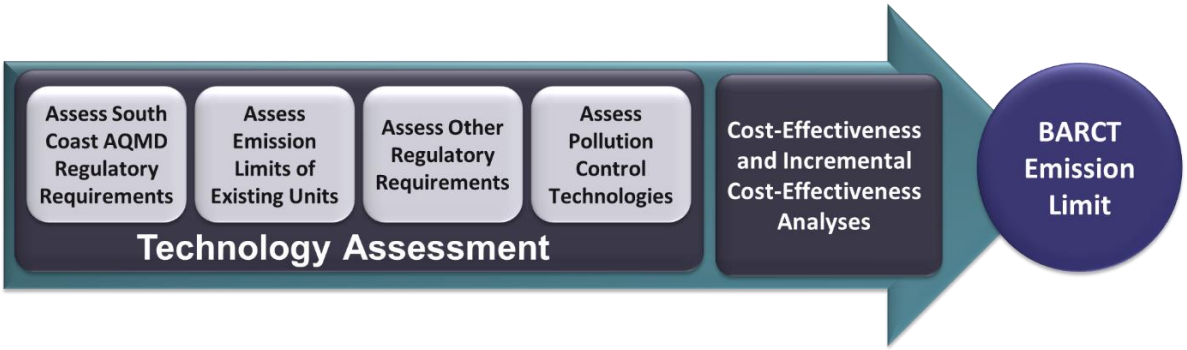

Figure 2-4: BARCT Assessment Approach

Technology Assessment

Staff conducted a technology assessment to evaluate VOC control technologies that will achieve the BARCT levels for Phase II VOC limits for automotive coating categories subject to PAR 1151. To quicky transition products out of pCBtF and t-BAc, staff is proposing to temporarily raise the VOC limits similar to those of the U.S. EPA National Rule limits for Phase I; except for categories that can currently meet lower limits. The technology assessment will focus on establishing a lower future effective Phase II limit at or near current VOC levels. There are currently 12 automotive coating categories subject to Rule 1151; the BARCT assessment focused on nine of the automotive categories and subcategories that utilize 16 to 55 percent pCBtF on average in their formulation and will have potential challenges in meeting Phase II VOC content limits without the use of pCBtF or t-BAc in their formulation. The remaining five categories were either not reported in the manufacturer survey or are not anticipated to encounter significant challenges to meet the current limits in Rule 1151. The technology assessment consists of four steps: the assessment of South Coast AQMD requirements, a complete assessment of emission limits of existing coatings, review of other regulatory requirements, and assessment of available VOC control technologies. The assessment also considers the categorization and subcategorization of the coatings. Based on stakeholder feedback, PAR 1151 includes three new subcategories: matte gloss coatings, epoxy primers, and bifurcated primers into primer sealers and primer surfacers.

BARCT Assessment

Assessment of South Coast AQMD Regulatory Requirements

Staff reviewed existing South Coast AQMD VOC coating regulations for similar categories and to assess potential technology transfer. Most of the limits in existing South Coast AQMD rules were at similar VOC levels as Rule 1151, which may be an indication that the low VOC limits are likely achieved using exempt solvents. Table 2-9 summarizes the current South Coast AQMD VOC coatings rules that staff evaluated as part of the BARCT technology assessment.

Table 2-9: South Coast AQMD Regulatory Requirements

Regulation/ Rule Title	Relevant Unit/ Equipment	VOC Emission Limits for Similar Coating Categories
Regulation XI – Source Specific Standards / Rule 1107 – Coatings of Metal Parts and Products	All metal coating operations except: aerospace assembly, magnet wire, marine craft, motor vehicle, metal container, and coil coating operations	• General One-Component: 275 g/L • General Multi-Component: 340 g/L • Etching Filler: 420 g/L • Metallic: 420 g/L • Pretreatment Coatings: 420 g/L • Touch Up: 420 g/L • Extreme High Gloss: 340 g/L • High Performance Architectural: 420 g/L
Regulation XI – Source Specific Standards / Rule 1106 – Marine and Pleasure Craft Coatings	Applies to marine or pleasure craft coatings and any associated solvent	**Pleasure Craft** • Finish Primer/Surfacer: 420 g/L • High Build Primer Surfacer:340 g/L • Marine Deck Sealant Primer: 760 g/L • Pretreatment Wash Primer: 780 g/L • Teak Primer: 775 g/L • Extreme High Gloss Coating: 490 g/L • High Gloss Coating: 420 g/L • Pretreatment Wash Primer: 780 g/L **Marine Coating** • Extreme High Gloss: 420 g/L (baked); 490 g/L (air dried) • High Gloss: 275 g/L (baked); 340 g/L (air dried) • Pretreatment Wash Primer: 420 g/L (baked);
Regulation XI – Source Specific Standards / Rule 1113 – Architectural Coatings	Applies to coatings applied to stationary sources, fields, or lawns	• Industrial Maintenance (IM) Coatings: 100 g/L • Color Indicating Safety Coating: 480 g/L • High Temp IM Coating: 420 g/L • Non-Sacrificial Anti-Graffiti Coatings: 100 g/L • Metallic Pigmented Coatings: 150 g/L • Multi-Color Coatings: 250 g/L • Non-flat Coatings: 50 g/L • Pretreatment Wash Primers: 420 g/L

Assess VOC Limits of Existing Coatings

Assess VOC Limits of Existing Coatings

The manufacturers' submitted survey data was used to evaluate existing VOC levels for each coating category. Based on the survey, most coatings use either pCBtF or t-BAc in their formulation to comply with existing limits. Adhesion promoters and truck bed liners were the only two categories that utilize t-BAc along with pCBtF in their formulation; these two categories only account for one percent of the total automotive coating sales. Table 2-10 shows the average VOC content per category.

Table 2-10: VOC Limits of Existing Coatings and Exempt Compounds Usage

Automotive Coating Category	Average VOC as applied (g/L)	t-BAc in Formulation	pCBtF in formulation
Adhesion Promoter	528	Yes	Yes
Base Coating	340	No	Yes
Multi-Color Coating	Not Reported	Not Reported	Not Reported
Clear Coating	246	No	Yes
Pretreatment Coating	657	No	Yes
Primer	232	No	Yes
Single-Stage Coating	334	No	Yes
Truck Bedliner Coating	249	Yes	Yes
Underbody Coating	382	No	Yes
Uniform Finish Coating	467	No	Yes
Temporary Protective Coating	Not Reported	Not Reported	Not Reported
Any Other Coating Type	Not Reported	Not Reported	Not Reported

Other Regulatory Requirements

Other Regulatory Requirements

This step of the BARCT assessment identifies and compares other regulatory requirements for the same source type or category. The evaluation ensures that the proposed requirements are consistent with, conform to, or are more stringent than existing standards. The assessment evaluated most California Air Districts that have similar automotive coatings rules, the Federal Regulation 40 CFR Part 9 and 59 – National Volatile Organic Compound Emission Standards for Automotive Refinish Coating (U.S. National Rule), and the European Regulation for Paints, Varnishes, Vehicle Refinish Products, and Activities. Most Air Districts throughout California have similar VOC limits since most Air Districts rely on the limits in the CARB SCM. Furthermore, most automotive refinishing products sold and used in California rely on pCBtF and t-BAc to meet the low limits specified in the CARB SCM. The U.S. National Rule limits and European limits are higher than those of California air districts and manufacturers do not use pCBtF or t-BAc in their product formulation. Tables 2-11 and 2-12 compare limits between large California Air Districts, National Rule, and European Rule.

Table 2-11: Other Air District Limits

Category	Antelope Valley – Rule 1151 (g/L)	Bay Area AQMD – Rule 45 (g/L)	Eastern Kern APCD – Rule 410.4A (g/L)	Feather River AQMD – Rule 3.19 (g/L)	San Diego County APCD – Rule 67.20 (g/L)	Santa Barbara APCD – Rule 339 (g/L)
Adhesion Promoter	540	540	540	540	540	540
Base Coating	420	420	420	420	420	420
Clear Coating	250	250	250	250	250	250
Pretreatment Coating	660	660	660	660	660	660
Primer	250	250	250	250	250	250
Single-Stage Coating	340	420	340	340	340	340
Truck Bed Liner Coating	310	310	200	310	310	310
Uniform Finish Coating	540	540	650	540	540	540
Any Other Coating Type	250	250	250	250	250	250

Table 2-12: South Coast AQMD, U.S. National Rule, Limits

Category	South Coast AQMD Limits (g/L)	European Limits (g/L)	National Rule Limits (g/L)
Adhesion Promoter	540	--	840
Base Coating	420	420	600
Clear Coating	250	420	600
Pretreatment Coating	660	780	780
Primer	250	540	550-580
Single-Stage Coating	340	420	600
Truck Bed Liner Coating	310	840	--
Uniform Finish Coating	540	--	840
Specialty Coating	--	840	840
Any Other Coating Type	250	--	840

Assess Low-VOC Technologies

The next step is to research the commercially available low VOC control technologies and seek information on any emerging VOC control technology. As part of this assessment, staff met with several of the major automotive coating manufacturers to discuss the status and development of low VOC products. Most of the manufacturers agree that phasing out the toxic compounds as quickly as possible is the best approach, but the lack of a suitable drop-in exempt solvents is a challenge. Manufacturers have indicated they have been working on reformulations to meet existing limits without pCBtF or t-BAc and are confident they will have a product to bring to the market. In addition, staff met with coating resin raw material suppliers to discuss emerging technologies; the resin suppliers stated that they are currently in the process of developing resin systems that meet the current limits of Rule 1151 without the use of exempt solvents; they are developing two component primer systems that meet current limits. There are a few products available that demonstrate feasibility to meet the current VOC limits without pCBtF or t-BAc but may only be specific to certain substrates or do not meet certain performance requirements. UV/EB/LED curable primer is a technology that can be utilized for repairing areas of one square-foot or less and allows for fast cure times. Staff has identified a UV/EB/LED curable primer formulated at approximately 210 g/L, which is less than the current 250 g/L limit for primers. Table 2-13 lists some of the coating products that are currently available on the market that meet the current limits.

Table 2-13: Low VOC Coatings Currently Available without pCBtF or t-BAc

Automotive Coating Type	Category	VOC As Applied (g/L)
Water-based 1K Primer - Gray	Primer	86
Water-based 1K Primer Surfacer - Gray	Primer	86
Water--based High-Build 1K Primer	Primer	160
Water-based Flexible 1K Primer Surfacer	Primer	158
UV Cured Primer Filler Surfacer	Primer	210
Water-based Acrylic Urethane Clearcoat	Clearcoat	126

Another form of effective VOC control is the use of add-on control technology that captures and directs VOC-laden air from process areas or emissions points to air pollution control equipment. The effectiveness of an add-on control system is based on the capture efficiency and the VOC destruction capability of the emissions control device, which is typically around 95 percent destruction efficiency. Capture efficiency refers to the ability of a ventilation system to capture and transfer VOCs released from process areas or emission points to the pollution control device. If the process areas or emission points meet the criteria set forth in U.S. EPA Method 204, the area or emission point may be considered a permanent total enclosure (PTE) and the capture efficiency is assumed to be 100 percent. If the criteria of U.S. EPA Method 204 are not met, then the capture efficiency of the system can only be determined through source testing.

The options for control devices are numerous, each having different cost and control efficiencies. The particular selection is dependent upon the needs and operation of the specific automotive refinish facility. Although there are many types of control devices that work on different principles such as adsorption or destruction of VOC emissions, the most typical type of control equipment for VOC emissions is the use of thermal destruction equipment such as a thermal oxidizer or a regenerative catalytic oxidizer.

Rule 1151 allows for the use of add-on control equipment as an option for achieving compliance. Although this method of control may be cost-effective for some operators, it could be prohibitively expensive for others, particularly those that are small businesses or have low production throughputs. Staff's evaluation of add-on control using a thermal oxidizer determined that it was not cost-effective at $230,000 per ton of VOC reduced. Therefore, the use of add-on controls is offered as an option rather than a mandated requirement. The evaluation can be found in Chapter 4 under the incremental cost-effectiveness analysis. The primary form of control is to rely on low-VOC coating formulations.

Proposed Initial Phase II VOC Emission Limits

Based on the BARCT assessment and discussion with manufacturers, staff has developed the following proposed initial Phase II VOC limits. The next step is to determine if it is cost-effective to reformulate from the Phase I VOC limits to the Phase II VOC limits.

Table 2-14: Initial Proposed Phase II Limits

Automotive Coating Categories	Initial Proposed Phase II Limit (g/L)
Adhesion Promoter	***720***
Gloss Clear Coating	**250**
Matte-Clear Coating	**520**
Color Coating	***250***
Metallics Color Coating	**250**
Pretreatment Wash Primer	**660**
Epoxy Primer	**340**
Primer Sealer	**250**
Primer Surfacer	**250**
Single-Stage Coatings	**340**
Tinted Mid-Coat	**250**
Temporary Protective Coating	**60**
Truck Bed Liner Coating	**310**
Underbody Coating	**430**
Uniform Finishing Coat	**540**
Any Other Coating Type	**250**

For the coating categories outlined in red, staff did not identify any pCBtF or t-BAc in those coatings; therefore, staff is not proposing to change those VOC limits since it is feasible for them to meet current VOC limits without pCBtF and t-BAc.

Cost-Effectiveness and Incremental Cost-Effectiveness Analysis

The South Coast AQMD routinely conducts cost-effectiveness analyses regarding proposed rules and regulations that result in the reduction of criteria pollutants (NOx, SOx, VOC, PM, and CO). The analysis is used as a measure of relative effectiveness of a proposal. It is generally used to compare and rank rules, control measures, or alternative means of emissions control relating to the cost of purchasing, installing, and operating control equipment to achieve the projected emission reductions. The major components of the cost-effectiveness analysis are the annualized nonrecurring costs, recurring cost, emission reductions, discount rate, present value factor, and equipment life.

- Annualized Nonrecurring Cost: The cost difference of the transition from the higher Phase I limits to the lower Phase II limits. Staff anticipates that coating manufacturers will have to reformulate or develop new products with lower VOC content; the cost difference between the new product for Phase II and Phase I products is the annualized nonrecurring cost. Staff estimates the cost of Phase II compliance products to be 10 percent more than Phase I products; this is based on manufacturer feedback. For color coating category, water-based low-VOC products are currently available, so the cost difference between Phase I and Phase II is based on actual costs.
- Recurring Cost: Annual cost that is recurring over the course of the technology considered. Operation and maintenance are examples of recuring costs. However, there will be zero recurring cost associated with the transition from Phase I to Phase II since the evaluation is only based on the cost difference during the transition from the higher VOC Phase I products to the low-VOC Phase II products. Accordingly, there are no operation and maintenance costs associated with the transition.
- Present Value Factor (PVF): Formula, as described below, is based on timeframe evaluated and discount rate used. For this evaluation, cost is evaluated over one year for Phase I and Phase II cost difference; thus, the present worth value is equal to one.
- Discount rate: The discount rate used for the cost-effectiveness calculation is four percent and used in calculating the present value factor.
- Emission Reduction: The VOC reduction from the higher Phase I interim limits to the lower Phase II limit over one year timeframe.
- Equipment life: The timeframe at which the cost difference between Phase I and Phase II and emission reductions are evaluated. The timeframe used is one year.

The cost-effectiveness for PAR 1151 was completed using the discounted cash flow method, as explained in the next section.

Discounted Cash Flow (DCF)

The DCF method converts all costs, including initial capital investments and costs expected in the present and all future years of equipment life, to present value. Conceptually, it is as if calculating the number of funds that would be needed at the beginning of the initial year to finance the initial capital investments and to set aside to pay off the annual costs as they occur in the future. The fund that is set aside is assumed to be invested and generates a rate of return at the discount rate chosen. The final cost-effective measure is derived by dividing the present value of total costs by the total emissions reduced over the equipment life. The following equation is used for calculating cost-effectiveness with DCF:

$$Cost - effectiveness = \frac{Initial\ Capital\ Investments\ +\ (Annual\ O\&M\ Costs\ \times\ PVF)}{Annual\ Emission\ Reductions\ \times\ Years\ of\ Equipment\ Life}$$

Where:

$$PVF = \frac{(1+r)^N - 1}{r * (1+r)^{(N-1)}}$$

Where

r = real interest rate (discount rate); and
N = years of equipment life.

The present-value factor (PVF) converts a constant stream of payments made for N years into its single present-value equivalent.

Finally, Health and Safety Code Section 40920.6(a)(3) states that an incremental cost-effectiveness assessment should be performed on one or more identified potential control options that meet emission reduction objectives. To determine the incremental cost-effectiveness under this paragraph, South Coast AQMD calculates the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control option as compared to the next less expensive control option. Once the BARCT assessment is complete and VOC limits are established, staff considers incrementally more stringent options to demonstrate that the VOC limit represents the "maximum degree of reduction achievable by each class or category." The equation for incremental cost-effectiveness is as follows:

$$\text{I} - CE\left(\$/_{tons\ VOC\ reduced}\right) = \frac{Incremental\ Difference\ in\ Cost\ (Present\ Worth\ Value)}{Incremental\ Difference\ in\ Emission\ Reductions\ (Lifetime\ Reductions)}$$

Summary of Cost-Effectiveness Analysis and Incremental Cost-Effectiveness Analysis

To determine cost-effectiveness for the proposed Phase II BARCT limits, cost information and estimates for existing coatings were obtained. Staff met with multiple coating manufacturers, vendors, distributors, and stakeholders to gather cost data and estimates for various types of coatings. Based on manufacturer feedback, coatings meeting the current limits are approximately 10 percent more expensive than those meeting the U.S. National Rule limits and, as a result, staff assumed the products meeting the proposed Phase II limits will be similar in cost to the coatings meeting current Rule 1151 limits. The cost difference between the Phase I and Phase II products will be used in the cost-effectiveness analysis. The South Coast AQMD Governing Board established a cost screening threshold of $40,168 per ton of VOC removed.

Automotive Coating Categories

As previously mentioned, one of the first steps in the BARCT assessment is to establish the class and category of automotive coating products. Staff collaborated with the stakeholders to better understand the challenges and establish several subcategories of the specific coating categories. Based on the BARCT technology assessment and manufacturer feedback, staff updated the existing categories and established subcategories of coatings for color coats, clear coats, and primers since each coating had specific challenges and/or requirements. The following sections

explain the cost-effectiveness of reducing the VOC limits from the Phase I to Phase II VOC limit for each applicable subcategory of automotive coating.

Adhesion Promoter

Adhesion promoters are coatings applied directly to uncoated plastic and other synthetic surfaces, excluding metals, to facilitate bonding of subsequent coatings. All adhesion promoters reported in the automotive coating manufacturer survey are solvent-based coatings and utilize exempt compounds to comply with the current VOC content limit of 540 g/L. The two primary exempt solvents used in this category are pCBtF and t-BAc. Total estimated annual usage for this category is approximately 12,900 gallons per year which represents approximately 0.7 percent of the automotive coatings used in South Coast AQMD.

The proposed Phase I VOC content limit of 840 g/L is identical to the limit for adhesion promoters in the U.S. National Rule. Upon discussion with coating manufacturers, and after reviewing the coating data evaluation, staff determined that a lower Phase I limit for adhesion promoters was not feasible given the VOC contents of the commercially available adhesion promoters that do not contain pCBtF or t-BAc.

The proposed Phase II VOC content limit of 720 g/L is technologically feasible and cost-effective by the January 1, 2028, effective date based on discussions with coating manufacturers. The cost-effectiveness for the category is approximately $30,000 per ton of VOC reduced.

PAR 1151 also includes an alternative Product-Weighted Maximum Incremental Reactivity (PW-MIR) VOC limit of 2.0 g O_3/g VOC for adhesion promoters. Traditional mass-based VOC limits treat all VOCs equal, other than water and exempt compounds which are excluded. However, research[3] has shown that different solvents have varying potentials to form ground-level ozone. The MIR scale measures the relative ozone-forming potential of VOCs, offering a more nuanced approach than traditional mass-based limits. By using a PW-MIR VOC limit, one can account for the differences in reactivity, ensuring that products with more reactive VOCs are more strictly regulated, while less reactive VOCs are afforded some flexibility. The California Air Resources Board (CARB) published MIR values for various VOCs, which have been instrumental in developing these limits[4]

Staff utilized survey data and online searches to identify adhesion promoters sold within the South Coast AQMD, identifying 15 such products. To gather detailed VOC information for each product, staff reviewed the Safety Data Sheets for all 15 adhesion promoters. Using the CARB MIR values, staff calculated the PW-MIR for each product. In cases where VOC compounds were reported as a range, staff calculated an average PW-MIR based on the mid-point of the reported range, as well as a maximum PW-MIR using the highest reported value for each VOC compound. After calculating the average and maximum PW-MIR values for all the products, staff performed a statistical analysis to propose an appropriate PW-MIR limit for adhesion promoters. Table 2-15 lists the products staff considered; included are the weight percentages (wt%) for pCBtF and t-

[3] Carter, William P.L., College of Engineering, Center for Environmental Research and Technology, The SAPRC-99 Chemical Mechanism and Updated VOC Reactivity Scales, February 2023

[4] California Air Resources Board (CARB), "Tables of Maximum Incremental Reactivity (MIR) Values", available at https://ww2.arb.ca.gov/sites/default/files/2020-12/cp_reg_mir-tables.pdf

BAc in those products, as those solvents have very low MIR values. Staff put more emphasis on adhesion promoters without pCBtF and t-BAc to more accurately reflect the potential PW-MIR of these products once those exempt solvents are prohibited.

Table 2-15: PW-MIR Values for Adhesion Promoters

PRODUCT	Regulatory VOC As Applied (g/L)	pCBtF (wt %)	t-BAc (wt %)	PW-MIR with Average VOC Content (g O_3/g VOC)	PW-MIR with Max VOC Content (g O_3/g VOC)
Product 1	540	87.8	0	0.26	0.36
Product 2	526	0	58.1	1.22	1.75
Product 3	540	0	0	1.35	1.68
Product 4	537	3.1	22	2.72	3.21
Product 5	508	86.9	0	0.35	0.51
Product 6	540	82.8	0	0.4	0.56
Product 7	537	55.8	0	0.49	0.62
Product 8	520	54.8	0	1.42	1.81
Product 9	516	49.4	0	0.16	0.2
Product 10	517	49.3	0	0.37	0.56
Product 11	511	33.9	0	0.47	0.74
Product 12	533	3.5	20.2	2.69	3.17
Product 13	526	0	58.1	1.22	1.75
Product 14	529	0	20	2.68	3.16
Product 15	540	0	0	1.35	1.68

In addition to this assessment, a manufacturer of an adhesion promoter provided data on their potential future non-pCBtF/t-BAc formulation and indicated it could achieve a PW-MIR of between 2.0 – 2.5 g O_3/g VOC, which supports staff's assessment and proposed limit.

The proposed PW-MIR limits are designed to achieve equal or greater reductions in ground-level ozone compared to traditional mass-based VOC limits because VOCs with the greatest ozone forming potential will be targeted rather than treating each VOC equally; this offers more flexibility in product reformulation. Additionally, PW-MIR limits are particularly beneficial for coatings with low solids content. For these coatings, there are limited options to reduce VOC content, especially when compounds such as pCBtF and t-BAc are no longer allowed for use. It

should be noted that a cost-effectiveness analysis has not been conducted, as the use of PW-MIR is presented as an option rather than a requirement. Staff anticipates that formulation costs will be lower, as the PW-MIR approach provides manufacturers with greater flexibility in reformulating their products. This flexibility allows for higher levels of VOCs while still achieving the necessary reductions in ozone formation. It is also important to note that a product complying with the proposed alternative MIR limit can potentially have a higher mass (g/L) limit than the mass limits in the Table of Standards in the rule.

Gloss Clear Coating

Broadly, clear coatings are coatings that are formulated with materials that do not impart color and are applied over a color coating or previous layer of clear coating. Ninety-nine percent of the clear coatings reported in the automotive coating manufacturer survey are solvent-based and about 60 percent contain pCBtF. Forty one percent of the total automotive coatings used in South Coast AQMD are clear coats. Staff is proposing to carve out a subcategory from clear coatings for gloss clear coatings; gloss clear coatings register a gloss of 70 units or greater on a sixty-degree meter, according to ASTM Test Method D 523. Gloss clear coats annual usage is approximately 801,000 gallons.

The proposed Phase I VOC content limit for the high gloss clear coat category is 520 g/L. The proposed Phase II VOC content limit of 250 g/L is technologically feasible based on a future effective date of January 1, 2030. The VOC limit is cost-effectiveness for the category at $39,000 per ton of VOC removed.

Matte Clear Coating

Staff is proposing to carve out a subcategory from clear coatings for matte clear coatings. Matte clear coatings are coatings that are formulated with materials that do not impart color and are applied over a color coating or a subsequent layer of a matte clear coating; matte clear coatings register a gloss of less than 70 units on a sixty-degree meter, according to ASTM Test Method 523. Matte clear coatings contain a flattening agent which is a substance that gives the clear coat a lusterless or matte appearance. According to manufacturers, a higher VOC limit is necessary due to the flattening agent used in these coatings. Based on coating manufacturer feedback, matte clear coatings are a small, niche category of coatings and make up approximately 0.4 percent of the clear coating category used in South Coast AQMD.

Staff evaluated the cost-effectiveness of a lower Phase II VOC content limit of 520 g/L for matte clear coatings. Due to the relatively low volume of these coatings sold and subsequently low emission reductions from the lower limit, it was determined to not be cost-effective at $600,000 per ton of VOC removed. Accordingly, staff is proposing to maintain the 550 g/L for matte clear instead of lowering the Phase II VOC content limit.

Color Coating

Color coatings are pigmented automotive coatings, excluding adhesion promoters and primers, that require a subsequent clear coating to be applied. Color coatings are generally applied over a primer or adhesion promoter but can also be applied over another color coating. Based on survey data and product data sheet analysis, staff confirmed that use of pCBtF is prevalent in solvent-based color coatings. Approximately 30 percent of color coatings reported in the survey are water based while 70 percent reported are solvent based. Based on the survey data, color coatings can typically be divided into two subcategories: solid colors coats and metallic color coatings. Metallic color coatings need to have a higher VOC content in their formulation to achieve their metallic

appearance; solid color coatings can be formulated at lower VOC levels. The following figure shows the average VOC content for each subcategory.

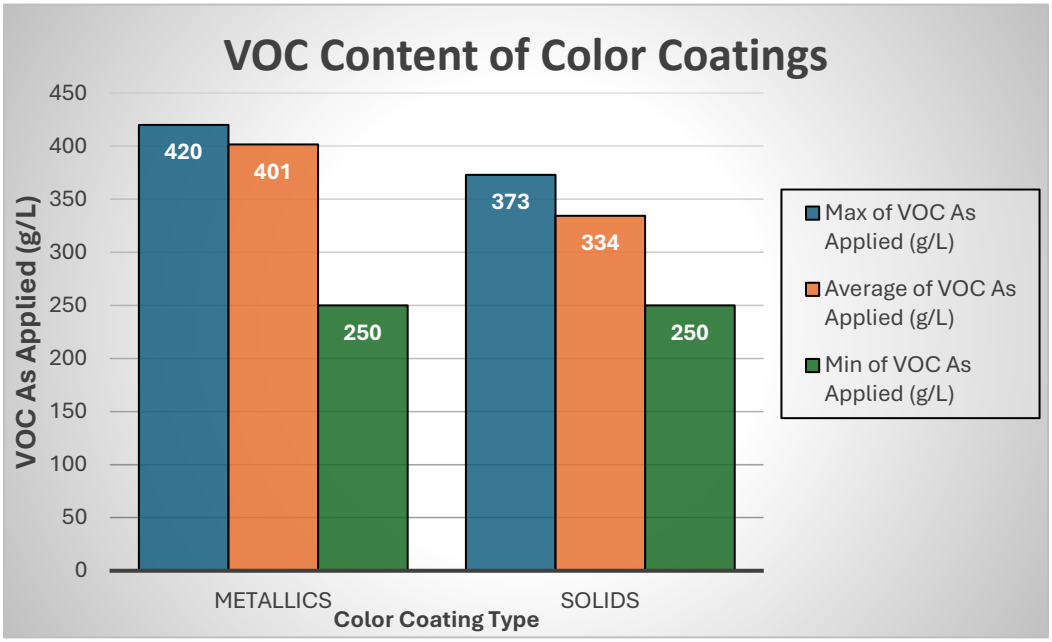

Figure 2-5: Metallics and Solid Color VOC Content

Lower-VOC water-based color coatings are widely used by most facilities and make up most of the volume of color coatings sold for use in South Coast AQMD. Approximately 240,000 gallons are used annually in the South Coast. Water-based color coatings do not contain pCBtF or t-BAc.

Because there are non-pCBtF-containing color coatings currently commercially available and in use that meet the existing VOC content limit for color coatings, staff is not proposing to raise the VOC Content limit of 420 g/L during the Phase I period. There are smaller shops that rely on the higher VOC solvent-based color coatings so the rule will allow higher VOC coatings to be sold in small containers, which is detailed in Chapter three of this staff report.

The proposed Phase II VOC Content limit of 250 g/L is based on reported automotive coating manufacturer survey data and discussions with coating manufacturers. It is cost-effective for the color coatings category at $24,000 per ton of VOC reduced.

Survey data provided by coating manufacturers did not include sales volume for the individual products. The average "As Applied VOC" contents displayed in Figure 2-4 are based on the number of products reported by coating manufacturers.

Metallic Color Coating

Staff initially proposed to carve out a subcategory of color coatings for metallic color coatings. Metallic color coatings are color coatings that contain more than 0.042 g/L of metal flakes, as applied, where such particles are visible in the dried film.

There are non-pCBtF-containing metallic color coatings currently commercially available and in use that meet the existing VOC content limit for color coatings; therefore, staff is not proposing to

raise the VOC Content limit of 420 g/L during the Phase I period. Approximately 293,000 gallons of metallic color coatings are used annually.

Coating manufacturers voiced concerns regarding the higher VOC contents of metallic color coatings compared to traditional solid color coatings and the need for a separate, higher limit. Staff reviewed metallic color coating data sheets and initially confirmed the need for a subcategory carve-out. However, based on follow up meetings with, BASF, one of the major automotive coating manufacturers, a 250 g/L is technically feasible since they currently offer a water-based basecoat system that has a maximum VOC content of 250 g/L for all colors including solid colors, metallic colors, and mid-coat layers. The formulation for the BASF Glasurit® 100 line currently meets the 250 g/L limit without the use of pCBtF and t-BAc. However, several manufacturers have raised color matching concerns associated with product development, reformulation, and testing. Therefore, staff is also proposing a future effective date of January 1, 2030, for both the color and metallic color coating category; this will ensure manufacturers have adequate time to address technical and color matching challenges associated with reformulation. Staff is proposing a lower Phase II VOC content limit 250 g/L for the metallic color coating category which is cost-effectiveness at $18,000 per ton of VOC reduced.

Based on staff's latest analysis, PAR 1151 includes the same Phase I and Phase II VOC limits and effective dates for solid color coatings and metallic coatings; therefore, the categories will be combined in the Table of Standards as "Color Coatings."

Tinted Mid-Coat

Tinted mid-coats are transparent color coatings used as part of a three-stage metallic or pearlescent system. The mid-coat is traditionally used to add a depth effect to paints and color match three-stage coatings during the repair process. Mid-coats are similar to basecoats since they can be tinted or adjusted to get a different color and provide the metallic finish desired. Approximate mid-coat usage is 2,000 gallons per year for the category.

Mid-coats utilize pCBtF in formulation to meet the current 420 g/L VOC limit. Since no suitable replacement is currently available, staff is proposing a Phase I limit of 750 g/L which is similar to the National Rule limit. Based on manufacturer feedback and staff evaluation of the mid-coat category. a Phase II VOC limit of 250 g/L is feasible and also cost-effective at $8,000 per ton of VOC reduced. Therefore, staff is proposing a Phase II limit of 250g/L for the category with a future effective date of January 1, 2030.

Primers

The primer category can be divided into pretreatment wash primers, primer sealers, primer surfacers, and epoxy primers. Most primers reported in the automotive coating manufacturer survey are solvent based, with only a very small percentage being water-based. Staff found the use of pCBtF to be prevalent among primers to meet the current VOC content limits.

Pretreatment Wash Primer

Pretreatment wash primers are automotive coatings that contain a minimum of 0.5 percent acid by weight and not more than the 16 percent solids by weight as necessary to provide surface etching. Staff confirmed the use of pCBtF is prevalent in pretreatment wash primers as reported in the automotive coating manufacturer survey. Approximately 25,300 gallons are used annually in South Coast AQMD.

The proposed Phase I VOC content limit is 780 g/L. Staff initially evaluated the cost-effectiveness of a lower Phase II VOC content limit of 720 g/L for pretreatment wash primers, but due to the relatively low volume of these coatings sold and subsequent low emission reductions from the lower limit, staff confirmed that the lower limit is not cost-effective at $104,000 per ton of VOC removed. Accordingly, staff initially determined that it was appropriate to maintain the higher Phase I VOC content limit in Phase II. After further discussions with automotive coating manufacturers, staff again evaluated the cost-effectiveness of a lower Phase II VOC content limit. Staff determined that a Phase II VOC content limit of 660 g/L for pretreatment wash primers is cost-effective for the category at $7,000 per ton of VOC emissions reduced. The proposed Phase II VOC content limit of 660 g/L is technologically feasible based on a future effective date of January 1, 2028.

In addition, similar to adhesion promoters, PAR 1151 includes an alternative PW-MIR VOC limit for pretreatment wash primers that manufacturers can opt to comply with in lieu of the mass-based VOC limit in PAR 1151 Table 1 – Table of Standards. The mass-based VOC limit for pretreatment wash primers is slightly lower than that of the adhesion promoters; therefore, staff is proposing a slightly lower PW-MIR limits of 1.8 g O_3/g VOC. A cost-effectiveness assessment was not conducted as this is an alternative option meant to provide flexibility and not a required VOC limit.

Table 2-16: PW-MIR Values for Pretreatment Wash Primers

PRODUCT	Regulatory VOC As Applied (g/L)	pCBtF (wt %)	t-BAc (wt %)	PW-MIR with Average VOC Content (g O_3/g VOC)	PW-MIR with Max VOC Content (g O_3/g VOC)
Product 1	652	14.6	0	0.55	0.60
Product 2	657	10.5	0	1.37	1.82
Product 3	659	0	0	1.73	2.34
Product 4	659	36.5	0	0.44	0.54
Product 5	652	14.6	0	1.53	1.99
Product 6	657	71.3	0	0.32	0.4
Product 7	660	1.4	0	2.4	2.73

Epoxy Primer

Epoxy primers are automotive coatings that are formulated with an epoxy resin and hardener and are applied directly to metal during the restoration of a vehicle, for the purpose of adhesion, resistance to moisture and corrosion, and where the primary function is to bond to the base material and seal to facilitate subsequent work. Approximately 3,400 gallons of epoxy primers are used annually.

The proposed Phase I VOC content limit is 580 g/L. The proposed Phase II VOC content limit is 340 g/L and is technologically feasible based on a future effective date of January 1, 2028. The proposed Phase II limit is cost-effective for the category at $11,000 per ton of VOC emissions reduced.

Primer Sealer

Primer sealers are automotive coatings that are applied prior to the application of a topcoat for the purpose of color uniformity, or to promote the ability of an underlying coating to resist penetration by the topcoat. These types of primers are referred to as "non-sanding primers" since primer sealers are not intended to be sanded, the basecoat can simply be applied after the sealer dries. Approximately 10,200 gallons of primer sealers are used annually.

The proposed Phase I VOC content limit is 550 g/L. Staff initially proposed a Phase II VOC content limit of 150 g/L for both the primer sealer and surfacer subcategories, but several manufacturers expressed concern regarding the ability to meet the lower limit. Manufacturers stated that they are currently in the process of developing solvent-based prototypes that meet the 250 g/L limit without pCBtF. The lower 150 g/L VOC content does not offer enough flexibility to address humidity adhesion test challenges and also has not yet obtained OEM approval. In response to feedback, staff revised the proposed Phase II VOC content limit to 250 g/L for both the primer sealer and surfacer subcategories. The revised proposed VOC content limit of 250 g/L is technologically feasible with a future effective date of January 1, 2028. The proposed limit is cost-effective for the category at $22,000 per ton of VOC reduced.

Primer Surfacer

Primer surfacers are automotive coatings that are applied for the purpose of corrosion resistance or adhesion, and to promote a uniform surface by filling in surface imperfections. Approximately 287,000 gallons are used annually for this category.

Staff identified a commercially available UV/EB/LED curable product being used at a local refinishing facility as a potential technology to justify lowering the VOC limit of the primer surfacer category. The UV/EB/LED curable primer technology is currently only recommended for panel repairs of one square-foot or less but can potentially be scaled up to larger panels. The UV/EB/LED curable primer has a VOC content of 206 g/L, which is slightly lower than the proposed Phase II VOC limit of 250 g/L. A Phase II limit of 210 g/L is technically feasible based on this technology; however, the cost for the UV/EB/LED primer (at approximately $260 for a quart of product) is approximately four times higher than a conventional primer. In addition, a UV light curing lamp tool is needed to cure the product at a cost of about $2,000; a one-time cost for a tool that may last up to ten years. Staff's cost-effectiveness calculation concluded the cost-effectiveness ranges from $800,000 to $1.8 MM per ton of VOC reduced for the UV/EB/LED technology. Due to the high cost and low potential VOC reductions, staff is not recommending a Phase II limit of 210 g/L based on the UV/EB/LED curable technology and instead proposes a 250 g/L limit based on traditional primer surfacer technology. Automotive coating manufacturers and resin manufacturers have indicated that low VOC primers are currently being developed to meet or exceed current VOC limits.

The proposed Phase I VOC content limit is 580 g/L. The proposed Phase II limit of 250 g/L is technologically feasible based on a future effective date of January 1, 2028. The proposed limit is cost-effective for the category at $23,000 per ton of VOC reduced.

Single-Stage coating

Single-stage coatings are pigmented automotive coatings, excluding adhesion promoters and primers, labeled and formulated for application without a subsequent clear coating and are applied over an adhesion promoter, a primer, or a color coating. Staff confirmed that no water-based single-stage coatings were reported in the automotive coating manufacturer survey and that single-stage coatings comprise about two percent of automotive coatings used in South Coast AQMD with an annual usage of approximately 35,000 gallons.

The proposed Phase I VOC content limit is 600 g/L. The proposed Phase II VOC content limit is 340 g/L and is technologically feasible based on a future effective date of January 1, 2028. The proposed limit is cost-effective for the category at $19,000 per ton of VOC reduced.

Table 2-17: Cost-effectiveness by Category

Automotive Coating Category	Proposed Phase II VOC Content Limits (g/L)	Cost-Effectiveness
Base Coatings		
Color Coating	250	$24,000
Metallic Color Coating	250	$18,000
Tinted Mid-Coat	250	$8,000
Clear Coatings		
Gloss Clear Coating	250	$39,000
Matte-Clear Coating	520	$600,000
Primers		
Pretreatment Wash Primer	660	$7,000
Epoxy Primer	340	$11,000
Primer Sealer	250	$22,000
Primer Surfacer	250	$23,000
Other Coating Categories		
Adhesion Promoter	720	$30,000
Single-Stage Coating	340	$19,000
Temporary Protective Coating	60	N/A
Truck Bedliner Coating	310	N/A
Underbody Coating	430	N/A
Uniform Finish Coating	540	N/A
Any Other Coating Type	250	N/A

Reducers and Thinner

In recent years, reducers and thinners have posed an enforcement challenge as end users have been buying and using non-compliant high-VOC reducers and thinners instead of the more expensive, compliant pCBtF-based reducers and thinners. These high VOC reducers and thinners could not be used in any meaningful amount in the automotive coatings at the autobody shops to produce a compliant ready-to-spray coating.

As the South Coast AQMD phases out pCBtF and t-BAc, a mechanism to reduce the air quality impact of reducers and thinners is to develop PW-MIR VOC limits. The automotive coatings will continue to have a mass-based VOC limit; however, the new PW-MIR limit on the reducer and thinner will result in less ground-level ozone formation. To gather detailed VOC information for each product, staff reviewed the safety data sheets for 40 reducers and thinners. Using the CARB MIR values, staff calculated the PW-MIR for each product. In cases where VOC compounds were reported as a range, staff determined an average PW-MIR based on the midpoint of the reported range and a maximum PW-MIR using the highest reported value for each compound. After calculating both average and maximum PW-MIR values, staff conducted a statistical analysis to propose an appropriate PW-MIR limit for reducers and thinners and established a PW-MIR limit of 1.50 g O_3/g VOC, which has been demonstrated to be technically feasible and is achievable with several currently commercially available products. Table 2-18 shows a subset of the over 100 thinners and reducers staff reported in the survey.

Table 2-18: PW-MIR Values for Selected Reducers and Thinners

PRODUCT	Regulatory VOC As Applied (g/L)	pCBtF (wt %)	t-BAc (wt %)	PW-MIR with Average VOC Content (g O_3/g VOC)	PW-MIR with Max VOC Content (g O_3/g VOC)
Product 1	891	0	0	1.32	1.63
Product 2	844	55	0	0.77	0.79
Product 3	247	82	0	0.16	0.20
Product 4	0	95	0	0.10	0.11

Staff assessed 15 percent of the reported reducers and thinners in the survey, considering their PW-MIR values and pCBtF content. The data indicates that the price per gallon of products with higher PW-MIR values tends to decrease. On average, products with a PW-MIR greater than 1.50 g O_3/g

VOC cost $98 per gallon, while those with a PW-MIR less than 1.50 g O_3/g VOC cost $145 per gallon. This suggests that pCBtF is associated with a higher price (Figure 2-6).

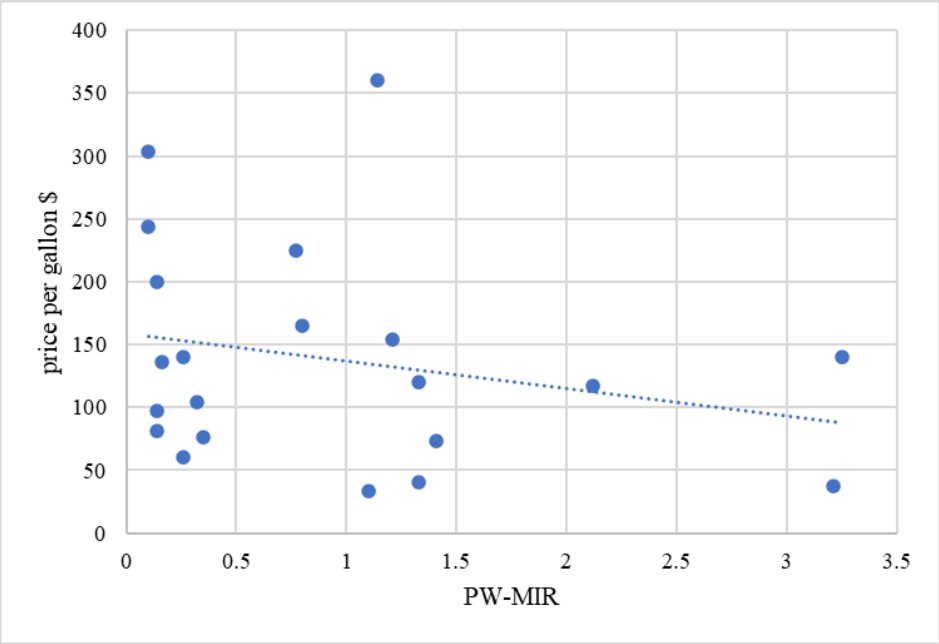

Figure 2-6: Price per gallon vs PW-MIR for reducers and thinners

In addition, as shown in Figure 2-7, the price per gallon of a product has a positive correlation with its pCBtF percentage. On average, products containing more than 50 percent pCBtF cost approximately $180 per gallon, while non-pCBtF products average around $94 per gallon.

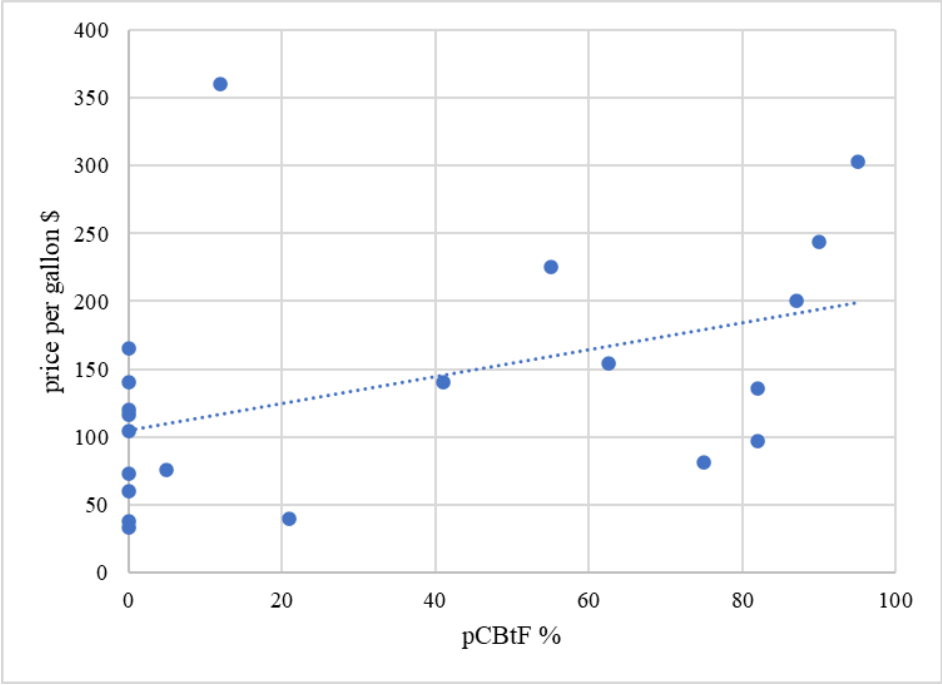

Figure 2-7: Price per gallon vs pCBtF content for reducers and thinners

On the other hand, for non-pCBtF products, there is no correlation between the price per gallon and the PW-MIR (Figure 2-8). This indicates that the cost of a product formulated without pCBtF is independent of its PW-MIR. Therefore, a lower PW-MIR does not necessarily translate to a higher cost in this category.

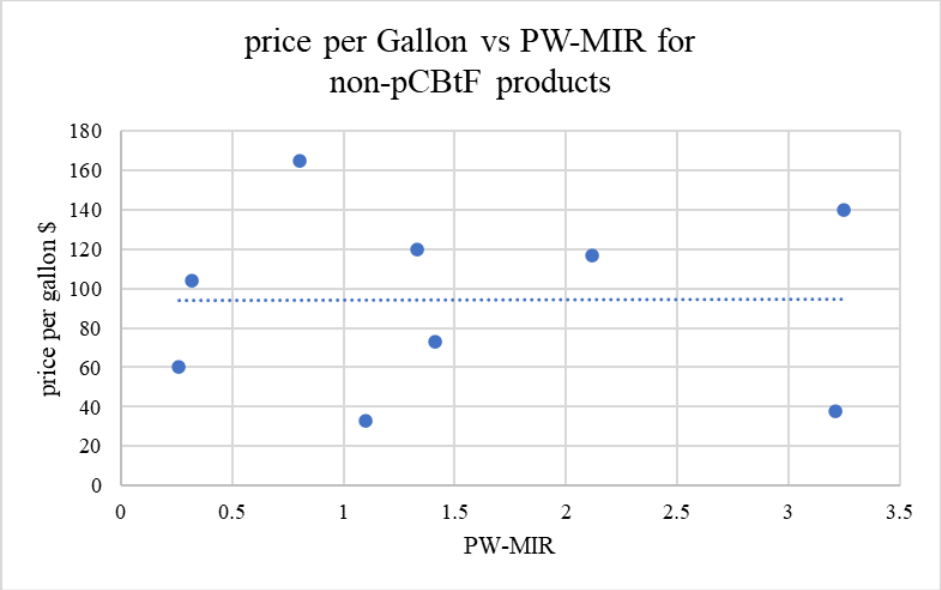

Figure 2-8: Price per gallon vs PW-MIR for non-pCBtF reducers and thinners

Potential Ozone Reduction Benefit

By adopting a PW-MIR approach instead of relying solely on VOC limits measured in grams per liter, the regulatory framework can be better aligned with air quality goals while providing manufacturers with increased flexibility. The PW-MIR approach offers flexibility, allowing manufacturers to explore various formulations without being restricted by a single mass-based VOC limit. This encourages innovation and the development of products that meet regulatory requirements while enhancing performance and reducing environmental impact. In the reducers and thinners category, implementing a PW-MIR limit will reduce the ozone formation potential of the ready-to-spray automotive coating beyond the emission reductions that result from the mass-based VOC limits in Table 1 of the rule.

Rule 1151 currently does not have a VOC limit for reducers and thinners, the VOC content is regulated on the ready to spray coating, which includes the reducer and thinners. Based on the manufacturer's survey, there are approximately 126,338 gallons of reducers and thinners sold into the South Coast AQMD annually. That number is an underestimate as not all manufacturers submitted a survey, and staff is aware of a significant amount of non-complaint reducers and thinners being used in our jurisdiction. Reducers and thinners that can be used to mix compliant coatings are mostly formulated with pCBtF; they have an average PW-MIR VOC of 0.40 g O_3/g VOC because pCBtF has such low photochemical reactivity (0.11 g O_3/g VOC). Reducers and thinner that do not contain pCBtF have an average PW-MIR of 1.85 g O_3/g VOC. With the phase out of pCBtF, staff assumes the PW-MIR of the reducers will increase up to 1.85 g O_3/g VOC leading to a considerable increase in the amount of ground level ozone formed. The future effective limit of 1.50 g O_3/g VOC is projected to reduce ozone formation potential by approximately 0.18 tons per day (tpd).

While staff did not find a strong cost correlation with the MIR VOC level, the average cost of a coating under 1.50 g O_3/g VOC is $93 per gallon, the average cost coatings above 1.50 g O_3/g VOC is $98 per gallon. The cost effectiveness analysis would indicate there is a cost savings; however, staff does not think the added regulatory limit will save costs. There is a significant cost savings going from pCBtF thinners and reducers to products with conventional solvents. but transitioning to lower MIR products will require some formulation work and product testing.

CHAPTER 3: SUMMARY OF PROPOSALS

Introduction

The main objective of the proposed amendments to Rule 1151 is to phase out the use of pCBtF and t-BAc as solvents in automotive coatings, as directed by the South Coast AQMD's Stationary Source Committee, due to toxicity concerns.

Staff is proposing the following amendments to Rule 1151. The proposed amendments are primarily on the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. Some other amendments are for new labeling and reporting requirements, and for rule clarification or streamlining. The proposed revised rule structure and key provisions are discussed in the following sections.

Proposed Amended Rule Structure

(a) Purpose
(b) Applicability
(c) Definitions
(d) Requirements
(e) Alternative Compliance Options
(f) Prohibition of Possession, Specification, Sale or Use
(g) Recordkeeping Requirements
(h) Administrative and Reporting Requirements for Automotive Coating Manufacturers
(i) Test Methods
(j) Rule 442 Applicability
(k) Exemptions

Proposed Amended Rule 1151

Purpose [Subdivision (a)]

The purpose of this rule is to reduce VOC emissions, toxic air contaminants, stratospheric ozone-depleting compounds, and global-warming compound emissions from automotive coating applications performed on motor vehicles, mobile equipment, and associated parts and components.

No significant revisions were made to this subdivision. Staff capitalized defined terms to indicate that definitions for the associated terms can be found in the Definitions subdivision.

Applicability [Subdivision (b)]

PAR 1151 applies to any person that supplies, sells, offers for sale, markets, manufactures, blends, packages, repackages, possesses, or distributes any automotive coating, automotive coating component, or associated solvent for use within the South Coast AQMD, as well as any person who uses, applies, or solicits the use or application of any automotive coating, automotive coating component, or associated solvent within the South Coast AQMD.

No significant revisions were made to this subdivision. Staff capitalized defined terms to indicate that definitions for the associated terms can be found in the definition's subdivision.

Definitions [Subdivision (c)]

To provide clarity, definitions are used in the proposed amended rule as a proper noun to better distinguish defined terms from common terms. Refer to PAR 1151 for a complete list of definitions.

The following are new and modified definitions for PAR 1151, including some that distinguish the new automotive coating categories necessary for the transition away from pCBtF and t-BAc. Staff proposes to establish new categories and VOC content limits to reflect the results of the technology assessment. For all definitions, refer to the preliminary draft of PAR 1151 released with the Staff Report. Accordingly, the following definitions for those new categories will be added:

ADHESION PROMOTER in paragraph (c)(1), which means:

> *"any Automotive Coating that is specifically labeled and formulated to be applied to uncoated plastic and other synthetic surfaces, excluding metals, to facilitate bonding of a subsequent automotive coating."*

EPOXY PRIMER in paragraph (c)(14), which means:

> *"any Primer formulated with an epoxy resin and a hardener that is labeled and formulated for application directly to metal surfaces for adhesion, resistance to moisture and corrosion, and where the primary function is to bond to the base material and seal for subsequent work."*

GLOSS CLEAR COATING in paragraph (c)(16), which means:

> *"any Automotive Coating that is formulated with materials that do not impart color, is specifically labeled and formulated for application over a Color Coating or a previous layer of a Clear Coating, and that registers a gloss of 70 units or greater on a 60-degree meter, according to ASTM Test Method D523."*

MATTE CLEAR COATING in paragraph (c)(20), which means:

> *"any Automotive Coating that is formulated with materials that do not impart color, is specifically labeled and formulated for application over a Color Coating or a previous layer of a Matte Clear Coating, and that register a gloss of less than 70 units on a 60-degree meter, according to ASTM Test Method D523.*

MAXIMUM INCREMENTAL REACTIVITY (MIR) in paragraph (c)(21), which means:

> *"the measure of the photochemical reactivity of a VOC, which estimates the weight of ozone produced from a weight of VOC expressed as gram of ozone per gram of VOC (g O_3/g VOC). MIR values for individual VOCs are specified in sections 94700 and 94701, Title 17, California Code of Regulations."*

PRETREATMENT WASH COATING in paragraph (c)(24), was renamed as PRETREATMENT WASH PRIMER; however, the definition was not substantially altered.

PRIMER in paragraph (c)(25), which means:

> *"any Automotive Coating that is specifically labeled and formulated for application to a substrate to provide 1) a bond between the substrate and subsequent coats, 2) corrosion resistance, 3) a smooth substrate surface, or 4) resistance to penetration of subsequent coats, for the purpose of applying a subsequent Automotive Coating. Primers may be pigmented and include Weld-through Primers, Epoxy Primers, Primer Sealers, and Primer Surfacers."*

PRIMER SEALER in paragraph (c)(26), which means:

> *"any Coating applied prior to the application of a topcoat for the purpose of color uniformity, or to promote the ability of an underlying Coating to resist penetration by the topcoat."*

PRIMER SURFACER in paragraph (c)(27), which means:

> *"any Coating applied for the purpose of corrosion resistance or adhesion, and that promotes a uniform surface by filling in surface imperfections."*

PRIVATE LABELER in paragraph (c)(28), which means:

> *"is the person, company, firm, or establishment (other than the toll manufacturer) identified on the label of a Regulated Product."*

PRODUCT-WEIGHTED MIR (PW-MIR) in paragraph (c)(29), which means:

> *"the sum of all weighted-MIR for all ingredients in a Regulated Product. The PW-MIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging) and calculated according to the following equations:*
>
> Weighted MIR (Wtd-MIR) ingredient = MIR x Weight fraction ingredient,)
>
> and,
>
> $PW\text{-}MIR = (Wtd\text{-}MIR)_1 + (Wtd\text{-}MIR)_2 + \ldots + (WtdMIR)_n$
>
> where,
>
> | | | |
> |---|---|---|
> | MIR | = | ingredient MIR; and |
> | 1,2,3,...,n | = | each ingredient in the product up to the total n ingredients in the product.*"* |

READY-TO-SPRAY AUTOMOTIVE COATINGS in paragraph (c)(30), which means:

> *"the Automotive Coatings, mixed with any Automotive Coating Components as recommended by the manufacturer's stated mix ratio."*

REDUCER OR THINNER in paragraph (c)(31), which means:

> *"any solvent specifically labeled and formulated to reduce the viscosity of Automotive Coatings."*

REGULATED PRODUCT in paragraph (c)(32), which means:

> *"any Automotive Coating or Automotive Coating Component."*

SOUTH COAST AQMD TEST METHOD in paragraph (c)(35), which means:

> *"a test method included in the manual of "Laboratory Methods of Analysis for Enforcement Samples," which can be found on the South Coast AQMD website and are referenced in subdivision (i)."*

TINTED MID-COAT in paragraph (c)(38), which means:

> *"a transparent Color Coating specifically labeled and formulated to add depth and color-match to a three-stage metallic or pearlescent coating system."*

Requirements [Subdivision (d)]

This subdivision contains the provisions for any person that applies any automotive coating to a motor vehicle, mobile equipment, or associated parts or components of a motor vehicle or mobile equipment.

Paragraph (d)(1) - PAR 1151 VOC Content Limits

PAR 1151 establishes Phase I and Phase II VOC content limits and effective dates for automotive coatings by category, as summarized in PAR 1151 Table 1 – Table of Standards. The following table provides a summary of the proposed VOC content limits and effective dates. Coatings complying with Phase I and Phase II VOC limits are not allowed to contain pCBtF or t-BAc.

Table 3-1: Summary of the Revisions to the VOC Content Limits and Effective Dates Compared with the Current Requirements

Coating Categories	Current Limits (1)		Phase I Limits - Effective on date of rule adoption		Phase II Limits		
	g/L	lb/gal	g/L	lb/gal	g/L	lb/gal	Effective Date
Base Coatings							
Color Coating (2)	420	3.5			250	2.1	1/1/2030
Tinted Mid-Coat	420	3.5	750	6.3	250	2.1	1/1/2030
Clear Coatings							
Gloss Clear Coating	250	2.1	520	4.3	250	2.1	1/1/2030
Matte-Clear Coating	250	2.1	550	4.6			
Primers and Sealers							
Pretreatment Wash Primer	660	5.5	780	6.5	660	5.5	1/1/2028
Epoxy Primer	250	2.1	580	4.8	340	2.8	1/1/2028
Primer Sealer	250	2.1	550	4.6	250	2.1	1/1/2029
Primer Surfacer	250	2.1	580	4.8	250	2.1	1/1/2029
Other Coating Categories							
Adhesion Promoter	540	4.5	840	7.0	720	6.0	1/1/2028
Single-Stage Coating	340	2.8	600	5.0	340	2.8	1/1/2028
Temporary Protective Coating	60	0.5					
Truck Bed Liner Coating	310	2.6					
Underbody Coating	430	3.6					
Uniform Finishing Coating	540	4.5					
Any Other Coating Type	250	2.1					

1 The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards.

2 See Paragraph (d)(4) for Color Coatings supplied in half-pint or smaller containers.

Paragraph (d)(2) - PAR 1151 PW-MIR Limits

PAR 1151 establishes a product-weighted maximum incremental reactivity (PW-MIR) limit for reducers and thinners and an effective date, as summarized in PAR 1151 – Table 2.

Table 3-2: Product- Weighted MIR VOC Content Limit for Reducers and Thinners and Effective Dates

	PW-MIR VOC Limit (g O_3/g VOC)	**Effective Date**
Reducers and Thinners	**1.50**	**1/1/2030**

Paragraph (d)(4) – Alternative VOC Content Limits for Color Coatings

In paragraph (d)(4), staff is proposing an alternative VOC content limit of 720 g/L for color coatings that are supplied in half-pint or smaller containers, provided that the coating does not contain more than 0.01 percent by weight of either pCBtF or t-BAc. This is intended to address smaller autobody shops that are still using solvent-based color coatings and this will provide additional time to transition to water-based alternatives. Shops will be able to comply with this alternative limit until January 1, 2030, as stated in the paragraph.

Paragraph (d)(5) – Alternative VOC Content Limits for Adhesion Promoters and Pretreatment Wash Primers

In paragraph (d)(5), staff is proposing alternative VOC content limits for adhesion promoters and pretreatment wash primers. Rather than complying with the otherwise applicable VOC content limits, coating manufacturers may elect to comply with the applicable PW-MIR limit summarized in PAR 1151 – Table 3.

Table 3-3: Alternative Product-Weighted MIR VOC Content Limits and Effective Dates

	PW-MIR VOC Limit (g O_3/g VOC)	**Effective Date**
Adhesion Promoters	**2.00**	**1/1/2028**
Pretreatment Wash Primers	**1.80**	**1/1/2028**

Paragraph (d)(6) – Sell-Through and Use-Through Provision for Alternative VOC Content Limits of Color Coatings

Paragraph (d)(6) includes the sell-through and use-through allowances for color coatings that are supplied in half-pint or smaller containers and that comply with the alternative VOC content limit pursuant to paragraph (d)(4). This paragraph clarifies that color coatings complying with the alternative VOC content limit pursuant to paragraph (d)(4) and that are manufactured prior to January 1, 2030, may be sold, supplied, or offered for sale up to January 1, 2032, and used until January 1, 2033.

Paragraph (d)(7) – Sell-Through and Use-Through Provision for VOC Content Limit Reductions

Paragraph (d)(7) includes the sell-through and use-through allowances for coating categories where there is a *decrease* in the allowed VOC limit. This paragraph clarifies that coatings manufactured to comply with the higher, Phase I VOC limit and prior to the Phase II effective date, can be sold for up to 24 months and used for up to 36 months after the VOC limit is decreased upon the Phase II effective date. Paragraph (d)(7) does not apply to the sell-through and use-through periods associated with the transition away from pCBtF and t-BAc-containing coatings to U.S. EPA National Rule coatings. These sell-through and use-through periods will be subject to the provisions in subparagraph (f)(8)(D), discussed later in the staff report.

Paragraph (d)(8) – Sell-Through and Use-Through Provision for Reducers or Thinners

Paragraph (d)(8) includes the sell-through and use-through allowances for reducers or thinners manufactured prior to the corresponding January 1, 2030, effective date of the PW-MIR limit. Reducers or thinners manufactured prior to this date may be sold, supplied, or offered for sale until January 1, 2032, and used until January 1, 2032. Paragraph (d)(8) does not apply to the sell-through and use-through periods associated with the transition away from pCBtF and t-BAc-containing coatings to coatings formulated to comply with the U.S. EPA National Rule VOC content limits.

Alternative Compliance Options [Subdivision (e)]

This subdivision contains the provisions for any person that chooses to comply with the provisions of paragraph (d)(1) by using an approved emission control system or an alternative emission control plan.

Subdivision (e) was previously a paragraph in the preceding subdivision and is now its own stand-alone subdivision. Staff moved this language for better readability and consistency. No changes were made to this language other than being moved to its own subdivision.

Prohibition of Possession, Specification, Sale or Use [Subdivision (f)]

This subdivision contains the provisions for any person that applies, possesses, solicits the use or application of, supplies, sells, offers for sale, markets, blends, packages, repackages or distributes automotive coatings for use within the South Coast AQMD.

Clauses (f)(2)(A)(iv) and (f)(3)(A)(iv) – PW-MIR Allowances

Clauses (f)(2)(A)(iv) and (f)(3)(A)(iv) clarify that a person can solicit from, specify, or require any other person to use, and can supply, sell, offer for sale, market, blend, package, repackage or distribute an automotive coating in South Coast AQMD that does not meet applicable VOC limits required by paragraph (d)(1) if the automotive coating otherwise complies with an applicable alternative PW-MIR limit in PAR 1151 – Table 3.

Paragraph (f)(7) – Carcinogenic Materials and Exempt Compounds

Paragraph (f)(7) was moved from Subdivision (d) to Subdivision (f) to streamline the rule and group all provisions that include prohibitions together in the same subdivision. Paragraph (f)(7) prohibits the manufacturing of regulated products for use in South Coast AQMD in which cadmium or hexavalent chromium. Staff added language to clarify that the manufacture, use, supply, sale, and offering for sale of a regulated product for use within South Coast AQMD in

which cadmium or hexavalent chromium is also prohibited. In addition, staff deleted the qualification that the cadmium or hexavalent chromium is used "as a pigment or as an agent to impart any property or characteristic to the automotive coatings." Carcinogenic materials should be limited regardless of their purpose in an automotive coating. Instead, PAR 1151 establishes a concentration limit for cadmium and hexavalent chromium that aligns with the limits established by the U.S. EPA's limits under the U.S. Resource Conservation and Recovery Act (RCRA).

The prohibition of using Group II exempts was moved from Subdivision (d) to Subdivision (f) to streamline the rule and group all provisions that include prohibitions together in the same subdivision. Currently, the rule prohibits the manufacture, sale, offer for sale, or distribution for use of any automotive coatings that contain any Group II exempt compounds within the South Coast AQMD. The amended prohibition language includes an upper concentration limit to account for potential trace levels of Group II exempts, established at 0.01 weight percent for all Group II exempts other than volatile methyl siloxanes (VMS). VMS are found in small, but non-negligible, amounts in some silicone-based coatings; therefore, staff included a 0.1 weigher percent upper concentration limit for VMS. In addition, PAR 1151 extends the prohibition to include pCBtF and t-BAc with an upper concentration limit of 0.01 weight percent. Manufactures can continue to sell coatings containing pCBtF and t-BAc manufactured prior to May 1, 2025, within the South Coast AQMD to allow to time transition away from those solvents. Coatings containing pCBtF and t-BAc that are manufactured prior to May 1, 2025, that are already in the supply chain, can be continued to be sold until May 1, 2026, and continued to be used until July 1, 2027. The following table provides a summary of the proposal.

Table 3-4: pCBtF and t-BAc Prohibition Timeline

Category	Prohibition Effective Date	Sell-through End Date	Use-through End Date
Color Coatings	November 1, 2025	November 1, 2026	January 1, 2028
All Other Coating Categories	May 1, 2025	May 1, 2026	July 1, 2027

PAR 1151 includes a longer phase-out period for color coatings to allow for end-user training. Most large autobody shops are currently using water-based color coatings and small shops can take advantage of the half-pint alternative VOC limit until the Phase II limits take effect. Medium-sized shops are still using solvent-based color coatings, and the half-pint containers will not work in the existing mixing equipment. Staff is providing a longer phase-out time to allow time for end-user training as the medium-sized autobody shops transition from solvent-based to water-based color coatings. Staff visited many shops that transitioned to water-based coatings over a decade ago. While they agree that water-based coatings are good products, training was needed to learn how to properly apply the coatings. Since the large shops already use water-based coatings and small shops will likely opt for the cheaper half-pint high-VOC coatings, staff does not anticipate there will be a lot of pCBtF-based color coatings manufactured for use in the South Coast AQMD after May 1, 2025.

Recordkeeping Requirements [Subdivision (g)]

Subdivision (g) outlines the recordkeeping requirements including maintaining records for VOC emissions pursuant to Rule 109 – Recordkeeping for Volatile Organic Compound Emissions, emission control systems, and for any person who supplies, sells, offers for sale, markets, blends, packages, repackages or distributes any automotive coatings for use within South Coast AQMD that do not meet the applicable VOC limits but are intended for use at a facility that utilizes an approved emission control system; a facility that operates in accordance with an approved alternative emissions control plan; or are exempt under subdivision (k).

This subdivision was restructured to streamline and better organize the rule provisions. Most of the changes are minor, defined terms were capitalized, and the existing Rule 1151 recordkeeping clause (e)(3)(A)(iv) was moved to paragraph (g)(3).

Administrative and Reporting Requirements for Automotive Coating Manufacturers [Subdivision (h)]

This subdivision outlines the compliance statement, labeling, and reporting requirements for automotive coating manufacturers.

Staff is proposing to require coating manufactures to add PW-MIR labeling for reducers and thinners, applicable adhesion promoters and pretreatment wash primers, as well as the date of manufacture for all regulated products. Manufacturers will also be required to submit a General Quantity and Emission Report (QER) to South Coast AQMD according to the proposed schedule in PAR 1151 Table 5.

Subparagraph (h)(2)– Labeling Requirements

Subparagraph (h)(2)(A) requires any automotive coating and automotive coating component to display the applicable automotive category on the label.

Subparagraph (h)(2)(B) requires any automotive coating and automotive coating component to display both the actual VOC and regulatory VOC content on the label in grams of VOC per liter of material and in grams of VOC per liter of material, less water and exempt compounds.

Subparagraph (h)(2)(C) requires any manufacturer of an adhesion promoter or pretreatment wash primer who elects to comply with the PW-MIR limit in paragraph (d)(5) in lieu of mass limit in grams of VOC per liter in paragraph (d)(1), shall display the PW-MIR VOC content on the product label.

Subparagraph (h)(2)(D) requires any automotive coatings and automotive coatings components to display the date of manufacture or a code indicating the date of manufacture. If the manufacturer uses a code that does not clearly indicate the date of manufacture, they must file an explanation of the date code with the Executive Officer. These labeling requirements will be effective beginning one year after rule adoption.

Paragraph (h)(3) – Labeling Requirements for Solvent Manufacturers

Paragraph (h)(3) requires any reducers or thinners to display the PW-MIR on the label on and after January 1, 2030.

Paragraph (h)(4) and (h)(5) – General Quantity and Emission Report (QER)

Paragraphs (h)(4) and (h)(5) specify the information required to be submitted by automotive coating manufacturers and/or private labelers of regulated products sold into or within the South Coast AQMD, and the reporting timeline. Some key parameters required to be reported include the product manufacturer, name and code, applicable Rule 1151 category, VOC content, whether the coating is solvent-based or water-based, PW-MIR, and volumes sold into or within South Coast AQMD. Table 3-4 provides a summary of the reporting deadlines.

Table 3-5: Reporting Timeline

Reporting Deadlines	**Reported Years**
Manufacturers & Private Labelers	
September 1, 2030	2028, 2029
September 1, 2035	2033, 2034
September 1, 2040	2038, 2039

For a coating that falls under multiple categories, the category with the most restrictive VOC content pursuant to paragraph (d)(3) shall be listed in the general quantity and emissions report. In addition, any automotive coating that contains water or uses water as a carrier shall be considered water-based or water-based in the general quantity and emissions report. The following example demonstrates the acceptable QER reporting format:

QER Example:

Reporting the quantity and emissions of multicomponent coatings shall be reported as ready-to-spray with maximum actual VOC and maximum regulatory VOC. It should be reported as follows:

A gloss clear coating contains the following components:

Table 3-6: Multicomponent Coating Example

	Maximum Regulatory VOC (g/L)	**Maximum Actual VOC (g/L)**
Part A	400	100
Part B	600	550
Thinner	800	800

The coating, as applied, has a Regulatory VOC of 250 g/L and an Actual VOC of 150 g/L. The QER should be completed as follows:

Table 3-7: QER Example

Product Name	Coating Category	Water-based or Solvent-Based	Single or Multi-Component	VOC of Coating, As Applied (g/L)	VOC of Material, As Applied (g/L)	Total Annual Volume (gal) Sold In South Coast AQMD
Gloss Clear	Gloss Clear Coating	S/B	M	250	150	1,000
Thinner	Reducer/ Thinner	S/B	N/A	800	800	500

Test Methods [Subdivision (i)]

This provision specifies the approved test methods for determining the VOC content of automotive coatings, to quantify amounts of exempt perfluorocarbon compounds in automotive coatings, metal content of automotive coatings, acid content of pretreatment wash primers, gloss determination of automotive coatings, transfer efficiency of alternative automotive coatings application methods, and efficiency of emission control systems. The structure and numbering has been amended and streamlined; however, the content remains unchanged. The reference to the U.S. EPA method for capture efficiency in clause (i)(7)(A)(i) was removed because that method is no longer an active test method.

Rule 442 Applicability [Subdivision (j)]

This provision clarifies that any automotive coating, automotive coating operation, or facility that is exempt pursuant to subdivision (k) from all or a portion of the VOC limits of subdivision (d), shall comply with Rule 442 – Usage of Solvents. This subdivision was not changed other than to capitalize defined terms and amend a reference that changed.

Exemptions [Subdivision (k)]

This provision provides conditional exemptions to various subdivisions of this rule. Staff is not proposing any removals from this subdivision.

Subparagraph (k)(2(B) – Automotive Coating Training Center

Subparagraph (k)(2)(B) outlines the timeframe during which automotive training centers owned and operated by automotive coating manufacturers that are used for educational training purposes shall be conditionally exempt from the prohibition of pCBtF and t-BAc in paragraph (f)(7).

The intent is to address automotive coating training centers that are located within the South Coast AQMD who train employees that are employed at auto body shops located in Air Districts outside of South Coast AQMD's jurisdiction. Other local Air Districts within California may have yet to prohibit the use of pCBtF and t-BAc in their jurisdiction; these Air Districts will continue to use

automotive coatings that contain pCBtF and t-BAc. Staff is proposing a period of ten years from the date of rule adoption to allow automotive training centers to use coatings that contain pCBtF and t-BAc.

Paragraph (k)(5) – Phase I Product Labeling

Paragraph (k)(5) outlines the timeframe during which automotive coatings formulated to meet Phase I VOC content limits shall be exempt from the labeling requirements of paragraph (h)(2). Staff is proposing a period of one year from the date of rule adoption during which automotive coating manufacturers may transition U.S. National Rule products into South Coast AQMD without having to re-label products before doing so. The intention of this exemption period is to more rapidly transition away from pCBtF and t-BAc-containing products upon rule adoption.

CHAPTER 4: IMPACT ASSESSMENT

Emission Inventory

The emission inventory for the proposed rule was determined by using the 2002 CARB Automotive Refinishing Survey, California population growth data from the U.S. Census, and VOC content and sales data from the South Coast AQMD Coating Manufacturer Survey. According to the 2002 CARB Automotive Refinishing Survey, the total volume of automotive coatings from all categories was 3,685,636 gallons with a population of approximately 33.8 million people in the state of California based on U.S. census data published on April 1, 2000. The U.S. Census data published on April 1, 2020, reported that the population of California increased by approximately 15 percent to approximately 39.5 million people and, as a result, staff estimated that automotive coatings usage also increased by approximately 15 percent to a total volume of 4,574,991 gallons in 2021 in California. Since South Coast AQMD accounts for nearly 46 percent of the California population, the total volume used was also estimated to be approximately 46 percent of the total volume at approximately 2.1 million gallons. Manufacturers also reported percent sales by category in the South Coast AQMD survey which was applied to the total usage volume estimated in the South Coast AQMD. While VOC limits are based on the regulatory VOC, which removes water and exempts from the numerator and denominator, emissions are calculated based on the actual VOCs. The regulatory VOC is the VOC based on the volume of solids in the coating and estimates the amount of VOC emitted from painting a certain square footage. This calculation was developed by the U.S. EPA to address potential lowering of solids to comply with VOC regulations resulting in the need for additional layers of coating. The actual VOC represents the VOC content in a can of paint which is the metric used for emission baselines. There is not a direct correlation between the regulatory and actual VOC from coating to coating, if will vary depending on the amount and type of exempt solvent or water used in the formulation. For the emissions calculations for PAR 1151, staff estimated the actual VOC of the coatings based on coatings with a similar regulatory VOC as reported in the survey data provided by the automotive coating manufacturers.

Based on staff's proposal, the baseline emission for the PAR 1151 can be separated into current Limits (2021), Phase I Limits, and Phase II Limits. The baseline emissions are 2.47, 7.29, and 2.28 respectively. The following table lists the associated emissions by category for the respective phases.

Table 4-1: Estimated VOC Emission Inventory by Category for Each Phase

Emission Category	2021 Emissions (tpd)	Phase I Emissions (tpd)	Phase II Emissions (tpd)
Base Coatings			
Color Coating	0.73	0.73	0.46
Tinted Mid-Coat	0.003	0.01	0.0028
Clear Coatings			
Gloss Clear Coating	1.09	3.92	1.09
Matte-Clear Coating	0.006	0.02	0.02
Primers			
Pretreatment Wash Primer	0.08	0.21	0.08
Epoxy Primer	0.003	0.02	0.005
Primer Sealer	0.01	0.06	0.01
Primer Surfacer	0.23	1.8	0.23
Other Coating Categories			
Adhesion Promoter	0.04	0.12	0.10
Single-Stage Coating	0.08	0.2	0.08
Temporary Protective Coating	0	0	0
Truck Bedliner Coating	0.13	0.13	0.13
Underbody Coating	0.004	0.004	0.004
Uniform Finish Coating	0.07	0.07	0.07
Any Other Coating Type	0	0	0
Total PAR 1151	**2.47**	**7.29**	**2.28**

Control Technology

Compliance with PAR 1151 is expected to be met through 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 to meet the VOC limits in PAR 1151. For certain categories, there are existing products that meet the proposed lower VOC content limits; therefore, product reformulation is technically feasible. Some end-users may comply with the rule using alternative options such as control devices (e.g., emission collection systems or thermal oxidizer). The latter options may be cost prohibitive for most refinishing facilities, so it is anticipated that most will comply using lower VOC products in the future.

Emission Reductions

Based on the technology assessment, which includes staff discussions with stakeholders and analyzing the South Coast AQMD automotive coating manufacturer survey data as well as product data sheets, staff is proposing updated VOC content limits for six existing automotive coating categories and four proposed new automotive coating categories. Staff is proposing an effective date of January 1, 2028, for all but four automotive coating categories: gloss clear coatings, color coatings, metallic color coatings, and tinted mid-coats, which will have an effective date of January 1, 2030, to provide the necessary additional time to reformulate these coatings to meet the proposed Phase II VOC content limits.

Staff is proposing to maintain the higher interim Phase I limit for matte clear coatings in Phase II to accommodate specific challenges and requirements for the category. The VOC limits are presented in Table 4-2; the delayed and foregone emissions, and emission reductions are presented in Table 4-3.

Table 4-2: Proposed Phase I and Phase II VOC Limits by Category

Automotive Coating Category	Current Limits	Phase I Limits	Phase II Limits	Phase II Effective Date
Base Coatings				
Color Coating	420	420	250	1/1/2030
Tinted Mid-Coat	420	750	250	1/1/2030
Clear Coatings				
Gloss Clear Coating	250	520	250	1/1/2030
Matte-Clear Coating	250	550		
Primers				
Pretreatment Wash Primer	660	780	660	1/1/2028
Epoxy Primer	250	580	340	1/1/2028
Primer Sealer	250	550	250	1/1/2029
Primer Surfacer	250	580	250	1/1/2029
Other Coating Categories				
Adhesion Promoter	540	840	720	1/1/2028
Single-Stage Coating	340	600	340	1/1/2028
Temporary Protective Coating	60	60	60	-
Truck Bedliner Coating	310	310	310	-
Underbody Coating	430	430	430	-
Uniform Finish Coating	540	540	540	-
Any Other Coating Type	250	250	250	-

Table 4-3: Temporary Emission Reductions Forgone and Final Emission Reductions by Category

Automotive Coating Category	Current Emissions	Phase I Emissions	Phase II Emissions	Phase II Effective Date	Forgone Emission Reductions (tpd)
Base Coatings					
Color Coating	0.33	0.33	0.19	1/1/2030	(0.14)
Metallics Color Coating	0.40	0.40	0.27	1/1/2030	(0.13)
Tinted Mid-Coat	0.003	0.01	0.0028	1/1/2030	(0.0002)
Clear Coatings					
Gloss Clear Coating	1.09	3.92	1.09	1/1/2030	0
Matte-Clear Coating	0.003	0.02	0.02	N/A	0.017
Primers					
Pretreatment Wash Primer	0.08	0.21	0.08	1/1/2028	0
Epoxy Primer	0.003	0.02	0.005	1/1/2028	0.002
Primer Sealer	0.01	0.06	0.01	1/1/2029	0
Primer Surfacer	0.23	1.8	0.23	1/1/2029	0
Other Coating Categories					
Adhesion Promoter	0.04	0.12	0.10	1/1/2028	0.006
Single-Stage Costings	0.08	0.2	0.08	1/1/2028	0
Temporary Protective Coating	0	0	0	N/A	0
Truck Bedliner Coating	0.13	0.13	0.13	N/A	0
Underbody Coating	0.004	0.004	0.004	N/A	0
Uniform Finish Coating	0.07	0.07	0.07	N/A	0
Any Other Coating Type	0	0	0	N/A	0
Total Emissions (tpd)	2.47	7.29	2.28		-
PAR 1151 Emissions Change (tpd)	**0**	**4.82**	**(5.01)**		**(0.19)**

The temporary forgone emissions from current limits to Phase I is approximately 4.82 tpd and emission reductions from Phase I to Phase II emissions will be approximately 5.01 tpd; at full implementation the total overall emission reduction will be 0.19 tpd for the proposed rule amendments. The temporary increase from the current VOC limits to the Phase I limits is being proposed to phase out pCBtF and t-BAc as quickly as possible to protect public health, which aligns with the South Coast AQMD Stationary Source Committee's directive to prioritize toxicity over VOC reductions.

Cost-Effectiveness and Incremental Cost-Effectiveness

Cost-Effectiveness

The cost and cost-effectiveness analysis are based on the cost difference between the estimated cost of coatings formulated to meet the Phase II VOC limits and coatings formulated to meet the Phase I VOC limits. The cost of the Phase II compliant coatings is assumed to be ten percent more than Phase I compliant coatings. The cost-effectiveness analysis was conducted for each coating category using the estimated emission reduction from Phase I to Phase II VOC limits. Staff did not include the cost savings associated with the transition from the current pCBtF and t-Bac-containing lower-VOC coatings to coatings that meet the Phase I VOC limits. Cost savings will occur from the transition to the higher VOC coatings meeting the Phase I limit due to the high cost of pCBtF.

Phase I limits for all categories will be adjusted back to current or near-current levels in Phase II. However, there are five coating categories where the VOC limits will not change and thus a cost-effective and incremental cost-effectiveness analysis was not conducted. The five categories are: temporary protective coatings, truck bed liner coatings, underbody coatings, uniform finish coatings, and "any other" coating type. Staff also proposed to maintain the Phase I interim limit for the metallic color coating category since a higher VOC limit is needed to achieve a metallic appearance, so a cost-effectiveness analysis was not conducted for this category.

Staff gathered costs from various sources which included the manufacturers, online research, and vendor quotes. Certain coating categories such as color coats currently have water-based low-VOC options; in this case, staff relied on actual cost data since it is already available. For categories where costs are not available, staff assumed a ten percent increase in cost. This difference in cost is used in the cost-effectiveness analysis.

Table 4-4: Cost-Effectiveness for Each Automotive Coating Category

Automotive Coating Category	Cost-Effectiveness ($ per ton VOC reduced)
Base Coatings	
Color Coating	$24,000
Metallics Color Coating	$18,000
Tinted Mid-Coat	$8,000
Clear Coatings	
Gloss Clear Coating	$39,000
Matte Clear Coating	$600,000
Primers	
Pretreatment Wash Primer	$7,000
Epoxy Primer	$11,000
Primer Sealer	$$22,000
Primer Surfacer	$23,000
Other Coating Categories	
Adhesion Promoter	$30,000
Single-Stage Costings	$19,000
Temporary Protective Coating	N/A
Truck Bedliner Coating	N/A
Underbody Coating	N/A
Uniform Finish Coating	N/A
Any Other Coating Type	N/A

Consistent with the South Coast AQMD cost-effectiveness methodology, the discount cash flow method of analysis is used to calculate the cost-effectiveness for PAR 1151 for Phase I to Phase II emission limits. The cost-effectiveness for the proposed amendments is calculated by the following equation using clearcoat category as an example.

CE = [Capital Cost + (1.0 x Annual O& M)]/(Annual Emission Reductions x 1)

Where,

Capital Cost	=	Product cost difference between Phase II and I
1.0	=	Present value factor for 1 year at 4% interest
1	=	Assumed Productive Life of the Equipment in years

The cost-effectiveness for clear coat category is:

CE = [($39,906,099) + ($0* 1.0)]/(398*1)

CE = ($39,906,099)/398 tons
CE = $38,656 per ton of VOC Reduced

Incremental Cost-Effectiveness

There is no established cost threshold for incremental cost-effectiveness; however, under Health and Safety Code Section 40920.6, South Coast AQMD is required to perform an incremental cost analysis when adopting a Best Available Retrofit Control Technology (BARCT) rule or feasible measure required by the California Clean Air Act. To perform this analysis, South Coast AQMD must (1) identify one or more control options achieving the emission reduction objectives for the proposed amended rule, (2) determine the cost-effectiveness for each option, and (3) calculate the incremental cost-effectiveness for each option. To determine incremental costs, South Coast AQMD must, pursuant to Health and Safety Code Section 40920.6(a)(3), "calculate the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control option as compared to the next less expensive control option." Staff conducted a cost-effectiveness assessment for each automotive coating category and determined that it was cost-effective for most categories to achieve the lower Phase II limits. Staff's evaluation also concluded that a thermal oxidizer with low-NOx burner is the next stringent level of control. This add-on VOC control option controls emissions at the facility level and can achieve up to 95 percent destruction efficiency, yielding additional VOC reductions; this type of control is considered Best Available Control Technology (BACT). Cost of add-on control will vary based on facility size and the size of the unit needed. Staff assumed an average spray booth size of 30'W x 15'W x 13'H, flow rate of 15,000 scfm, and operation of 12 hours a day for 5 days per week. The rated heat input necessary is approximately 1.25 MMBtu/hr with an annual operating cost of approximately $91,000 per year with an equipment life of 25 years. Based on vendor quotes and compiled costs, the capital and installation costs are estimated to be approximately $275,000. There are approximately 3,000 refinishing facilities operating spray booths within the South Coast AQMD. Therefore, the cost to equip all spray booths with add-on control is estimated to be $825 million. The additional emission reductions are assuming a 95 percent capture efficiency and a 95 percent destruction efficiency across the control device. The more stringent add-on control option yields an additional emission reduction of 2.4 tons per day or 876 tons per year.

Using the discounted cash-flow method the annual cost of this add-on control option, assuming 25 years life for the equipment, is calculated using the following equation:

Annual Cost of Control Option = [Capital Cost + (15.62 x Annual O& M)]/(876 x 25)

Where,

15.62 = Present value factor at 25 years and 4% interest

Capital Cost for this control option= $825,000,000

Annual O & M (calculated based on 1.25 MMBtu/hr and fuel usage using SoCal Gas June 2024 rates) = $272,160,000

Annual Cost of Control Option = [$825,000,000 + (15.622) x 272,160,000)]/(876 x25)

= $230,000 per ton of additional VOC reduced

Socioeconomic Impact Assessment

A socioeconomic impact assessment has been conducted and released for public review and comment as a separate document at least 30 days prior to the South Coast AQMD Governing Board Hearing for PAR 1151, which is scheduled for November 1, 2024 (subject to change).

California Environmental Quality Act (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) and South Coast AQMD's certified regulatory program (Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l); codified in South Coast AQMD Rule 110), the South Coast AQMD, as lead agency, reviewed the proposed project (PAR 1151) and determined that: 1) PAR 1151 implements the 2022 AQMP Control Measure CTS-01 – Further Emission Reduction from Coatings, Solvents, Adhesives; and 2) the Final Program Environmental Impact Report (EIR) for the 2022 AQMP evaluated Control Measure CTS-01 and analyzed its potential environmental impacts. Since PAR 1151 does not involve any new or modified impacts when compared to what was previously analyzed in the Final Program EIR for Control Measure CTS-01, PAR 1151 qualifies as a later activity within the scope of the program approved earlier for the 2022 AQMP per CEQA Guidelines 15168 (c), and the Final Program EIR for the 2022 AQMP adequately describes the activity for the purposes of CEQA such that no new environmental document will be required. The analysis supporting this conclusion is provided in Appendix A of this Staff Report.

Draft Findings Under The Health and Safety Code

Health and Safety Code Section 40727 requires that prior to adopting, amending, or repealing a rule or regulation, the South Coast AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, nonduplication, and reference, as defined in that section, based on relevant information presented at the Public Hearing, this written analysis, and the rulemaking record. The draft findings are as follows:

Necessity – PAR 1151 is needed to phase out two exempt compounds, pCBtF and t-BAc, to address their toxic risk as by proposed by 2022 AQMP Control Measure CTS-01.

Authority - The South Coast AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702 and 41508.

Clarity - PAR 1151 is written and displayed so that the meaning can be easily understood by persons directly affected by it.

Consistency - PAR 1151 is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or federal and state regulations.

Nonduplication - PAR 1151 does not impose the same requirement as any existing state or federal regulation, and the proposed amendments are necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

Reference - In amending Rule 1151, the South Coast AQMD Governing Board references the following statutes which the South Coast AQMD hereby implements, interprets, or makes specific: Health and Safety Code Sections 40001, 40440, and 40702.

Comparative Analysis

Under Health and Safety Code Section 40727.2, the South Coast AQMD is required to perform a comparative analysis when adopting, amending, or repealing a rule or regulation. The comparative analysis is relative to existing federal requirements, existing or proposed South Coast AQMD rules and air pollution control requirements and guidelines which are applicable to VOC regulations for automotive coatings. There are no other existing or proposed South Coat AQMD rules that directly apply to the same source type (non-assembly line motor vehicle and mobile equipment coating operations). The California Air Resource Board provides suggested VOC standards in the form of a Suggested Control Measure (SCM) but has no regulatory requirements; the SCM serve as technical support document to promote consistency and uniformity among California Air District rules which most, if not all, of the California Air Districts have adopted. Staff evaluated six of the larger California Air Districts air districts with similar automotive coating rules and will refer to them collectively as California Air Districts in the table below. The California Air Districts evaluated are: Antelope Valley AQMD, Bay Area AQMD, Eastern Kern APCD, Feather River AQMD, San Diego County APCD, and Santa Barbara County APCD. The comparative analysis for PAR 1151 can be found in Table 4-5.

Table 4-5: Comparative Analysis of PAR 1151

Rule Element	PAR 1151	CARB Suggested Control Measure (SCM) for Automotive Coatings	U.S. EPA, 40 CFR Parts 59, National Volatile Organic Compound Emission Standards for Automobile Refinish Coatings	California Air Districts
Applicability	• Any person who supplies, sells, offers for sale, markets, manufactures, blends, packages, repackages, possesses, or distributes any Automotive Coating, Automotive Coating Component, or associated solvent for use within the South Coast AQMD, as well as any person who uses, applies, or solicits the use or application of any Automotive Coating, Automotive Coating Component, or associated solvent within the South Coast AQMD.	• Applies to anyone who sells, supplies, offers for sale, or manufacturers any automotive coatings for use within the applicable California Air District • Technical support document to promote consistency and uniformity among California Air District rules • All automotive coatings that are applied to motor vehicles and mobile equipment	• Manufacturers or importers of automobile refinish coatings or coating components manufactured for sale or distribution in the U.S.	• Similar to CARB SCM
Requirements	• VOC limits for automotive coatings categories: undercoats, basecoats, clear coats, primers, and other automotive coating categories • Future effective date for lower Phase II Limits • PW-MIR limit for reducers/thinners • Alternative VOC limit for color coatings supplied in half pint or smaller containers • Alternative VOC limit for adhesion promoters and prewash treatment primers • Most restrictive clause for products subject to multiple VOC limits	• VOC limits for the main automotive coating categories which include primers, color coatings, and clear coats	• VOC limits for automotive coatings categories pretreatment wash primers, primers/primer surfacers, primer sealers, single stage/two topcoat, topcoats of two or more stages, multi-colored topcoats, and specialty coatings • National Rule standards combines and averages basecoat and clear coats as part of topcoats whereas PAR 1151 regulates as separate categories	• Similar to CARB SCM • BAAQMD higher limit for single stage: 420 g/L • Eastern Kern APCD lower limit for truck bed liners at 200 g/L

Rule Element	PAR 1151	CARB Suggested Control Measure (SCM) for Automotive Coatings	U.S. EPA, 40 CFR Parts 59, National Volatile Organic Compound Emission Standards for Automobile Refinish Coatings	California Air Districts
	• Sell through and use through for products on shelf prior to effective date of rule • Minimum transfer efficiency requirements • Alternative Compliance option using emission control system			
Prohibition	• Prohibition of sale of products that do not meet VOC content limit • Prohibition of use of products containing pCBtF and t-BAc at a future date • Prohibition of sale and use of products containing certain exempt compounds • Prohibition of sale and use of carcinogenic material • Prohibition of sale and use of products containing pCBtF and t-Bac at a future date	• Prohibition of possession provision that prohibits any person from having any automotive coating or solvents that do not comply with the VOC limits	• Prohibition of sale of products that do not meet VOC content limit in Table of Standards	• Prohibition of sale of products that do not meet VOC content limit in Table of Standards
Recordkeeping	Daily	None	None	Daily
Administrative	• Container labeling of VOC content and date of manufacture • Sales and quantity reporting from manufacturers, private labelers, and distribution centers based on reporting timeline specified	• Container labeling of VOC content and date of manufacture • • Sales reporting from manufacturers, private labelers, big box retailers, and distribution centers • • Annual reporting of sales utilizing 55-gallon per year	• Container labeling of VOC content and date of manufacture or code indicating such date	• Container labeling of VOC content and date of manufacture or code indicating such date

Rule Element	PAR 1151	CARB Suggested Control Measure (SCM) for Automotive Coatings	U.S. EPA, 40 CFR Parts 59, National Volatile Organic Compound Emission Standards for Automobile Refinish Coatings	California Air Districts
Exemptions	• Exemption for automotive coatings subject to other source specific rules • Automotive coating products packaged and applied using a propellant or aerosol • Automotive coating products supplied or sold in 0.5 ounces or smaller containers • Exemption for automotive training centers until 10 years after rule adoption • Labeling requirements for Phase I for one year after rule adoption.	• Aerosol consumer products and aerosol coatings such as spray paints • Original equipment manufacturer coatings that are covered by separate district rules • Products manufactured for use outside of California air districts • Exempts tertiary butyl acetate (t-Bac) from the VOC definition	• None	• Aerosol costing products • Coating applied at training centers for educational purposes • Coatings located at prototype manufacturing facilities • BAAQMD Exemption for touch up operations, • Eastern Kern County APCD and Butte County : Automotive coating products supplied or sold in 0.5 ounces or smaller containers

APPENDIX A: DETAILED CEQA ANALYSIS

Introduction

The California Environmental Quality Act (CEQA) is comprised of Public Resources Code Section 21000 et seq. and the CEQA Guidelines which are codified at Title 14 California Code of Regulations, Section 15000 et seq. CEQA requires the evaluation of all potential adverse environmental impacts of proposed projects and the identification and implementation of methods to reduce or avoid significant adverse environmental impacts of these projects, if feasible. [Public Resources Code Section 21061.1 and CEQA Guidelines Section 15364 defining feasible]. The purpose of the CEQA process is to inform decision makers, public agencies, and interested parties of potential adverse environmental impacts that could result from implementing a proposed project and to identify feasible mitigation measures or alternatives, when an impact is significant.

Control Measure CTS-01 of the 2022 AQMP seeks volatile organic compound (VOC) emission reductions by focusing on select coating, adhesive, solvent, and sealant categories by further limiting the allowable VOC content in formulations or incentivizing the use of super-compliant technologies. Categories to be considered include but are not limited to, metal part and product coatings, automotive refinishing coatings, adhesives, and sealants. Use of super-compliant zero- and low-VOC materials, such as powder coating, aqueous coatings, and some ultraviolet light, electron beam, and light emitting diode cured coatings, eliminate or substantially reduce emissions compared to similar products that are not zero- or low-VOC products. There are several product categories where these materials perform as well as traditional products and are widely available in the market. This control measure is anticipated to be accomplished with a multi-phase adoption and implementation schedule.

PAR 1151 affects approximately 3,000 automotive refinishing facilities in the South Coast AQMD jurisdiction and is designed to implement Control Measure CTS-01 of the 2022 AQMP. PAR 1151includes a future effective prohibition on the use of para-chlorobenzotrifluoride (pCBtF) and *tert*-Butyl Acetate (t-BAc), two solvents that are exempt from the definition of a VOC but that have been deemed as potential carcinogens by the Office of Environmental Health Hazard Assessment (OEHHA). PAR 1151 proposes a phase-out timeline for pCBtF and t-BAc, along with a commitment to determine the feasibility of emission reductions through conducting technology assessments and seeking input from stakeholders.

To expedite the transition away from pCBtF and t-BAc, PAR 1151 proposes a temporary period of a few years, referred to herein as Phase I, a three to five year period which will be effective upon rule adoption, to allow coatings and primers which are formulated to meet the National U.S. Environmental Protection Agency (U.S. EPA) VOC content limits to be used in the South Coast AQMD, provided the formulations do not include pCBtF or t-BAc. The transition away from pCBtF- and t-BAc-containing coatings will result in a temporary increase in VOC emissions of 4.82 tons per day (tpd) (equivalent to 9,640 pounds per day) during the Phase I period. The Phase II period will begin on January 1, 2028, for a majority of coating categories, and during this period, facilities will begin to transition away from the higher-VOC coatings to reformulated low-VOC coatings that do not contain pCBtF or t-BAc. This transition to Phase II will result in a permanent decrease in VOC emissions of 0.19 tpd (equivalent to 380 pounds per day). To address the temporary increase in VOC emissions during Phase I (referred to herein as temporary VOC emission reductions foregone), the 2022 AQMP has a State Implementation Plan (SIP) set-aside account which reserved 4.0 tpd of VOC emissions specifically designated for the potential

technology assessment and phase-out of toxics for VOC-based rules as targeted by Control Measure CTS-01. Since its adoption, the amount of VOC reserves in the SIP set-aside account was revised to 3.0 tpd. Nonetheless, any temporary VOC emission reductions foregone for amending the various VOC-based rules, as is the case for PAR 1151, will be offset by the VOC emission reduction reserves in the set-aside account. Also, it is important to emphasize that PAR 1151 will result in permanently lowering the toxicity of the coatings which will protect public health. In addition to PAR 1151, other opportunities for reducing VOC emissions from product formulations are expected to occur over the long-term due to future VOC limits that are currently in South Coast AQMD Rules 1113 – Architectural Coatings, and 1168 – Adhesive and Sealant Applications, that have not yet gone into effect. Thus, region-wide, VOC emissions will be reduced even with the temporary VOC emission reductions foregone during Phase I of implementing PAR 1151.

The 2022 AQMP[5] was considered a "project" as defined by CEQA Guidelines Section 15378, and the South Coast AQMD was lead agency under CEQA because it was the "public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect upon the environment." [Public Resources Code Section 21067]. Further, since the South Coast AQMD Governing Board had the primary responsibility for approving the entirety of the project, the South Coast AQMD was the most appropriate public agency to act as lead agency for the project. [CEQA Guidelines Section 15051(b)].

The 2022 AQMP: 1) had environmental impacts which were evaluated in a Final Program Environmental Impact Report (Program EIR); and 2) was a discretionary action which was considered and approved by the South Coast AQMD Governing Board.

Therefore, the proposed project, PAR 1151, is integrally related to the 2022 AQMP for which a previous environmental analysis has been prepared in the Final Program EIR for 2022 AQMP, which was certified by the South Coast AQMD Governing Board on December 2, 2022.[6]

The Final Program EIR for the 2022 AQMP identified potentially significant impacts, and mitigation measures were adopted. Further, since mitigation measures were adopted for the 2022 AQMP, a Mitigation, Monitoring, and Reporting Plan for the 2022 AQMP, pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines 15097 was also required and adopted.

Further, because the Final Program EIR concluded that the 2022 AQMP will have potentially significant and unavoidable adverse impacts on the environment, Findings were made pursuant to CEQA Guidelines Section 15091, and a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093 was adopted.

The 2022 AQMP, along with the December 2022 Final Program EIR for the 2022 AQMP (State Clearinghouse No. 2022050287) and its corresponding Findings, Statement of Overriding Considerations, and Mitigation, Monitoring, and Reporting Plan, upon which the analysis of the

[5] South Coast AQMD, 2022 Air Quality Management Plan, December 2022. https://www.aqmd.gov/home/air-quality/air-quality-management-plans/air-quality-mgt-plan

[6] South Coast AQMD, Final Program Environmental Impact Report for the 2022 Air Quality Management Plan, December 2022. https://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2022/2022-aqmp-final-peir.pdf

PAR 1151 relies, are incorporated by reference pursuant to CEQA Guidelines Section 15150 and are available from the South Coast AQMD's website at:

December 2022 Final Program EIR for the 2022 AQMP
Master webpage: https://www.aqmd.gov/home/research/documents-reports/lead-agency-scaqmd-projects/south-coast-aqmd-projects---year-2022

> **December 2022 Final Program EIR for the 2022 AQMP (including Appendices)**
> https://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2022/2022-aqmp-final-peir.pdf
>
> **Findings, Statement of Overriding Considerations, and Mitigation Monitoring and Reporting Plan:** https://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2022/2022-aqmp-attachment1toresolution.pdf
>
> **2022 AQMP:** https://www.aqmd.gov/home/air-quality/air-quality-management-plans/air-quality-mgt-plan

Copies of these documents may also be obtained from:

> Derrick Alatorre, Deputy Executive Officer/Public Advisor
> South Coast AQMD 21865 Copley Drive, Diamond Bar, CA 91765
> Phone: (909) 396-2432
> Email: publicadvisor@aqmd.gov

A Program EIR was considered to be the appropriate document for the 2022 AQMP pursuant to CEQA Guidelines Section 15168(a)(3) because the 2022 AQMP constituted a series of actions that can be characterized as one large project in connection with the issuance of rules, regulations, plans, or other general criteria required to govern the conduct of a continuing program. In addition, the use of a Program EIR had the following advantages by:

- Providing an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action;
- Ensuring a consideration of cumulative impacts that might be slighted in a case-by-case analysis;
- Avoiding duplicative reconsideration of basic policy considerations;
- Allowing consideration of broad policy alternatives and program-wide mitigation measures at an early time when the Lead Agency has greater flexibility to deal with basic problems of cumulative impacts; and
- Allowing its use with a later activity if the later activity is within the scope of the project analyzed in the Program EIR without requiring further environmental documents.

Because PAR 1151 implements Control Measure CTS-01 which was adopted in the 2022 AQMP, this appendix examines whether PAR 1151 qualifies as a later activity within the scope of the analyses in the Final Program EIR for the 2022 AQMP, pursuant to CEQA Guidelines 15168(c) – Use with Later Activities.

As such, this appendix: 1) compares the proposed later activity of PAR 1151 with the previously approved program, Control Measure CTS-01 which was adopted in the 2022 AQMP; 2) summarizes the environmental impacts analyzed in the Final Program EIR for the 2022 AQMP for Control Measure CTS-01; 3) identifies the differences, if any, between the analysis of the environmental impacts in the Final Program EIR for 2022 AQMP for Control Measure CTS-01 and PAR 1151 and as needed, identifies any other impact areas which may require further analysis; and 4) considers the evidence and determines whether: a) PAR 1151 is a later activity within the scope of the program approved earlier for the 2022 AQMP; and b) the Final Program EIR for the 2022 AQMP adequately describes the later activity of PAR 1151 for the purposes of CEQA such that no new environmental document will be required.

Summary Of Environmental Impacts

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 resources involved; physical changes; alterations of ecological systems; health and safety impacts caused by physical changes; and other aspects of the resources involved 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 [codified in Title 14 California Code of Regulations Section 15000 et seq]. Under the CEQA Guidelines Appendix G: Environmental Checklist Form, there are 20 environmental topic areas categories in which potential adverse impacts from a project are evaluated. The South Coast AQMD, as lead agency, has taken into consideration the environmental checklist questions in Appendix G, but has reorganized the contents to consolidate the environmental topic areas to avoid repetition. For example, South Coast AQMD's customized the environmental checklist by: 1) combining the topics of "air quality" and "greenhouse gas emissions" into one section; 2) combining the topics of "cultural resources" and "tribal cultural resources" into one section; 3) separating the "hazards and hazardous materials" topic into two sections: "hazards and hazardous materials" and "solid and hazardous waste"; and 4) distributing the questions from the topic of "utilities/service systems" into other more specific 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, noncompliance 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).

The CEQA Guidelines also includes provisions for the preparation of Program EIRs in connection with the issuance of plans, such as the 2022 AQMP, to govern the conduct of a continuing program, including adoptions of broad policy programs as distinguished from those prepared for specific types of projects such as land use projects, for example. [CEQA Guidelines Section 15168]. A Program EIR also allows for the consideration of broad policy alternatives and program-wide mitigation measures at an early time when an agency has greater flexibility to deal with basic problems or cumulative impacts. [CEQA Guidelines Section 15168 (b)(4)]. Lastly, a Program EIR also plays an important role in establishing a structure within which a CEQA review of future related actions can be effectively conducted. A Program EIR, by design, provides the basis for future environmental analyses and will allow future project-specific CEQA documents, if necessary, to focus solely on the new effects or detailed environmental issues not previously considered. If an agency finds that no new effects could occur, or no new mitigation measures would be required, the agency can approve the activity as being within the scope of the project covered by the Program EIR and no new environmental document would be required. [CEQA Guidelines Section 15168(c)(2)].

The Final Program EIR for the 2022 AQMP analyzed the impacts of implementing the various control measures in the 2022 AQMP on 19 environmental topic areas: aesthetics, agriculture and forestry resources, air quality and greenhouse gas emissions, biological resources, cultural and tribal 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, transportation, wildfire, and mandatory findings of significance. The Final Program EIR for the 2022 AQMP concluded that the implementation of all of the control measures in the 2022 AQMP would result in potentially significant impacts for the following environmental topic areas: air quality and greenhouse gas (GHG), energy, hazards and hazardous materials, hydrology and water quality, noise, and solid and hazardous waste. All other environmental topic areas were either concluded to have less than significant impacts or no impact. Mitigation measures to minimize significant impacts from implementation of the 2022 AQMP were adopted in the Mitigation, Monitoring, and Reporting Plan which can be found in Attachment 1 to the Governing Board Resolution for the Final Program EIR for the 2022 AQMP.[7]

Table A-1 summarizes the analysis in the Final Program EIR for the 2022 AQMP associated with Control Measure CTS-01: effect of implementation and nature of potential impacts, environmental topic areas affected according to level of significance impact, and the applicable mitigation measures. It should be noted that Control Measure CTS-01 was determined to have potentially significant impacts to the environmental topic area of hazards and hazardous materials; less than significant impact to operational air quality, and hydrology and water quality; and no impact to the environmental topic areas of energy, GHG, noise, and solid and hazardous waste. However, the Final Program EIR for the 2022 AQMP concluded potential significant impacts to air quality and GHG, energy, hydrology and water quality, noise, and solid and hazardous waste as a result of implementing other control measures.

[7] South Coast AQMD, Attachment 1 to the Governing Board Resolution for the Final Program Environmental Impact Report for the 2022 Air Quality Management Plan, December 2022. https://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2022/2022-aqmp-attachment1toresolution.pdf

Implementation of Control Measure CTS-01 was anticipated to result in potential adverse operational air quality impacts associated with the delayed VOC emission reductions and permanent VOC emission reductions foregone associated with the removal of the exemption for pCBtF and t-BAc, but also the benefit of reducing exposure to toxic air contaminants. Potential hazards impacts were expected from the potential use of more flammable materials in coatings formulations due to the removal of the exemption for pCBtF and t-BAc. Potential hydrology and water quality impacts were expected from the potential increased use of water-based formulations and water used by consumers to clean equipment used in the application of the coatings.

Table A-1. Analysis of Control Measure CTS-01 in the Final Program EIR for the 2022 AQMP

Effects of Implementing CTS-01	Environmental Topic Areas with Potentially Significant Impacts	Applicable Mitigation Measures For Potentially Significant Impacts	Environmental Topic Areas with Less than Significant Impacts	Environmental Topic Areas with No Impacts
Revising the VOC content limits for select coating categories, incentivizing the use of super-compliant zero-emission and low-VOC materials and technologies and removing the VOC exemption status for pCBtF and t-BAc to address toxicity concerns.	- Hazards and Hazardous Materials	- Hazards and Hazardous Materials: HZ-7 and HZ-8	- Air Quality - Hydrology and Water Quality	All other environmental topic areas not listed to be potentially significantly impacted, or less than significantly impacted

Table A-2 summarizes the expected effect of project implementation, environmental topic areas affected, and the applicable mitigation measures associated with implementation of PAR 1151 and compares the similarities to those analyzed for Control Measure CTS-01 in the Final Program EIR for the 2022 AQMP. PAR 1151 proposes to phase out the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily revises VOC limits for several product categories or includes new subcategories and prohibits pCBtF and t-BAc use in the regulated products. PAR 1151 also proposes requirements for new labeling and reporting and includes rule clarification and streamlining. Therefore, of the above physical effects contemplated by Control Measure CTS-01, implementation of PAR 1151 is expected to result in the increased use of flammable products, temporary increased VOC emissions, increased water demand, and impacts to wastewater quality.

Table A-2. Comparison of Environmental Impacts between CTS-01 and PAR 1151

Effects of Implementing PAR 1151	Similarity to Environmental Topic Areas with Potentially Significant Impacts	Potentially Applicable Mitigation Measures For Potentially Significant Impacts	Similarity to Environmental Topic Areas with Less than Significant Impacts	Similarity to Environmental Topic Areas with No Impacts
Temporary increase of VOC emissions during Phase I period, and potential use of water and flammable materials in coating formulations due to the transition away from pCBtF- and t-BAc containing coatings. *Implementation of PAR 1151 is expected to result in the same or similar potential impacts as for Control Measure CTS-01 of the 2022 AQMP.*	Hazards and Hazardous Materials *Implementation of PAR 1151 is expected to result in the same or similar potentially significant impacts relating to the increased use of flammable products from Control Measure CTS-01 of the 2022 AQMP, if coatings are reformulated with flammable products.*	Hazards and Hazardous Materials: HZ-7 and HZ-8 *These mitigation measures were crafted to minimize the impacts associated with the potential increased use of flammable products from Control Measure CTS-01 of the 2022 AQMP. These are also expected to apply to PAR 1151, if coatings are reformulated with flammable products.*	- Air Quality During Operation - Hydrology and Water Quality *Implementation of PAR 1151 is expected to result in the same or similar, less than significant impacts as anticipated for Control Measure CTS-01 of the 2022 AQMP (e.g., temporary VOC emissions reductions foregone, increased water demand, and impact to wastewater quality).*	- Aesthetics - Agriculture and Forestry Resources - Biological Resources - Cultural and Tribal Cultural Resources - Energy - Greenhouse Gas Emissions - Geology and Soils - Land Use and Planning - Mineral Resources - Noise - Population and Housing - Public Services - Recreation - Solid and Hazardous Waste - Transportation - Wildfire *Same as Control Measure CTS-01 of the 2022 AQMP.*

The Final Program EIR for the 2022 AQMP concluded that the implementation of Control Measure CTS-01 would have the potential to generate: 1) significant adverse impacts on hazards and hazardous materials due to the potential use of flammable materials in reformulated products; 2) less than significant impacts on operational air quality due to a temporary increase in the interim VOC emissions (e.g., temporary emission reductions foregone); 3) less than significant impacts on hydrology and water quality due to increased water demand and increased wastewater; and 4) no impacts for all other environmental topic areas.

Environmental Topic Area with Potentially Significant Impacts

The Final Program EIR for the 2022 AQMP analyzed the potential environmental impacts that may occur from implementing all of the control measures which comprise the 2022 AQMP and its goal to address the 2015 federal 8-hour ozone standard to satisfy the planning requirements of the federal Clean Air Act (CAA), and concluded that its implementation would result in potentially significant impacts for the following environmental topic areas: air quality and GHG, energy, hazards and hazardous materials, hydrology and water quality, noise, and solid and hazardous waste. However, specific to the implementation of Control Measure CTS-01, the Final Program EIR for the 2022 AQMP analyzed and concluded potentially significant impacts only for the environmental topic of hazards and hazardous materials.

Since PAR 1151 implements Control Measure CTS-01 without adding new or modifying the previously analyzed impacts for each environmental topic area, the overall conclusion of potentially significant impacts for the topic of hazards and hazardous materials in the Final Program EIR for the 2022 AQMP will remain unchanged if PAR 1151 is implemented.

The following sections summarizes the analysis in the Final Program EIR for the 2022 AQMP of the potentially significant impacts for the topic of hazards and hazardous materials relative to Control Measure CTS-01.

Hazards and Hazardous Materials

Implementation of a project would be considered to have significant hazards or hazardous materials impacts if any of the following conditions occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment, or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Impacts to Fire Hazards

The Final Program EIR for the 2022 AQMP anticipated that Control Measure CTS-01 could require reformulation of certain coatings, adhesives, and lubricants to meet lower future VOC content limits. In addition, Control Measure CTS-01 would remove the VOC exemption status for pCBtF and t-BAc to address toxicity concerns. OEHHA has determined that these compounds are potentially carcinogenic and have consequently developed unit risk factors for these compounds. Due to OEHHA's determinations, the phase-out of the exemption status of pCBtF and t-BAc in architectural coatings including industrial maintenance and anti-graffiti coatings, automotive coatings, paint thinners, multi-purpose solvents, and adhesives is needed to reduce exposure to toxic materials. Removal of the VOC exemption status for pCBtF and t-BAc may result in some increases to VOC emissions (represented as VOC emission reductions foregone) from coating, solvent, and adhesive product categories that rely on formulations with these compounds to achieve a low-VOC content.

Although the goal of the reformulated products is to reduce the VOC content, the reformulations could have widely varying flammability and health effects depending on the chemical characteristics of the replacement solvents chosen. While most reformulations are expected to be made with water, which is not flammable and does not have adverse health impacts, other reformulations could be made with an exempt, but extremely flammable solvent, such as acetone. Acetone is an exempt compound from air quality rules and regulations because of its low reactivity. In addition, coatings, solvents, adhesives, and lubricants can also be reformulated with other solvents that are not exempted from the definition of a VOC in South Coast AQMD's Rule 102 – Definition of Terms, but that also have flammability and health effects issues.

Table A-3 in this appendix is from Table 4.4-5 of the Final Program EIR for the 2022 AQMP and identifies a list of typical conventional solvents and possible replacement solvents that may be used in the manufacture of coatings, adhesives, and lubricants along with their chemical characteristics pertaining to whether each substance is fire hazard. As illustrated in Table A-3, the flammability classifications by the National Fire Protection Association (NFPA) are the same for acetone as well as for other conventional solvents that are currently used in existing formulations such as t-BAc, toluene, xylene, methyl ethyl ketone (MEK), isopropanol, butyl acetate, and isobutyl alcohol. Because acetone has the lowest flash point of all the chemicals listed, from a flammability perspective, reformulations made with acetone would represent the worst-case. However, it is important to note that acetone also has one of the highest Lower Explosive Limit (LEL), 2.6 percent by volume, which means that acetone vapors will not cause an explosion unless the vapor concentration exceeds 26,000 parts per million (ppm).

In contrast, a conventional solvent such as toluene can cause an explosion at 1.3 percent by volume or 13,000 ppm, which poses a much greater risk of explosion when compared to acetone. Similarly, the concentration of xylene, another conventional solvent, can cause an explosion at even lower concentrations than toluene at 1.0 percent by volume or 10,000 ppm. However, facility operators are required to follow operating guidelines when working with flammable chemicals. These guidelines specify well-ventilated areas, as prescribed by the fire department codes, so that LEL concentrations would be avoided when working with flammable chemicals.

While a "worst-case" flammability scenario could be that all of the affected 2022 AQMP coatings, solvents, adhesives, and lubricants would be reformulated with acetone to meet the VOC content limits, due to lower costs, most future reformulated products will likely be reformulated using primarily water. Water-based coatings are generally not flammable and typically have a lower NFPA classification, and a lower Consumer Product Safety Commission classification when compared to coatings formulated with conventional solvents.

Chemistry classes at all levels from grade school to universities, as well as industrial laboratories, use acetone for wiping down counter tops and cleaning glassware. Additional uses for acetone include solvent for paint, varnish, lacquers, inks, adhesives, floor coatings, and cosmetic products including nail polish and nail polish remover. Further, it is currently used widely in coating and solvent formulations.

Labels and safety data sheets accompanying acetone-based products caution the user regarding acetone's flammability and advise the user to "*keep the container away from heat, sparks, flame, and all other sources of ignition. The vapors may cause flash fire or ignite explosively. Use only with ventilation*." All of the large coating manufacturers currently offer pure acetone for sale with similar warnings. The Uniform Fire Code (UFC) treats solvents such as acetone, butyl acetate, and MEK as Class I Flammable Liquids. Further, the UFC considers all of these solvents to present the same relative degree of fire hazard. [South Coast AQMD, 2003]. Acetone has very low flash point than the other Class I Flammable Liquids; therefore, it is considered to have a more severe fire hazard potential and should be labeled as "extremely flammable." The UFC sets standards intended to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulation to use flammability labeling when required. For some applications, local fire agencies require permits for the use or storage of hazardous materials and permit modifications for increases in their use. Permit conditions depend on the type and quantity of the hazardous materials onsite. Permit conditions may include, but are not limited to, specifications for sprinkler systems, electrical systems, ventilation, and containment. The fire departments make annual business inspections to ensure compliance with permit conditions and other appropriate regulations.

A list of conventional and potential replacement solvents properties and their related health hazards information are shown in Tables A-3 and A-4, respectively. As illustrated in Tables A-3 and A-4, some of the potential replacement solvents have lower or less severe threshold limit values (TLVs), permissible exposure levels (PELs), or immediately dangerous to life or health concentrations (IDLHs) than some of the conventional solvents. For example, acetone would be considered to have less health hazards than all of the conventional solvents listed. However, there are some replacement solvents that could have higher, more severe, or unknown toxicological effects. For example, the diisocyanate group of solvents appear to have more severe toxicological effects than the listed traditional solvents.

Table A-3. Chemical Characteristics for Conventional and Potential Replacement Coating Solvents

CAS No.	Chemical Compound	Auto-ignition Temperature (°F)	Boiling Point (@760 mmHg, °F)	Evaporation Rate @ 25 °C (Butyl Acetate = 1)	Flash Point (°F)	LEL/ UEL [a] (% by Vol.)	Vapor Pressure (mmHg @ 20 °C)	NFPA Flammability Rating [b]	Flammability[c]
Conventional Solvents									
67-64-1	Acetone	538	56	6.1	-4	2.6/12.8	180	3	Extremely Flammable
80-05-7	Bisphenol A	N/A	428	N/A	N/A	N/A	N/A	0	N/A
123-86-4	n-Butyl acetate	N/A	257	1	73	1.7/7.6	15	3	Extremely Flammable
111-79-2	2-Butoxyethanol	471.2	340.7	N/A	141.8	1.1/12.7	0.8	2	Combustible
78-92-2	sec-Butyl alcohol	N/A	208	N/A	81	1.7/9.8	11.5	3	Flammable
108-94-1	Cylohexane	788	312.1	N/A	111	1.1/9.4	0.53	2	Combustible
25265-71-8	Diethylene glycol	444	471	N/A	255	1.6/10.8	1	1	Combustible
34590-94-8	Dipropylene glycol methyl ether	278.6	408	N/A	180	1.1/3	0.5	3	Combustible
29911-28-2	Dipropylene glycol monobutyl ether	N/A	441	N/A	205	N/A	0.06	1	Combustible
100-41-4	Ethylbenzene	809.6	276.8	0.84	70	0.8/7	6.75	3	Flammable
103-09-3	2-Ethylhexyl acetate	N/A	390	N/A	185	N/A	N/A	2	Combustible
107-21-1	Ethylene glycol	748	388	0.01	232	3.2/15.3	0.06	1	Combustible
109-59-1	Ethylene glycol isopropyl ether	N/A	109.5	N/A	109	1.6/13	2.6	2	Combustible
50-00-0	Formaldehyde	806	- 2	N/A	147	N/A	N/A	4	Combustible
78-83-1	Isobutyl alcohol	780	226	0.82	82	1.2/10.9	9	3	Flammable
108-21-4	Isopropyl acetate	N/A	109.5	N/A	39	1.8/8	47	3	Flammable
67-63-0	Isopropyl alcohol	399	180	2.3	53	2/12.7	33	3	Extremely Flammable
64742-95-6	Light aromatic hydrocarbons	880	335	0.3	180	0.6/7	11	2	Combustible
110-43-0	Methyl amyl ketone	N/A	301	N/A	106	1.1/7.9	2.14	2	Combustible
78-93-3	Methyl ethyl ketone	474	80	4	16	1.8/11.5	8.7	3	Extremely Flammable
108-10-1	Methyl isobutyl ketone	860	291	0.46	97	1/8.2	5	3	Flammable
107-87-9	Methyl n-propyl ketone	N/A	271.5	N/A	45	1.5/8.2	27	3	Flammable

Table A-3 (continued). Chemical Characteristics for Conventional and Potential Replacement Coating Solvents

CAS No.	Chemical Compound	Auto-ignition Temperature (°F)	Boiling Point (@760 mmHg, °F)	Evaporation Rate @ 25 °C (Butyl Acetate = 1)	Flash Point (°F)	LEL/ UEL [a] (% by Vol.)	Vapor Pressure (mmHg @ 20 °C)	NFPA Flammability Rating [b]	Flammability[c]
Conventional Solvents									
64741-41-9	Mineral spirits (Stoddard)	232	154-188	0.1	109-113	1.0 / 7	1.1	2	Combustible[d]
64742-94-5	Heavy aromatic naphtha	830	719.6	>0.1	145	1.8/11.7	1	2	Combustible
91-20-3	Naphthalene	978.8	424	N/A	176	0.9/5.9	0.03	2	Combustible
8002-05-9	Petroleum distillate (Naphtha)	N/A	86-460	N/A	20 - 100	1.1/5.9	40	3	Extremely Flammable
108-88-3	Toluene	538	111	2	41	1.3/7	22	3	Flammable[d]
108-67-8	1,3,5-Trimethylbenzene	550	329	0.01	122	2.6/12.5	2	2	Combustible
95-63-6	1,2,4-Trimethylbenzene	932	337	0.01	112	0.9/6.4	1	2	Combustible
64742-89-8	V.M.&P Naphtha	288	266.9	1.2	53.1	1.2/6	20	3	Flammable
1330-20-7	Xylene	499	139	0.8	81	1.0/6.6	6	3	Flammable[d]
Potential Replacement Solvents									
67-64-1	Acetone	538	56	6.1	-4	2.6/12.8	180	3	Extremely Flammable
100-51-6	Benzyl alcohol	817	401	0.006	199	1.3/13	0.15	2	Combustible
71-36-3	n-Butanol	N/A	242.5	N/A	95	1.4/11.2	4	3	Flammable
123-86-4	n-Butyl acetate	N/A	257	1	73	1.7/7.6	15	3	Extremely Flammable
85-68-7	Butyl benzyl phthalate	797	698	N/A	390	N/A	8.6E-6	1	Combustible
616-38-6	Dimethyl carbonate	869	194	3.2	64	4.2/12.9	42	3	Flammable
108-01-0	2-Dimethylaminoethanol	455	282	N/A	104	1.6/11.9	3.18	2	Combustible
117-81-7	Dioctyl phthalate	735	446	N/A	405	0.3/	< 0.01	1	Combustible
25265-71-8	Dipropylene glycol	590	449	N/A	250	2.9/12.6	0.03	1	Combustible
763-69-9	Ethyl 3-Ethoxypropionate	N/A	338	N/A	138	N/A	< 1	2	Combustible
141-78-6	Ethyl acetate	800	171	N/A	25	2.2/9	73	3	Extremely Flammable
64-17-5	Ethyl alcohol	685	173	1.4	55	3.3/19	44	3	Extremely Flammable
111-76-2	Ethylene glycol monobutyl ether	460	340	0.07	144	1.1/12.7	0.8	2	Combustible
111-80-5	Ethylene glycol monoethyl ether	455	275	0.41	120	1.7/15.6	4	2	Combustible
109-86-4	Ethylene glycol monomethyl ether	545	256	0.53	100	1.8/19.8	6	2	Combustible

Table A-3 (concluded). Chemical Characteristics for Conventional and Potential Replacement Coating Solvents

CAS No.	Chemical Compound	Auto-ignition Temperature (°F)	Boiling Point (@760 mmHg, °F)	Evaporation Rate @ 25 °C (Butyl Acetate = 1)	Flash Point (°F)	LEL/ UEL [a] (% by Vol.)	Vapor Pressure (mmHg @ 20 °C)	NFPA Flammability Rating [b]	Flammability[c]
Potential Replacement Solvents (continued)									
2807-30-9	Ethylene glycol monopropyl ether	455	300	0.22	124	1.3/15.8	1.3	2	Combustible
149-57-5	2-Ethylhexanoic acid	699	442	N/A	244	1/8.6	< 0.01	1	Combustible
822-06-0	Hexamethylene diisocyanate	N/A	415	N/A	284	1/	0.5	1	Combustible
64742-53-6	Hydrotreated light naphthenic distillate	>600	500	N/A	295	N/A	0.04	1	Combustible
79-20-9	Methyl acetate	501	135	5.3	14	3.1/16	173	3	Extremely Flammable
96-29-7	Methyl ethyl ketoxime	N/A	306	N/A	1380	N/A	0.9	2	Combustible
101-68-8	Methylene bisphenyl diisocyanate	464	597	N/A	390	N/A	5E-6	1	Combustible
98-56-6	Parachlorobenzotrifluoride	>500	282	0.9	109	0.9/10.5	5.3	1	Combustible
57-55-6	Propylene glycol	700	370	0.01	210	2.6/12.5	0.08	1	Combustible
108-65-6	Propylene glycol monomethyl ether acetate	N/A	294	N/A	109	1.1/13.1	2.53	2	Combustible
770-35-4	Propylene glycol phenyl ether	923	469	0.002	239	0.8/6.0	0.01	3	Flammable
1569-01-3	Propylene glycol propyl ether	N/A	302	N/A	118	N/A	N/A	2	Combustible
100-42-5	Styrene	914	293	0.5	88	1.1/6.1	4.5	3	Flammable
540-88-5	Tertiary butyl acetate	N/A	208	2.8	62	1.5 /N/A	N/A	3	Flammable
25265-77-4	Texanol	730	471	< 0.01	248	0.6/4.2	0.01	1	Combustible
26471-62-5	Toluene diisocyanate	1148	478	N/A	250	0.9/9.5	0.025	1	Combustible
121-44-8	Triethylamine	480	194	5.6	16	1.2/8.0	57.1	3	Extremely Flammable
144-19-4	Trimethyl 1,3-pentanediol	572	450	N/A	235	N/A	N/A	1	Combustible

[a] Lower Explosive Limit / Upper Explosive Limit

[b] NFPA Flammability Rating: 0 = Not Combustible; 1 = Combustible if heated; 2 = Caution: Combustible liquid flash point of 100° to 200°F; 3 = Warning: Flammable liquid flash point below 100°F; 4 = Danger: Flammable gas or extremely flammable liquid

[c] The Consumer Products Safety Commission (CPSC) has Labeling and Banning Requirements for Chemicals and Other Hazardous Substances which are located in 15 U.S.C.§1261 and 16 CFR Part 1500. Specifically, the flammability of a product is defined in 16 CFR Part 1500.3 (c)(6) and is based on flash point. For example, a flammable liquid needs to be labeled as: 1) "Extremely Flammable" if the flash point is below 20 °F; 2) "Flammable" if the flash point is above 20 °F but less than 100°F; or, 3) "Combustible" if the flash point is above 100 °F up to and including 150 °F.

[d] Requires Special Hazards Labeling per 16 CFR Part 1500.14 (a)(3) & (b)(3)

Table A-4. Health Hazards of Conventional and Potential Replacement Solvents

CAS No.	Chemical Compound	NFPA Health Rating [a]	TLV (ACGIH)[b] (ppm)	PEL (OSHA) [c] (ppm)	IDLH (NIOSH)[d] (ppm)	Health Effects
Conventional Solvents						
67-64-1	Acetone	1	500	1,000	2,500	Mild irritation - eye, nose, throat, skin; narcosis
80-05-7	Bisphenol A	2	N/A	N/A	N/A	Mild irritation - eyes and skin
123-86-4	n-Butyl acetate	2	150	150	1,700	Moderate irritation – eye, nose, throat; narcosis
111-79-2	2-Butoxyethanol	1	20	50	5	Mild irritation - eyes, skin and respiratory
78-92-2	sec-Butyl alcohol	2	100	150	2,000	Mild irritation - eye, nose, throat, skin; narcosis
108-94-1	Cyclohexane	2	20	50	700	Moderate irritation- eye, skin, nose and throat
25265-71-8	Diethylene glycol	1	N/A	N/A	N/A	Mild irritation - eyes and skin
34590-94-8	Dipropylene glycol methyl ether	0	100	100	100	Mild irritation – eye, skin, respiratory, digestion
29911-28-2	Dipropylene glycol monobutyl ether	1	N/A	N/A	N/A	Potential severe irritation to eyes, nose and throat; moderate skin and digestion irritation
100-41-4	Ethylbenzene	2	100	100	800	Moderate irritation – eye, skin, nose, throat
103-09-3	2-Ethylhexyl acetate	2	N/A	N/A	N/A	Mild irritation – eye, skin, respiratory, digestion
107-21-1	Ethylene glycol	2	100	50	N/A	Mild irritation – respiratory, skin, kidney, reproductive
109-59-1	Ethylene glycol isopropyl ether	2	25	25	N/A	Mild irritation – eye, skin, respiratory, digestion
50-00-0	Formaldehyde	3	0.30	1	0.016	Irritation - skin, eyes, nose, and throat. High levels of exposure may cause some types of cancers.
78-83-1	Isobutyl alcohol	1	50	100	8,000	Mild irritation – eye, nose, throat; suspect carcinogen
108-21-4	Isopropyl acetate	1	100	250	1,800	Mild irritation – eye, skin, nose, throat
67-63-0	Isopropyl alcohol	1	200	400	2,000	Mild irritation – eyes, nose, throat; narcosis
64742-95-6	Light aromatic hydrocarbons	2	10-100	10-100	25-100	Mild irritation – eye, skin, respiratory, digestion
110-43-0	Methyl amyl ketone	1	50	100	100	Mild irritation - eyes and skin
78-93-3	Methyl ethyl ketone	1	200	200	3,000	Mild irritation – eye, nose, throat; narcosis; skin
108-10-1	Methyl isobutyl ketone	2	50	50	50	Potential serious eye irritation; mild skin and respiratory irritation
107-87-9	Methyl n-propyl ketone	2	150	200	150	Moderate irritation – eye, skin, respiratory

Table A-4 (continued). Health Hazards of Conventional and Potential Replacement Solvents

CAS No.	Chemical Compound	NFPA Health Rating [a]	TLV (ACGIH)[b] (ppm)	PEL (OSHA) [c] (ppm)	IDLH (NIOSH)[d] (ppm)	Health Effects
Conventional Solvents						
64741-41-9	Mineral spirits (Stoddard)	1	100	500	5,000	Narcosis; mild irritant
64742-94-5	Heavy aromatic naphtha	2	N/A	N/A	N/A	Mild irritation – eye, skin, respiratory, digestion
91-20-3	Naphthalene	4	10	10	10	Moderate irritation - eye, skin; fatal if inhaled
8002-05-9	Petroleum distillate (Naphtha)	1	400	500	1,100	Mild irritation; narcosis
108-88-3	Toluene	2	50	200	500	Moderate irritation – eye, nose, throat; narcosis; skin; suspect teratogen; mutagen, nervous system
108-67-8	1,3,5-Trimethylbenzene	2	25	25	25	Mild irritation - skin, eye; harmful if inhaled
95-63-6	1,2,4-Trimethylbenzene	2	25	25	25	Mild irritation - skin; serious irritation- eye; harmful if inhaled
64742-89-8	V.M.&P Naphtha	1	300	500	N/A	Mild irritation - skin, eye
1330-20-7	Xylene	2	100	100	1,000	Mild irritation – eye, nose, throat; narcosis; skin
Potential Replacement Solvents						
67-64-1	Acetone	1	500	1,000	2,500	Mild irritation - eye, nose, throat, skin; narcosis
100-51-6	Benzyl alcohol	2	N/A	N/A	N/A	Mild irritation - skin, respiratory; severe eye and ingestion irritation
71-36-3	n-Butanol	2	20	100	1,400	Potential severe irritation to eyes, nose and throat; moderate skin, digestion and respiratory irritation
123-86-4	n-Butyl acetate	2	150	150	150	Mild irritation - skin, eye, respiratory, digestion
85-68-7	Butyl benzyl phthalate	1	N/A	N/A	N/A	Mild irritation - eye, nose, throat, skin
108-01-0	2-Dimethylaminoethanol	3	N/A	N/A	N/A	Potential severe irritation to eyes, skin, throat and digestion; high risk to unborn child
616-38-6	Dimethyl carbonate	0	N/A	N/A	N/A	Mild irritation - respiratory, skin, eye, digestive
117-81-7	Dioctyl phthalate	0	N/A	N/A	N/A	Mild irritation - respiratory, skin, eye, digestive
25265-71-8	Dipropylene glycol	1	N/A	N/A	N/A	Mild irritation - respiratory, skin, eye, digestive, nausea, dizziness; may cause liver and kidney damage
763-69-9	Ethyl 3-Ethoxypropionate	1	0.3	N/A	0.01	Mild irritation - respiratory, skin, eye, digestive

Table A-4 (continued). Health Hazards of Conventional and Potential Replacement Solvents

CAS No.	Chemical Compound	NFPA Health Rating [a]	TLV (ACGIH)[b] (ppm)	PEL (OSHA) [c] (ppm)	IDLH (NIOSH)[d] (ppm)	Health Effects
Potential Replacement Solvents						
141-78-6	Ethyl acetate	1	400	400	400	Mild irritation - respiratory, skin, eye, digestive; may cause acute inhalation
64-17-5	Ethyl alcohol	2	1,000	1,000	1,000	Mild irritation - respiratory, skin, eye, digestive
111-76-2	Ethylene glycol monobutyl ether	2	20	50	700	Mild irritation – eye, nose, throat; anemia; skin
111-80-5	Ethylene glycol monoethyl ether	2	5	200	500	Cumulative blood damage; moderate irritation of eyes, throat, skin
109-86-4	Ethylene glycol monomethyl ether	2	5	25	N/A	Cumulative CNS; skin; suspect reproductive effects; blood disorders
2807-30-9	Ethylene glycol monopropyl ether	2	N/A	N/A	N/A	Mild irritation - eye, nose, skin, respiratory, digestive
149-57-5	2-Ethylhexanoic acid	2	N/A	N/A	N/A	Mild irritation - eye, nose, skin, respiratory, digestive
822-06-0	Hexamethylene diisocyanate	4	0.005	N/A	0.005	Potential fatality if inhaled; moderate skin, eye irritation; toxic if swallowed
64742-53-6	Hydrotreated light naphthenic distillate	1	N/A	N/A	N/A	Mild irritation - eye, skin, respiratory, digestive
79-20-9	Methyl acetate	2	200	200	200	Mild irritation - eye, nose, skin, respiratory, digestive
96-29-7	Methyl ethyl ketoxime	2	N/A	N/A	N/A	Mild irritation - eye, nose, skin, respiratory, digestive
101-68-8	Methylene bisphenyl diisocyanate	3	0.01	0.02	40	Mild irritation – respiratory
98-56-6	Parachlorobenzotrifluoride	2	N/A	N/A	N/A	Mild irritation - eye, nose, respiratory, digestive
57-55-6	Propylene glycol	0	100	100	N/A	Mild irritation – slight eye, anesthesia
108-65-6	Propylene glycol monomethyl ether acetate	1	N/A	N/A	N/A	Mild irritation - eye, nose, skin, respiratory, digestive
770-35-4	Propylene glycol phenyl ether	2	N/A	N/A	N/A	Mild irritation - eye, nose, skin, respiratory, digestive
1569-01-3	Propylene glycol propyl ether	2	N/A	N/A	N/A	Mild irritation - eye, nose, skin, respiratory, digestive
100-42-5	Styrene	2	20	100	5,000	Mild irritation – eye, respiratory, neurotoxicity

Table A-4 (concluded). Health Hazards of Conventional and Potential Replacement Solvents

CAS No.	Chemical Compound	NFPA Health Rating [a]	TLV (ACGIH)[b] (ppm)	PEL (OSHA) [c] (ppm)	IDLH (NIOSH)[d] (ppm)	Health Effects
Potential Replacement Solvents						
540-88-5	Tertiary butyl acetate	2	200	200	200	Mild irritation - eye, nose, skin, respiratory, digestive; prolonged exposure may cause dermatitis, blood effects, central nervous system and kidney problems
25265-77-4	Texanol	1	N/A	N/A	N/A	Mild irritation - eye, nose, skin, respiratory, digestive
26471-62-5	Toluene diisocyanate	3	0.005	0.02	10	Mild irritation – respiratory
121-44-8	Triethylamine	3	1	25	200	Mild irritation - eye; Cumulative eye, respiratory, and hematological effects.
144-19-4	Trimethyl 1,3-pentanediol	0	N/A	N/A	N/A	Mild irritation - eye, nose, skin, respiratory, digestive

[a] NFPA Health Rating: 0 = No unusual hazard; 1 = Caution: May be irritating; 2 = Warning: May be harmful if inhaled or absorbed; 3 = Warning: Corrosive or toxic. Avoid skin contact or inhalation; 4 = Danger: May be fatal on short exposure. Specialized protective equipment required.

[b] TLV = Threshold Limit Value, a recommended guideline established by the American Conference of Governmental Industrial Hygiene (ACGIH)

[c] PEL = Permissible Exposure Limit, established by OSHA

[d] IDLH = Immediately Dangerous to Life and Health, established by NIOSHA

In addition to the health hazard values summarized in Table A-3, several of the chemicals listed are identified as toxic air contaminants, including but not limited to the following: ethylbenzene, formaldehyde, methyl ethyl ketone (MEK), methyl isobutyl ketone (MIBK), toluene, triethylamine, and xylene. The use of materials that contain toxic compounds is of particular concern, in both existing formulations as well as reformulated products, to the South Coast AQMD and other agencies such as U.S. EPA, CARB, OSHA, and OEHHA (which is part of the California Environmental Protection Agency (Cal/EPA), because some of the toxic air contaminants used in some coatings are considered carcinogens (cancer-causing), while others may have other non-cancer health effects.[8]

For these reasons, the South Coast AQMD has two rules which regulate toxic air contaminant emissions at facilities, including those using coatings: South Coast AQMD Rule 1401 – New Source Review of Toxic Air Contaminants, and South Coast AQMD Rule 1402 – Control of Toxic Air Contaminants From Existing Sources. Rule 1401 applies to new and modified facilities, including coating facilities, and Rule 1402 applies to facility-wide risk at existing facilities. Since the majority of coating facilities located within South Coast AQMD's jurisdiction are existing sources, the requirements in Rule 1402 are the main drivers for reducing overall risk and, therefore, toxic air contaminant emissions from this industry.

Thus, when coatings and other products are reformulated as part of implementing the various control measures from the 2022 AQMP, including CTS-01, manufacturers could potentially use replacement chemicals that could pose new or different health risks, but South Coast AQMD Rules 1401 and 1402 would limit potential exposures to nearby receptors for manufacturers within the Basin. Further, future South Coast AQMD rule development efforts, including PAR 1151, seeking to lower VOC limits would require individual evaluation of reformulations, the replacement chemicals, and the corresponding potential health risks. Exposure typically occurs when applying the coatings, solvents, and adhesives.

Some of the replacement solvents (e.g., triethylamine) in Table A-4 are likely to be present in trace amounts during accidental releases which, considered a one-time event, would be neutralized and cleaned up before all the solvent has evaporated, so no new chronic health risk is expected. No acute risk would be generated because they would only be present in trace amounts for a brief duration until the spill is cleaned up. As shown in Table A-4, the toxicity of replacement materials is generally less or no worse than conventional solvents overall but if a facility changes from using water-based products to using products that are reformulated with chemicals that may have new or different health hazards, significant adverse health hazard impacts could occur from using some low-VOC reformulated products. However, as with the use of all chemicals, existing health protective regulations would continue to apply when handling and storing both flammable and toxic materials. In addition, any increase in the future use of a low-VOC compliant coating materials that are reformulated with water would be expected to result in a concurrent reduction in the number of accidental releases of high-VOC coating materials. As a result, the net number of accidental releases would be expected to remain constant or potentially be reduced.

[8] Formaldehyde, toluene, triethylamine, and xylene are classified as having both chronic and acute health effects; ethylbenzene as having chronic health effects and zinc oxide proposed as having chronic health effects; MEK as having acute health effects with future proposed risk value for chronic; and cobalt compounds as having future proposed risk values. In addition, MIBK is classified by U.S. EPA as a HAP, but the toxicology assessment is not finalized.

Regarding fire hazards, if manufacturers use solvents such as Texanol, propylene glycol, etc., in future compliant water-based coatings, significant adverse hazard impacts would not be expected to occur because, in general, these solvents are either equivalent or less flammable than conventional solvents based on NFPA ratings. However, if manufacturers reformulate with acetone, then more acetone-based (and extremely flammable) products would be on the market. Similarly, if manufacturers reformulate with products that have increased flammability than products manufactured with conventional solvents, consumers who may be used to a higher VOC product with lower flammability, may be unaware that the reformulated products may have chemicals with increased flammability and an increased risk when used.

In general, water-based coatings and products tend to contain less flammable and less toxic materials than solvent-based coatings and products. While the continued and potentially increased use of water-based coatings and products would generally be expected to reduce the overall hazard, impacts associated with solvent-based products, a switch from currently using water-based products to reformulated solvent-based products could offset any reduction realized.

Without knowing how many facilities currently using water-based products would switch to using reformulated solvent-based products as a result of implementing the 2022 AQMP Control Measure CTS-01, significant impacts on fire hazards associated with reformulated coatings products could occur. Therefore, the Final Program EIR for the 2022 AQMP concluded that hazards and hazardous materials impacts associated with increased flammability of potential replacement solvents were significant. For these reasons, implementation of PAR 1151 is also concluded to result in potentially significant hazards and hazardous materials impacts associated with increased flammability of potential replacement solvents in reformulations of coatings.

Mitigation Measures

Since hazards and hazardous materials impacts associated with increased flammability of potential reformulated coatings were found to be significant, the following mitigation measures were adopted in the Final Program EIR for the 2022 AQMP, and will be required as part of future rule development pertaining to reformulated products:

HZ-7 Add consumer warning requirements for all flammable and extremely flammable products.

HZ-8 Add requirements to conduct a public education and outreach program in joint cooperation with local fire departments regarding flammable and extremely flammable products that may be included in consumer paint thinners and multi-purpose solvents.

Mitigation Measure HZ-7 will need to be implemented by any manufacturer that supplies reformulated coatings, solvents, adhesives, and lubricants with intent to sell these products within South Coast AQMD's jurisdiction. Mitigation Measure HZ-8 will be jointly implemented by the South Coast AQMD working with the local fire departments. The potential fire hazard impacts associated with more flammable solvents were expected to be significant prior to mitigation. While the South Coast AQMD cannot predict which coatings, solvents, adhesives, and lubricants each

affected facility might choose to use in the future as reformulations become available or estimate the amount of coatings to be used, the mitigation measures are expected to be effective at informing consumers about the potential fire hazards associated with reformulated products. Thus, after mitigation is applied, the Final Program EIR for the 2022 AQMP concluded that no remaining significant impacts on fire hazards were expected. These mitigation measures are also applicable to PAR 1151 and will similarly mitigate the potential fire hazard impacts to less than significant levels.

Conclusion and Cumulative Impacts

The Final Program EIR for the 2022 AQMP concluded that, while the continued and potential increased use of water-based coatings and products would generally be expected to reduce the overall hazard impacts associated with solvent-based products, the potential reformulation of coatings and products to products that are more flammable could result in a significant impact on fire hazards. Mitigation Measures HZ-7 and HZ-8 were identified as effective at informing consumers about the potential fire hazards associated with reformulated products. Thus, if PAR 1151 is implemented, no remaining significant impacts on fire hazards are expected after mitigation measures are applied. Table A-5 summarizes the impacts of PAR 1151 on the topic of hazards and hazardous materials.

When combined with the Southern California Association of Governments (SCAG) Connect SoCal Plan[9], the CARB Proposed 2022 State SIP Strategy[10], state policies, and other past, present, and reasonably foreseeable activities, the 2022 AQMP was concluded to result in a significant increase in the use of hazards and hazardous materials and would contribute to cumulatively considerable hazards and hazardous materials impacts. Feasible mitigation measures were developed to reduce the potentially significant hazards and hazardous materials impacts. No additional feasible mitigation measures were identified to further reduce cumulative hazards and hazardous materials impacts. Cumulative impacts to hazards and hazardous materials for past, present and reasonably foreseeable future projects would remain significant and unavoidable.

[9] Southern California Association of Governments, Connect SoCal (2020–2045 Regional Transportation Plan/Sustainable Communities Strategy), May 2020. https://scag.ca.gov/read-plan-adopted-final-connect-socal-2020

[10] California Air Resources Board, 2022 State Strategy for the State Implementation Plan (2022 State SIP Strategy), September 2022. https://ww2.arb.ca.gov/resources/documents/2022-state-strategy-state-implementation-plan-2022-state-sip-strategy

Table A-5. Summary of Hazards and Hazardous Materials Impacts

Significance Criteria	Potentially Significant Impacts	Mitigation Measures For Potentially Significant Impacts	Cumulative Impacts
Hazards and hazardous materials impacts are significant if any of the following conditions occur: • Non-compliance with any applicable design code or regulation. • Non-conformance to National Fire Protection Association standards. • Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment, or fire protection. • Exposure to hazardous chemicals in concentrations equal to or greater than the ERPG 2 levels	Implementation of PAR 1151 would cause potential significant hazards and hazardous materials impacts: • Due to the potential use of more flammable materials when reformulating coatings in response to the prohibition from having coatings formulated with pCBtF and t-BAc	HZ-7 and HZ-8	Cumulative impacts to hazards and hazardous materials for past, present, and reasonably foreseeable future projects would remain significant and unavoidable.

Environmental Topic Area With Less Than Significant Impacts

Since PAR 1151 implements Control Measure CTS-01 without adding new or modifying the previously analyzed impacts for each environmental topic area, the overall conclusion of less than significant impacts for the topics of operational air quality and hydrology and water quality in the Final Program EIR for the 2022 AQMP will remain unchanged if PAR 1151 is implemented. The following section summarizes the analysis of less than significant impacts for the environmental topics of air quality and hydrology and water quality in the Final Program EIR for the 2022 AQMP and explains how these conclusions also apply to the implementation of PAR 1151.

Air Quality

The Final Program EIR for the 2022 AQMP anticipated that, due to OEHHA's determinations, several South Coast AQMD rules would need to be amended as part of implementing Control Measure CTS-01 in order to prohibit the use of pCBtF and t-BAc in automotive coatings, architectural coatings, including industrial maintenance and anti-graffiti coatings, paint thinners, multi-purpose solvents, lubricants, adhesives and sealants in order to reduce the potential exposure to toxic materials.

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. 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 automotive coatings subject to Rule 1151.

The Final Program EIR for the 2022 AQMP anticipated that, if the future use of coatings, solvents, lubricants, paint thinners, adhesives, and sealants that are formulated with pCBtF and t-BAc is prohibited, without other products commercially available on the market that are capable of achieving the future VOC limits, then these various rules may need to be amended to allow the increase in the future VOC limits for certain products until such time that lower VOC formulations without pCBtF and t-BAC can be developed. If these aforementioned rules are amended to increase the future VOC limits, then previously anticipated VOC emission reductions will either be delayed or permanently foregone, depending on the future availability of lower VOC-containing formulations.

As such, Control Measure CTS-01 specifically committed to revising the VOC content for select product categories, incentivizing the use of super-compliant zero emission and low-VOC materials, and removing the VOC exemption status for pCBtF and t-BAc to address toxicity concerns. The Final Program EIR for the 2022 AQMP concluded that implementation of the 2022 AQMP control measures, including Control Measure CTS-01, would generate less than significant operational air quality impacts. However, implementation of Control Measure CTS-01 was expected to cause delayed VOC emission reductions and permanent VOC emission reductions foregone due to the removal of the exemption for pCBtF and t-Bac. To address these temporary and permanent VOC emissions increases that would occur, the 2022 AQMP established a revised SIP set-aside reserve of VOC emissions specifically designated for the potential technology assessment and phaseout of toxics for VOC-based rules as targeted by Control Measure CTS-01.

The reserve of VOC emissions in the set-aside account is specifically designated to offset the temporary emission reductions foregone that may occur during the potential technology assessments and phaseout of toxics for all VOC-based rules as targeted by Control Measure CTS-01. The contents in the set-aside account is funded by VOC emission reductions achieved beyond the South Coast AQMD's initial commitment in other recent South Coast AQMD rule amendments which targeted VOC emission reductions. In addition, the set-aside account is annually audited and replenished when the rules that are amended in response to Control Measure CTS-01 attain the final low-VOC limit and realize permanent VOC emission reductions.

Ultimately, implementation of Control Measure CTS-01 was concluded in the Final Program EIR for the 2022 AQMP to result in an overall net VOC emission reductions with an added benefit of reducing exposure to toxic air contaminants. The analysis in the Final Program EIR for the 2022 AQMP also concluded that the long-term health benefit of prohibiting these toxic compounds with substantial adverse carcinogenic health effects outweighs the delayed and permanent VOC emission reductions foregone that would be associated with implementing Control Measure CTS-01.

Unlike Control Measure CTS-01, no permanent VOC emission reductions foregone are expected if PAR 1151 is implemented. Instead, PAR 1151 is expected to result in temporary VOC emission increases (also referred to as temporary emission reductions foregone) and these increases will be offset from the reserve of VOC emission reductions in the SIP set-aside account that was established for the 2022 AQMP and by other VOC rulemaking efforts. It is important to note that the set-aside account is only going to be relied upon to offset the temporary VOC emission reductions delayed during the Phase I-portion of implementing PAR 1151 (e.g., for a three to five-year period). Once Phase II of PAR 1151 is implemented, permanent VOC emission reductions will be expected, and the set-aside account will be replenished accordingly. In addition, other opportunities for reducing VOC emissions from product formulations are expected to continue to occur over the long-term due to future VOC limits that are currently in other South Coast AQMD rules (e.g., Rules 1113 and 1168) that have not yet gone into effect. Upon full implementation, PAR 1151 will result in an overall a long-term net VOC emission reductions.

Impacts to Operational Air Quality

South Coast AQMD's adopted air quality significance thresholds for criteria pollutant emissions, the mass daily thresholds, were developed in 1993, and a full discussion of their development can be found in the South Coast AQMD CEQA Handbook. Significance thresholds for toxic air contaminants are based on requirements in South Coast AQMD Rules 1401 and 212, while the significance criteria for odor is based on requirements in South Coast AQMD Rule 402. The significance threshold for greenhouse gas emissions was adopted by the South Coast AQMD Governing Board in December 2008. Information on the history and development of the various air quality significance thresholds is available on the South Coast AQMD website.[11] Table A-6 summarizes South Coast AQMD's air quality significance thresholds.

[11] https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf

Table A-6. South Coast AQMD Air Quality Significance Thresholds

Mass Daily Thresholds [a]		
Pollutant	**Construction**	**Operation**
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 [b]		
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)[c] & 2.5 μg/m^3 (operation) 1.0 μg/m^3	
$PM_{2.5}$ 24-hour average	10.4 μg/m^3 (construction)[c] & 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] Ambient air quality thresholds for criteria pollutants based on South Coast AQMD Rule 1303, Table A-2 unless otherwise stated.
[c] Ambient air quality thresholds 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

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Based on Table 4-3 provided in the Chapter 4 of this document, it is estimated that PAR 1151 will cause approximately 4.82 tpd (equivalent to 9,640 pounds per day) of temporary emission reductions foregone during Phase I but result in emission reductions of approximately 5.01 tpd during the period from Phase I to Phase II. A temporary increase of the current VOC limits during Phase I is being proposed so as to phase out pCBtF and t-BAc as quickly as possible to protect public health in accordance with the South Coast AQMD Stationary Source Committee's directive to prioritize reducing toxicity over VOC reductions. The temporary VOC emissions increase in Phase I exceeds the mass daily South Coast AQMD air quality significance thresholds shown in Table A-6; however, there is a SIP set-aside account which has 3.0 tpd of VOC emission reserves along with a surplus of approximately two tpd of VOC emission reductions achieved by other South Coast AQMD VOC rules to address this issue. More importantly, upon full implementation, PAR 1151 will achieve an overall VOC emission reduction of 0.19 tpd (equivalent to 380 pounds per day) over the long-term.

South Coast AQMD implements several recent rules pertaining to VOC emissions reduction, for instance, rules including optical gas imaging requirements with more frequent leak detection and repair. These rules are anticipated to be able to collectively achieve VOC emission reductions sufficient to offset the projected increases in VOC emissions from implementing Control Measure CTS-01, including the temporary VOC emissions increase during Phase I of PAR 1151. Specifically, South Coast AQMD Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, Rule 463 – Organic Liquid Storage, and Rule 1148 – Thermally Enhanced Oil Recovery Wells were previously amended and were anticipated to achieve VOC emission reductions of 1.86 tpd, 1.65 tpd, and 0.67 tpd, respectively, which collectively would achieve approximately 4.18 tpd of VOC emission reductions. The combined VOC emission reduction of these rules (4.18 tpd) with the revised SIP set-aside account (3.0 tpd), should be sufficient to fully offset the temporary VOC emission reductions foregone due to PAR 1151. Further, these other rules are anticipated to achieve VOC emission reductions in greater quantities beyond the original targets, commitments, and obligations made by the South Coast AQMD at the time of the rule amendments.

Both PAR 1151 and the implementation of Control Measure CTS-01 are expected to result in VOC emissions reductions. Control Measure CTS-01 is anticipated to achieve both short- and long-term reductions in VOC emissions, while PAR 1151 is expected to result in long-term VOC emissions reductions of 0.19 tpd (equivalent to 380 pounds per day) at full implementation. The Final Program EIR for the 2022 AQMP concluded that Control Measure CTS-01 was expected to result in less than significant air quality impacts during operation. Similarly, PAR 1151 is expected to result in the same less than significant air quality impacts during operation due to the temporary VOC emissions increase over the short-term being offset by the SIP set-aside account and surplus emission reductions from other South Coast AQMD VOC rules, and a net air quality benefit over the long-term. Thus, the conclusion in the Final Program EIR for 2022 AQMP of less than significant air quality impacts during operation relative to Control Measure CTS-01 also applies to PAR 1151. As mentioned earlier, both PAR 1151 and Control Measure CTS-01 are expected to result in long-term VOC emission reductions, while the VOC emission reductions attributable to PAR 1151 will be a subset of the total expected VOC emission reductions from CTS-01; thus, upon full implementation of the proposed project, PAR 1151 will result in less than significant air quality impacts during operation.

Finally, the focus of Control Measure CTS-01 is to revise the VOC content for select product categories, incentivizing the use of super-compliant zero emission and low-VOC materials, and removing the VOC exemption status for pCBtF and t-BAc to address toxicity concerns, the Final Program EIR for the 2022 AQMP concluded that implementation of Control Measure CTS-01 would not result in emissions of other criteria pollutants that are typically associated with combustion activities (e.g., oxides of nitrogen (NOx), carbon monoxide (CO), sulfur oxides (SOx), particulate matter (PM)10, and PM2.5). Since PAR 1151 is partially implementing Control Measure CTS-01, PAR 1151 would also not be expected to cause emissions of these other criteria pollutants. Thus, PAR 1151 will have no air quality impacts associated with NOx, CO, SOx, PM10, and PM2.5 emissions. Since no significant operational air quality impacts were identified, no mitigation measures are necessary or required.

Toxic Air Contaminants

The Final Program EIR for the 2022 AQMP concludes that implementation of some control measures will cause an increase in toxic air contaminants emissions (e.g., ammonia slip from the use of ammonia in SCR technology) while implementation of other control measures specifically aim to reduce toxic air contaminant emissions (e.g., Control Measure CTS-01 which prohibits the use of pCBtF and t-BAc). In addition, decreases in criteria pollutant emissions will also result in decreases of toxic air contaminant emissions associated with combustion of transportation fuels and natural gas including diesel particulate, benzene, formaldehyde, and other TACs. When considered together, implementation of all control measures which comprise the 2022 AQMP is expected to cause an overall reduction in toxic air contaminant emissions. Control Measure CTS-01 specifically aims to reduce emissions of pCBtF and t-BAc, which are toxic air contaminants with high cancer potency factors and adverse health effects. Rule 102 contains a definition which describes what qualifies as a VOC and divides compounds into Group I and Group II. 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 in Rule 102 such as perchloroethylene (0.021). While some coatings manufacturers could use new toxic air contaminant compounds in their revised product formulations, for any formulations that contain toxic compounds that are also classified as a VOC, the VOC limits in PAR 1151, which partially implement Control Measure CTS-01, serve to restrict the overall toxicity in coatings subject to the rule. Since t-BAc and pCBtF have higher cancer potency factors compared to other Group II compounds, the overall toxicity of any reformulations from implementing PAR 1151 would be reduced relative to baseline conditions. It should be noted that Group II compounds are already restricted because they are toxic, potentially toxic, upper atmospheric ozone depleters, or cause other adverse environmental impacts. Therefore, the overall amount of toxic air contaminants used in product reformulations will be reduced as a result of implementing PAR 1151. The long-term health benefit of prohibiting these toxic compounds with substantial adverse carcinogenic health effects (e.g., t-BAc and pCBtF) in PAR 1151 outweighs the temporary delayed VOC emission reductions that were discussed in the previous section. Based on the foregoing analysis, implementation of PAR 1151 is similar to the implementation of Control Measure CTS-01 in that they both will result in an overall reduction in the amount of toxic air contaminants used in future product reformulations. The Final Program EIR for the 2022 AQMP concluded less than significant impacts relative to toxic air contaminants for Control Measure CTS-01. As such, PAR

1151, which partially implements Control Measure CTS-01, is expected to result in the same air quality benefit over the long-term relative to reduced toxics. Thus, the previous conclusion of less than significant air quality impacts relative to toxic air contaminants in the Final Program EIR of the 2022 AQMP for all control measures, including Control Measure CTS-01 which is the basis for PAR 1151, will also apply to PAR 1151. Further, since no significant operational air quality impacts relating to emissions of toxic air contaminants were identified in the Final Program EIR of the 2022 AQMP for all control measures, including Control Measure CTS-01 which is the basis for PAR 1151, no mitigation measures were necessary or required at that time. Similarly, since PAR 1151 is also expected to also have less than significant air quality impacts relating to toxic air contaminants, no mitigation measures are necessary or required.

Conclusion and Cumulative Impacts

The Final Program EIR for the 2022 AQMP concluded that implementation of Control Measure CTS-01 would result in less than significant operational air quality impacts and less than significant impacts from toxic air contaminants. The 2016 AQMP established a set-aside account for VOC emissions, in the event that not all of the adopted control measures would achieve the entire amount of desired emission reductions. At the time, the SIP set-aside account had an initial balance of 0.5 tpd of VOC for each year from 2017 to 2030, and 0.2 tpd of VOC in 2031, to accommodate projects with a positive conformity determination (i.e., emissions that exceed the de minimis threshold). In addition, the 2022 AQMP revised the amount in the SIP set-aside reserve to 3.0 tpd VOC emissions specifically designated for the potential technology assessment and phaseout of toxics for VOC-based rules as targeted by Control Measure CTS-01. Thus, any delayed or permanent VOC emission reductions foregone from amending the various VOC-based rules, including but not limited to PAR 1151, will be offset by the VOC emissions in the SIP set-aside account. In addition, other opportunities for reducing VOC emissions from product formulations are expected to continue to occur over the long-term due to future VOC limits that are currently in rules that have not yet gone into effect. Therefore, cumulative air quality impacts from PAR 1151 and all other AQMP control measures when considered together, are not expected to be significant because implementation of all AQMP control measures, and in particular PAR 1151, is expected to result in net emission reductions and an overall air quality improvement.

Relative to cumulative impacts, the Final Program EIR for the 2022 AQMP concluded that implementation of the 2022 AQMP, when combined with past, present, and reasonably foreseeable activities, would contribute to cumulative considerable impacts to air quality during construction, but would not contribute to cumulatively considerable impacts to air quality during operation (including toxic air contaminants). PAR 1151 implements Control Measure CTS-01 and will have no impact to air quality during construction, and a net benefit to air quality during operation. There are no new impacts that would occur from implementing PAR 1151 which would change the previous conclusions of the Final Program EIR for the 2022 AQMP for the control measures, including Control Measure CTS-01, regarding cumulatively considerable impacts to air quality during construction. Further, no new mitigation measures would be required. Therefore, the cumulative impacts to air quality during construction would remain significant and unavoidable.

Hydrology and Water Quality

In the 2022 AQMP, Control Measure CTS-01 committed to revising the VOC content for select product categories, incentivizing the use of super-compliant zero emission and low-VOC materials, and removing the VOC exemption status for pCBtF and t-BAc to address toxicity concerns. The analysis in the Final Program EIR for the 2022 AQMP concluded that implementation of Control Measure CTS-01 would be expected to cause potential adverse hydrology and water quality impacts associated with the increased use of water-based formulations.

Implementation of a project would be considered to have significant adverse hydrology or water quality impacts if any of the following conditions occur:

Water Demand

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 262,820 gallons per day of potable water.
- The project increases demand for total water by more than five million gallons per day.

Water Quality

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Impacts to Water Demand

One of the commitments in Control Measure CTS-01, which is the basis for PAR 1151, is to reformulate conventional coatings into low-VOC coatings. The process of reformulating coatings relies on some water in the product chemistry and water for clean-up, but historically, reformulating coatings has not resulted in significant adverse impacts on water demand. The potential increase in water use associated with Control Measure CTS-01 was evaluated in the Final Program EIR for the 2016 AQMP (and restated in the Final Program EIR for the 2022 AQMP) for both manufacturers of water-based coatings and water used by consumers to clean equipment used in the application of the coatings. The analysis was conservative and assumed that one gallon of water would be used to manufacture one gallon of coating applied, and one gallon of water would be used to clean-up equipment for every gallon of coating applied. The analysis determined that the water demand associated with the manufacture of water-based formulations combined with

their associated clean-up activities was estimated to be 62,547 gallons per day. This estimate was especially conservative because the majority of manufacturers of coatings are neither located within South Coast AQMD's jurisdiction nor California. Thus, as a practical matter, only the water used for reformulations manufactured within South Coast AQMD's jurisdiction plus the portion of the water needed for clean-up purposes would be representative of the potential water demand impact that would occur as a result of the continued implementation of Control Measure CTS-01.

The Final Program EIR for the 2022 AQMP concluded that implementation of Control Measure CTS-01 was not expected to cause significant impacts on both water demand and water supplies, as water use resulting from coating reformulation was not anticipated to exceed the South Coast AQMD significance threshold of 5,000,000 gallons per day of total water (comprised of potable, recycled, and groundwater) demand, and the 262,820 gallons per day significance threshold for potable water. The implementation of PAR 1151 is not expected to increase water demand estimates beyond that previously projected by Control Measure CTS-01. This is because the CTS-01 estimates were conservative, and most affected facilities under PAR 1151 use products manufactured outside of South Coast AQMD's jurisdiction and/or California. However, for all control measures, the Final Program EIR for the 2022 AQMP concluded potentially significant impacts to water demand, and a portion of the water demand impacts, though to a lesser extent was associated with Control Measure CTS-01. For example, the production of alternative fuels associated with Control Measure MOB-06 was estimated to require 200,000 to 300,000 gallons of water per day which exceeded the South Coast AQMD significance threshold of 262,820 gallons per day for potable water.

Based on these considerations, less than significant water demand impacts were expected due to the implementation of the Control Measure CTS-01. The previous conclusion of less than significant water demand impacts reached in the Final Program EIR of the 2022 AQMP for Control Measure CTS-01, which is the basis for PAR 1151, will also apply to PAR 1151.

Impacts to Water Quality

The Final Program EIR for the 2022 AQMP anticipated that, for Control Measure CTS-01, certain products are expected to be reformulated to meet low-VOC content limits with future effective dates and the reformulated products could have widely varying compositions depending on the chemical characteristics of the replacement solvents chosen. Implementation of the 2022 AQMP control measures may result operational water quality impacts due to potentially increased volumes of wastewater generated via the reformulation of coatings, solvents, adhesives, and lubricants into water-based products to reduce the VOC content per Control Measure CTS-01. The 2022 AQMP concluded that implementation of Control Measure CTS-01 and consequently, the use of water to manufacture coatings, solvents, and other products, would generally lead to formulations that would be less toxic than the currently available products that contain either exempt or non-exempt chemicals (that are typically petroleum-based) and as such, generate fewer adverse impacts to water quality. Thus, the Final Program EIR for the 2022 AQMP concluded less than significant impacts to water quality for Control Measure CTS-01. Currently, there are some products in use that are formulated with exempt or non-exempt solvents, and clean-up may require something other than water, such as acetone or other solvents, which could cause adverse water quality impacts if the clean-up materials are disposed of improperly. However, under Control

Measure CTS-01, most products are expected to be made with water, but other reformulations could continue to be made with an exempt solvent such as acetone or other solvents that are exempted from the definition of a VOC in South Coast AQMD's Rule 102. For those products made with water, water would also be used for clean-up and the resultant wastewater could be disposed of into the public sewer system.

Control Measure CTS-01 could also result in the use of ultraviolet (UV)-cured resins and coatings which would not be expected to use water or generate wastewater. Lastly, the phase-out of the VOC exemption of t-BAc and pCBtF in architectural coatings, automotive coatings, paint thinners, multi-purpose solvents, and adhesives is needed to reduce exposure to toxic materials and will also reduce the potential for adverse water quality impacts. The application methods for reformulated products are expected to require the same types of equipment (e.g., spray guns, rollers, and brushes) currently used in coating operations such that the corresponding clean-up practices employed to clean the coating equipment would also not be expected to change.

Historically, the reformulation of conventional coatings into low-VOC coatings which rely on water in the product chemistry and water for clean-up has not resulted in significant adverse impacts on water quality. As previously discussed in the section on Impact to Water Demand, the potential wastewater impacts associated with Control Measure CTS-01 were previously evaluated in the Final Program EIR for the 2016 AQMP for both wastewater from manufacturing water-based coatings and wastewater generated by consumers when cleaning equipment used in the application of the coatings. The analysis was conservative and assumed that one gallon of water would be used clean-up equipment for every gallon of coating applied resulting in approximately 21,000 gallons per day of wastewater generated, which is relatively small when compared to the estimated wastewater treatment capacity of about 2,900 mgd within South Coast AQMD's jurisdiction.

Based on discussions with coating formulators, the trend in coating technologies is to replace toxic/hazardous solvents with equal or less toxic/hazardous solvents. Thus, lowering the VOC content limit of coatings will have reduce any existing impacts on water quality because reformulation is not expected to change the current practices of applying coatings and other materials, or alter the product chemistry, or disposal methods to be more detrimental to water quality. In the past, the South Coast AQMD has received comments that, with the increased use of water-based technologies to meet the lower VOC content limits, there will be a greater trend of improperly disposing of coating applicators into groundwater, storm drains, or sewer systems; however, there is no data to support this contention. In any event, there are several reasons why there should be no significant increase over current practices for improper disposal due to greater use of water-based coatings. Results from a survey of contractors determined that a majority either dispose of the waste material properly as required by the coating manufacturer's Safety Data Sheets or recycle the waste material regardless of type of coating. Based upon these considerations, there is no reason to expect that paint contractors will change their disposal practices, especially those that dispose of wastes properly, with the implementation of Control Measure CTS-01. The Final Program EIR for the 2022 AQMP conclusion of less than significant impacts on water quality due to implementation of Control Measure CTS-01 applies to PAR 1151, as PAR 1151 does not propose any expected new or additional impacts on water quality compared to Control Measure CTS-01. The Final Program EIR for the 2022 AQMP concluded that the implementation of all

control measures combined is expected to result in significant water quality impacts; as such a mitigation measure to address these impacts was adopted (e.g., HWQ-5). Mitigation measure HWQ-5 states that, for any project that would increase the generation of wastewater, the facility must review diversion options for reusing the treated wastewater on-site, in lieu of discharge, where applicable and feasible. However, for Control Measure CTS-01, the Final Program EIR for the 2022 AQMP concluded that less than significant impacts to water quality would occur because the reformulated products would have less toxicity. Since clean-up activities are not expected to be substantially different with PAR 1151 relative to what was contemplated for Control Measure CTS-01, an increased volume of wastewater would not be expected. As such, mitigation measure HWQ-5, is not applicable to implementing PAR 1151. Further, since PAR 1151 partially implements Control Measure CTS-01, wastewater which may be generated from the application reformulated coatings is expected to contain less hazardous materials than the wastewater generated for solvent-based coating operations, thereby reducing toxic influent to the wastewater treatment plants.

Based on these considerations, less than significant water quality impacts were expected due to the implementation of the Control Measure CTS-01. The previous conclusion of less than significant water quality impacts reached in the Final Program EIR of the 2022 AQMP for Control Measure CTS-01, which is the basis for PAR 1151, will also apply to PAR 1151.

Conclusion and Cumulative Impacts

The analysis in the Final Program EIR for the 2022 AQMP indicated that implementation of Control Measure CTS-01 was not expected to result in significant water demand, water supply, and water quality impacts. PAR 1151 implements Control Measure CTS-01, and implementation of PAR 1151 is not expected to create new water demand, water supply, and water quality impacts or make the previously identified water demand, water supply, and water quality impacts more severe. Thus, the previous conclusion in the Final Program EIR of the 2022 AQMP of less than significant impacts to hydrology and water quality for Control Measure CTS-01, which is the basis for PAR 1151, will also apply to PAR 1151.

However, the Final Program EIR for the 2022 AQMP concluded that implementation of the 2022 AQMP, which combined the effects of Control Measure CTS-01 with other measures such as L-CMB-01, L-CMB-05, L-CMB-06, MCS-02, MOB-05, MOB-06, MOB-07, and M0B-08, would result in significant impacts to hydrology and water quality. The Final Program EIR for the 2022 AQMP includes mitigation measures such as HWQ-1 to HWQ-5 to lessen hydrology and water quality impacts. These mitigation measures have been adopted for all previously mentioned control measures. No new or modified mitigation measures will be required for the implementation of the proposed project. Relative to cumulative impacts, the Final Program EIR for the 2022 AQMP concluded that implementation of the 2022 AQMP, when combined with past, present, and reasonably foreseeable activities, would contribute to cumulatively considerable impacts to hydrology and water quality. Since PAR 1151 is expected to have less than significant impacts on hydrology and water quality, there are no new impacts which would change the previous conclusions of the Final Program EIR for the 2022 AQMP regarding cumulatively considerable impacts to hydrology and water quality. Further, no new mitigation measures would be required if

PAR 1151 is implemented. Therefore, the cumulative impacts to hydrology and water quality would remain significant and unavoidable due to the combined effect of all other control measures.

Environmental Topic Areas With No Impacts

This section identifies the environmental topic areas that were analyzed and concluded to have no impacts if the proposed project is implemented. The 2022 AQMP was designed to reduce emissions from existing emission sources and products and promote the use of the cleanest technology available. The analysis provided in the Final Program EIR for 2022 AQMP concluded that implementation of Control Measure CTS-01 would have no impacts to the following environmental topic areas: aesthetics, agriculture and forestry resources, biological resources, cultural and tribal cultural resources, energy, GHG emissions, geology and soils, land use and planning, mineral resources, noise, solid and hazardous waste, population and housing, public services, recreation, transportation, and wildfire. Since no impacts were identified, no mitigation measures are necessary or required for these environmental topic areas. PAR 1151 implements Control Measure CTS-01 without adding new or modifying the previously analyzed impacts for each environmental topic area; therefore, the overall conclusions of no impacts for these environmental topic areas in the Final Program EIR for the 2022 AQMP will remain unchanged if PAR 1151 is implemented.

The following summarizes the conclusions of no impacts in the Final Program EIR for the 2022 AQMP for each of these environmental topic areas and explains how the conclusions for each environmental topic area also apply to the implementation of PAR 1151.

Aesthetics: The majority of control measures from the 2022 AQMP to be implemented within South Coast AQMD's jurisdiction would typically affect industrial, institutional, or commercial facilities located in appropriately zoned areas (e.g., industrial and commercial areas) that are not usually associated with scenic resources. The Final Program EIR of the 2022 AQMP 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.

PAR 1151 proposes to prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. Therefore, PAR 1151 will not require construction activities to install new or modify existing structures, which means that PAR 1151 will also not require new light generating equipment or cause any changes in the visual profile of the facility structures. Implementation of the 2022 AQMP control measures, including Control Measure CTS-01, was not expected to create additional demand for new lighting or exposed combustion sources that could create glare, adversely affecting day or nighttime views in any areas. Based on these considerations, no significant aesthetic impacts were expected due to the

implementation of the 2022 AQMP. The previous conclusion of no impact to aesthetics reached in the Final Program EIR of the 2022 AQMP for all control measures, including Control Measure CTS-01 which is the basis for PAR 1151, will also apply to PAR 1151.

Agriculture and Forestry Resources: Implementation of 2022 AQMP control measures, including Control Measure CTS-01, was not expected to generate any new construction of buildings or other structures that would require conversion of farmland to non-agricultural use, conflict with zoning for agricultural uses, or a Williamson Act contract. Further, 2022 AQMP control measures would typically affect existing facilities that are located in appropriately zoned areas. Any new facilities that may be affected by 2022 AQMP control measures would be constructed and operated for reasons other than complying with the control measures. Improvements would continue to be subject to project-level review, including review of agricultural impacts under CEQA. Therefore, implementation of the 2022 AQMP would not affect Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, or conflict with a Williamson Act contract, if implemented. Physical changes associated with the 2022 AQMP were expected to occur at previously developed sites and would not warrant construction in undeveloped areas where agricultural and forest resources are more likely to exist. The 2022 AQMP control measures would have no direct or indirect effects on agricultural or forest land resources because their focus is on achieving emission reductions by increasing the low-emitting technologies into market. The 2022 AQMP could provide benefits to agricultural and forest land resources by improving air quality in the region, thus reducing the adverse oxidation impacts of ozone on plants and animals. PAR 1151 proposes to prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. Therefore, PAR 1151 will not require construction activities to install new or modify existing structures. Under PAR 1151, manufacturing of the automative coatings 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 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 Final Program EIR of the 2022 AQMP for all control measures, including Control Measure CTS-01 which is the basis for PAR 1151, will also apply to PAR 1151.

Biological Resources: Implementation of the 2022 AQMP control measures, including Control Measure CTS-01, was not expected to result in habitat modification, adversely affect any riparian habitat, or interfere with the movement of any native resident or migratory fish or wildlife species. Facilities affected by the 2022 AQMP control measures have already been disturbed and typically do not contain open space, water features, or natural vegetation. Sites might contain landscaping that consists of ornamental trees, vegetation, and turf. The sites of the affected facilities that would be subject to the control measures were not expected to support riparian habitat, federally protected wetlands, or migratory corridors because they are existing, developed, and established industrial and commercial facilities. Additionally, special status plants, animals, or natural communities identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service were not expected to be found on or in close

proximity to the affected facilities. PAR 1151 proposes to prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. Therefore, PAR 1151 will not require construction activities to install new or modify existing structures. As with the PAR 1151, the manufacture of automotive coating 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 1151 would not be expected to result in or have the potential to result in the removal of vegetation with potential to support wildlife. Based upon these considerations, significant adverse biological resources were not expected from implementing the 2022 AQMP. Therefore, the previous conclusion of no impact to biological resources reached in the Final Program EIR for the 2022 AQMP for all control measures including Control Measure CTS-01, which is the basis for PAR 1151, will also apply to PAR 1151.

Cultural and Tribal Cultural Resources: PAR 1151 was crafted to partially implement Control Measure CTS-01 of the 2022 AQMP and as such, proposes to prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. As is the case with Control Measure CTS-01, PAR 1151 will also not require construction activities to install new or modify existing structures. Also, most facilities affected by 2022 AQMP control measures would be located on previously disturbed industrial and commercial sites where there is little likelihood of identifiable artifacts. Consequently, with no expected construction resulting from implementing Control Measure CTS-01, which is the basis for PAR 1151, no city or county planning department approvals for construction activities subject to project-level review, including review for impacts to cultural and tribal and cultural resources, would be required.

In addition, regarding the topic of cultural resources, commercial and industrial areas are generally not located in historic districts, and implementation of the 2022 AQMP control measures, including Control Measure CTS-01 which is the basis for PAR 1151, was not expected to require or cause a substantial adverse change in the significance of a historical cultural resource. For this reason, the Final Program EIR for the 2022 AQMP concluded no impacts for the topic of cultural resources. Since PAR 1151 implements Control Measure CTS-01 from the 2022 AQMP, the previous conclusion of no impact to cultural resources reached in the Final Program EIR for the 2022 AQMP will also apply to PAR 1151.

Further, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either eligible or listed in the California Register of Historical Resources or local register of historical resources. The provisions of CEQA, Public Resources Code Section 21080.3.1 et seq. (also known as Assembly Bill 52 or AB 52), require meaningful consultation with California Native American Tribes on potential impacts to tribal cultural resources, as defined in Public Resources Code Section 21074. In addition, as part of the AB 52 process, Native American tribes must submit a written request to the relevant lead agency if it wishes to be notified of projects that require CEQA public noticing

and are within its traditionally and culturally affiliated geographical area. South Coast AQMD maintains a list of Native American tribes which wish to receive CEQA notices.

As such, the South Coast AQMD provided a formal notice of the 2022 AQMP 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). The NAHC notification list provided a 30-day period during which a Tribe may respond to the formal notice, in writing, requesting consultation on the 2022 AQMP. However, no Tribes requested consultation during the 30-day comment period for the 2022 AQMP. Since PAR 1151, implements Control Measure CTS-01 from the 2022 AQMP, no separate tribal consultation pursuant to AB 52 to address site-specific requests identified by the tribes would be needed to implement PAR 1151.

The Final Program EIR for the 2022 AQMP concluded less than significant impacts for the environmental topic of tribal cultural resources out of an abundance of caution for all of the control measures combined because some of the control measures could require physical modifications and disturbance to existing structures and/or soil. However, Control Measure CTS-01 was not one of the control measures that was identified as resulting in the potential for any physical modifications, and thus, if evaluated individually, the effect of Control Measure CTS-01 on tribal cultural resources would have no impact. Since PAR 1151 implements Control Measure CTS-01 from the 2022 AQMP, no impact to tribal cultural resources is also expected for PAR 1151.

Geology and Soils: The 2022 AQMP control measures, including Control Measure CTS-01, would not directly or indirectly expose people or structures to earthquake faults, seismic shaking, seismic-related ground failure including liquefaction, lateral spreading, landslides, mudslides, or substantial soil erosion. Most facilities affected by 2022 AQMP control measures would be located on previously disturbed industrial and commercial sites where there is little likelihood of identifiable artifacts. It is possible, however, that cultural or archaeological resources or human remains may nevertheless be discovered. PAR 1151 proposes to prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. Therefore, PAR 1151 will neither require construction activities to install new or modify existing structures nor soil excavation. Therefore, no significant impacts to geology and soils are expected to occur. Further, projects implemented as a result of the 2022 AQMP would be subject to project-level review, including review of both geological and paleontological impacts under CEQA, as applicable. The Final Program EIR for the 2022 AQMP concluded that implementation of the control measures, including Control Measure CTS-01, would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature or result in other significant adverse geology or soils impacts. The previous conclusion of no impact to geology and soils reached in the Final Program EIR for the 2022 AQMP for all control measures including Control Measure CTS-01, which is the basis for PAR 1151, will also apply to PAR 1151.

Energy: The Final Program EIR for the 2022 AQMP previously analyzed energy impacts associated with reformulating automative coating products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting

compounds. The Final Program EIR for the 2022 AQMP control measure, including Control Measure CTS-01, concluded that no energy impacts would occur because manufacturing and reformulation of automative coating 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. PAR 1151 proposes to prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. Therefore, PAR 1151 will not require construction activities to install new or modify existing structures. Thus, the previous conclusion of no impact to energy reached in the Final Program EIR for the 2022 AQMP for all control measures including Control Measure CTS-01, which is the basis for PAR 1151, will also apply to PAR 1151.

GHG Emissions: 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.[12] 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 timeframe. As a result, the South Coast AQMD's current position is to evaluate the effects of GHGs over a longer timeframe (e.g., annually) than a single day. 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,

[12] Jacobsen, Mark Z. "Enhancement of Local Air Pollution by Urban CO2 Domes," Environmental Science and Technology, as describe in Stanford University press release in March 2010, available at: https://pubs.acs.org/doi/10.1021/es903018m

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, p. 3-10). The first two tiers involve: 1) exempting the project because of potential reductions of GHG emissions allowed under CEQA; 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.

Many control measures of the Final Program EIR for the 2022 AQMP are expected to have GHG emissions associated with construction over the short-term; however, construction GHG emissions are amortized over 30 years and are much less that the overall potential operational emissions reductions of GHGs over the long-term. The Final Program EIR for the 2022 AQMP identified potential significant impacts for GHG emissions, however, Control Measure CTS-01, which implements PAR 1151, was concluded to not contribute to the conclusion of significance. The purpose of PAR 1151 is to reduce emissions of VOCs, toxic air contaminants, and stratospheric ozone-depleting compounds from the application of automotive coatings because formulations of these products contain compounds that are primarily comprised of VOCs but can also contain toxics and stratospheric ozone-depleting compounds. However, automotive coatings 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 1151 does not contain any proposed limitations on the use of GHG compounds. PAR 1151 proposes to prohibit the manufacture, supply, sale and use of automotive coatings containing t-BAc and pCBtF but neither of these compounds are considered a GHG pollutant. In addition, the main focus of PAR 1151 is to revise VOC limits and/or their corresponding effective dates for certain automotive coatings categories, which will result in potentially significant operational air quality impacts for VOC emissions during the Phase I interim period when high-VOC coatings without t-BAc and pCBtF will be used until low-VOC coatings can be reformulated without t-BAc and pCBtF during Phase II . Therefore, no significant GHG impacts are expected. Further, PAR 1151 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 appendix, automotive coatings 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 1151 is implemented, combustion-generated GHG pollutants (e.g., CO2, CH4, N2O) would also not be created if PAR 1151 is implemented. In conclusion, the proposed revisions to the VOC limits and/or their corresponding effective dates for certain automotive coatings categories in PAR 1151 along with the proposed prohibition of t-BAc and pCBtF to reduce toxics contained in certain automotive coatings will have no significant impact on GHG emissions. Therefore, PAR 1151 is not expected to generate GHG emissions either directly or indirectly, that may have a significant impact on the environment. Further,

implementation of PAR 1151 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 1151.

The Final Program EIR for the 2022 AQMP concluded potentially significant GHG operational emissions over the short-term and less than significant GHG emission impacts over the long-term for the entire 2022 AQMP. However, Control Measure CTS-01 was not one of the control measures that contributed to these short- and long-term GHG impacts.

In addition, the Final Program EIR for the 2022 AQMP also concluded that the cumulative air quality impacts for past, present, and reasonably foreseeable future projects may show quantitively that the emissions benefit of implementing the 2022 AQMP is greater than the expected short-term emission increases in GHG emissions. As such, the cumulative operational GHG impacts were concluded to be less than significant.

Since PAR 1151 implements Control Measure CTS-01, PAR 1151 will not contribute to these aforementioned GHG impacts or make them more severe at the project- or cumulative-level. Thus, PAR 1151 is not expected to result in any additional significant GHG impacts. Since no significant GHG emission impacts were identified for PAR 1151, no mitigation measures are necessary or required. Similarly, since PAR 1151 will not contribute to any of the GHG impacts previously analyzed in the Final Program EIR for the 2022 AQMP, the previous conclusion that cumulative operational GHG impacts would be less than significant and not cumulatively considerable will remain unchanged if PAR 1151 is implemented.

Land Use and Planning: Since the 2022 AQMP does not require construction of major new land use developments in any areas within South Coast AQMD's jurisdiction, none of the control measures, including Control Measure CTS-01, were expected to physically divide any established communities within South Coast AQMD's jurisdiction. For purposes of evaluating potential land use impacts, the analysis assumed that no new rail or truck traffic routes would be constructed, but rather that existing truck and rail routes and corridors would be modified. The truck and rail corridors likely to be involved are primarily associated with rail yards and intermodal facilities in industrial zones within the Southern California area. Since none of the existing transportation routes would likely be modified and no new transportation routes were anticipated, no land use conflicts, or inconsistencies with any general plan, specific plan, local coastal program, or zoning ordinance were expected. Activities that result from implementing the various 2022 AQMP control measures would be subject to project-level review that would assess consistency with adopted land use regulations, including review of impacts to land use and planning under CEQA, as applicable. Any proposed modification to an existing rail or truck traffic route/corridor would require a separate CEQA evaluation. No significant land use impacts were identified because any activities undertaken to implement the 2022 AQMP control measures would be expected to comply with, and not interfere with, applicable land use plans, policies, or regulations of an agency with jurisdiction over the project, including, but not limited to the general plans, specific plans, local coastal programs or zoning ordinances. PAR 1151 proposes to prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other

amendments for new labeling and reporting requirements, and for rule clarification or streamlining. Therefore, PAR 1151 will not require construction activities to install new or modify existing structures. The previous conclusion of no impact to land use and planning reached in the Final Program EIR for the 2022 AQMP for all of the control measures, including Control Measure CTS-01, will also apply to PAR 1151.

Mineral Resources: The analysis in the Final Program EIR for the 2022 AQMP indicated that there were no provisions in the 2022 AQMP that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state, or of a locally important mineral resource recovery site delineated in a local general plan, specific plan, or other land use plan. PAR 1151 proposes implement Control Measure CTS-01 and prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. Therefore, PAR 1151 will not require construction activities to install new or modify existing structures. Implementation of the 2022 AQMP control measures, including Control Measure CTS-01, is not expected to result in an increase in the use of mineral resources. The 2022 AQMP was not expected to have any significant effects on the use of important minerals. Therefore, no new demand for mineral resources was expected to occur and no significant adverse mineral resources impacts from implementing the proposed project were anticipated. The previous conclusion of no impact to mineral resources reached in the Final Program EIR for the 2022 AQMP will also apply to PAR 1151.

Noise: Implementation of a project would be considered to have significant adverse noise impacts if any of the following conditions occur: 1) construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers; and 2) the proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary. PAR 1151 proposes to implement Control Measure CTS-01 and prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. Therefore, neither Control Measure CTS-01 nor PAR 1151 will require construction activities to install new or modify existing structures. Since implementation of CTS-01 and PAR 1151 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. Therefore, implementation of CTS-01 and PAR 1151 is not expected to have an effect on noise. The previous conclusion of no impact to noise reached in the Final Program EIR for the 2022 AQMP regarding Control Measure CTS-01 will also apply to PAR 1151.

Population and Housing The analysis in the Final Program EIR for the 2022 AQMP indicated that none of control measures, including Control Measure CTS-01, were anticipated to generate any significant effects, either direct or indirect, on the population or population distribution of people living in the South Coast AQMD's jurisdiction as no additional workers were anticipated to be required. Consistent with past experience, the analysis also indicated that the existing labor pool within the southern California area would accommodate the labor requirements for any modifications requiring construction at affected facilities. Additionally, the 2022 AQMP control measures, including Control Measure CTS-01, contain no provisions that would cause displacement of substantial numbers of people or housing necessitating construction of replacement housing elsewhere. PAR 1151 proposes to implement Control Measure CTS-01 and prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. Therefore, neither Control Measure CTS-01 nor PAR 1151 will require construction activities to install new or modify existing structures. Accordingly, population and housing impacts were not expected from the implementation of the 2022 AQMP. The previous conclusion of no impact to population and housing reached in the Final Program EIR for the 2022 AQMP regarding all of the control measures, including Control Measure CTS-01, will also apply to PAR 1151.

Public Services: Fire protection and emergency medical services are provided to affected facilities and residential developments by local county and city fire departments. All activities undertaken as a result of implementing the 2022 AQMP control measures, including Control Measure CTS-01, would be required to comply with fire-related safety features in accordance with the applicable provisions of the adopted California Fire Code, any county or city ordinances, and standards regarding fire prevention and suppression measures related to water improvement plans, fire hydrants, fire access, and water availability. Based on the preceding discussion, implementation of the 2022 AQMP control measures, including Control Measure CTS-01, would not adversely affect the ability of local fire protection to provide adequate service and impacts would be less than significant. Implementation of the 2022 AQMP control measures would not result in an increase in calls for police protection. Implementation of the 2022 AQMP control measures occur at existing facilities or promote transition to low-emitting products but would not facilitate the construction of new development. At existing industrial facilities, on-site security is typical and would be expected to continue with the same demand for police department support as is currently needed. Furthermore, implementation of the 2022 AQMP control measures would not induce population growth either directly or indirectly. PAR 1151 proposes to implement Control Measure CTS-01 and prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. Therefore, PAR 1151 will not require construction activities to install new or modify existing structures. Considering that no increase in local population would be expected to occur as a result of PAR 1151, there would also be no additional demand for new or expanded schools, parks, and libraries such that no other adverse population or housing impacts would be expected. The previous conclusion of no impact to public

services reached in the Final Program EIR for the 2022 AQMP for all of the control measures, including Control Measure CTS-01, will also apply to PAR 1151.

Recreation: Demand for parks and recreational facilities in an area is usually determined by the area's population. Per Population and Housing section, the implementation of the 2022 AQMP control measures, including Control Measure CTS-01, does not include the development of new homes, which would lead to an increase in population and thereby, the need for additional park and recreation facilities. PAR 1151 proposes to implement Control Measure CTS-01 and prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. Therefore, PAR 1151 will not require construction activities to install new or modify existing structures. The implementation of the 2022 AQMP control measures, including Control Measure CTS-01, would not increase the use of existing neighborhood and regional parks or other recreational facilities, nor would it require construction of new or expanded parks or recreational facilities. The Final Program EIR for the 2022 AQMP concluded that no impacts to park and recreational facilities would occur, and no mitigation measures were necessary in order to implement all of the control measures, including Control Measure CTS-01. Thus, the previous conclusion of no impact to recreation reached in the Final Program EIR for the 2022 AQMP for all of the control measures, including Control Measure CTS-01, will also apply to PAR 1151.

Solid and Hazardous Waste: Implementation of a project would be considered to have significant solid and hazardous waste impacts if the generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills. The Final Program EIR for the 2022 AQMP concluded that implementation of Control Measure CTS-01 is not expected to result in significant solid and hazardous waste impacts. PAR 1151 proposes to implement Control Measure CTS-01 and prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. Therefore, PAR 1151 will not require construction activities to install new or modify existing structures. The sell-through and use-through provisions in PAR 1151 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 1151, 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 1151, 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 1151 would not be expected to create a new need to dispose of unused materials that do not comply with PAR 1151 upon adoption. The previous conclusion of no impact to solid and hazardous waste reached in the Final Program EIR for the 2022 AQMP regarding Control Measure CTS-01 will also apply to PAR 1151.

Transportation: Implementation of the 2022 AQMP control measures, including Control Measure CTS-01, was not expected to substantially alter vehicle mileage or transportation routes. The 2022 AQMP builds upon transportation and related Transportation Control Measure (TCMs) developed by Southern California Association of Governments (SCAG) and included in the SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Therefore, the 2022 AQMP control measures would not conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. As discussed in the Population and Housing paragraph, implementation of the 2022 AQMP was not expected to generate additional employee or population increases. Therefore, no increase in vehicle trips was expected. Therefore, less than significant impacts from the implementation of the 2022 AQMP control measures were expected to occur. PAR 1151 proposes to implement Control Measure CTS-01 and prohibit the use of pCBtF and t-BAc as solvents in automotive coatings due to toxicity concerns. The proposed project primarily includes the revised VOC limits for several product categories or new subcategories and the prohibition of pCBtF and t-BAc use in the regulated products. PAR 1151 proposes some other amendments for new labeling and reporting requirements, and for rule clarification or streamlining. As with Control Measure CTS-01, PAR 1151 will not require construction activities to install new or modify existing structures. Under PAR 1151, automative coatings are expected to be manufactured, formulated, and applied in a similar fashion as occurred with the previous rule version with no expected changes in modes of transportation, delivery, recirculation, and distribution of automotive coatings. The previous conclusion of no impact to transportation reached in the Final Program EIR for the 2022 AQMP for all of the control measures, including Control Measure CTS-01, will also apply to PAR 1151.

Wildfire: Activities that result from implementation of the 2022 AQMP control measures, including Control Measure CTS-01, would not block or otherwise interfere with the use of evacuation routes; nor would they interfere with operations of emergency response agencies or with coordination and cooperation between such agencies. Therefore, there would be no impacts on emergency activities. PAR 1151 proposes to implement Control Measure CTS-01 and prohibit the use of pCBtF and t-BAc in automotive coating formulations due to toxicity concerns. As such, PAR 1151 includes revised VOC limits for several product categories and new subcategories plus a prohibition from using pCBtF and t-BAc in the regulated products. PAR 1151 proposes amendments for new labeling and reporting requirements, and for rule clarification or streamlining. As with Control Measure CTS-01, PAR 1151 will not require construction activities to install new or modify existing structures. The previous conclusion of no impact to wildfire reached in the Final Program EIR for the 2022 AQMP for all of the control measures, including Control Measure CTS-01, will also apply to PAR 1151.

In summary, relative to cumulative impacts, the Final Program EIR for the 2022 AQMP concluded that implementation of all of the control measures, including Control Measure CTS-01, when combined with past, present, and reasonably foreseeable activities, would not contribute to cumulatively considerable impacts to the following environmental topic areas: aesthetics, agriculture and forestry resources, biological resources, cultural and tribal cultural resources, GHG emissions, energy, geology and soils, land use and planning, mineral resources, population and housing, public services, recreation, transportation, and wildfire. However, the Final Program EIR for the 2022 AQMP concluded that implementation of control measures other than Control

Measure CTS-01, would contribute to cumulatively considerable impacts to noise and solid and hazardous waste.

Since implementation of Control Measure CTS-01 via PAR 1151 is expected to have no impact on any of the aforementioned environmental topic areas, there are no new or modified impacts expected from PAR 1151 which would change the previous conclusions in the Final Program EIR for the 2022 AQMP regarding cumulatively considerable impacts.

CONCLUSION

Control Measure CTS-01 of the 2022 AQMP was previously analyzed in the Final Program EIR for the 2022 AQMP, and PAR 1151, which implements Control Measure CTS-01, is not expected to result in new or modified physical changes or impacts that were not previously analyzed in the Final Program EIR for the 2022 AQMP.

The Final Program EIR for the 2022 AQMP concluded that implementation of all the control measures combined would result in potentially significant impacts to the environmental topic areas of air quality and GHG emissions, energy, hazards and hazardous materials, hydrology and water quality, noise, and solid and hazardous waste. However, the Final Program EIR for the 2022 AQMP concluded that implementation of Control Measure CTS-01 would only have potentially significant hazards and hazardous materials impacts, less than significant air quality and hydrology and water quality impacts, and no impacts to the environmental topics of GHG emissions, energy, noise, and solid and hazardous waste. The previous conclusions reached in the Final Program EIR for the 2022 AQMP for Control Measure CTS-01, will also apply to PAR 1151.

For environmental topic areas which were concluded in the Final EIR for the 2022 AQMP to have potentially significant impacts, mitigation measures were adopted. Nonetheless, no environmental topic area identified as having a potentially significant impact in the Final Program EIR for the 2022 AQMP was concluded to be feasibly mitigated to less than significant levels. When combined with the Connect SoCal Plan, the SIP strategies, state policies, and other past, present, and reasonably foreseeable activities, implementation of the 2022 AQMP was concluded to result in significant environmental impacts. No additional feasible mitigation measures to reduce the significant cumulative impacts were identified, and cumulative impacts to the environmental topic areas of air quality and greenhouse gas emissions, energy, hazards and hazardous materials, hydrology and water quality, noise, and solid and hazardous waste remained significant and unavoidable.

Therefore, the environmental impacts associated with implementing PAR 1151 are within the scope of what was previously analyzed in the Final Program EIR for the 2022 AQMP for Control Measure CTS-01. Thus, no new Initial Study would need to be prepared leading to either an EIR or a Negative Declaration pursuant to CEQA Guidelines Section 15168(c)(2). PAR 1151 does not introduce new information which will cause new significant effects or substantially worsen or make more severe significant effects that were previously analyzed in the Final Program EIR for the 2022 AQMP. There is no change to the mitigation measures or alternatives previously considered in the Final Program EIR for the 2022 AQMP. Thus, in accordance with CEQA

Guidelines Section 15168(c)(2), a subsequent EIR would not be required pursuant to CEQA Guidelines Section 15162.

Based on the preceding analysis, pursuant to CEQA Guidelines Section 15168(c)(2), PAR 1151 is considered a later activity within the scope of the 2022 AQMP which was analyzed in the Final Program EIR for the 2022 AQMP. The mitigation measures developed in the Final Program EIR for the 2022 AQMP for the previously adopted Control Measure CTS-01 in the 2022 AQMP upon which PAR 1151 relies are also applicable to the implementation of PAR 1151 and will remain in effect. [CEQA Guidelines Section 15168(c)(3)].

Therefore, PAR 1151 is considered a later activity within the scope of the Final Program EIR for the 2022 AQMP and the Final Program EIR for the 2022 AQMP adequately describes the later activity for the purposes of CEQA such that no new environmental document will be required.

REFERENCES

The 2022 AQMP, along with the December 2022 Final Program EIR for the 2022 AQMP (State Clearinghouse No. 2022050287) and its corresponding Findings, Statement of Overriding Considerations, and Mitigation, Monitoring, and Reporting Plan, upon which the analysis of PAR 1151 relies, are incorporated by reference pursuant to CEQA Guidelines Section 15150 and are available from the South Coast AQMD's website at:

December 2022 Final Program EIR for the 2022 AQMP

Master webpage: https://www.aqmd.gov/home/research/documents-reports/lead-agency-scaqmd-projects/south-coast-aqmd-projects---year-2022

December 2022 Final Program EIR for the 2022 AQMP (including Appendices)

https://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2022/2022-aqmp-final-peir.pdf

Findings, Statement of Overriding Considerations, and Mitigation Monitoring and Reporting Plan: https://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2022/2022-aqmp-attachment1toresolution.pdf

2022 AQMP: https://www.aqmd.gov/home/air-quality/air-quality-management-plans/air-quality-mgt-plan

Introduction

1. South Coast AQMD, December 2022, 2022 Air Quality Management Plan, https://www.aqmd.gov/home/air-quality/air-quality-management-plans/air-quality-mgt-plan.
2. South Coast AQMD, December 2022, Final Program Environmental Impact Report for the 2022 Air Quality Management Plan. https://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2022/2022-aqmp-final-peir.pdf.

Summary of Environmental Impacts

3. South Coast AQMD, December 2022, Attachment 1 to the Governing Board Resolution for the Final Program Environmental Impact Report for the 2022 Air Quality Management Plan -Findings, Statement of Overriding Considerations, and Mitigation, Monitoring, and Reporting Plan. https://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2022/2022-aqmp-attachment1toresolution.pdf.

Environmental Impact Area with Potentially Significant Impacts

4. South Coast AQMD Air Quality Analysis Handbook: https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook
5. Southern California Association of Governments, May 2020, Connect SoCal (2020–2045 Regional Transportation Plan/Sustainable Communities Strategy), https://scag.ca.gov/read-plan-adopted-final-connect-socal-2020

6. California Air Resources Board, September 2022, 2022 State Strategy for the State Implementation Plan (2022 State SIP Strategy), https://ww2.arb.ca.gov/resources/documents/2022-state-strategy-state-implementationplan-2022-state-sip-strate

Environmental Impact Area with Less Than Significant Impacts

7. South Coast AQMD, March 2023, South Coast AQMD Air Quality Significance Thresholds, https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf.

Environmental Impact Area with No Impacts

8. 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: https://pubs.acs.org/doi/10.1021/es903018m

APPENDIX B: RESPONSES TO COMMENTS

Public Workshop Comments

Staff held a Public Workshop on September 30, 2024, to provide a summary of PAR 1151. The following is a summary of the verbal comments received on PAR 1151 and staff's responses.

Commentor #1 Doug Raymond – W.M. Barr

Doug Raymond expressed support of an alternative MIR limit for the adhesion promoter coating category and requested that staff update the rule language in paragraph (k)(5) to provide more clarity on acceptable product labeling.

Staff Response to Commentor #1:

Staff expressed appreciation for the support of the alternative MIR limit since staff believes it will provide manufacturers the flexibility to formulate using a variety of solvent options while still meeting the South Coast AQMD air quality goals. After an assessment of existing adhesion promote composition data, staff is proposing an alternative MIR limit of 2.0 g O_3/g VOC for the adhesion promoter coating category.

Commentor #2 Andrew Batenhorst – California Autobody Association (CAA)

Andrew Batenhorst expressed concern that the cost of complying with the proposed amendments will be passed onto autobody shops by the automotive coating manufacturers.

Staff Response to Commentor #2:

Staff acknowledged the commentor's concerns and potential cost impacts to small businesses that a product reformulation may pose, but the toxic health impacts should also be a major concern and priority. Staff expects the overall cost of the coatings in Phase I to decrease since pCBtF is more expensive when compared to solvents used in National Rule compliant product formulations; this should result in a cost savings to businesses. To further minimize any potential impacts on small business, staff is working closely with automotive coating manufacturers to determine the most feasible pathway and timeline to achieve the end goal of removing the toxic compounds and obtaining emission reductions. Additionally, staff will also be conducting a Socioeconomic Impact Assessment that will analyze potential regional economic impacts and will consider the range of probable costs to industry and small businesses.

Commentor #3 Emily Taylor – Axalta

Emily Taylor expressed concern that the six-month timeline after rule adoption for the VOC labeling requirements in paragraph (h)(2) is not sufficient. Commentor suggested a twelve-month timeline after rule adoption or no labeling requirement if the necessary VOC product information is provided upon request.

Staff Response to Commentor #3:

Staff received several similar written comments regarding the challenges of relabeling products sold nationally and, accordingly, revised the proposal to include a 12-month exemption from the labeling requirements.

Commenter #4 Ryan Brown – AkzoNobel

Ryan Brown expressed concern that the proposed amendments would increase costs for the autobody shops and customers due to manufacturers needing to reformulate. Ryan also mentioned that the proposed timeline is not sufficient for the manufacturers to reformulate products to comply with the proposed amendments.

Staff Response to Commentor #4

Staff responded by recognizing that reformulating is a challenge for manufacturers. Due to national rule products being allowed for sale and use during phase I and the high cost of pCBtF, staff expect costs to be lower than current coatings sold for use in the South Coast AQMD. During phase II, staff believes the benefit of removing toxins justify the potential cost increases and the proposed changes are below the cost effectiveness threshold. Staff worked with all of the major automotive coating manufacturers to draft feasible timelines and VOC limits.

Commentor #5 Tim Ronak – AkzoNobel

Tim Ronak expressed concern that the proposed amendments would increase the cost of the manufacturing and supply chain for the affected products, and as a result increase insurance premiums for both shop owners and consumers. Commentor also expressed concern of potential economic impacts that the proposed amendments may have on the South Coast market.

Staff Response to Commentor #5

Staff acknowledged the commentor's concerns and considers potential cost impacts in the rule development process. Staff is working closely with the major automotive coating manufacturers to determine most feasible pathway and timeline that will minimize any potential impacts on the end-user.

Commentor #6 Bruce Williams – Axalta

Bruce Williams acknowledged staff's efforts and agreed with the proposal to remove pCBtF and t-BAc from affected products. Commentor expressed concern on the alignment of the use-through and sell-through timelines for the different VOC limit changes.

Staff Response to Commentor #6

Staff acknowledge the commentor's concerns. Staff aligned the sell-through and use-through timelines for: 1) the Phase I compliant products with the applicable Phase II effective date for their respective categories, 2) the alternative color coating VOC limit in small containers, and 3) the reducer and thinner being reformulated to comply with the PWMIR limit. These alignments will ease the transition as automotive coatings are frequently sold as a system, so each component should be allowed to be sold and used in the same timeframe.

Commentor #7 Rhett Cash – American Coatings Association

Rhett Cash expressed concern about the proposed timelines for the two phases as well as the VOC limits for the color and metallic coatings. Commentor suggested raising the proposed VOC limits for the color and metallic coatings or extending the proposed timelines. Commentor also suggested removing the proposed MIR compliance method for reducers and thinners or increasing the proposed MIR limit. Commentor also suggests the inclusion of volatile methyl siloxane use in the

rule language. Commentor also expresses the difficulties that reporting information on multi-component coatings as proposed would cause.

Staff Response to Commentor #7

Staff acknowledge the commentors concerns and suggestions. After discussing with multiple manufacturers, staff consider the VOC limit timelines to be reasonable to achieve. Staff did increase the proposed MIR limit for thinners and reducers based on further research and input from manufacturers and modified the prohibition level for volatile methyl siloxanes (VMS).

Commentor #8 Ben Mendoza – Kelly's Bodyshop

Ben Mendoza expressed concern about the impact on small businesses that the proposed changes can cause due to increases in costs. Commentor also asked what other actions South Coast AQMD is taking to improve air quality in the district.

Staff Response to Commentor #8

Staff acknowledge the commentor's concerns, and further explained some examples of how South Coast AQMD is planning on improving air quality. Staff also recommended reading the Air Quality Management Plan for further information.

Commentor #9 Steve Baran – AkzoNobel

Steve Baran expressed concern for the economic impact to paint shops or other sellers having unsellable stock of the prohibited coatings. Commentor also suggested extending the use-through and sell-through timelines.

Staff Response to Commentor #9

Staff acknowledge the commentor's concerns and clarified that there will be use-through and sell-through timelines that will allow shops to transition out of the prohibited coatings. Staff did consider revising the use-through and sell-through timelines and made some adjustments.

Commentor #10 – Katy Wolf

Katy Wolf expressed concern over the toxicity of volatile methyl siloxanes. Commentor also expressed concern on allowing use of VMSs, and later having toxicity concerns in the future, similar to the process currently occurring with pCBtF.

Staff Response to Commentor #10

Staff acknowledge the commentor's concerns and committed to reviewing the proposed amendments to Rule 1151. PAR 1151 retained the prohibition of VMSs but will allow for a slightly higher level, 0.1 percent instead of 0.01 percent, due to the potential for these compounds to be present as a by-product or contaminant.

Commentor #11 Bruce Williams – Axalta

Bruce Williams asked for clarification on the purpose of the carve out for the eight-ounce cans and how it would be practically applied.

Staff Response to Commentor #11

Staff responded by clarifying that the specified rule language was intended to support smaller shops with low usage of solvent based coatings, and the shops would only be able to purchase the solvent based coatings in eight-ounce cans.

Comment Letters

Comment Letter #1

September 11, 2024

Chris Bradley
Planning, Rule Development and Implementation
South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765
Email: cbradley@aqmd.gov

Re: Proposed Amended Rule 1151 – Automotive Coatings

Dear Mr. Bradley:

Saint Clair Systems, Inc. is involved in the design and manufacture of viscosity control equipment for fluid dispensing systems. This includes UV/EB/LED cure applications for various customers. We are involved in industrial coatings and automotive finishing, adhesives and sealants, coil coatings, and printing sectors, just to name a few. We welcome the opportunity to comment on the proposed amendments to Rule 1151 – Automotive Coatings.

We appreciate the district's efforts to protect the air, but the current proposal adds a multitude of burdens to our industry and acts as a barrier to the implementation of clean, sustainable technology.

PAR 1151 treats all coating processes alike regardless of their environmental benefit. UV/EB/LED processes are formulated with no Volatile Organic Compounds (VOCs) or toxic air contaminants, and the application and curing process does not emit any Hazardous Air Pollutants (HAPs). Conversion away from solvent-based processes benefits the District, and your Board has provided incentives in the form of regulatory flexibility in several other rules such as R219 and most recently R301.

We strongly oppose the new additional requirements for reporting, recordkeeping and labelling in the latest R1151 proposal. The current Rule 109 requirements cover UV/EB/LED materials and sufficiently provides the district with compliance verification. PAR 1151 creates a whole host of mandates on businesses, even those outside California which will not result in any emission reductions. In fact, these additional requirements will deter businesses from investing in clean technologies like UV/EB/LED. Businesses who are willing to invest in clean technologies should be encouraged to do so. Saddling them with added regulatory costs is a disincentive and will be counterproductive to the District's mission. Thus, we urge the district to:

1-1

12427 31 Mile Road • Washington Township, Michigan • 48095
586.336.0700 • www.viscosity.com

saint clair systems

TEMPERATURE & VISCOSITY CONTROL

Provide exemptions for UV/EB/LED materials from section (g) Recordkeeping Requirements and section (h) Administrative and Reporting Requirements for Automotive Coating Manufacturers.

We hope we can continue to work with staff to add language that would remedy the harm being done to businesses in the South Coast who are looking to convert to cleaner, safer UV/EB/LED processes thereby providing the district emission reductions above and beyond those currently required in R1151.

1-1

Sincerely,

Michael R. Bonner
Vice President – Engineering & Technology
Saint Clair Systems, Inc.

12427 31 Mile Road • Washington Township, Michigan • 48095
586.336.0700 • www.viscosity.com

Staff Response to Comment Letter #1:

Response to Comment 1-1:

Staff appreciates Saint Clair Systems, Inc. comment letter. Staff agrees that conversion away from solvent-based processes yields an environmental benefit to our region and is also aware that the curing process associated with UV/EB/LED type system is not similar to traditional forms of automotive coatings which typically require air drying. South Coast AQMD rules are technology neutral and does not promote one technology type over another type provided the different technologies achieve the same emission reductions. Staff evaluates all currently available technologies that help meet air quality goals. As part of PAR 1151, staff assessed the current state of all VOC control technologies along with their associated costs prior to proposing a VOC limit. This evaluation was conducted on a class and category basis since each coating category may have their own unique challenges and performance requirements. The technology assessment includes meeting with coating manufacturers, evaluating emissions from existing coatings, and field visits to local businesses of various sizes ranging small volume to high production automotive repair facilities. During field visits, staff identified a business that has invested in the UV curing technology as part of their repair process; the UV curable coating used at this business is an undercoat categorized as a primer surfacer coating and typically limited to one square foot or less. Staff included data for UV primer in the BARCT assessment in Chapter 2; however, the VOC content of the coating is not zero-VOC and is formulated with a VOC content of approximately 200 g/L. While this coating is slightly below the proposed phase II VOC limit, the technology was not the driver of the proposed VOC limit as the high cost and low potential VOC reductions were not demonstrated to be cost effective.

In regard to the requirements in subdivision (g) for recordkeeping, these are not new requirements but existing requirements. The additional paragraphs in paragraph (g)(1) is incorporating by reference all requirements and exemptions under Rule 109 requirements with additional provisions to clarify how end users need to maintain records. Paragraphs (g)(2) and (g)(3) reference emission control systems for facilities that use coatings that exceed VOC limits. Any end user applying high-VOC UV/EB/LED coatings that use an emission control system must keep those records. Furthermore, subdivision (g) incorporates by reference Rule 109, including that rule's exemption from recordkeeping for "super compliant" materials. Rule 109 defines a super compliant material as any material containing 50 grams or less of VOC per liter of material. Rule 109, Paragraph (h)(2) states: "The provisions of this rule shall not apply to any Super Compliant Material(s) used at a facility which can demonstrate that the total permitted and non-permitted facility VOC emissions, including emissions from the super compliant material, do not exceed 4 tons in any calendar year as shown by annual VOC records." Therefore, facilities using the exemption must keep minimal records to verify that their VOC emissions meet the 4 ton per year criteria. An example of this recordkeeping can include, but is not limited to, maintaining all purchase receipts of super compliant material(s) and technical data sheets. Facilities using non-super compliant material(s) in addition to super compliant material(s) are still required to maintain records pursuant to Rule 109 for the non-super compliant material(s).

In regard to reporting requirements, without the reporting data provided by the manufacturers of these low-VOC products, it would not be possible for the South Coast AQMD to determine accurate emission inventories or observe trends in the use of ultra-low VOC content products. Staff relies on submitted Quantity and Emissions Reports (QERs) to determine the progress that has

been made to reformulate to lower VOC products. The sales volume reported from these lower VOC products also provides an indication of market acceptance. If UV/EB/LED or low-VOC technologies were to be excluded from the QERs, the technology would remain unnoticed as a potential clean technology alternative.

Comment Letter #2

September 13, 2024

Mr. Christopher Bradley
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: South Coast Air Quality Management District Proposed Amended Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations; ACA Comments

Dear Mr. Bradley:

The American Coatings Association (ACA) submits the following comments to the South Coast Air Quality Management District (SCAQMD) regarding Proposed Amended Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations. ACA is a voluntary, nonprofit trade association working to advance the needs of the paint and coatings industry and the professionals who work in it. The organization represents paint and coatings manufacturers, raw materials suppliers, distributors, and technical professionals. ACA serves as an advocate and ally for members on legislative, regulatory, and judicial issues, and provides forums for the advancement and promotion of the industry through educational and professional development services. ACA appreciates the opportunity to comment and looks forward to working with SCAQMD throughout the rulemaking process.

VOC Limits for Color Coatings, Metallic Color Coatings, and Tinted Mid-Coats

Some coatings manufacturers have expressed concerns with the proposed Phase II VOC limit of 250 g/L for color coatings, metallic color coatings, and tinted mid-coats. These concerns stem from technical and color matching challenges associated with reformulation of these products. In addition, some coatings manufacturers anticipate that the development of tinted mid-coats using waterborne technology will be very challenging. Due to these outstanding issues, ACA encourages the District to consider increasing the Phase II VOC limits for color coatings, metallic color coatings, and tinted mid-coats to 420 g/L. This VOC limit is consistent with the current VOC limits in effect for these products.

If SCAQMD decides to move forward with the Phase II VOC limit of 250 g/L for color coatings, metallic color coatings, and tinted mid-coats, then ACA requests that the District include an effective date of 1/1/2031 for these three categories. It will be very difficult for industry to complete the amount of work needed to reformulate with respect to color matching, the number of toners required, scale-up, color retrieval system updates, and launch logistics within SCAQMD's proposed timeline of 1/1/2030. A 1/1/2031 timeframe will give industry an additional year to develop, formulate, and test its products to ensure the availability of effective coatings as well as compliance with the new rule requirements. An additional year also aligns with SCAQMD's federal ozone requirements to record VOC emissions reductions prior to 2032.

2-1

901 New York Avenue, NW – Suite 300 West | Washington, DC 20001 | 202-462-6272

VOC Limit for Gloss Clear Coatings

SCAQMD's proposed Phase II VOC limit for gloss clear coatings is 250 g/L. This VOC limit will be particularly challenging due to the technological methods of addressing the lower limit. Industry is not aware of current or foreseeable technology that has demonstrated the ability to replicate OEM appearance with refinish coatings, along with required drying speed. ACA encourages the District to consider increasing the Phase II VOC limits for gloss clear coatings to 420 g/L. This VOC limit is consistent with the VOC limit for these product types in the EU. 2-2

Group II Exempt Compound Language

ACA encourages SCAQMD to consider increasing the threshold in paragraph (f)(8) to 0.1 percent by weight. Of particular concern for industry is the Group II Exempt Compounds in subparagraph (f)(8)(A) and the use of volatile methyl siloxanes (VMS). The use of VMS has been allowed in other coatings rules in the District, including amended Rule 1168. The limited use of VMS is common in the ceramic coatings market, including DIY and specialty detailing services for car enthusiasts. As such, ACA supports a threshold of 0.1 percent by weight instead of 0.01 percent by weight in paragraph (f)(8). This small threshold increase would be helpful for the impurity levels of certain VMS that are unavoidable with other silicone chemistries that are not Group II Exempt. 2-3

Provisions for Reducers/Thinners

ACA requests that SCAQMD remove all provisions and requirements related to reducers/thinners. ACA believes that the underlying reason for including specific requirements for reducers/thinners is due to enforcement issues within the District. The issue is not with the products themselves.

In addition, it's important to note that the VOC content of reducers/thinners is already regulated through the VOC limits of the other coatings categories. It is redundant to have both PW-MIR limits for reducers/thinners and VOC limits on the ready-to-spray mixtures that use the same reducers/thinners. It also adds unnecessary constraints to an already limited formulation toolbox for coatings manufacturers. Consequently, ACA encourages SCAQMD to remove all provisions and requirements for reducers/thinners from Rule 1151. 2-4

Reporting Requirements

The new QER reporting requirements outlined in paragraph (h)(4) will be burdensome for coatings manufacturers. In particular, the requirement for multi-component coatings in subparagraph (h)(4)(H) will be impossible for coatings manufacturers to report. It will require manufacturers to collect ready-to-spray data from every automotive refinish shop and customer that they sold automotive coating components to within SCAQMD for the reporting timeframe. These shops and customers mix the ready-to-spray coatings to color match a substantial number of different colors as is needed to match the color on other parts of automobiles and mobile equipment. The sheer amount of data that will be collected, collated, and formatted for the QER is untenable. With that said, the information from each individual shop or customer is available to SCAQMD during facility inspections. When an individual shop or customer is asked to produce this information during an inspection, it is much less data than what would be required to be aggregated for the QER. ACA urges SCAQMD to remove subparagraph (h)(4)(H). If the District proceeds with the reporting requirement in subparagraph (h)(4)(H), industry needs additional detail and specificity. 2-5

In addition, subparagraph (h)(4)(F) will require manufacturers to report annual volumes sold into the District, including products sold through distribution centers located within or outside the District. Many third-party distributors are reluctant to share details around sales to customers that are not under a rebate program or contract with the coatings manufacturer, as the distributors may view this non-contractual or rebated business as theirs to manage on their own. Coatings manufacturers may be forced to update distribution agreements to specify that distributors must comply with this new data requirement or risk being deauthorized as a distributor. However, there are some warehouse distributors that supply small jobbers with no contracts, who may not have formal agreements in place to fall back on in the event a jobber resisted providing the sales information. This requirement places the compliance burden on coatings manufacturers, but the data that the District wants reported is actually held by other parties in the distribution chain. ACA encourages SCAQMD to remove subparagraph (h)(4)(F). 2-6

Definitions

Paragraph (c)(5) defines Automotive Coating as "any Coating used or recommended for use in Motor Vehicles, Mobile Equipment, or Associated Parts and Components in refinishing, service, maintenance, repair, restoration, or modification, except metal plating activities." However, section (c) does not define or clarify the differences between refinishing, repair, and/or restoration. Repair and/or refinishing may also be considered processes that restore a vehicle's appearance back to its original condition. ACA encourages SCAQMD to clarify the terms "refinishing," "repair," and "restoration." 2-7

Epoxy Primer Category

Section (c)(14) of the revised preliminary draft rule language states that an epoxy primer must be labeled and formulated for vehicle restoration and that restoration is the process of restoring a vehicle's appearance back to its original condition. ACA requests that SCAQMD provide rationale for creating the epoxy primer category and its limitation of use to restoration.

In addition, ACA is seeking clarification on whether epoxy primers can be used for other purposes outside of restoration. There is also a concern that the rule language indicates manufacturers may only sell epoxy primers to those who will use the primer in restoration processes. Please clarify if the sales of epoxy primers for non-restoration use is prohibited. If allowed, please provide additional detail regarding the expected language for the labels and product literature. 2-8

Definitions of Matte-Clear Coating and Gloss Clear Coating

The definition of matte-clear coating in paragraph (c)(20) should be defined differently to accommodate clear coatings that have a mid-range value for gloss units and more closely align with how gloss is measured for these types of coatings. ACA suggests the following revised definitions for matte-clear coatings and gloss clear coatings:

> MATTE-CLEAR COATING means any Automotive Coating that is formulated with materials that do not impart color and is specifically labeled and formulated for application over a Color Coating or a previous layer of a Matte-Clear Coating, that registers a gloss of less than ~~40~~ 85 units on a 60-degree meter, according to ASTM Test Method D523. 2-9
>
> GLOSS CLEAR COATING means any Automotive Coating that is formulated with materials that do not impart color and is specifically labeled and formulated for application over a Color Coating or

Clear Coating, which registers a gloss of ~~40~~ 85 units or greater on a 60-~~unit~~ degree meter, according to ASTM Test Method D523.

2-9 Cont.

ACA recommends that the gloss cutoff be changed from 40 to 85 units at a 60-degree angle.

Alternative VOC Limit for Color Coatings & Package Size

ACA encourages SCAQMD to increase the package size to 1 quart (32 fluid ounces) for color coatings and metallic color coatings utilizing the alternative VOC limit provisions in paragraph (d)(3). Current shop usage of small volume ready-to-spray coatings exceed 8 ounces. Industry is also seeking clarification on whether this packing size alternative is for the automotive coating component or for the ready-to-spray mixture.

2-10

Labeling Requirements for Coatings Manufacturers

ACA encourages SCAQMD to consider either removing the labeling requirements in subparagraphs (h)(2)(A)-(B) or revising the labeling exemption in paragraph (k)(5) to one year from the date of rule adoption for Phase I products. U.S. EPA's National Rule does not require this information to be on the product label. Industry will be utilizing its current inventory that complies with both U.S. EPA's National Rule and SCAQMD's proposed Phase I requirements. It will be burdensome for industry to relabel its products with the additional information in subparagraphs (h)(2)(A)-(B). Over-stickering also adds unnecessary time, labor, and cost to the supply chain. In addition, if manufacturers are including the information in subparagraphs (h)(2)(A)-(B) on its current National Rule product labels, the categories may not align exactly with those defined in Rule 1151 and would likely create confusion for enforcement.

2-11

In lieu of the labeling requirements in subparagraphs (h)(2)(A)-(B), coatings manufacturers are able to provide this information on their VOC compliance wallcharts. These resources are available on the internet and would be as accessible to the District as the information on the actual product label.

Errors in Preliminary Staff Report – Table 2-12

ACA noticed several errors in Table 2-12 in the preliminary draft staff report. The values for several categories are incorrect or misrepresented in the "National Rule Limits (g/L)" column. ACA encourages SCAQMD to review and correct Table 2-12 in the staff report for accuracy and clarity.

2-12

Conclusion

Thank you for your consideration of ACA's comments. Please do not hesitate to contact me if you have any questions or require additional clarification.

Sincerely,

Rhett Cash
Counsel, Government Affairs

Submitted via email

4

Staff Response to Comment Letter #2:

Response to Comment 2-1:

Staff understands the concern some manufacturers may have regarding the proposed Phase II VOC limit of 250 g/L for color coatings, metallic coatings, and tinted mid-coats. However, staff has received feedback from several manufacturers that offer product lines for color coatings, metallic coatings, and tinted mid-coats that are currently commercially available and formulate at or below 250 g/L. Given that the compliant technology is available today, staff believes that the proposed effective date of 1/1/2030 is reasonable and provides sufficient time for manufacturers to reformulate and address color matching challenges. Several manufacturers have indicated they are currently working on reformulation efforts. Maintaining the effective date of 1/1/2030 is necessary to demonstrate attainment with the 2015 8-hour ozone National Ambient Air Quality Standards (NAAQS) for the South Coast Air Basin by 2032, and most importantly, sets the pathway for an to expedited phase-out of pCBtF and t-BAc as soon as practicable. Staff is maintaining the Phase II VOC limit proposal of 250 g/L since the technology is readily available.

Response to Comment 2-2:

Staff acknowledges that reformulation efforts and subsequent testing necessary to comply with a Phase II limit of 250 g/L for the gloss clear coat category can be a challenging process. Staff identified some water-based products currently available on the market which demonstrates it is technically feasible. PAR 1151 allows for several more years of testing and reformulation before the 250 g/L limit goes into effect. An effective date of 1/1/2030 should provide sufficient time to address the expressed challenges. Staff worked closely with coating manufacturers in developing the timelines and they have generally agreed with the proposed timeline for developing a suitable replacement that meets OEM requirements. Staff held several meetings with multiple coating manufacturers, and none expressed a major concern with the proposed Phase II limit of 250 g/L or its implementation timeline. Many manufacturers anticipated the upcoming prohibition of pCBtF and started working on reformulating and testing new products prior to this rule amendment.

Response to Comment 2-3:

Staff agrees with the concern associated with the presence of volatile methyl siloxanes (VMS) associated with silicone chemistries and thus have increased the threshold in paragraph (f)(7) from 0.01 percent to 0.1 percent by weight for VMS.

Response to Comment 2-4:

The PW-MIR limit for reducers and thinners proposed by staff was added in part to address the enforcement issues with non-compliant reducers being used throughout the South Coast AQMD. These non-compliant reducers are used as replacement for the recommended reducer/thinner specified by the manufacturer and when the non-compliant reducers are mixed with a basecoat, clear coat, or primer, the ready-to-spray mixture no longer complies with the VOC limit of their respective category. PW-MIR limits are applicable to stand alone reducer/thinners and are intended to reduce the amount of ozone created from the use of autobody coatings. Staff acknowledges there will be some reformulation necessary to meet the PW-MIR limit and based on the comments received, have increased the proposed limit from 1.0 to 1.5 g O_3/g VOC. Some existing reducers and thinners already meet this limit and an effective of 2030 allows time for the remaining reducers and thinners to comply. The PW-MIR will require coating manufacturers to prioritize solvents with lower-MIR to comply.

Response to Comment 2-5:
Staff worked to establish a balance between obtaining the necessary data while minimizing the impact on the regulated industry. Accurate inventory data is critical for planning, and most emissions from automotive coatings are from small autobody and collision shops that do not report their emissions to the South Coast AQMD; therefore, there is very limited data available to determine the emission inventory, product availability, and product trends.

To address the lack of data, the South Coast AQMD conducted a voluntary survey of product sales as part of rule development. The results from the survey are not a complete inventory because only five out of seven autobody coating manufacturers responded. Mandatory reporting in other coatings rules, such as Rule 314, which requires annual reporting and fees, provides clear benefits: emissions trends over time, enhanced understanding of the primary categories contributing to emissions and the widespread availability of low-VOC products in many applications.

Staff understands that reporting takes resources and therefore is only requiring reporting every five years starting in 2030. This strikes a balance between the need for accurate emission information and the burden of reporting on manufacturers. In addition, the reporting requirement is proposed to sunset in 2040.

Staff did make revisions to the reporting requirements for multicomponent coatings by only requiring the maximum regulatory VOC and maximum actual VOC for a product line. This will help streamline the reporting for the manufacturers and provide more meaningful data for the South Coast AQMD. In an instance where there are multiple colors in a product line, those colors can be reported as one line item with the maximum VOC content and volume sold.

Response to Comment 2-6:

Staff understands there will be challenges with the reporting requirements; however, PAR 1151 established the first reporting deadline sufficiently far in the future to accommodate any manufacturer and distributor agreements. In general, South Coast AQMD has stricter VOC limits for many types of products so the manufacturers must have a way to track those sales to ensure only compliant products are coming into our jurisdiction. They also must plan on the volume of coatings they must manufacture to meet the demand for coating sales within our jurisdiction; therefore, they should be able to accurately determine the sales for the specified years they will be required to report. The reporting requirements are very similar to other VOC reporting rules but with a longer timeframe between reports.

Response to Comment 2-7:
Staff believes it is not necessary to clarify the terms “refinish,” “repair,” or “restoration” since the terms are understood in plain language and the process for all three terms equates to restoring a vehicle appearance to its original appearance. Staff removed the reference to the term “restoration” in the definition of an epoxy primer because it created ambiguity.

Response to Comment 2-8:
PAR 1151 includes a new category for epoxy primers based on feedback from a coating manufacturer who expressed concerns about the ability to formulate an epoxy primer at or below 250 g/L VOC limit without the use of pCBtF. Staff identified several low-VOC epoxy primers;

however, they do use pCBtF. Staff created a carve out to allow for a slightly higher VOC limit of 340 g/L to achieve the desired performance. Based on sales-volume data, the volume for this category is fairly small when compared to other types of primers.

Response to Comment 2-9:
The definition of matte clear coating was intended to address a niche category of specialty clear coatings, used on a limited number of vehicles, that measure 40 units or less on a 60-degree meter. Manufacturers have indicated that matte clear coatings require a higher VOC limit due to the additional solvent used as a carrier for the matting agents that achieve the matte finish. Matte clear coatings are used in relatively small volumes and are not common compared to their gloss clear coating counterpart.

Staff does not believe that it is necessary to revise the definition for gloss clear coats from 40 to 85 units on a 60-degree meter; however, staff understands that vehicles gloss can change over time making repair and gloss/color matching challenging. A vehicle that left the factory at a gloss level well below 40 units can in time, increase to a gloss to above that level. Staff does not agree with establishing a gloss level for "matte clear coatings" as high as 85-gloss units, that level is clearly a high gloss coating. Staff is proposing to increase the gloss level for a "matte clear coating" to 70 units to address the challenges for repairing and matching lower-gloss clear finishes and will monitor the QERs to determine if adjustments are needed to the gloss levels and VOC limits in the future. Matte finishes are more of a niche category at this time, but their popularity is increasing which mean the emissions could increase because of this high VOC carve out.

Response to Comment 2-10:
The packaging size alternative is for any autobody coating or component purchased for use by an autobody shop. The intent of this alternative VOC limit is to allow for small autobody shops that have not transitioned to water-based coatings to continue to use solvent-based color coatings until the future effective Phase II date goes into effect. The alternative packaging size is to help address challenges and lessen the impact on small shops and individuals who purchase half pints for small jobs. Staff does not agree with increasing the packaging size to one quart since many individuals purchase only small amounts that are necessary; however, staff did include a longer pCBtF phase-out period for color coatings to allow time for the medium-sized shops who are using mixing equipment that will not accommodate half-pint cans. This extra time will allow for the needed training for painters to learn how to properly apply water-based color coatings.

Response to Comment 2-11:
Staff does not agree with removing the labeling requirements in subparagraph (h)(2)(A) and (h)(2)(B) but does agree with the suggestion for revising the labeling exemption in paragraph (k)(5) to one year from the date of rule adoption for Phase I products.

Response to Comment 2-12:
Staff appreciates pointing out the error in the table. The table that is being referenced is Table 2-8 in this draft staff report, it was Table 2-12 in the preliminary draft staff report. Staff will provide that update.

Comment Letter #3

September 13, 2024

Mr. Christopher Bradley
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: South Coast Air Quality Management District Proposed Amended Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations

Dear Mr. Bradley:

The W.M. Barr & Company, Inc. appreciates the opportunity to comment on the South Coast Air Quality Management District (SCAQMD) proposed amendments to Rule 1151 Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations.

The W.M. Barr & Company, Inc. is a major supplier of Multi-purpose Solvents and Paint Thinners to the retail market under our Klean-Strip® brand. Our family of brands supports consumers in their efforts to maintain clean and well-maintained homes. We also support the automotive paint and body industry bringing our expertise in paint removal, surface preparation and adhesion promoter technologies to life through our Bulldog® and Klean-Strip Automotive® brands.

VOC Limits

W.M. Barr supports the proposed VOC limits for the Adhesion Promoter category for Phase I and Phase II. While the Phase II date of 1/1/2028 and VOC limit of 740 g/l will be challenging, W.M. Barr will make every effort to reformulate their product to meet this limit. W.M. Barr also suggests that an alternative future effective limit for Adhesion Promoters could be between 2.0 and 2.5 MIR. The use of Reactivity to control VOC emissions is a new and evolving Science Based alternative to Mass based VOC limits. MIR limits may provide a key pathway for meaningfully reducing ozone generation while maintaining optimal product performance. W.M. Barr encourages the district to expand its regulation into Reactivity VOC limits. 3-1

Definitions

W.M. Barr also supports changes to the definition of Adhesion Promoter. The new definition more clearly describes the use of this product category. 3-2

Phase I implementation

W.M. Barr appreciates the ability to sell product that complies with the US EPA National VOC limits for the Adhesion Promoter in the first phase so that there is time to reformulate out of the compound tert-Butyl acetate (t-BAc). This reformulation period will allow the paint and body shops to have access to a product that supports appropriate paint adherence, preventing unnecessary additional paint repairs and VOC releases, while quickly reducing t-BAc usage. 3-3

W.M. Barr & Company, Inc.
1715 Aaron Brenner Dr, Suite 600, Memphis, TN 38120
www.wmbarr.com

1

Currently the US EPA National VOC labeling does not require the wording in section (h)(2)(A)-(B). W.M. Barr will be quickly making label changes to send product into the Air Quality Management District that is correctly labeled in accordance with section (h)(2)(A)-(B), but it will be difficult to ensure that older stock produced without the need for this terminology does not enter the channels of trade. We appreciate that section (k)(5) provides some relief, but respectfully the sales allowance for US EPA Nationally labeled product be applied for at least nine months or preferably one year to allow time for Rule 1151 Phase 1 compliant product without this specific label language to move through our distribution network. W.M. Barr supports the comments of the America Coatings Association as it relates to this issue. 3-4

Summary

W.M. Barr & Company, Inc. supports the staff proposal for the VOC limits and dates for the Adhesion Promoter. Likewise, W.M. Barr supports the definition change for the Adhesion Promoter category. Our company is respectfully requesting sales allowances for US EPA Nationally labeled product be extended to nine months or one year instead of six months as currently proposed. 3-5

W.M. Barr & Company, Inc would like to thank the staff for all their hard work. As well for the staff's willingness to engage in discussions on the proposed amendments and meet with us to iron out differences. Any questions or comments feel free to contact our consultant Doug Raymond at 440-339-4539 or at djraymond@me.com.

Sincerely,

Amanda Burwell

Amanda Burwell M.P.H
Director of Regulatory Affairs | W.M. Barr
C: (901) 426-0958
1715 Aaron Brenner Dr. | Suite 600 | Memphis. TN 38120
www.wmbarr.com

cc: Heather Farr
cc: Doug Raymond

Staff Response to Comment Letter #3:

Staff Response to Comment Letter #3:

Response to Comment 3-1:
Staff appreciates W.M. Barr & Company for submitting the comment letter and support of the proposed VOC limits for adhesion promoter categories. Staff's assesement of potetnial PW-MIR values for the adhesion promoter category concluded that a PW-MIR value of 2.0 g O_3/g VOC is appropriate for the category and aligns with W.M. Barr's suggestion.

Response to Comment 3-2:
Staff appreciates support for the revised definition of adhesion promoters.

Response to Comment 3-3:
Thank you for the comment and staff appreciates the reformulation efforts to phase out of t-BAc as soon as practicable.

Response to Comment 3-4:
Please see response to comment 2-12. Thank you.

Response to Comment 3-5:
Thank you for supporting of staff's proposal and staff appreciates W.M. Barr's continual engagement with staff to address key concerns.

Comment Letter #4

September 12, 2024

Mr. Chris Bradley
Planning, Rule Development and Implementation
South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765
Email: cbradley@aqmd.gov

Re: Proposed Amended Rule 1151 – Automotive Coatings-- OPPOSE

Dear Mr. Bradley:

Miwon Specialty Chemical Co., Ltd. is involved in the production and distribution of raw materials that are used in ink and coating formulations that are cured by exposure to UV and LED light or an electron beam. Many of our customers have manufacturing facilities in California. We welcome the opportunity to comment on the proposed amendments to Rule 1151 – Automotive Coatings. We appreciate the district's efforts to protect the air, but the current proposal adds a multitude of burdens to our industry and, more importantly, acts as a barrier to the implementation of clean technology. Therefore, we stand opposed to the draft version of the proposed rule.

PAR 1151 treats all coating processes alike, regardless of their environmental benefit. UV/EB/LED processes are not formulated with Volatile Organic Compounds (VOCs) or toxics air contaminants. Conversion away from solvent processes benefits the District and your Board has provided incentives in the form of regulatory flexibility in several other rules such as R219 and most recently R301. 4-1

We strongly oppose the new additional requirements for reporting, recordkeeping and labelling, in the latest R1151 proposal. The current Rule 109 requirements cover UV/EB/LED materials and sufficiently provide the district with compliance verification. PAR 1151 imposes a whole host of mandates on businesses, even those outside California, which will not result in any emission reductions. In fact, these additional requirements will deter businesses from investing in clean technologies like UV/EB/LED. Businesses who are willing to invest in clean technologies should be encouraged to do so and saddling them with added regulatory costs will be counterproductive to the district's mission. Thus, we urge the district to: 4-2

Provide exemptions for UV/EB/LED materials from section (g) Recordkeeping Requirements and section (h) Administrative and Reporting Requirements for Automotive Coating Manufacturers.

We hope we can continue to work with staff to add language that would remedy the harm being done to businesses in the South Coast who are looking to convert to UV/EB/LED processes thereby giving the district emission reductions above and beyond those currently required in R1151. 4-3

Sincerely,

Paul Elias

Director

Miwon Specialty Chemical USA

Staff Response to Comment Letter #4:

Response to Comment 4-1:
Staff appreciates Miwon Specialty Chemical USA for taking the time to submit the comment letter. Please see response to comment 1-1.

Response to Comment 4-2:
Please see response to comment 1-1.

Response to Comment 4-3:
Please see response to comment 1-1.

Comment Letter #5

BASF
We create chemistry

September 13, 2024

Mr. Christopher Bradley
Planning, Rule Development and Implementation
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

SENT BY EMAIL
cbradley@aqmd.gov

RE: BASF Comments on South Coast Air Quality Management District Proposed Amended Rule 1151

Dear Mr. Bradley,

BASF submits the following comments to South Coast Air Quality Management District (SCAQMD) regarding Proposed Amended Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations. BASF manufactures and sells automotive refinish coatings into the North American market under the brands Glasurit®, R-M®, baslac®, Limco®, and Norbin®. BASF refinish products are currently used by over 8,000 body shops across the US. BASF appreciates the opportunity to work with SCAQMD throughout the rule amendment process, including this opportunity to comment on the preliminary draft rule.

VOC Limits for Basecoats

BASF supports SCAQMD's proposal to implement a Phase II VOC limit of 250 g/L for basecoats, which includes the existing category Color Coating, and the proposed new categories Metallic Color Coating and Tinted Mid-Coat.

BASF's Glasurit® 100 Line waterborne basecoat system has been commercially available in North America since 2020 and is already used at over 800 body shops across North America today. 100 Line has a maximum VOC content of 250 g/L for all colors – including solid colors, metallic colors and mid-coat layers – and does not contain the solvents PCBTF or TBAC. More information about 100 Line, including VOC wallcharts, TDSs and SDSs can be found on our website: https://refinish.basf.us/brands/glasurit/

BASF also offers several other waterborne basecoat systems which have a maximum ready-for-use VOC content of 420 g/L for all colors and including mid-coats, without PCBTF or TBAC. Lowering the proposed Phase I VOC limit for the Tinted Mid-Coat category from 750 g/L to 420 g/L could be another VOC emissions reduction opportunity for SCAQMD to consider, as compliant products are already commercially available today. 5-1

BASF has already provided the maximum VOC content data for 100 Line and our other products to SCAQMD via our timely response to the Rule 1151 Coating Manufacturer Survey. We note, however, that *Figure 2-4: Metallics and Solid Color VOC Content* on pg. 2-16 of the Preliminary Draft Staff Report released on August 16, 2024 does not accurately reflect the data BASF provided in the survey, which is that 250 g/L VOC content is achievable today for all colors, including solid and metallic colors. We request that SCAQMD consider correcting *Figure 2-4* for the Final Staff Report.

Given that compliant technology is commercially available today, BASF supports SCAQMD's ambition to implement the 250 g/L Phase II VOC limit for basecoats as soon as practical, to realize VOC emission reductions earlier.

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BASF

We create chemistry

VOC Limits for Primer Surfacer and Primer Sealer

BASF supports the Phase II VOC limit of 250 g/L for the Primer Surfacer and Primer Sealer categories, as proposed in the Revised Preliminary Draft Rule released on September 3, 2024.

This VOC limit will provide coatings manufacturers with some flexibility to develop different solutions to satisfy the gamut of body shop needs and provide the performance properties required for OEM certifications. Given that 250 g/L is the current VOC limit for primers in Rule 1151, maintaining 250 g/L as the VOC limit for Phase II will not lead to an increase in VOC emissions when compared to today. Any further lowering of the VOC limit for primers and primer surfacers will limit the types of technology coatings manufacturers can develop and could lead to lower productivity for body shops, decreased product performance and challenges passing OEM certifications for the coating system.

While waterborne primers with lower VOC levels may be suitable for quick repairs of small areas, they may not be suitable for full body repairs, nor provide all the properties body shops need for the wide variety of repairs and substrates they may need to deal with. Waterborne primers also have longer dry times than solventborne primers, which will slow down body shops and impact their productivity. Attempting to improve drying by introducing reactive primers and/or increased bake time could make the primers more difficult to sand. Further, this increased usage of heat for curing waterborne primers will lead to more energy usage from electric or gas sources at body shops. Repairs done using waterborne primers will also have a decreased likelihood of passing OEM certifications, as properties such as salt spray, humidity and stone chip resistance will be difficult to achieve. Water from the basecoat layer could penetrate into the primer layer, resulting in a shorter lifetime of the coating. If the coating system does not pass OEM certifications, body shops would not be able to complete OEM warranty repairs, resulting in business loss for shops in SCAQMD. 5-2

In summary, not all primers are interchangeable or universal in application usage. Coatings manufacturers need the flexibility of a higher VOC limit in order to develop a variety of primer surfacer and primer sealer solutions.

Matte Clearcoat Definition

The proposed definition of Matte Clear Coating is too narrow, and does not encompass the full range of gloss levels that are considered matte. The typical range of gloss levels for matte clearcoats is between 0-85 units, measured at a 60 degree angle. The gloss level may vary based on the specific car part being coated. For example, trim pieces may require higher gloss levels than the main body and gloss levels for vertical coated panels may differ from horizontal coated panels. Further, matte clearcoats applied over light and pure silver colors may also require a higher gloss level.

Since automotive OEM matte clearcoats all have different levels of gloss, refinish coatings manufacturers need to provide products that are flexible enough for body shops to be able to match the appearance of the coating on any car.

Therefore, BASF requests SCAQMD revise the definitions of Matte Clear Coating and Gloss Clear Coating as follows: 5-3

> MATTE-CLEAR COATING means any Automotive Coating that is formulated with materials that do not impart color and is specifically labeled and formulated for application over a Color Coating or a previous layer of a Matte-Clear Coating, that registers a gloss of less than ~~40~~ 85 units on a 60-degree meter, according to ASTM Test Method D523.
>
> GLOSS CLEAR COATING means any Automotive Coating that is formulated with materials that do not impart color and is specifically labeled and formulated for application over a Color Coating or Clear Coating, which registers a gloss of ~~40~~ 85 units or greater on a 60-~~unit~~ degree meter, according to ASTM Test Method D523.

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PWMIR Requirement for Reducers and Thinners

BASF requests that SCAQMD consider eliminating the proposed new PWMIR limit for Reducers and Thinners. The VOC content of Reducers and Thinners is already regulated via the VOC limits for ready-for-use coatings. Adding a PWMIR requirement on top of this is redundant and adds unnecessary constraints to coatings manufacturers' already limited formulation toolbox.

Alternately, if SCAQMD insists on introducing this new PWMIR requirement for Reducers and Thinners, BASF requests that SCAQMD consider updating the sell-through and use-through provisions for Reducers and Thinners in paragraph (d)(6) to 24 and 36 months, respectively, to align with the sell-through and use-through provisions for the other coatings categories set forth in paragraph (d)(5). Many National Rule or European products which comply with Phase I VOC limits rely on reducers with PWMIR values >1.0 when mixed to be ready-for-use. We appreciate that SCAQMD adjusted the effective date in Table 2 to align with the latest proposed Phase II effective date of 2030. Similarly aligning the sell-through and use-through provisions in paragraphs (d)(5) and (d)(6) will ensure that all phase-out timings match and prevent confusion for distributors and end-users. 5-4

Reporting Requirement

BASF requests that SCAQMD consider removing or revising the new Quantity and Emission Report (QER) requirement set forth in paragraph (h)(4), as it will lead to increased administrative and recordkeeping requirements which will be burdensome to coatings manufacturers and distribution partners.

Subparagraph (h)(4)(F) introduces a requirement for coatings manufacturers to report "total annual volume sold into or within [SCAQMD], including products sold through distribution centers located within or outside [SCAQMD]." Details on product sales through third party distributors may not be readily available to coatings manufacturers, and distributors may be reluctant to share such details with manufacturers.

Additionally, the proposed reporting requirement for multi-component automotive coatings, as outlined in subparagraph (h)(4)(H), should be removed or revised. A vast majority of automotive refinish coatings are not supplied as ready-for-use coatings, but instead must be mixed with reducers, hardeners and/or additives in manufacturer-specified mixing ratios prior to application. Industry standard for communicating mixing ratios and maximum VOC content of ready-for-use coatings is via the TDS and/or Wallcharts. Examples of BASF wallcharts can be found on our website: https://refinish.basf.us/?s=wallchart+south+coast. 5-5

The specific reducer or hardener that a body shop painter chooses for a given job is dependent on many factors, including the temperature and humidity. It's not possible for a coating manufacturer to know exactly what products were mixed together for every job; therefore, it's not possible for the coatings manufacturer to correlate product sales volumes to specific product mixing combinations, since these decisions occur at the body shop level.

Further, for color coatings, each basecoat system consists of approximately 80 toners, which can be used in various combinations to match any color that has been painted on a car, amounting to tens of thousands of colors. Therefore, it would be incredibly burdensome to attempt to list every possible combination of toners, mixing clears, etc., and would again be impossible to tie these combinations to specific sales volumes. Such a list would also be so lengthy and complicated that it would not provide value to SCAQMD.

Instead, if SCAQMD insists on requiring manufacturers to report ready-for-use VOC content information on the products we sell, we suggest the agency consider limiting the requirement to report only maximum ready-for-use regulatory VOC for a given coating product or system. This could potentially be done in a format similar to the Coating Manufacturer Survey that was used for PAR 1151.

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Training Centers

BASF appreciates SCAQMD's decision to incorporate a 10-year exemption for training centers, as outlined in subparagraph (k)(2)(B) of Revised Preliminary Draft PAR 1151. This temporary exemption from the PCBTF and TBAC prohibitions will enable coatings manufacturers with training facilities located in SCAQMD to continue to support all customers, including painters from other air districts, during this transition period. Due to the possibility that other jurisdictions may not adopt similar regulations within the 10 year period, we request that SCAQMD remain open to revisiting this exemption timeline in the future. 5-6

Alignment with Other Jurisdictions

BASF encourages SCAQMD to minimize changes to coating category names in order to maintain alignment with existing VOC regulations in other jurisdictions as much as possible.

For example, since the ultimate Phase II limit is proposed to be 250 g/L for all solid color coatings, metallic color coatings and tinted mid-coats, BASF requests that SCAQMD consider maintaining only the existing "Color Coating" category, to reduce complexity and promote alignment with existing VOC regulations in other jurisdictions. Further, the proposed change of the category "Clear Coating" to "Gloss Clear Coating" is unnecessary and deviates from the categories laid out in other automotive refinish VOC regulations. The difference between "Clear Coating" and "Matte Clear Coating" should still be understood by end users, as these terms are commonly used today. Modifying the category name would lead to increased administrative burdens, such as the need to update product documentation and labelling. 5-7

BASF also encourages SCAQMD to promote alignment of VOC category names and limits in any future discussions with regulatory authorities in other jurisdictions contemplating similar changes to their VOC regulations.

Thank you for your consideration of these comments. Please do not hesitate to contact me by email or phone if you have questions or require additional information.

Best regards,

Rachel Staran

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Staff Response to Comment Letter #5:

Response to Comment 5-1:

Staff appreciates BASF for taking the time to submit the comment letter and support for the Phase II VOC limit of 250 g/L for basecoats, as well as BASF's efforts, commitment, and leadership to early adoption of low VOC technology without the use of pCBtF or t-BAc as solvents. Having products that are commercially available today, and in use, proves that through research and testing, it is technologically feasible to achieve low limits. We also really appreciate BASF taking the time and effort to compile and submit data to South Coast AQMD as part of the Manufacturer Survey. The Survey analysis for the basecoat category relied on averages which may explain why the BASF data was not accurately reflected. Staff reviewed the data provided by BASF and a distinction was made in the data between solid color and metallic colors. Staff was not aware that the Glasurit® 100 line consisted of a 250 g/L for both metallics and solid colors. Staff has revised the assessment and clarified the analysis with a discussion of BASF's commercially available Glasurit® 100 line that meets the current limit of 250 g/L without pCBtF.

Response to Comment 5-2:

Staff understands that not all primers are universal in application which is why several subcategories of primers were created to address the challenges. Staff also agrees that a higher VOC limit of 250 g/L is necessary to provide flexibility to develop various types of compliant primers.

Response to Comment 5-3:

Please see response to comment 2-9.

Response to Comment 5-4:

Please see response to comment 2-4. However, staff does agree with the request to align the sell-through and use-through provisions with the respective categories. Staff is proposing to update the sell-through and use-through provisions for reducers and thinners in paragraph (d)(6) to 24 months and 36 months.

Response to Comment 5-5:

Staff appreciates the comment and understands the complexity and challenges with correlating product sales volumes with specific mixing combinations since they occur at the shop and job level. Staff agrees with the suggestion for reporting *maximum* ready-for-use (as applied) VOC content levels for each coating category, similar to the coating manufacturer survey used. This means, for a specific color coating line, a manufacturer does not have to report each and every color, or combination of color, hardener, additive, thinner that reflects the application conditions, as separate line-items. The QER can be streamlined to include a specific color line, by indicating the maximum VOC of that color line. Staff changed the rule language to address this comment.

Response to Comment 5-6:

Staff understands the challenges manufacturers have in attempting to comply with other air districts throughout California and the uncertainty of timelines that other agencies may adopt alongside similar regulations, thus staff agrees to remain open about revisiting the training exemption timeline in the future.

Response to Comment 5-7:

Staff understands the request to align with other air districts and attempts to align with other regulatory agencies, whenever possible. Staff is regularly meeting with other California air districts and CARB to work to align automotive coating regulatory requirements. The concern regarding the potential toxicity of pCBtF and t-BAc is shared throughout all of the air districts in California; however, not all districts have the same resources as the South Coast AQMD to amend regulations. Where feasible, staff has aligned the categories with the U.S. EPA National Rule. For example, PAR 1151 combined the color coatings and metallic coatings into one category as the BARCT assessment concluded both subcategories can achieve the same VOC limits on the same timeline. However, the gloss clear coating and matte clear coating subcategories will be retained as the BARCT assessment indicated they require different VOC levels.

Comment Letter #6

September 13, 2024

Chris Bradley
Planning, Rule Development and Implementation
South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765
Email: cbradley@aqmd.gov

Re: Public Comments-- Proposed Amended Rule 1151 – Automotive Coatings-- OPPOSE

Dear Mr. Bradley:

RadTech International is pleased to comment on the proposed amendments to Rule 1151—Automotive Coatings. RadTech is the premier trade association in North America for Ultraviolet/Electron Beam/Light Emitting Diode (UV/EB/LED) technology. We speak on behalf of our over 800 members who are involved in a myriad of industry sectors ranging from printing and packaging to nail polish. UV/EB/LED materials are also used in the Automotive Coatings industry in applications such as hard coat repair for polycarbonate headlight lenses. (please see attached June 2024 article published in the UV+EB Magazine).

UV/EB/LED processes are all electric, eliminating the need for add-on control devices thereby preventing emissions of criteria pollutants (Nitrogen Oxides) and Greenhouse Gases. Our products are not formulated with conventional solvents and therefore the emissions of Volatile Organic Contaminants (VOCs) are negligible. Energy curable materials are free of toxic materials and are considered "super-compliant" as they go above and beyond current rule requirements and provide the district with excess emission reductions. Transitioning to these cleaner materials help the district achieve its clean air goals.

Unfortunately, we cannot support the current rule proposal as it needlessly saddles our industry with burdensome requirements that do not result in any benefit to air quality. On the contrary, these overly prescriptive requirements act as a barrier to the implementation of clean technology. We urge the district to provide incentives in the form of **regulatory flexibility**, to companies who invest in UV/EB/LED technology. Our suggested changes are as follows:

Request for Exemption

As mentioned during the public workshop, RadTech urges the district to provide regulatory flexibility to UV/EB/LED processes. Our materials are typically well below 50 grams/liter in VOC content which is minimal compared to the proposed limits, some as high as 840 grams/liter. While it may make regulatory sense to scrutinize high VOC materials, it simply does not make sense to subject companies who are investing in clean air technology to the same level of scrutiny. In keeping with past district policies and direction from the Governing Board, we respectfully request that UV/EB/LED materials be exempted from the rule requirements Any relief from administrative burdens will amount to incentives for businesses to voluntarily choose UV/EB/LED technology. 6-1

We strongly oppose the new additional requirements for reporting, recordkeeping and labeling in the latest R1151 proposal. The current Rule 109 requirements cover UV/EB/LED materials and sufficiently provide the

district with compliance verification. PAR 1151 creates a whole host of mandates on businesses, even those outside California which will not result in any emission reductions. In fact, these additional requirements will deter businesses from investing in clean technologies like UV/EB/LED. Businesses who are willing to invest in clean technologies should be encouraged to do so and saddling with added regulatory costs will be counterproductive to the District's mission.

We ask the district to **provide exemptions for UV/EB/LED materials from section (g) Recordkeeping Requirements and section (h) Administrative and Reporting Requirements for Automotive Coating Manufacturers.**

6-1 cont.

Request for Definition

We very much appreciate the inclusion of a definition for energy curable materials in various source specific rules in past rulemakings. Unfortunately, PAR 1151 lacks any mention of energy curable materials which can cause confusion and uncertainty in the regulated community. The rule should be technology neutral and include definitions for all available compliant technologies. We would very much appreciate the inclusion of a definition for energy curable materials in the rule. We propose adding the following definition:

6-2

ENERGY CURABLE MATERIALS are single component reactive products that cure upon exposure to visible-light, ultraviolet light, or to an electron beam.

Test Method

The Environmental Protection Agency and the SCAQMD have long recognized that EPA Method 24 is not suitable for thin film UV/EB/LED Materials. The Multiple Test Method Section of the rule is problematic in that it acts as a "gotcha" to businesses who may be subject to fines by the district due to lack of clarity on which method to employ. Thus, RadTech urges the inclusion of ASTM D7767-11 as suitable test method for UV/EB/LED Automotive Coatings. We propose the following language:

6-3

The VOC content of thin film Energy Curable Adhesives and Sealants may be determined by manufacturers using ASTM Test Method 7767– Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them.

Transfer Efficiency

We request an exemption from the transfer efficiency requirements of the rule, for high viscosity (above 650 cps) materials. This request is consistent with the exemption in Rule 1106—Marine Coatings, adopted by the Board. Flexibility should be offered to UV/EB processes as related to the requirements for transfer efficiency in the rule. We suggest the following language

The provisions of paragraph (d)(7) shall not apply to marine or pleasure craft coatings with a viscosity of 650 centipoise or greater, as applied.

6-4

UV/EB materials not only meet but far exceed any proposed rule requirements and any added flexibility to companies that choose these pollution preventive processes will encourage voluntary emission reductions thereby furthering the district's mission. We appreciate your attention to this matter and look forward to a productive rulemaking process.

Sincerely,

Rita M. Loof
Director, Environmental Affairs

Cc: SCAQMD Board

Staff Response to Comment Letter #6:

Response to Comment 6-1:
Staff appreciates Radtech for taking the time to submit a comment letter. Staff supports providing regulatory relief for low emission materials and processes, including for super-compliant coatings. However, quantity and emission reporting is essential in determining if there are super-compliant coatings available in the marketplace and the extent to which they are being used. If low-VOC products were not reported, it would not be possible for staff to determine accurate emission inventories or observe trends in the use of ultra-low VOC content products. This data is also critical for staff when developing VOC rules to establish lower limits.

As mentioned in response to comment 1-1, Rule 1151 requires records to be kept pursuant to Rule 109. Rule 109 states that the requirements shall not apply to any super compliant material(s) used at a facility which can demonstrate that the total permitted and non-permitted facility VOC emissions, including emissions from the super compliant material, do not exceed 4 tons in any calendar year as shown by annual VOC records. Therefore, facilities using the exemption must keep *minimal* records to verify that their VOC emissions meet the 4 ton per year criteria. This exemption was included to encourage the use and sales of ultra-low VOC content products, ideally by offsetting the costs of reporting.

Response to Comment 6-2:
South Coast AQMD is technologically neutral and does not promote any one technology over another; the end user may choose to comply with the proposed VOC limit for the respective category at their discretion. Further, several major coating manufacturers currently offer UV curable primers as part of their product portfolio with a VOC content of approximately 200 g/L. The UV primers are simply classified as primers and subject to the VOC limits of the respective category. Staff believes it is not necessary to add a definition for energy curable materials or make a distinction between primer types when the final characteristics of the coating are the same. Adding a definition to a rule that is not referenced at any other place in the rule could cause confusion.

Response to Comment 6-3:
On August 22, 2022, U.S. EPA issued a limited SIP disapproval for South Coast AQMD Rules 1106 and 1107 for including ASTM D 7767 in the rules. U.S. EPA stated that ASTM D7767 is not a U.S. EPA approved test method and, therefore, cannot be used to enforce a SIP approved rule; it is not an appropriate test method to determine VOC compliance. Once U.S. EPA issues a final SIP disapproval or partial disapproval of a rule submitted into the SIP, South Coast AQMD faces potential sanctions by the federal government and other consequences under the Clean Air Act unless the identified rule deficiencies are corrected and approved by U.S. EPA. Offset sanctions would be triggered 18 months after the effective date of a final disapproval and highway funding sanctions would also be triggered after offset sanctions are imposed. Therefore, staff will not include ASTM Test Method D 7767 in PAR 1151.

Response to Comment 6-4:
Rule 1151 is not proscriptive about the transfer efficiency requirements. The rule allows for:

1) Electrostatic Spray Application,
2) HVLP spray,

3) Brush, dip, or roller, or
4) Any such other Automotive Coating application methods as demonstrated to be capable of achieving equivalent or better Transfer Efficiency than those listed above.

These options accommodate the application of coatings with a centipoise greater than 650, which is the viscosity of a typical motor oil; most automotive coatings have a centipoise of 15 or less, including UV/EB/LED coatings. Given the flexibility the rule allows, an exemption is not necessary.

Comment Letter #7

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UV CURING SYSTEMS
3D UV CURING SYSTEMS
UV RADIOMETERS
CORONA TREATERS
FLAME TREATERS
XYZ DISPENSING
IR SYSTEMS

LASER MARKING EQUIPMENT
NON-VACUUM PLASMA TREATMENT
HYDROPHYLIC MEDICAL COATING SYSTEMS
UV LED SYSTEMS
3D UV CURE CHAMBERS
UV DISINFECTION
UV RENTAL SYSTEMS

September 12, 2024

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Re: Proposed Amended Rule 1151 – Automotive Coatings-- OPPOSE

Dear Mr. Bradley:

DDU Enterprises, Inc is involved in UV, Surface treatment and other clean air manufacturing technologies serving many California manufacturers up and down the state for over 33 years. We welcome the opportunity to comment on the proposed amendments to Rule 1151 – Automotive Coatings. We appreciate the district's efforts to protect the air but the current proposal adds a multitude of burdens to our industry and acts as a barrier to the implementation of clean technology. Therefore, we stand opposed to the draft version of the proposed rule.
PAR 1151 treats all coating processes alike regardless of their environmental benefit. UV/EB/LED processes are not formulated with Volatile Organic Compounds (VOCs) or toxics air contaminants. Conversion away from solvent processes benefits the District and your Board has provided incentives in the form of regulatory flexibility in several other rules such as R219 and most recently R301.
We strongly oppose the new additional requirements for reporting, recordkeeping and labeling in the latest R1151 proposal. The current Rule 109 requirements cover UV/EB/LED materials and sufficiently provide the district with compliance verification. PAR 1151 creates a whole host of mandates on businesses, even those outside California which will not result in any emission reductions. In fact, these additional requirements will deter businesses from investing in clean technologies like UV/EB/LED. Businesses who are willing to invest in clean technologies should be encouraged to do so and saddling with added regulatory costs will be counterproductive to the District's mission. Thus, we urge the district to:
Provide exemptions for UV/EB/LED materials from section (g) Recordkeeping Requirements and section (h) Administrative and Reporting Requirements for Automotive Coating Manufacturers.
We hope we can continue to work with staff to add language that would remedy the harm being done to businesses in the South Coast who are looking to convert to UV/EB/LED processes thereby giving the district emission reductions above and beyond those currently required in R1151.

7-1

Sincerely Yours,

DS DeLong

Douglas S. DeLong
DDU Enterprises, Inc.

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Staff Response to Comment Letter #7:

Response to Comment 7-1:

Staff appreciates DDU Enterprises, Inc. for taking the time to submit a comment letter regarding PAR 1151. Please see response to comment 1-1 and response to comment 6-1. Thank you.