

Proposed Amended Rule 1151

Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations

Working Group Meeting #1

November 7, 2023



Join Zoom Webinar Meeting

<https://scaqmd.zoom.us/j/92823189689>

Teleconference Dial-In: 1-669-900-6833

Webinar Meeting ID: 928 2318 9689

Agenda

South Coast AQMD Background

Rule Development Process

Rule 1151 Background

Key Rule Amendment Objectives

tBAc and pCBtF Background

Technology Assessment(s)

Stakeholder Survey

South Coast Air Quality Management District

- Local air pollution control agency
 - Largest of the 35 local air agencies in CA and in the U.S.
 - 10,743 square miles
 - 17 million residents
- Responsibilities
 - Regulate emissions from stationary sources
 - Develop and implement plans to meet National Ambient Air Quality Standards
 - Permit and inspect affected businesses
 - Administer incentive funding annually

Cleaning The Air That We Breathe...

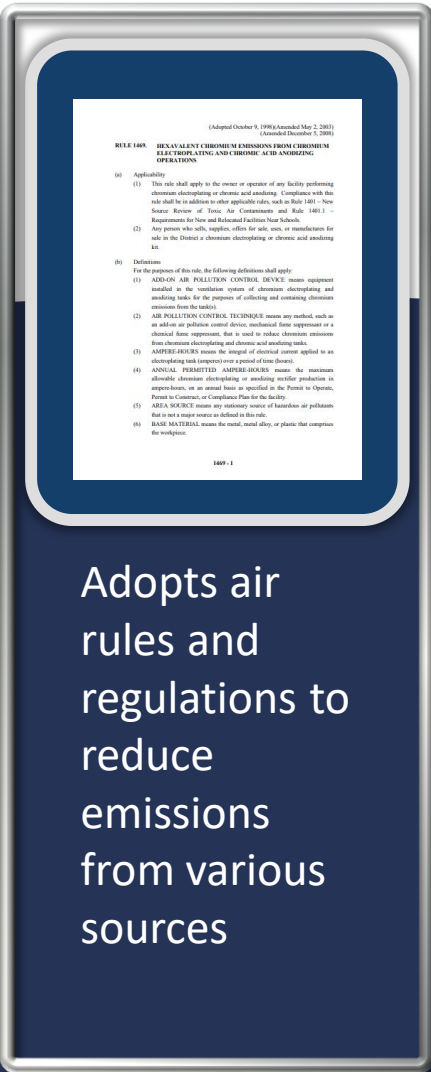




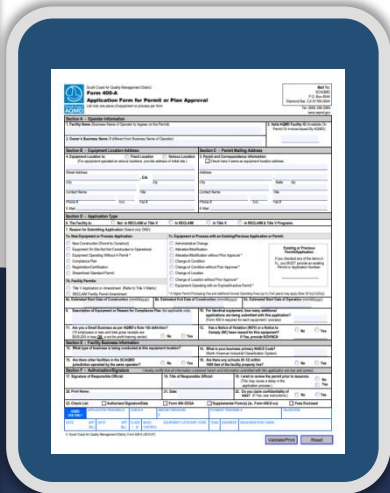
Key South Coast AQMD Activities



Develops the Air Quality Management Plan - blueprint for achieving compliance with federal and state clean air standards



Adopts air rules and regulations to reduce emissions from various sources



Issues permits for equipment that limits the amount of air emissions to ensure compliance with air quality rules



Conducts periodic inspections to ensure compliance with air quality requirements



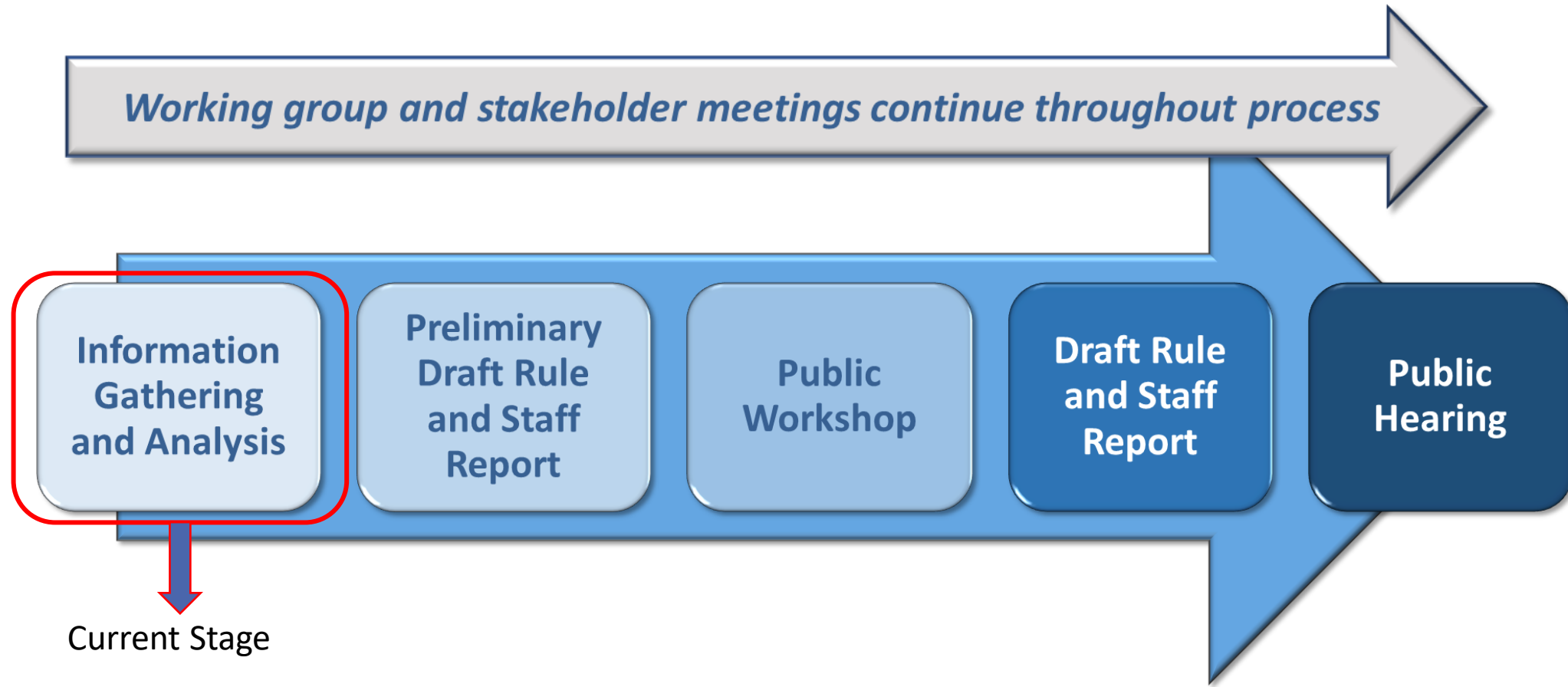
Responds to air quality complaints from the public



Conducts ambient air quality monitoring, including special studies

Rule Development Process

Overview of Rule Development Process



Working Group Meetings

- Comprised of stakeholders and representatives from industry (regulated industry, equipment suppliers), community and environmental groups, labor associations, government agencies, and academia
- Working Group Meetings (WGM) are held throughout the rule development process and are open to the public
- Objectives:
 - Build consensus and work through challenges
 - Provide opportunities for early input
 - Implement requirements
- Assists staff in understanding:
 - Key issues and concerns
 - Industry terms, industry practices, etc.
 - Applicable technologies

Stakeholder Input

- Stakeholders can provide input during working group meetings and throughout the rulemaking process
- Early input is strongly encouraged to help develop proposed rule amendments and to address issues
- Working Group Meetings, individual meetings, and site visits allow stakeholders to dialogue directly with staff to discuss individual issues



Information Gathering

- Staff gathers information from multiple sources:
 - Internet searches
 - Manufacturer meetings/surveys
 - Internal expertise and data
 - Facility permits, inspection reports, compliance history, previous rule files, other rule amendments
 - Product datasheets
 - Site visits
- Information includes types of products being used, volatile organic compound content, product cost, etc.
- Information used to inform staff recommendations



Overview of Automotive Refinishing



Automotive Refinishing Overview

Automotive refinishing is the coating of motor vehicles or mobile equipment, or their associated parts and components

There are several different types of automotive refinishing coatings, with the most prevalent being primers, color coatings, and clear coatings

Automotive coatings are generally applied using High Volume Low Pressure spray guns inside of an enclosed paint spray booth to prevent overspray and control emissions

Rule 1151 Background

Rule 1151 Background

- Applies to all motor vehicle and mobile equipment non-assembly line coating operations
- Purpose of the rule is to reduce volatile organic compound (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
- Adopted in 1988 and last amended in 2014 solely for administrative purposes
- The rule establishes VOC content limits for coatings used on motor vehicles and mobile equipment, coating application restrictions, and recordkeeping requirements

Rule 1151 Background (continued)

- VOC content limits and coating categories have not changed since the 2005 amendment to the rule



TABLE OF STANDARDS

VOC CONTENT LIMITS		
Grams per Liter of Coating, Less Water and Less Exempt Compounds		
AUTOMOTIVE COATING CATEGORIES	Current Limit	
	g/L	Lb/Gal
Adhesion Promoter	540	4.5
Clear Coating	250	2.1
Color Coating	420	3.5
Multi-Color Coating	680	5.7
Pretreatment Coating	660	5.5
Primer	250	2.1
Single-Stage Coating	340	2.8
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

Rule 1151 Background (continued)



The 2005 amendment to Rule 1151 exempted *tert*-butyl acetate (tBAC) from the definition of a VOC when used in automotive coatings other than color and clear coats



The 2005 amendment required staff to conduct a technical assessment of the use of tBAC by July 2007 and to consider information including toxicity, carcinogenic and health risk assessment studies



The technical assessment determined tBAC was not present in commercially available automotive coatings at the time

Key Objectives of Rule Amendment

Key Objectives of Rule Amendment

1

Address AB 617
Commitments

2

Evaluate VOC
Content Limits

3

Address
Compliance and
Enforcement issues
with Reducers

4

Phase Out the use
of tBAc and pCBtF

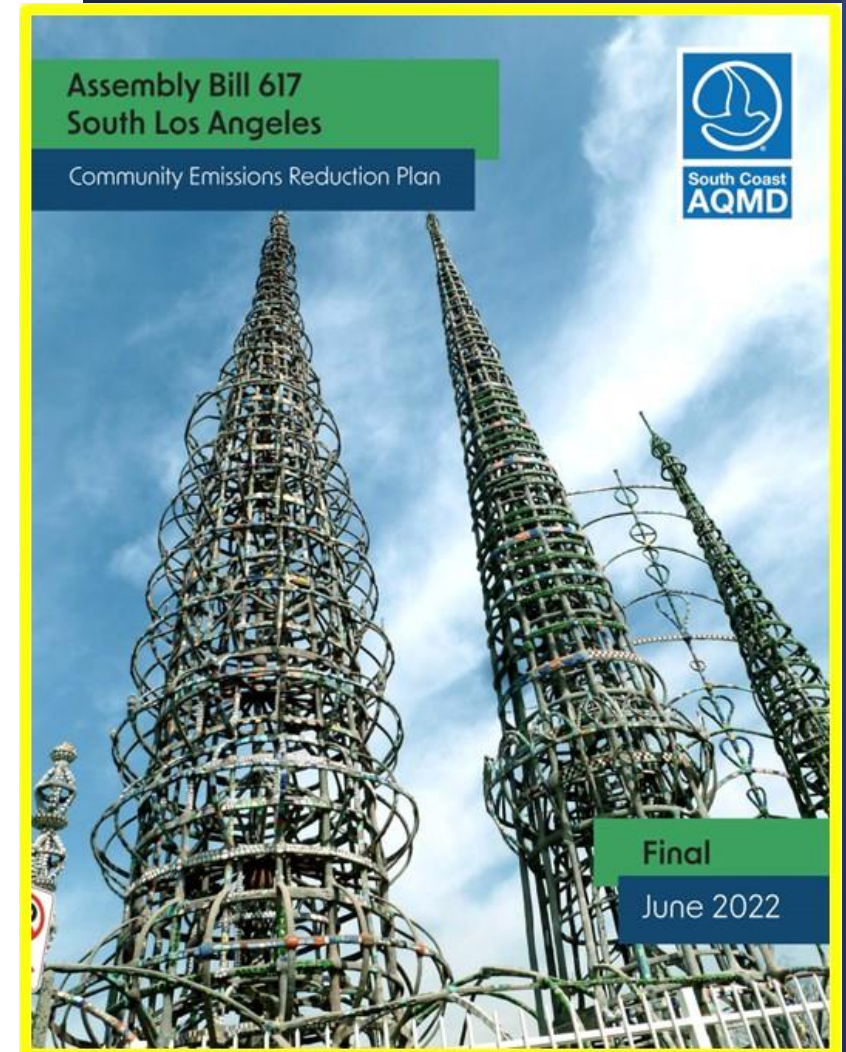
Assembly Bill (AB) 617 Background

- AB 617 signed into law in 2017
 - Statewide strategy to reduce toxic air contaminants and criteria pollutants in designated environmental justice communities
 - Establishes community-focused and community-driven actions to reduce air pollution and improve public health
- AB 617 South Los Angeles Community Emission Reduction Plan
 - Community Steering Committee requested that various objectives be met to address community concerns regarding auto body shops, including:
 - Reducing emissions from and exposure to autobody shops through amendments to Rules 1151 and 1171 ¹
 - Considering U.S. EPA Best Management Practices ² as rule requirements

¹ Rule 1171 – Solvent Cleaning Operations

² SLA CERP Chapter 5c Auto Body Shops, Objective G: Rule Amendments

<http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2022/2022-June3-027.pdf?sfvrsn=6>



Volatile Organic Compounds (VOC)

- A VOC is any volatile compound made of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds
- Can be photochemically reactive and contribute to the formation of ground-level ozone (smog)

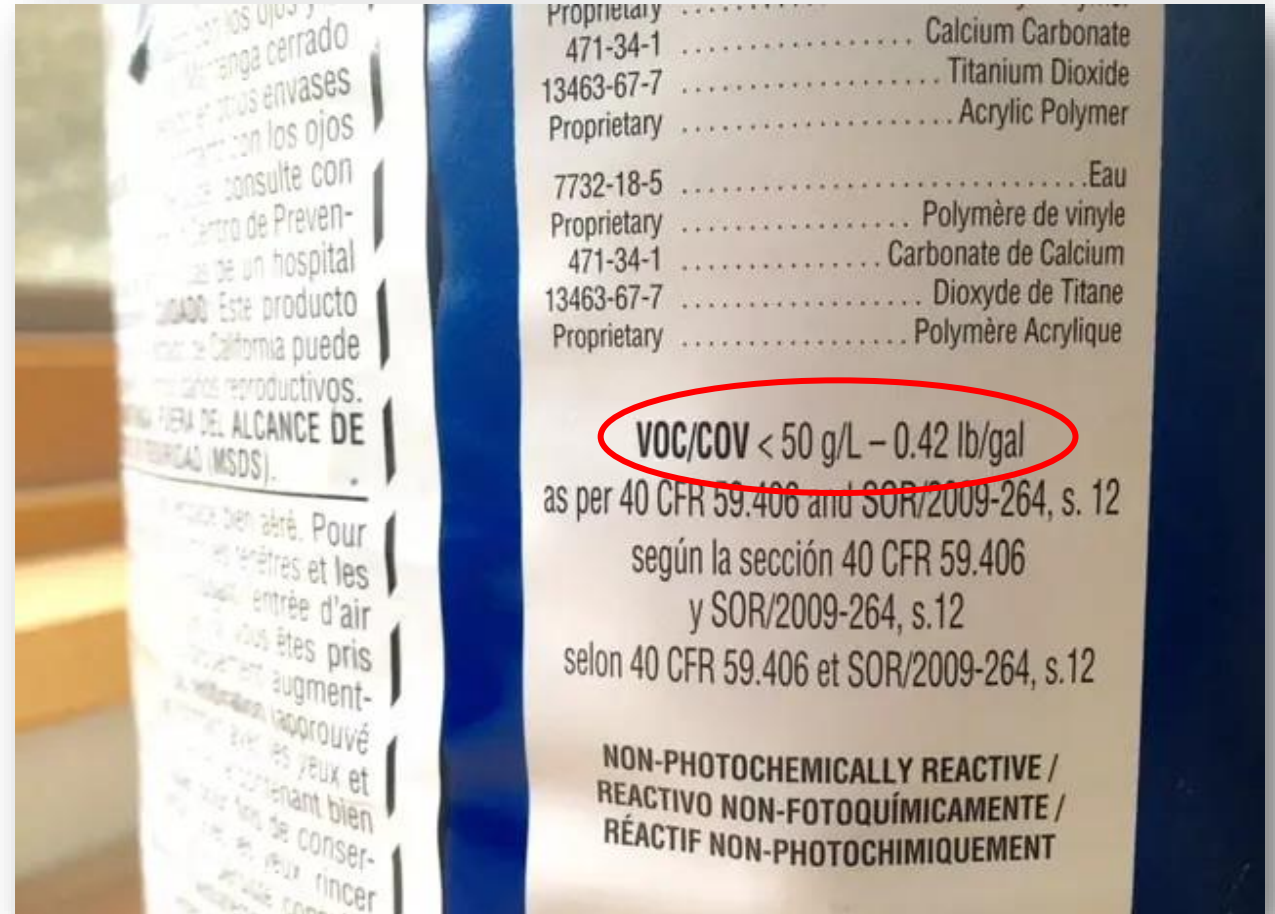
Common Sources of VOC

- Motor vehicles
- Coatings, paint, inks, and solvents
- Industrial processes
- Consumer products
- Biogenic (especially fires)

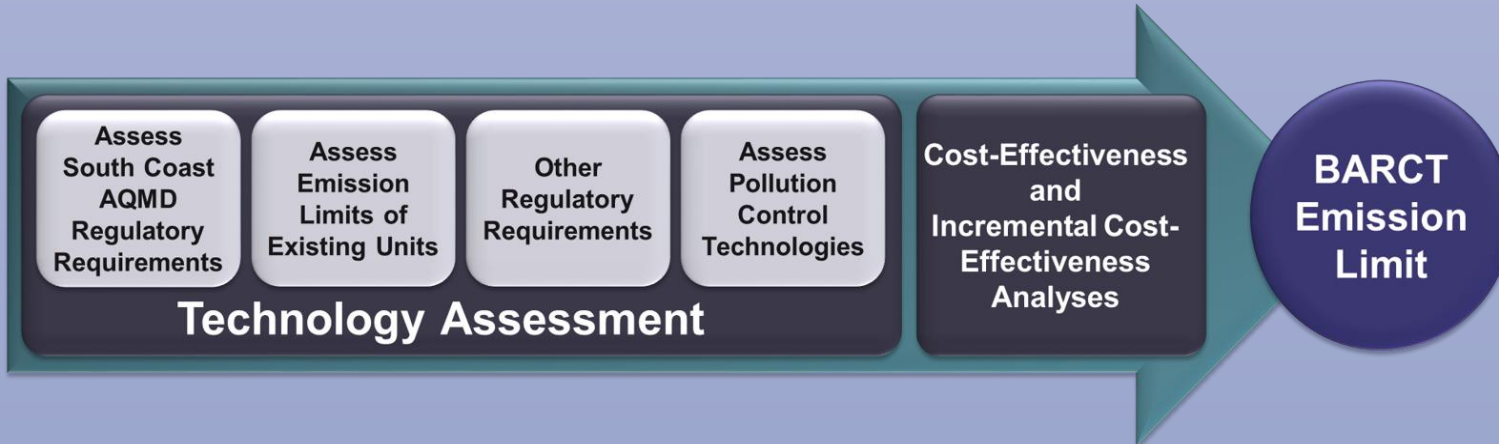


Controlling VOC Emissions

- South Coast AQMD controls VOC emissions from automotive refinishing facilities by imposing VOC content limits for automotive refinishing coatings



BARCT Assessment



- Proposed BARCT VOC limit established using a methodical approach that meets state law
- BARCT is defined in the California Health and Safety Code §40406 as:

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

- VOC limits are designed to achieve maximum reductions taking into account economic impacts
- 2022 Final AQMP requires staff to present options for control when cost threshold is exceeded
- Cost-effectiveness threshold is \$36,000/ton of VOC reduced

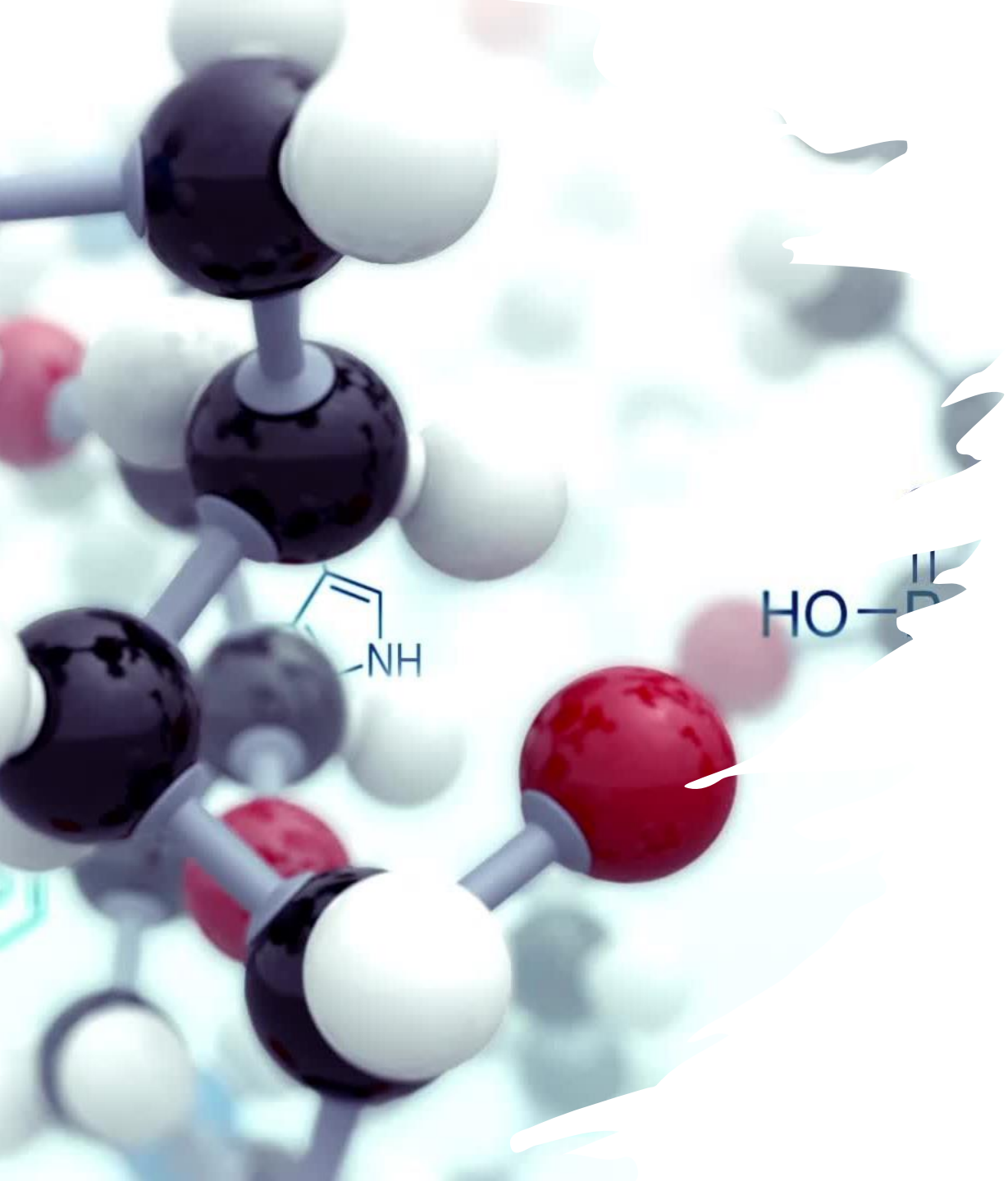
Reducers and Thinners Background

- Reducers, also known as thinners, are mainly used to thin an automotive coating so they can be applied with a spray gun
- Reducers can be made up of a single or combination of solvents, generally depending on the drying conditions (e.g., temperature, humidity, etc.)
- Reducers account for a significant amount of VOC emissions from automotive coating application
- Under the current version of Rule 1151, reducers do not have a VOC Content Limit in the Table of Standards
- South Coast AQMD has observed a disproportionate and significant amount of non-compliant reducers used and stored at automotive refinishing facilities

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Phase Out the use
of tBAc and pCBtF

Tertiary-Butyl Acetate (t-BAc) and Para-Chlorobenzotrifluoride (pCBtF)



4

Phase Out the use
of tBAC and pCBtF

Exempt Compounds

- Certain solvents are defined as exempt from the definition of a VOC by the U.S. EPA if they are negligibly photochemically reactive
 - Defined as less reactive than ethane
- Exempt compounds are not considered toward the VOC content of regulated materials
- U.S. EPA does not consider toxicity when making their designation

South Coast AQMD's Defined Exempt Compounds

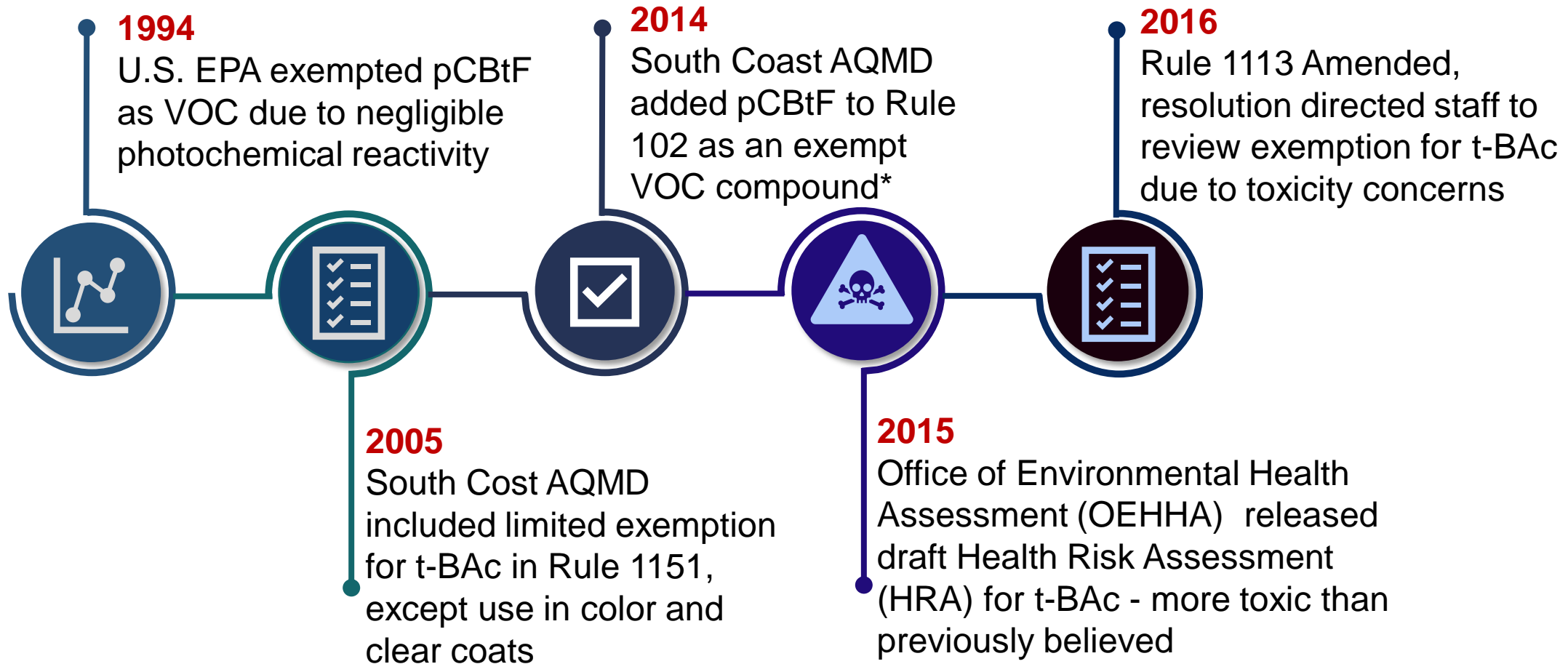
- South Coast AQMD considers compounds designated as exempt by the U.S. EPA but also considers the toxicity, ozone depletion potential, or other environmental impacts
- Rule 102 – Definition of Terms breaks exempt compounds into two groups
 - Group I: exempt compounds that are not expected to be restricted in the future
 - Group II: exempt compounds that are prohibited from use in many VOC rules
- South Coast AQMD sometimes includes limited exemption in source specific rules to address potential toxicity concerns
 - Rule 1113 – Architectural Coatings and Rule 1151 includes limited exemptions for t-BAC

(B) Group II

methylene chloride (dichloromethane)
 1,1,1-trichloroethane (methyl chloroform)
 trichlorofluoromethane (CFC-11)
 dichlorodifluoromethane (CFC-12)
 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113)
 1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114)
 chloropentafluoroethane (CFC-115)
 cyclic, branched, or linear, completely methylated siloxanes (VMS)
 tetrachloroethylene (perchloroethylene)
 ethylfluoride (HFC-161)
 1,1,1,3,3,3-hexafluoropropane (HFC-236fa)
 1,1,2,2,3-pentafluoropropane (HFC-245ca)
 1,1,2,3,3-pentafluoropropane (HFC-245ea)
 1,1,1,2,3-pentafluoropropane (HFC-245eb)
 1,1,1,3,3-pentafluoropropane (HFC-245fa)
 1,1,1,2,3,3-hexafluoropropane (HFC-236ea)
 1,1,1,3,3-pentafluorobutane (HFC-365mfc)
 chlorofluoromethane (HCFC-31)
 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)
 1 chloro-1-fluoroethane (HCFC-151a)

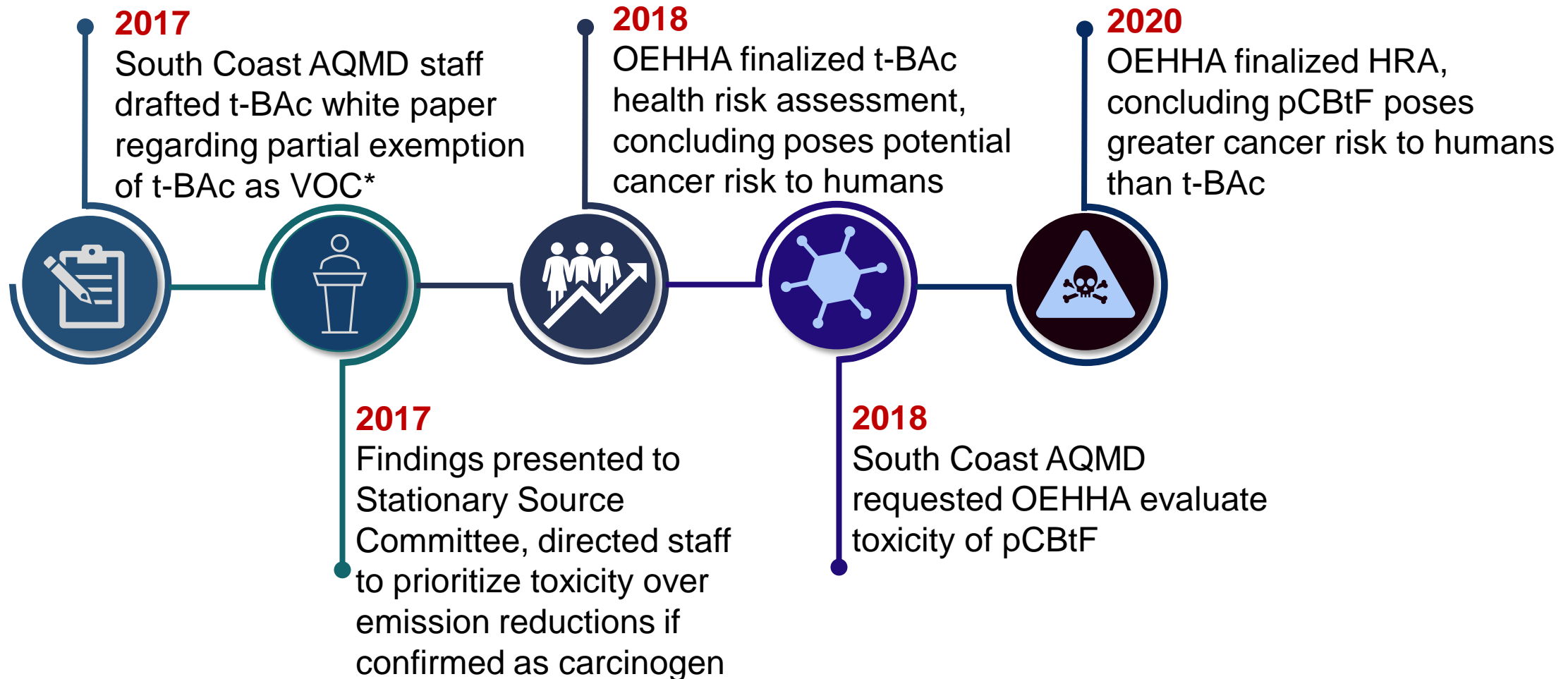
The use of Group II compounds and/or carbon tetrachloride may be restricted in the future because they are either toxic, potentially toxic, upper-atmosphere ozone depleters, or cause other environmental impacts. By January 1, 1996, chlorofluorocarbons (CFC), 1,1,1-trichloroethane (methyl chloroform), and carbon

tBAC and pCBtF Background



* Maintained partial exemption for tBAC and required technology assessment for exemption by end of 2016; Rule 1151 also amended in same year

tBAC and pCBtF Background (Continued)



* Staff's tBAC white paper served as the required technology assessment included in the 2014 amendment

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Phase Out the use
of tBAC and pCBtF

Actions Taken Following OEHHA Assessments

- Rule 1168 was the first VOC rule amended after t-BAC and pCBtF OEHHA assessments were finalized
 - Prior amendment in 2017 required staff to conduct a technology assessment for certain future effective VOC limits
 - Technology assessment determined some of the effective dates needed to be delayed
 - Staff initiated the rule amendment in 2022 which also considered the use to t-BAC and pCBtF

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Phase Out the use
of tBAC and pCBtF

Rule 1168 Amendment

- Staff considered several approaches to address toxicity concerns for t-BAC and pCBtF
 - Remove the exemption but allow the use of the solvents
 - Approach would not necessarily reduce the use or toxic exposure of the solvents
 - Allow limited uses, e.g., outdoor applications
 - Modeling demonstrated the off-site health risk was high
- Staff compared the toxicity of other Group II solvents that are prohibited in VOC rules to the toxicity of t-BAC and pCBtF

tBAC and pCBtF Toxicity Comparison

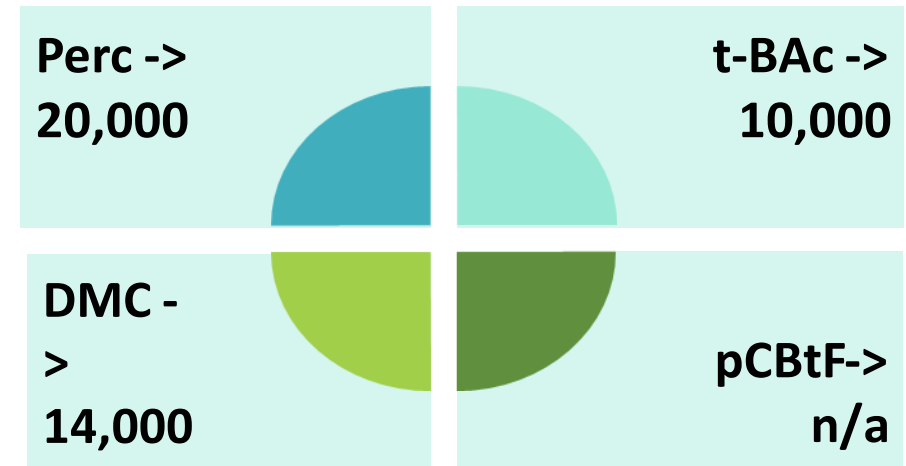
- Cancer Potency Factor (Slope Factor) for four Group II compounds is shown here
- Five Group II compounds have a defined Cancer Potency Factor or Reference Exposure Level (REL)
- pCBtF has the highest Cancer Potency Factor of all Group II exempt compounds, almost 50% more than perchloroethylene



tBAC and pCBtF Toxicity Comparison (continued)

Acute Reference Exposure Levels (REL) for Group II Compounds

- Acute Health Impact (HI) has an inverse correlation with REL
 - t-BAC has the lowest REL meaning the highest risk among Group II compounds
- Cancer Potency Factor for pCBtF is much higher than t-BAC, perchloroethylene, and Dimethyl Carbonate (DMC), but there is no established REL for pCBtF



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Phase Out the use
of tBAC and pCBtF

Staff's Conclusions

Additional modeling supported the Stationary Source Committee's recommendation to remove the VOC exempt status of t-BAC

OEHHA's assessment of t-BAC and pCBtF shows compounds to be as toxic as many chemicals currently prohibited

Staff recommended prohibiting the use of t-BAC and pCBtF

Rule 1168 Proposal for t-BAC and pCBtF

- In November 2022, South Coast AQMD Governing Board approved Proposed Amended Rule 1168 with a future prohibition of t-BAC and pCBtF
- Rule allowed time for manufacturers to reformulate and develop products
 - Longer timelines allowed for categories that relied heavily on exempt compounds to comply with VOC limits
 - Included sell-through and use-through dates to allow time for products to be used

Table 3: pCBtF and t-BAC Prohibition Timeline

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

4

Phase Out the use
of tBAC and pCBtF

Future Rule Development

- Rule 1168 set forth a path to phase out and prohibit the use of t-BAC and pCBtF for VOC rules
- Rule 1151 will be the second VOC rule to consider the use to t-BAC and pCBtF
- Rule development anticipated to begin next year for:
 - Rule 1113 – Architectural Coatings
 - Rule 1171 – Solvent Cleaning Operations

Technology Assessment



Technology Assessment

- Staff has reviewed several Safety Data Sheets (SDS) online for various coating types and manufacturers to confirm VOC, t-BAC and pCBtF content
- The gathered information will be used to evaluate the potential for adjusting VOC limits, and a t-BAC and pCBtF prohibition timeline
- More information is needed from stakeholders before any changes to VOC limits and any prohibition timeline(s) are proposed

Stakeholder Survey

Stakeholder Survey

- The stakeholder survey will help staff gain a clearer picture of:
 - The VOC content, t-BAC and pCBtF ranges, and percent waterborne/ solvent-based for each coating category
 - The share of the overall automotive refinishing coating market that contains t-BAC and/or pCBtF
 - The share of the overall automotive refinishing coating market that is solvent or water-based
 - Survey question shown subject to change



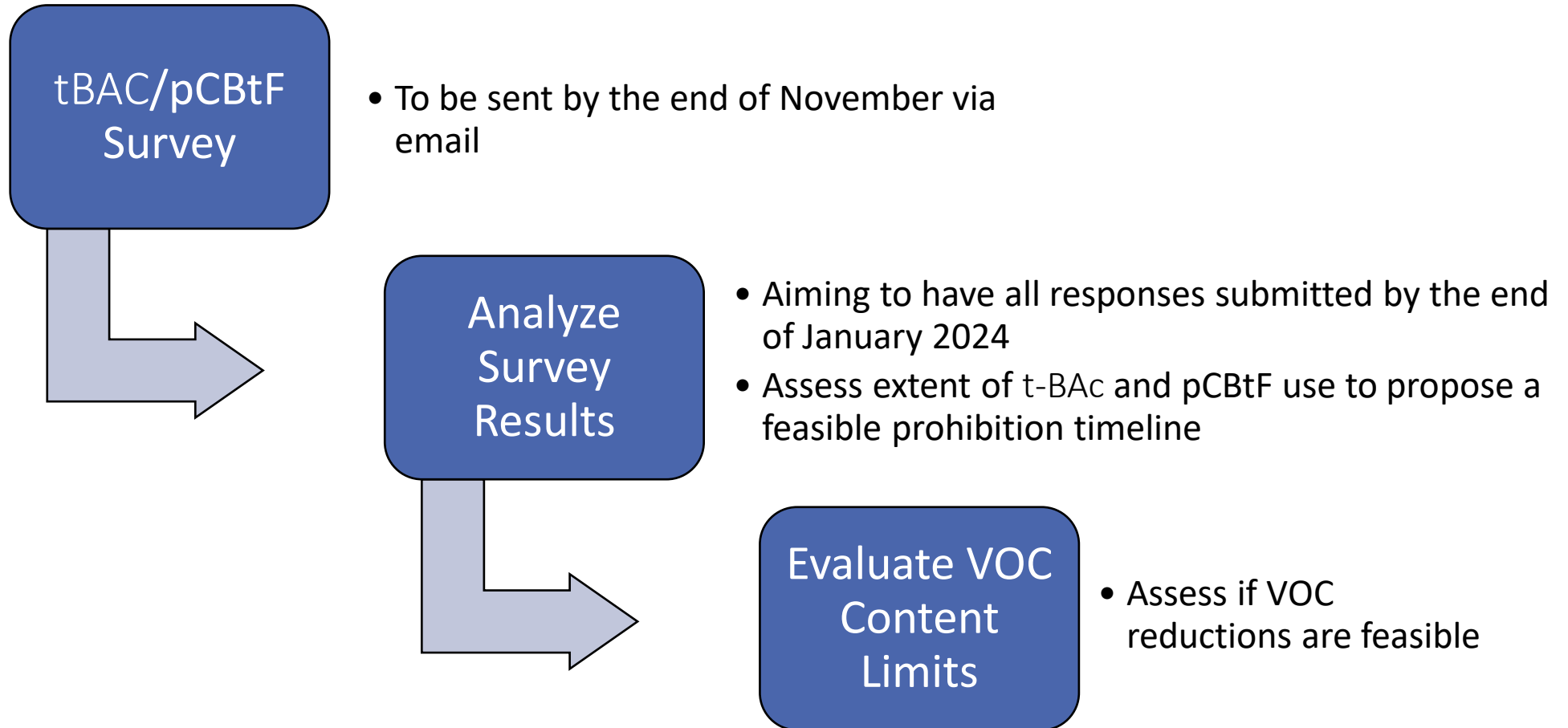
South Coast
Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
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PROPOSED AMENDED RULE 1151 T-BAC/PCBTf SURVEY

1. Company name, Contact name, Email, Phone number (optional):
2. Do you sell automotive coatings into or within the South Coast AQMD?
3. If yes, do any of the coatings contain para-chlorobenzotrifluoride (pCBtF), also known as Oxsol 100?
4. If yes, please list each coating category that the pCBtF-containing coatings belong to in the Table of Standards in South Coast AQMD Rule 1151. See Attached.
5. If you answered yes to Question 3, please provide the approximate weight percent range of pCBtF in each coating category.
6. Are there alternative products that do not contain pCBtF that can replace those that do contain pCBtF?
7. If yes, do these alternative products comply with Rule 1151 VOC content limits?
8. Do you sell automotive coatings that contain tert-butyl acetate (tBAc) into or within the South Coast AQMD?
9. What percentage of products that you sell or manufacturer are water-based? Are solvent-based?

Stakeholder Survey



Next Steps

Next Steps



Continue to hold Working Group and individual stakeholder meetings



Continue to review existing products on the market



Anticipated Public Hearing in 2024 (3rd Quarter)

Working Group Materials

- Working group materials for each working group meeting will be made available:
<https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules>

South Coast AQMD

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This page includes a list of rules that are actively in rule development or have recently been proposed and/or amended.

Information regarding Working Group Meetings, Public Workshops, and supporting documents such as presentations, draft staff reports, draft proposed rules, comment letters received, and other information can be found by clicking the rule in the table.

Information associated with the rule development process for rules that were adopted or amended within the past five years can be found on our [Archived Page](#).

Please refer to the [South Coast AQMD Rule Book](#) to obtain the current list of adopted or amended rules and regulations.

For current rule forecast please see the monthly [Governing Board Agenda](#).

Rule Name	Description
Regulation III	Fee Rules
Rule 218.2 and Rule 218.3	Proposed Rule 218.2 - Continuous Emission Monitoring System: General Provisions Proposed Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications

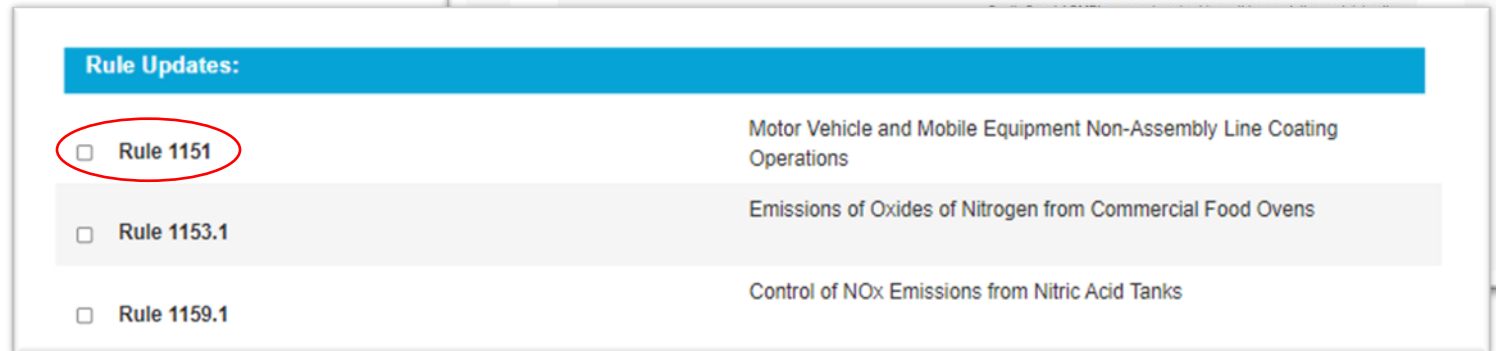
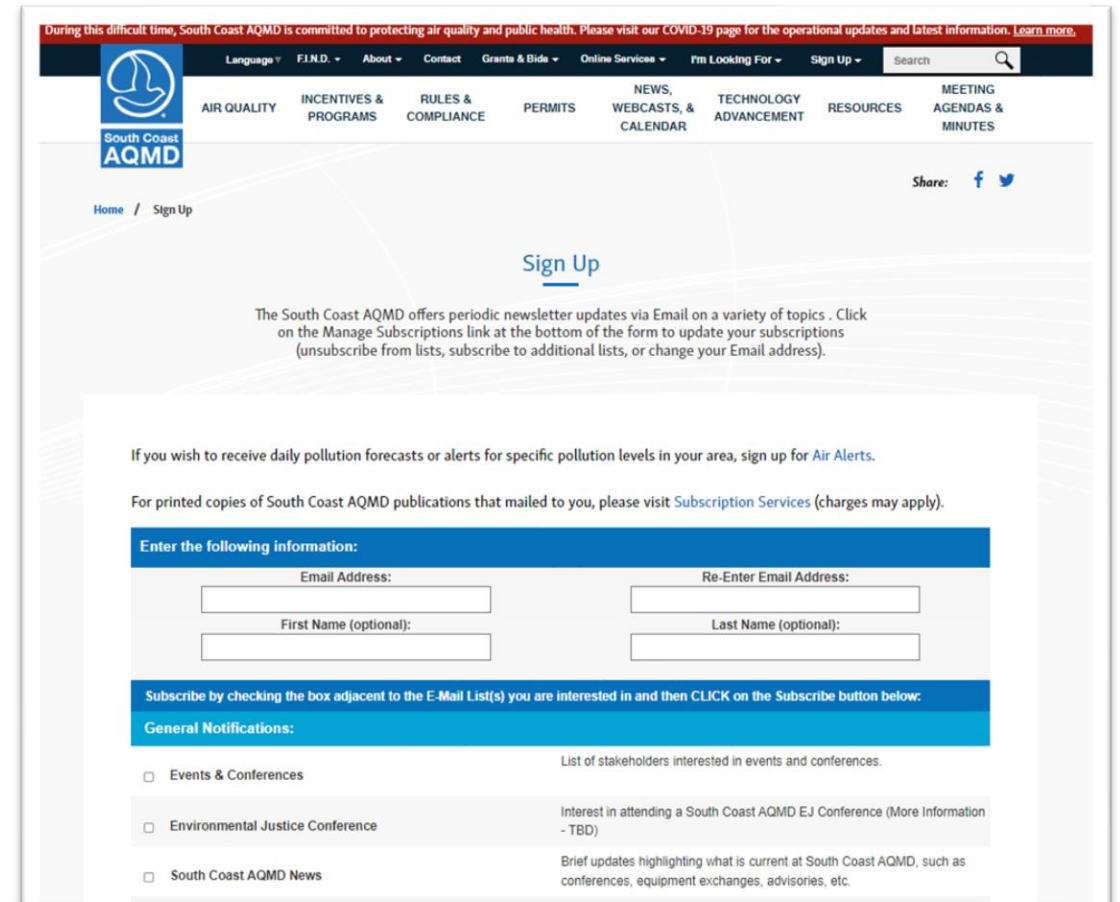
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Enter email address and name

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Future meeting notices, links to documents, and any updates will be sent via email



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