

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Staff Report
Proposed Amended Rules 1113– Architectural Coatings

November 2015

Deputy Executive Officer
Planning, Rule Development, & Area Sources
Philip M. Fine, Ph.D.

Assistant Deputy Executive Officer
Planning, Rule Development, & Area Sources
Jill Whynot

Author: Heather Farr, Program Supervisor
Reviewed By: William Wong, Principal Deputy District Counsel
David De Boer, Program Supervisor

Contributors: Joan Niertit, Principal Air Quality Chemist
Diana Thai, Air Quality Specialist
Bradley McClung, Air Quality Inspector III

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
GOVERNING BOARD**

Chairman: DR. WILLIAM A. BURKE
Speaker of the Assembly Appointee

Vice Chairman: DENNIS YATES
Mayor, Chino
Cities of San Bernardino County

MEMBERS:

MICHAEL D. ANTONOVICH
Supervisor, Fifth District
County of Los Angeles

BEN BENOIT
Mayor, Wildomar
Cities of Riverside County

JOHN J. BENOIT
Supervisor, Fourth District
County of Riverside

JOE BUSCAINO
Councilmember, 15th District
City of Los Angeles Representative

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

JOSEPH K. LYOU, Ph. D.
Governor's Appointee

JUDITH MITCHELL
Councilmember, Rolling Hills Estates
Cities of Los Angeles County/Western Region

SHAWN NELSON
Supervisor, Fourth District
County of Orange

DR. CLARK E. PARKER, SR.
Senate Rules Committee Appointee

MIGUEL A. PULIDO
Mayor, Santa Ana
Cities of Orange County

JANICE RUTHERFORD
Supervisor, Second District
County of San Bernardino

EXECUTIVE OFFICER:
BARRY R. WALLERSTEIN, D.Env.

Table of Contents

EXECUTIVE SUMMARY	6
BACKGROUND.....	8
RULE DEVELOPMENT PROCESS.....	10
PAR 314.....	12
PAR 1113.....	12
Applicability.....	12
Definitions.....	12
Requirements.....	16
Table of Standards (TOS).....	16
VOC Limit Changes.....	17
Averaging Compliance Option (ACO).....	20
Administrative Requirements.....	20
Test Methods.....	20
Small Container Exemption (SCE).....	25
Rule Clean Up.....	30
ALTERNATIVES ANALYSIS.....	30
COMPARATIVE ANALYSIS.....	32
SUMMARY OF POTENTIAL EMISSION REDUCTIONS.....	37
CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA).....	37
COST EFFECTIVENESS.....	37
SOCIOECONOMIC ASSESSMENT.....	40
LEGISLATIVE AUTHORITY.....	41
AQMP AND LEGAL MANDATES.....	41
DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE.....	41
REFERENCES.....	42
COMMENTS AND RESPONSES.....	42

Tables

Table 1: AMP and Ammonia RELs	15
Table 2: AMP Exposure Calculations.....	15
Table 3: Building Envelope Coatings Available in 2014.....	18
Table 4: Specialty Coating Phase out from SCE.....	26
Table 5: Comparison of Compliant Rust Preventative Coatings	29
Table 6: Compliant versus Non-Compliant Rust Preventative Sales.....	30
Table 7: Estimated Emission Reductions from Small Container Exemption Restriction	30
Table 8: Summary of Potential Emission Reductions from PAR 1113	37
Table 9: Small Container Exemption - Compliant versus non-Compliant Sales.....	39
Table 10: Number of Affected Facilities.....	40
Table 11: Coating Categories with Socioeconomic Impact.....	40

Figures

Figure 1: Rule 314 Quantity and Emissions Summary – 2008 - 2014	10
Figure 2: Rule Development Flow Chart	11
Figure 3: Recycled Coatings Sales and Emissions.....	19
Figure 4: Exclusion Pathway Flowchart for non-Reactive Early Eluting SVOCs.....	24
Figure 5: 2014 Sales and Emission Summary for Coatings Sold Under the SCE.....	25

ACRONYMS USED IN THIS REPORT

ACA American Coatings Association

AMP 2-Amino-2-Methyl-1-Propanol

AQMP Air Quality Management Plan

ASTM American Society for Testing and Materials

CARB California Air Resources Board

CEQA California Environmental Quality Act

DBP Dibutyl Phthalate

GC/MS Gas Chromatography/Mass Spectrometry

g/L Grams per Liter

IMC Industrial Maintenance Coatings

MP Methyl Palmitate

NO_x Oxides of Nitrogen

OEHHA Office of Environmental Health Hazard Assessment

PAR Proposed Amended Rule

PSU Primer, Sealer, & Undercoater

RPC Rust Preventative Coating

SCE Small Container Exemption

SCM Suggested Control Measure

SCAQMD South Coast Air Quality Management District

SIP State Implementation Plan

SWA Sales Weighted Average

SVOC semi-volatile organic compound

TGA Thermogravimetric Analysis

tpd Tons per day

USEPA United States Environmental Protection Agency

VOC Volatile Organic Compound

WPCMS Waterproofing Concrete/Masonry Sealer

EXECUTIVE SUMMARY

Rule 1113 - Architectural Coatings, was originally adopted by the South Coast Air Quality Management District (SCAQMD) on September 2, 1977, to regulate the Volatile Organic Compound (VOC) emissions from the application of architectural coatings, and has since undergone numerous amendments. The 2012 Air Quality Management Plan (AQMP), included Control Measure CM#2012 CTS-01 – Further VOC Reductions from Architectural Coatings, to achieve 2 – 4 tons of VOC emission reductions per day by 2019. Rule 314 – Fees for Architectural Coatings, was adopted on June 6, 2008, requiring manufacturers to pay fees, as well as report sales and emissions of architectural coatings into the SCAQMD. Based on the sales data collected from Rule 314, numerous site visits, technical research, and working group meetings, staff has developed PAR 1113 in regard to the following:

PAR 1113:

- Limit the small container exemption (SCE) for certain categories
- Propose new categories with VOC limits and eliminate categories that will be regulated under a different rule
- Clarify existing definitions and requirements, as necessary
- Reduce the VOC limit of some architectural coating categories to reflect currently available inventory
- Include colorants in the labeling requirements
- Include several new test methods
- Remove outdated language

Staff has held six working group meetings, a Public Workshop, and Public Consultation Meeting with stakeholders beginning June 5, 2014, as well as met with individual architectural coating manufacturers and the American Coatings Association (ACA). The current proposal incorporates and addresses numerous comments and concerns expressed by the stakeholders.

Staff proposes the following amendments to achieve emission reductions and clarify rule implementation issues for improved enforceability:

PAR 1113:

- Remove all references to the averaging provision which sunset on January 1, 2015.
- Remove outdated language.
- Add 8 definitions; amend 10 definitions, and phase out 2 definitions:
 - Add – Building Envelope, Building Envelope Coatings, Color Indicating Safety Coatings, Default Coatings, Tile and Stone Sealers, Topcoat, Tub and Tile Refinishing Coatings, and Wood Conditioners.

- Amend –Faux Glazes, Flat Coatings, Floor Coatings, Mastic Coatings, Nonflat Coatings, Lacquers, Reactive Penetrating Sealers, Shellacs, Varnishes, and Clear Wood Finish (re-named Wood Coatings).
- Phase out – Bond Breakers and Form Release Compounds.
- Clarify the requirements in paragraph (c)(1) and (c)(2).
- Establish a VOC limit for the following new coating categories:
 - Building Envelope Coatings, Color Indicating Safety Coatings, Tile and Stone Sealers, Tub and Tile Refinishing Coatings, and Wood Conditioners.
- Reduce the VOC limit on the following categories:
 - Building Envelope Coatings and Recycled Coatings.
- Amend and update the Table of Standards 1 for clarifications.
- Include an exception for recycled coatings to the most restrictive clause (c)(3).
- Include colorants in the labeling requirements for the date of manufacturer and the VOC content.
- Include the following test methods:
 - VOC content:
 - SCAQMD Method 313 - Determination of Volatile Organic Compounds VOC by Gas Chromatography-Mass Spectrometry.
 - ASTM Test Method D6886 - Standard Test Method for Determination of the Weight Percent Individual Volatile Organic Compounds in Waterborne Air-Dry Coatings by Gas Chromatography.
 - Reactive Penetrating Sealers
 - ASTM D6490 - Standard Test Method for Water Vapor Transmission of NonFilm Forming Treatments Used on Cementitious Panels.
 - Building Envelope Coatings:
 - ASTM E2178 - Standard Test Method for Air Permeance of Building Materials.
 - ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
 - ASTM E96/96M - Standard Test Methods for Water Vapor Transmission of Materials.
 - Tub and Tile Refinishing Coating:
 - ASTM D3363 - Standard Test Method for Film Hardness by Pencil Test.

- ASTM D4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
- ASTM D4585 - Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation.
- ASTM D714 - Standard Test Method for Evaluating Degree of Blistering of Paints.
- ASTM D3359 - Standard Test Methods for Measuring Adhesion by Tape Test.
- Tile and Stone Sealers:
 - ASTM C373 - Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products, Ceramic Tiles, and Glass Tiles.
 - ASTM C97/C97M - Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone.
 - ASTM C642 - Standard Test Method for Density, Absorption, and Voids in Hardened Concrete.
 - American National Standard Specification for Ceramic Tile (ANSI A137.1).
 - ASTM E96/96M - Standard Test Methods for Water Vapor Transmission of Materials.
- Degree of Chalking (method was referenced in section (b) but not section (e)):
 - ASTM D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films.
- Amend the Small Container Exemption such that:
 - The exemption is eliminated for high-VOC specialty coatings and coating categories not needing the exemption,
 - Restrict the exemption for Flat Coatings, Nonflat Coatings, Rust Preventative Coatings, and Industrial Maintenance Coatings, and
- Clarify the language.

The overall estimated emission reductions from PAR 1113 are 0.088 tons per day (tpd) by January 1, 2019, and will implement portions of CM#2012 CTS-01.

BACKGROUND

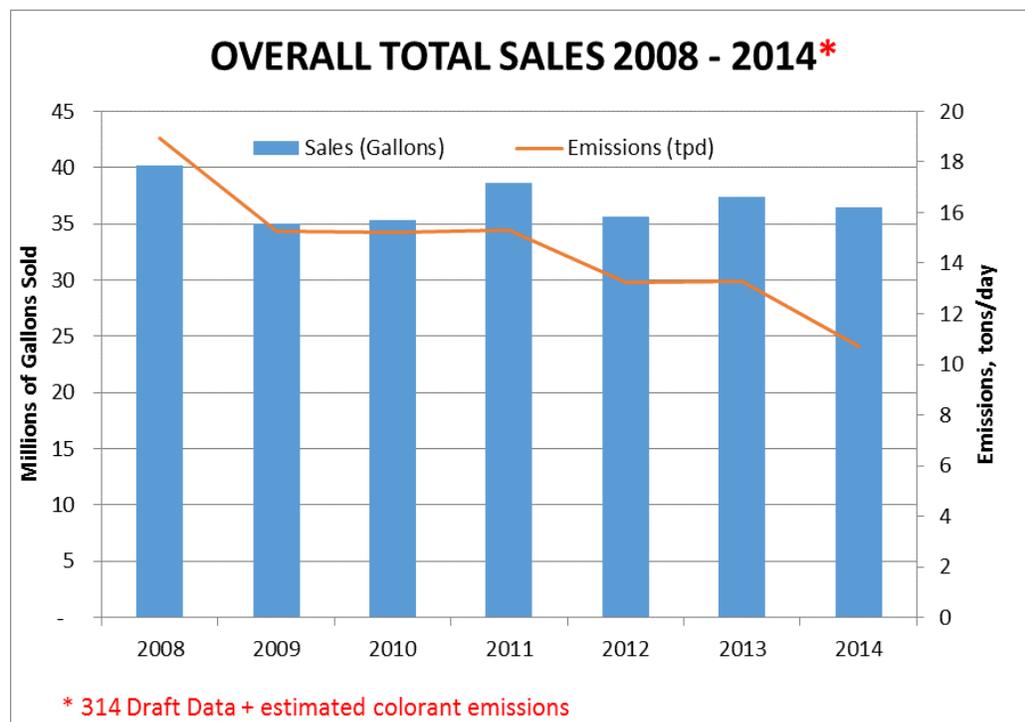
Architectural coatings are one of the largest non-mobile sources of VOC emissions in the SCAQMD. Rule 1113 is applicable to manufacturers, distributors, specifiers, and end-users of architectural coatings. These coatings are used to enhance the appearance of and to protect

stationary structures and their appurtenances, including homes, office buildings, factories, pavements, curbs, roadways, racetracks, bridges, other structures; and their appurtenances, on a variety of substrates. Architectural coatings are typically applied using brushes, rollers, or spray guns by homeowners, painting contractors, and maintenance personnel. Rule 1113 was first adopted in 1977, and has undergone numerous amendments, most recently on September 6, 2013, to provide regulatory relief for labeling requirements of containers holding four fluid ounces or less. Although successive amendments to Rule 1113 contributed to significantly reduced emissions, architectural coatings continue to be one of the largest sources of VOC emissions in the SCAQMD, with the exception of consumer products and mobile sources.

Rule 314, which is the fee and reporting rule that applies to architectural coatings, affects about 200 architectural coatings manufacturers. Beginning in 2009 and each subsequent calendar year, Rule 314 requires architectural coatings manufacturers to report to the SCAQMD the total annual quantity (in gallons) and emissions of each of their architectural products distributed or sold into or within the SCAQMD for use in the SCAQMD, during the previous calendar year. Fees are assessed on the manufacturers' reported annual quantity of architectural coatings as well as the cumulative VOC emissions from the reported annual quantity of coatings. Data collected from the manufacturers also provides SCAQMD with an annual emissions inventory that is used for planning purposes.

The 2012 AQMP projected the 2014 Annual Average Emissions for architectural coatings would be 16 tons per day (tpd), with a Summer Planning Inventory of 19 tpd. According to more recent Rule 314 data for products shipped in 2014, the emissions in the SCAQMD that can be attributed to architectural coatings is approximately 10 tpd with another 0.2 tpd and 0.4 tpd contributed by colorant and clean-up solvent. Staff notes that the Rule 314 data has not been fully audited, and volumes and emissions may be under or over-reported. The data may be revised upon more detailed audits and subsequent compliance reviews. The following represents the sales and emissions totals. Note the data is not finalized and could change as additional and/or amended data is received.

Figure 1: Rule 314 Quantity and Emissions Summary – 2008 - 2014



RULE DEVELOPMENT PROCESS

Staff initiated outreach with stakeholders regarding the intent to amend Rule 1113 in April 2014, 20 months prior to the scheduled Public Hearing. Over that period, staff held six working group meetings and a Public Workshop, see Figure 1, including several meetings with sub-groups for more in-depth discussions on Faux Finishing Coatings and VOC Test Methods. Numerous stakeholders participated both in person and via teleconference. Over the course of the discussions, the ACA and the manufacturers provided feedback on rule language, requirements, and appropriate effective dates for the rule proposal. Additionally, staff met individually with local and national manufacturers, both large and small, to discuss the proposal and obtain feedback on the status of technology and desired implementation dates.

Figure 2: Rule Development Flow Chart



STAFF ASSESSMENT FOR THE PROPOSED AMENDMENTS

PAR 314

Staff initially proposed to amend Rule 314 to include a tiered sales fee in lieu of the 25 g/L VOC limits for flat coatings, nonflat coatings, and primer, sealer, undercoaters. The proposal was for a lower fee for coatings that contain less than 25 g/L (\$0.01 from \$0.04) and a higher fee for coatings exceeding the VOC limit, e.g. coatings sold under the SCE or self-reported violations (\$0.40 from \$0.04). The proposal is being removed to allow time for additional data analysis and research regarding the impact of a recent court decision regarding fees.

PAR 1113

Applicability

Staff is removing the reference to the phased out averaging compliance plan which sunset on January 1, 2015. Based on feedback at the Public Workshop and Public Consultation Meeting, staff is changing the wording of the first sentence to make it clear that the rule applies to all coatings manufacturers who sell architectural coatings into and within the District and not just architectural coating manufacturers that operate within the District. Staff further clarified the language to indicate that individuals who sell architectural coatings outside the District are not necessarily culpable for coatings that end up being used within the District.

Definitions

For rule clarification, staff is proposing several new or amended definitions and is proposing to delete several definitions.

Bond Breakers and Form Release Compounds

Staff is proposing to phase out these two definitions upon the future adoption of Rule 1161 – Release Agents or any other Regulation XI rule limiting the VOC content of bond breakers or form release compounds, which will directly address these categories.

Building Envelope and Building Envelope Coatings

Staff is proposing a new coating category for Building Envelope Coatings. These coatings currently fall under the waterproofing sealer category, but there has been confusion amongst manufacturers if Rule 1113 applies to these coatings. Staff is proposing to include a specific category for these coatings to make it clear that Rule 1113 applies to Building Envelope Coatings, as this is a growing category. Staff is proposing a VOC limit of 100 g/L, the current VOC limit for waterproofing sealers, with a future reduction to 50 g/L by 2019. The 2019 VOC limit for this category is based on feedback from the majority of manufacturers of these types of products, stating that they can achieve it by that future date.

Color Indicating Safety Coatings

As the SCE is being further restricted, certain small niche categories need to be carved out in the rule. Amongst those coatings are Color Indicating Safety Coatings. These coatings are used by refineries as a safety precaution and include coatings that change color to indicate an acid leak as

well as coatings that change color to indicate a temperature change. Staff is proposing a VOC limit of 480 g/L, which is the current VOC content for these coatings, and as such, these coatings will not be given the SCE as it should not be needed.

Default Coating

Rule 1113 has always contained a default category for specialty coatings that are not listed in the Table of Standards (TOS). This category was not defined or included in the TOS but was described in subparagraph (c)(1)(B). For clarification, staff is proposing to add an entry in the TOS and a definition in section (b).

Faux Finishing Coatings

Staff is changing the order of the subcategories to reflect their alphanumeric order. In addition, staff is proposing to update the definition of a Faux Glaze to reflect what is being offered in the marketplace. The Faux definitions underwent considerable revisions during the 2011 rule amendment, but the glaze definition was not altered significantly at that time. Since the 2011 changes, staff became aware that most of what was being offered in the marketplace did not reflect staff's interpretation of the current Glaze definition. Considerable time and effort was put into the proposed definitions, such that both SCAQMD staff and the regulated industry agree as to what exactly can be categorized as a Faux Glaze. The Faux Trowel definition is also being amended to indicate that these coatings must be applied by trowel to meet the definition.

Flat Coating

Staff is proposing to amend the definition of a flat coating to harmonize it with the nonflat definition by including the ASTM method for measuring gloss.

Floor Coating

Staff is proposing to amend the floor coating definition for clarification.

Lacquers

Staff is proposing to amend the definition of a lacquer to clarify that the lacquer category only applies to lacquer topcoats and sanding sealers. There has been confusion in the past that lacquer undercoaters are allowed for architectural use at a 275 g/L VOC limit. Lacquer undercoaters with a VOC limit of 275 g/L are allowed in Rule 1136; but they have always been categorized as primer, sealer, undercoaters with a VOC limit of 100 g/L in Rule 1113. This change is for rule clarification.

Mastic Coating

Staff is proposing to amend the definition of a mastic coating in response to a comment received at the Public Workshop. The Roof Coatings Manufacturers Association expressed concern the current definition could lead to confusion on commonly used mastic cements that fall under Rule 1168 – Adhesives and Sealants. Excluding roof coatings from the Rule 1113 definition of mastic coatings will address this confusion.

Nonflat Coating

Staff is proposing to amend the definition of a nonflat coating because as written, it overlapped with the Default definition. A Nonflat Coating will now only be defined by the gloss level, which is the same approach used for the Flat Coating definition.

Reactive Penetrating Sealer

Staff is proposing to amend the definition of this coating category that was added in 2011. These coatings were added to address the needs of the California Department of Transportation (CalTrans) for infrastructure projects near the coast or above 4,000 feet. The definition was adopted based on the California Air Resources Board (CARB) Suggested Control Measure (SCM). Since adoption of the category, CalTrans has conducted a series of tests on potential coatings, and none of them could pass the criteria listed in current Rule 1113 paragraph (51)(E) defining Reactive Penetrating Sealers that includes not reducing the water transmission rate by more than 2 percent after application on a concrete or masonry substrate. Based on the extensive testing conducted, staff is proposing to change that criterion. In addition, since this niche category was adopted with a high-VOC limit to reflect the coatings that were available, staff is also proposing to restrict this category from using the SCE.

Shellacs

Staff is proposing to remove the outdated effective date. Also, staff is proposing to remove this category from the SCE as it currently has a high-VOC limit to reflect the limitations of the shellac chemistry (e.g. coatings formulated solely with the resinous secretions of the lac insect cannot be reformulated to a lower VOC limit due to the unique chemistry of the resin).

Tile and Stone Sealers

Staff is proposing to add a definition for Tile and Stone Sealers. These coatings are currently included under the broad category of Waterproofing Concrete and Masonry Sealers (WPCMS). Tile and Stone Sealers, which include both penetrating sealers and film forming sealers, are a smaller subset of the WPCMS and carving out a category will assist staff in tracking the sales of these products.

Topcoat

Staff is proposing to add a definition for topcoat as the term is included in the definitions of lacquers and varnishes.

Tub and Tile Refinishing Coatings

This is another category carve out that is necessary as the SCE is being further restricted. Staff has always interpreted these coatings as Industrial Maintenance Coatings (IMC) that are sold under the SCE, but manufacturers have been reporting these coatings in Rule 314 as either Flat, Nonflat, or Default Coatings; therefore, staff did not add this category under the IMC umbrella. The proposed definition and VOC limit is based on CARB's SCM, and since this is a high-VOC category carve out, the SCE will not be allowed.

Varnish

Staff is proposing to amend the definition of a varnish to clarify that for the purposes of Rule 1113, varnishes only refer to topcoats and not to undercoats.

Volatile Organic Compound

Prior to the August 25, 2015 Public Workshop, staff proposed to amend the definition of a volatile organic compound (VOC) to include 2-Amino-2-Methyl-1-Propanol (AMP) as an exempt compound. On September 15th the Office of Environmental Health Hazard Assessment (OEHHA) issued their final interim reference exposure levels (RELs) for AMP which were low enough to cause concern about the proposed exemption. AMP would largely replace ammonia in low-VOC coatings. AMP is primarily used as a neutralizer to control the pH of waterborne coatings. Some manufacturers switched from AMP to ammonia or sodium hydroxide, as the latter are not defined as VOCs. AMP is used in small quantities in some waterborne coatings, between 0.1% - 1.0%. The initial proposal to exempt AMP was thought to lower the toxicity of coatings as it was assumed that ammonia was more toxic than AMP but the new RELs do not support that conclusion:

Table 1: AMP and Ammonia RELs

	Acute REL	Chronic REL
AMP	990 µg/m ³	1 µg/m ³
Ammonia	3200 µg/m ³	200 µg/m ³

Staff used a simple box model to estimate if the exposure of painting a small room (10 x 10 x 8) could approach the RELs for AMP and therefore constitute a risk for the painter or homeowner. Staff assumed it would take 2 gallons of paint with a density of 1.4 g/mL and assumed the AMP will volatilize into the air with the exposure duration. The following are the estimated concentrations of AMP in the room during the painting operation:

Table 2: AMP Exposure Calculations

Air Exchange Rate (hourly)	0.3	1	2	5
Acute Concentration (µg/m ³)	1,799,546	1,169,705	779,803	389,902
Chronic Concentration (µg/m ³)	428,463	278,501	185,667	92,834

Based on the above exposure calculations, staff is not proposing to exempt AMP from the definition of a VOC at this time.

Wood Coatings

Staff is proposing to change the Clear Wood Finish definition to Wood Coatings. This change is to address the inconsistency of having pigmented Lacquers and Varnishes fall under the Clear Wood Finish umbrella. In addition, the definition is being changed to more closely reflect the definition in the CARB SCM, but with limited categories included (e.g. only varnish topcoats, lacquer topcoats and sanding sealers). The definition is also being changed to clearly indicate that it only applies to Lacquer and Varnish topcoats and not to undercoaters.

Requirements

Several changes are being proposed to subdivision (c):

- Paragraph (c)(1): staff is proposing the following amendments:
 - Remove references to the default category and the VOC limit for the default category since it will now be included in the TOS.
 - Remove the reference to the ACO
- Paragraph (c)(2): based on feedback from the Public Workshop, staff is proposing to amend (c)(2) to further clarify that the VOC limit for colorants apply to colorant that is added to architectural coatings at the point of sale. This change is just for clarification. The reference to the effective date is also being removed as the effective date has already past.
- Paragraph (c)(3) – the most restrictive clause: staff is proposing to amend the paragraph to indicate that recycled coatings are exempt from the most restrictive clause. This change will allow coatings that contain 50 percent or more of secondary and post-consumer coatings to be marketed for use as coating categories other than flat, nonflat or primer, sealer, undercoaters. This change was prompted by an inquiry during the Public Workshop about a potential future market, using recycled coatings as a base for a waterproofing coating. Staff further evaluated the usages of recycled coatings and realized the current sales of sacrificial anti-graffiti coatings (a common application of recycled coatings) runs afoul of the most restrictive clause. Since Rule 1113 contains a coating category for sacrificial anti-graffiti coatings with a lower-VOC limit (50 g/L), those coatings must comply with the 50 g/L VOC limit and not the 250 g/L VOC limit for recycled coatings. It is not the intent to discourage this usage of recycled coatings; therefore, staff is proposing to exempt recycled coatings from (c)(3). This change will not likely result in higher emissions from recycled coatings but staff will track the sales volumes and future coating categories where they are used.
- Paragraphs (c)(4) and (c)(6): staff is removing all references to the phased out averaging compliance option.

Table of Standards (TOS)

Several changes are being proposed to the TOS for clarification.

- Category Column: the newly proposed categories are being added to the coating category column.
- Category Codes: a column for the CARB category codes is being included. These codes are used for Rule 314 reporting so including them in the TOS could be helpful for reporting purposes.

- Ceiling Limit: the ceiling limit in the rule was used for the averaging compliance options (ACO). As the ACO has been phased out, this column is no longer needed and will be eliminated.
- Current Limit: this column is being renamed Limit because if there is a limit listed to the right of that column, the limit listed is not actually the current limit. In addition, all of the VOC limits listed are being updated to reflect any lower limits that have passed the effective date.
- Effective Dates:
 - 7/1/08 and 1/1//12 columns are being removed as they are already in effect and the three year sell through period either is expired or will soon expire.
 - 1/1/14 column is being retained for purposes of tracking the three-year sell through.
 - 1/1/16 column is being added to include an increase in the VOC limit for graphic arts coatings.
 - 1/1/19 column is being included to address a future effective date for a VOC reduction for Building Envelope Coatings and Recycled Coatings.
 - SCE column is being added as staff is proposing several changes to this exemption. Including a column will help clarify the requirements.

VOC Limit Changes

As stated above, staff is proposing to change the following VOC limits:

Building Envelope Coatings

These coatings would currently fall under the waterproofing sealer category which has a VOC limit of 100 g/L. Staff is proposing to initially set the VOC limit at 100 g/L which will be lowered to 50 g/L effective January 01, 2019. Based on manufacturer feedback, the 50 g/L limit will affect some currently or future available coatings but is achievable in that timeframe. Staff researched the coatings that are currently being offered for sale in the SCAQMD and found the following:

Table 3: Building Envelope Coatings Available in 2014

Volume (gallons)	SWA VOC (g/L)	Adjusted SWA VOC (g/L)	Emissions (tpd)	# products	# product over 100 g/L	# product s over 50 g/L	Potential Emissions *	Potential Reductions**
20,295	86	22	0.012	12	2	3	0.01	0.005

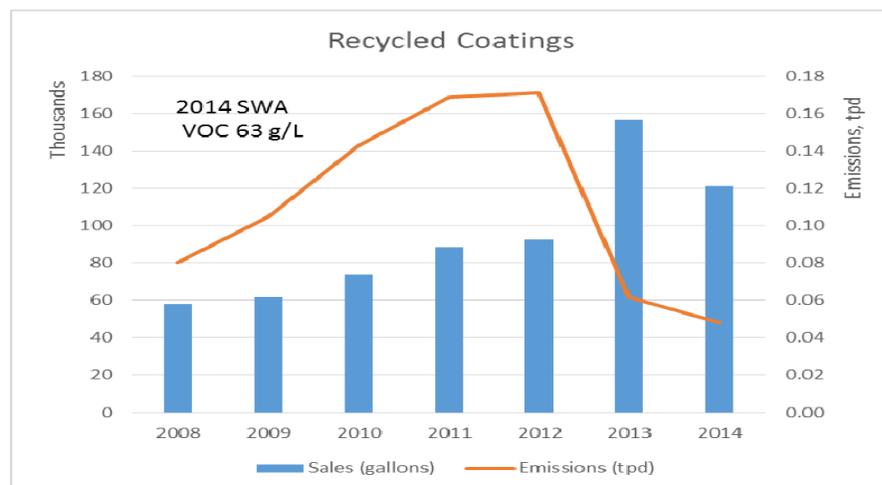
Based on staff's findings, from both coatings reported under Rule 314 and coatings not reported under Rule 314, all but three coatings meet the future VOC limit. Of those three, two do not meet the current VOC limit; therefore, are not currently legal for sale. Eliminating the two non-compliant coatings, the sales weighted average is 22 g/L. Staff feels the 50 g/L VOC limit originally proposed and supported by the manufacturers is achievable. The added expense of re-testing products that do not meet the future limit is limited to one product, the other two must be re-tested to be sold into the SCAQMD based on the current limit. For this category, staff was striving to set the VOC limit at the current baseline but not so high as to allow higher VOC coatings to enter the market in the future.

Graphic Arts Coatings

During the 2011 amendment to Rule 1113, staff reduced the VOC limit for graphic arts coatings from 500 g/L to 150 g/L based on the coatings that were available at that time. Staff projected an emission reduction of 0.003 tpd when the lower limit was adopted. Since that amendment, the manufacturer who was producing the graphic arts coatings that were less than 150 g/L went out of business. The only graphic arts coatings currently available are being sold under the SCE. The largest manufacturer of these coatings has stated that they will not reformulate to 150 g/L but they can be formulated to 200 g/L. As there currently are no compliant sales of these coatings, staff is not projecting any emissions increase from this change.

Recycled Coatings

Based on the currently available recycled coatings in our jurisdiction, the maximum VOC content is 130 g/L. Staff is proposing to lower the VOC to just above that level at 150 g/L. This change is not to seek emission reductions, but to have the VOC limits reflect what is being offered for sale. As recycled coatings are blended from locally available unused paints, it follows that the VOC content of these coatings would decrease over time. Further, with the adoption of PaintCare, the volume of recycled coatings has increased. PaintCare was adopted in California on October 19, 2012, and is a paint stewardship program that requires paint manufacturers to develop a financially and environmentally sustainable program to manage postconsumer coatings. There are currently 738 drop-off sites in California for consumers to bring unused paint. The following table demonstrates the trends in recycled coating sales:

Figure 3: Recycled Coatings Sales and Emissions

Staff is striving to have the VOC limits as low as possible to reflect the currently available products, such that the lower emissions achieved from market driven forces can be submitted under the State Implementation Program (SIP) as enforceable reductions. If all of the recycled coatings sold in 2014 (121,355 gallons) were formulated to the currently allowable VOC limit of 250 g/L limit (approximately 100 g/L VOC of Material), the emissions would be 0.14 tpd. The emissions at the proposed VOC limit of 150 g/L (approximately 60 g/L material) would be 0.08 tpd, so this change results in a SIP enforceable reduction of 0.06 tpd.

Based on feedback following the Public Workshop, and subsequent site visits with local recycled coatings manufacturers, staff is proposing to delay the effective date for this VOC change until January 1, 2019. Even though all of the coatings reported under Rule 314 were below the proposed 150 g/L limit (most were well below), the manufacturers had concerns over the required testing of these coatings. Unlike conventional coatings, the recycled coating manufacturers cannot control the coatings they receive, which serve as their raw materials. Various coatings collected by PaintCare or through household waste collections may still contain old, higher-VOC waterborne coatings. According to the recycled coating manufacturers, even some 15 year old coatings can still be good enough to use as a raw material. Staff acknowledges there are occasionally 200 g/L containers of coating collected, but it is offset by increasing quantities of less than 50 g/L coatings, including many 'zero-VOC' coatings.

The manufacturers may blend 1,000 batches annually but only test the VOC content quarterly, and they are concerned over the added cost of testing. One of the biggest selling points of recycled coatings is the lower cost. Some of the manufacturers have a difficult time finding a market for their products, partially due to the high-VOC content as end users seeking recycled coating are also seeking low-VOC coatings. Recycling unused paint is an important mission and the SCAQMD does not want to discourage this practice; therefore, staff is proposing to delay the effective date until January 1, 2019. Over time, the quantities of higher-VOC coatings will diminish. This delay will also mitigate the cost for relabeling coating containers, though one manufacturer already labels their recycled product as less than 100 g/L.

Some manufacturers would prefer not to have any VOC limit for recycled coatings, however, staff opposes this concept. Recently, staff discovered a re-use store stocking 250 g/L nonflat coating that was shipped in from Florida. Enforcement staff put an end to this practice. Leaving the VOC limit for recycled coatings at 250 g/L could further encourage the practice of importing high-VOC coatings as a raw material. With a population of over 17.5 million people and over 35 million gallons of paint sold annually, staff feels there is more than enough unused coating available locally to serve the local needs for recycled coatings.

Averaging Compliance Option (ACO)

All references to the ACO are being removed as this provision was phased out January 1, 2015. This change affects sections (a) Applicability, (c)(4) Sell-Through Provision, (c) Averaging Compliance Option, and Appendix A.

Administrative Requirements

Colorants were added to subparagraphs (d)(1) and (d)(3) to indicate that the VOC and date code labeling requirements apply to colorant containers. Although most colorants already contain the proposed labeling requirements, based on industry feedback, staff is proposing to allow manufacturers until January 1, 2017 to comply with this requirement.

Test Methods

Several test methods are being added to the rule, most of which are now included to define new coating categories. The following test methods are added to reflect the new definitions:

- ASTM E2178 - Standard Test Method for Air Permeance of Building Materials
- ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
- ASTM D3363 - Standard Test Method for Film Hardness by Pencil Test
- ASTM D4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser
- ASTM D4585 - Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation
- ASTM D714 - Standard Test Method for Evaluating Degree of Blistering of Paints
- ASTM D3359 - Standard Test Methods for Measuring Adhesion by Tape Test

In addition to the test methods above, staff is proposing to add SCAQMD Method 313 - Determination of Volatile Organic Compounds VOC by Gas Chromatography-Mass Spectrometry and ASTM Test Method D6886 (M6886) - Standard Test Method for Determination of the Weight Percent Individual Volatile Organic Compounds in Waterborne Air-Dry Coatings by Gas Chromatography to measure the VOC content of coatings. It is current practice for the SCAQMD laboratory to analyze all coating samples using USEPA Method 24 (M24), with a supplemental analysis for low-VOC, high-water coating with a material VOC

content of less than 150 g/L using SCAQMD Method 313 (M313). The USEPA and SCAQMD staff, along with industry and academia, recognize M24 does not yield accurate results for low-VOC, high-water-containing coatings. M24 is an indirect VOC measurement where the water (titration) and non-volatiles (oven) are measured and everything else is assumed to be VOC. As the VOCs in a coating approach zero, the indirect VOC measurement becomes unreliable. M313 is a direct VOC measurement technique which includes dilution of samples and analysis using Gas Chromatography (GC). The VOCs present are separated in a GC, identified by a Mass Spectrometer and quantified by a Flame Ionization Detector.

The GC approach of M313 is similar to the approach developed at California Polytechnic State University, San Luis Obispo (CAL Poly SLO) that was adopted by ASTM as M6886 in 2003. ASTM is the largest developer of consensus standards, and the committee is comprised of members of industry, academia, and regulatory agencies. M313 differs because of additional quality control requirements, and was the first GC method to include a marker compound to indicate when a compound should no longer be counted as a VOC, which was always an issue with the GC approach. The SCAQMD has participated in round robin studies (M313 versus M6886) with strong correlation between the two methods. It is staff's understanding that industry relies on M6886 for in house or third party testing of their products. Staff is proposing to include M6886 as well as M313 in Rule 1113 because manufacturers rely on this test. For compliance purposes, the SCAQMD laboratory will rely on the more rigorous M313, and provide a guidance document to explain the differences between the two methods such that a manufacturer utilizing M6886 will be aware of how their results could differ from results obtained by the SCAQMD laboratory.

The 1991 version of M313 (Method 313-91) is approved for inclusion in the State Implementation Plan (SIP) and the SCAQMD laboratory staff has been working with the USEPA, CARB, CAL Poly SLO and industry on revising M313 to enhance quality control parameters, include an endpoint, update the equipment, and address industries concerns about compounds that might elute earlier than the endpoint, but are not driven off when tested by M24. The 1991 version of the method references older technology which is currently not in common use. The addition of Methyl Palmitate (MP) as the marker compound serves as a delineation between VOCs and semi-volatile VOCs (SVOC) which should not be included in the VOC calculation. This marker compound was selected to yield consistent results to M24 and the original M313-91. This marker compound was further validated based on its non-volatility under ambient evaporation testing over a 6 month period. Prior to the use of MP as a marker compound, everything detected was measured as a VOC. This 'bright line' approach is used as a straight forward, relatively simple mechanism to determine if a compound should be counted as a VOC.

As VOC testing transitioned to a GC method, the lack of an endpoint created a significant source of uncertainty as to what should be included as a VOC. Formulators have themselves struggled with determining whether a particular product was compliant or not, using M24 or M313/M6886 without an endpoint. The intent in choosing MP was to provide clarity on the question of what is, and what is not, counted as a VOC, while at the same time keeping VOC results tethered to

M24 over a broad range of samples and compounds, an important characteristic to demonstrate equivalence to the USEPA.

This bright line approach lead to some concerns from industry. M24 determines volatility based on what is driven off in a 110°C forced air oven in an hour, and some compounds are only partially driven off under those conditions. Alternatively, M313 measures everything that elutes prior to MP as 100% VOC, and everything that elutes after MP as 100% non-VOC, thus over counting small amounts of SVOCs that elute prior to the marker compound, but undercounting small amounts of SVOCs that elute after the marker compound.

The issue of SVOCs and how they are treated in M313 versus M24 has been a topic of discussion and research since the formation of the VOC Working Group in 2010, the first time staff proposed including M313 in Rule 1113. The research conducted at Cal Poly SLO, the SCAQMD laboratory, and sponsored by some industry representatives over the past year and a half has been very enlightening, resulting in a general consensus as to how to treat these compounds. The following is a discussion of the progression of that work and the final conclusions.

During the initial 2014 Working Group meetings, many manufacturers brought up concerns about compounds that were not measured as 100% volatile when tested neat by M24. For example, a compound that is 82% volatile when tested neat by M24 would be measured as 100% volatile when analyzed by M313 leading to a potential bias in the method. There was initial concern that if the compound of interest were in a fully formulated coating, even less of it would volatilize leading to a greater bias. These discussions lead to development of an exclusion method for early eluting SVOCs. One concept that was discussed in the Working Group was to perform a film extraction test after completing the oven testing in M24 to determine how much of the compound of interest is retained in the coating. A similar approach was included in a draft version of M6886, but the method was considered too onerous for routine analysis. The compounds of interest are primarily high boiling solvents that are designed to leave the paint film, but in theory some of the solvent could get trapped within the film.

The SCAQMD laboratory and Cal Poly SLO conducted film extractions studies using different approaches. The SCAQMD laboratory found very little of any compound retained in the film after conducting a M24 solids analysis (1 hour in a 110°C oven). The results were not conclusive because it could not be demonstrated if the lack of compounds detected was due to the compounds leaving the film or because the film extraction was not effective. Cal Poly SLO used a slightly different approach where they performed a film extraction after 30 minutes, 1 hour, and 2 hours in the oven under M24 conditions. This study showed that the compounds could be detected after 30 minutes, and the concentration of the retained compounds decreased over time. Both studies seemed to indicate that most compounds were in fact not retained in the paint film, but the testing was onerous to perform and there was resistance to continue this line of research.

The next phase of the research focused on evaluating the neat compounds. Industry provided staff with a list of almost 100 compounds to evaluate, and the working group worked to develop an easier method to screen the list of compounds with a simplified neat test to pare down the list.

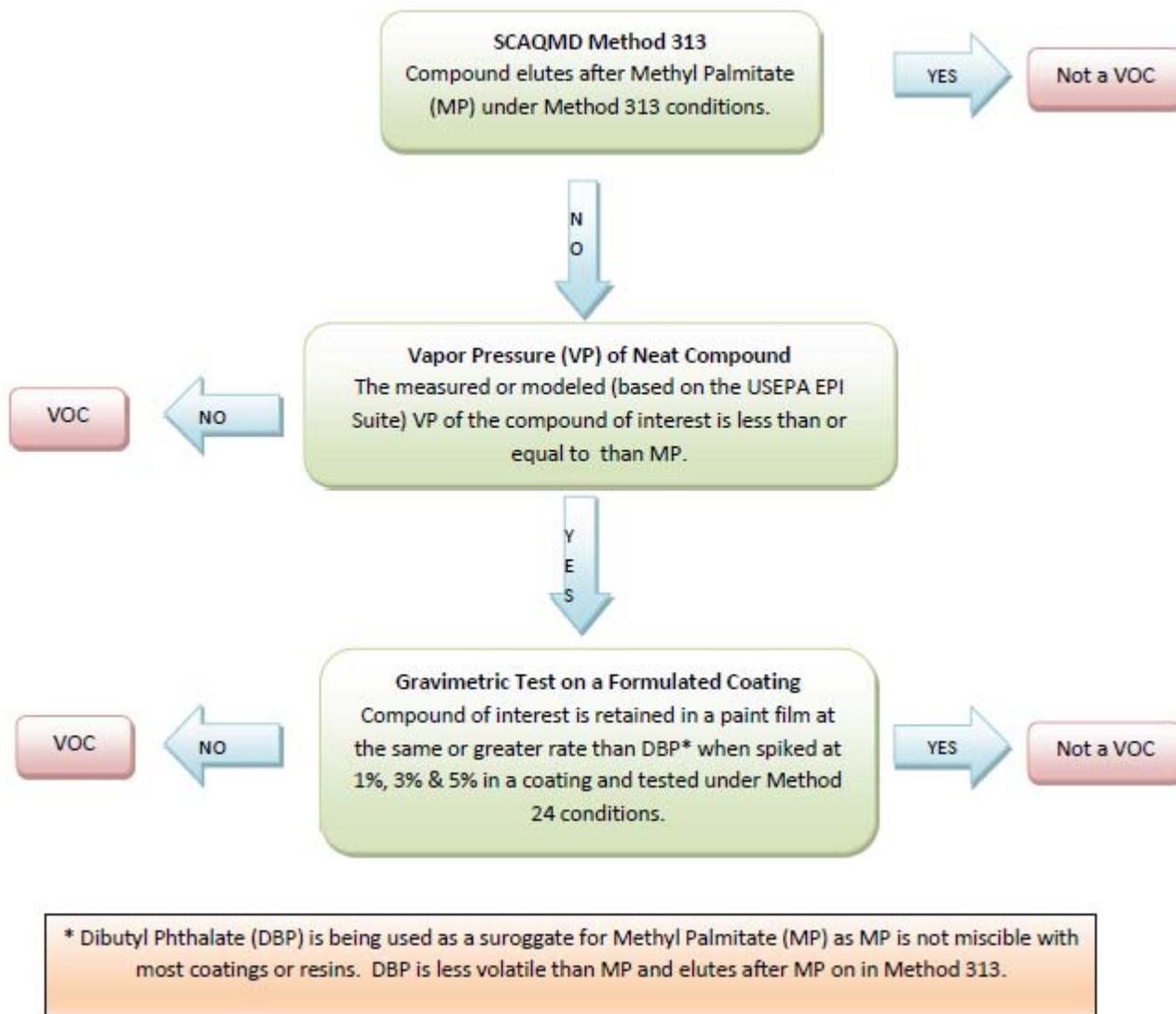
This proved more difficult than anticipated because the USEPA preferred to retain M24 conditions for this testing; however, M24 does not yield reproducible results for SVOCs. M24 is very repeatable for film forming coatings or any matrix that reaches a stable weight after the hour oven test. Due to their nature, SVOCs do not reach a stable weight, and therefore yield variable results. A method proposed by Cal Poly SLO to address this was to perform M24 on the compound of interest with the reference compound included in the same sample pan. The mixture could be analyzed on a GC before and after the M24 analysis. This was an innovative approach; however, it strayed from a pure neat analysis, and the matrix affects lead to unpredictable results with significant variability. This approach was not deemed viable.

The next approach under consideration was to use a thermogravimetric analysis (TGA) with M24 type parameters. While the SCAQMD laboratory was considering this approach, testing was underway on another Cal Poly SLO designed experiment, film spiking. Cal Poly SLO has conducted a study where they spiked a fully formulated coating and a resin with 1% of a compound of interest, and performed a TGA to determine if the weight loss of that compound could be accurately measured. The SCAQMD took that idea and modified it by spiking the coating/resin with 1%, 3% and 5% of the compound of interest, and then performed a M24 test. As the matrix is a fully formulated coating, M24 was expected to yield repeatable results and duplicate or triplicate sample pans could be tested simultaneously. In addition to the compounds of interest, a reference compound was also tested. The laboratory had difficulty getting the marker compound MP to mix with the coatings, so they experimented with Dibutyl Phthalate (DBP) as a surrogate. Since DBP elutes after Methyl Palmitate, it is already considered a SVOC. This experiment proved successful, relatively simple, and repeatable.

Also during this time, the SCAQMD started to look at vapor pressures as a way to screen the list of 100 neat compounds. The technique uses measured vapor pressures, or where measured vapor pressures are not available, modeled vapor pressures based on the USEPA EPI Suite. This proved an effective screening test that could take the place of a laboratory test on the neat compounds.

A year and a half into this research, staff is proposing to use the following flow chart to evaluate early eluting SVOCs that should not be included in the VOC calculation when detected by M313:

Figure 4: Exclusion Pathway Flowchart for non-Reactive Early Eluting SVOCs



Note: the only compound that has been demonstrated thus far to stay in the film of the coating was pentaethylene glycol (EG5). Staff is recommending that EG5 not be counted as a VOC when measured by M313 or M6886.

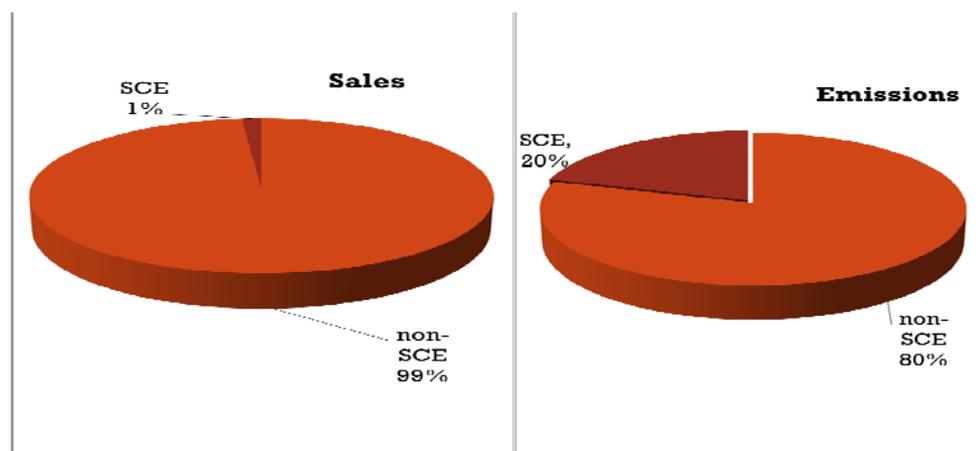
There has been a need for an improved VOC test method for a long time, and there has also been consensus that the GC approach used in M313/M6886 is one way to improve the testing. This approach is already being used by the SCAQMD laboratory and industry laboratories, and therefore is proposed for inclusion in Rule 1113. It is the current practice by both the SCAQMD laboratory and most manufacturers to use a GC method for VOC analysis, and staff intends to clarify this practice in Rule 1113. M313 will include a reference to the Exclusion Method for Early Eluting SVOCs, and a list of compound(s) that have been determined not to leave the paint

film. Staff is open to review methods that consider compounds other than straightforward solvents, such as amines. M313 will also include a precision and bias statement that has been approved by the USEPA.

Small Container Exemption (SCE)

Staff is proposing several changes to the SCE to achieve VOC emission reductions, address rule circumvention in the field, and reduce market disincentives for new technologies that may have a higher cost. Staff is focusing on the SCE because of the significant emissions from the relatively small volume of sales as the following pie charts demonstrate:

Figure 5: 2014 Sales and Emission Summary for Coatings Sold Under the SCE



The SCE is proposed to be eliminated for specialty categories that are already allowed a high-VOC limit and for the coating categories that have not used the exemption for many years (according to information reported by the manufacturers under Rule 314). The SCE removal will be effective January 1, 2016, and includes the following categories:

- Concrete-Curing Compounds For Roadways and Bridges
- Magnesite Cement Coatings
- Multi-Color Coatings
- Pre-Treatment Wash Primers
- Roof Primers, Bituminous
- Sacrificial Anti-Graffiti Coatings
- Stone Consolidants
- Repair and Other Swimming Pool Coatings
- Wood Preservatives

Staff is also proposing to phase out the exemption for the following high-VOC specialty coatings that have used the SCE to a very small extent, but to extend the effective date to January 1, 2018:

- Clear and Pigmented Shellacs (VOC limit 730g/L/550g/L)
- Reactive Penetrating Sealers (VOC limit 350 g/L)
- Tub and Tile Coatings (proposed VOC limit 420 g/L)

Staff initially proposed to phase out these categories by January 1, 2016 but received feedback that more time was needed, especially for tub and tile coatings. This is a newly proposed category and the VOC limit is based on CARB's SCM. The manufacturers of these coatings stated that through the SCM they can utilize tBAC in their formulations and rely on the SCE. Staff changed the proposed amendment to allow for several years for the reformulation of tub and tile coatings and included other categories where small quantities of high-VOC coatings were sold under the SCE. The following are the estimated VOC reductions from this change:

Table 4: Specialty Coating Phase out from SCE

Category	Est. Emissions Reduction (tpd)
Tub and Tile	0.01
Reactive Penetrating Sealers	0.0001
Shellacs	0.0007
Total	0.01

In addition, staff is proposing to phase out the exemption for coating categories utilizing this exemption for a large volume of sales. Staff has always acknowledged that the SCE is necessary for small niche usages, and for touch up where a small amount of a high-VOC coating could lead to lower emissions than repainting an entire object with a lower-VOC coating. The intent of the SCE is not as a mechanism for end users to utilize large volumes of high-VOC coatings. Staff has been tracking the usage under the SCE since 1999 to look for categories having a high volume of sales or an increase in sales. Based on the current analysis of high volume usage, staff is proposing to phase out the SCE for Flat, Nonflat Coatings and Rust Preventative Coatings (RPC). Staff is proposing to retain the SCE for 8 fluid ounce or less sample containers for touch up usage only. In regard to touch up as the justification for retaining the SCE, the end user would have to contact the manufacturer of the pre-painted object to determine the exact coating used, in order to perform the proper touch up. In such an instance, having the high-VOC products available on retail shelves would not be necessary.

Due to potential crossover between IMC and RPCs, staff is also proposing to restrict the SCE for IMCs. While staff does not believe these coatings are interchangeable, staff does foresee creative marketing to circumvent this rule change. To address the needs for touch up on larger projects, staff is proposing to allow IMC, and the subcategories falling under IMCs (Color Indicating Safety Coatings, High Temperature IM Coatings, Non-Sacrificial Anti-Graffiti Coatings, and IM Zinc Rich Primers) to be sold over the VOC limits in one liter containers or less, but restrict the exemption to touch up only, and restrict the sales to direct sales (e.g. not allow sales at retail outlets). The inclusion of the IMC subcategories is not intended for emission reductions since the SCE is only used for minimal sales. They would have been included along with other coatings not using the exemption, but staff included them with IMC coatings in case of a need for touch up.

One of the reasons for the further restriction on the SCE is to prevent end user rule circumvention. With limited resources, SCAQMD inspectors cannot be at all worksites on any

given day considering the jurisdiction contains almost 11,000 square miles. The inspection staff enforcing Rule 1113 during their field activities have encountered several instances of end users utilizing the SCE for higher volume projects to circumvent the VOC limits in Rule 1113. As mentioned, the feedback staff has received from manufacturers is the SCE is necessary for small niche projects, and for touch up of a substrate previously coated with a higher-VOC coating. During field activities, SCAQMD inspection staff received positive feedback about compliant coatings. Contractors have stated they prefer using compliant coatings as opposed to higher-VOC coatings, sold under the SCE, due to the lack of odor, ease of use, quick drying times, and simple clean-up. The use of compliant coatings keeps their inventory lower, thus resulting in less overhead costs. Many new construction products are LEED (Leadership in Energy and Environmental Design) certified and require the use of lower-VOC coatings.

SCAQMD inspection staff has received feedback from larger retailers about paint contractors purchasing coatings above the allowable VOC limits in small containers, and then combining them into larger containers to provide uniform color. This practice is not permitted under the SCE. Staff has also received feedback contractors order large quantities of small containers, which is supported by the Rule 314 data. In addition, regarding one high-VOC product specifically labeled for use on metal substrates only, SCAQMD inspection staff ascertained from a local retailer the product could be used on wood. Sales staff at this local retailer stated that they do not recommend its use on wood, but if the customer is insistent, then they will recommend the use of a good primer prior to its application. Staff believes this practice is more widespread than first thought.

One example of rule circumvention encountered in the field occurred in the spring of 2014. During an inspection at a sizable construction project, staff discovered the use of large quantities of non-compliant RPCs. The original product was in one gallon containers and had a VOC content of 400 g/L. Since the VOC limit for RPCs is 100 g/L, the product was not compliant with Rule 1113. If that same product was in quarts, then the SCE would apply. On a return inspection to the site, staff discovered the local retailer sold the paint contractor empty, labeled quart containers. The contractor then emptied the one gallon container into four quart containers in an attempt to comply with the rule. Furthermore, when they applied the product at the site, they then emptied the quarts into a larger 5 gallon bucket in order to facilitate roller application. The inspection resulted in a Notice of Violation and another example of the circumvention of the rule by taking advantage of the SCE.

In another example, staff spoke with a local paint contractor who was concerned because a coating sales representative had included a high-VOC coating in a specification for a metal fence project. The contractor noted the coating specified was not compliant with Rule 1113. He felt the high-VOC coating was an inferior product compared to new waterborne technologies; therefore, included a waterborne coating in his proposal. His assertion was the waterborne technology had much better color retention, and would not oxidize as quickly as the oil based coating being specified. The sales representative, who is also the manufacturer of the non-compliant product specified, disagreed with this assertion and stated he specifies this non-compliant product on every iron project he manages. The contractor stated he was trying to do

the right thing in regards to the rule requirements. He expressed his concerns to staff about getting cited for applying non-compliant coatings as the sales representative directed him to combine the small containers into a larger container in order to apply the coating, a practice that is not allowed in Rule 1113. This project required 25 gallons of high-VOC coating that could only be purchased in small containers, which reflects up to 100 individual quart size containers. The contractor did not contract for the job; however, another contractor did. This is an example of the SCE being utilized in ways inconsistent with the intent of the exemption. This demonstrates the use of small containers for large projects is not cost prohibitive and is not used only for specialty niche projects.

The assumed cost disincentive of purchasing products in small containers is also not supported by a recent shelf survey of retail prices. Most quart containers had a retail price between \$10.00 and \$15.00, whereas similar products in a gallon container were approximately \$40.00 to \$60.00, about the same cost per quart. In some instances, the gallon price of new, lower-VOC technologies such as waterborne alkyds emulsions were slightly higher on a per quart basis, thus creating an incentive to purchase multiple small containers of higher-VOC conventional solvent based alkyds. Additionally, during a recent retail store inspection, staff saw discounts offering four quarts for the price of three (e.g. buy 3 get one free) accompanied by boxes containing four quarts of higher VOC product. Rule 1113 specifically prohibits bundling small container products. Since this particular packaging was a shipping box, it was not a clear violation of the rule, but it appeared to have the same intent given the discount offer.

While companies may sell the same or similar products in gallons (lower-VOC) and quarts (potentially higher VOC under the SCE) at about the same cost, the older, higher-VOC technology costs less to manufacture with higher profit margins. All manufacturers have at least one low-VOC compliant product line, many manufacturers have already phased out the older technology, and some have entirely moved away from solvent based coatings. Those manufacturers who continue to sell the older technology under the SCE are benefitting from significantly higher profit margins, have not had to spend the resources to develop lower-VOC technologies and, in some cases, through lower pricing, create a competitive disadvantage for companies that have already switched to lower-VOC compliant products. One factor suppressing the market share of lower-VOC technology, is the availability of the older high-VOC technology at similar or lower prices. Staff has received feedback from a manufacturer who has made the switch to lower-VOC coatings, stating that if the SCE remains in place, they will go back to reformulating the higher-VOC product because they are currently giving up market share to their competitors.

Based on feedback from manufacturers, conventional alkyds, which are typically used as RPCs, can be replaced with either waterborne or exempt solvent technologies. As mentioned, some manufacturers eliminated their solvent based alkyd coatings years ago, others feel they eventually will phase them out, while still others have made it their business model to sell predominately solvent based coatings in small containers. In regard to the waterborne alkyds, several manufactures have stated those products are as good if not better than the solvent based products they replaced (better gloss retention, no chalking, better long term durability, less

yellowing) while others contend they are currently inferior in performance (inferior corrosion protection, inferior penetration and adhesion, and application issues). For those companies who want to continue to sell solvent based coatings, compliant alkyd coatings can be formulated using exempt solvents. The drawback of both waterborne and exempt solvent based alkyd RPCs is they cost more to produce, resulting in a smaller profit margin or a higher cost product for the end user. This is at least one reason these technologies have not made larger inroads in the marketplace.

The VOC limit for RPCs was reduced from 400 g/L to 100 g/L effective July 1, 2006. At that time, a sufficient number of compliant products were available to justify the 100 g/L VOC limit. The following table shows the number of compliant products from the 2006 Annual Staff Report compared to currently available coatings.

Table 5: Comparison of Compliant Rust Preventative Coatings

	Total Products Listed	Total Sales Volume (gallons)	Products below the 100 g/L VOC Limit			
			# of Products	Sales Volume	% of Products	% of Sales
2000 Sales Volumes from 2001 CARB survey	81	180,522	3	1,047	4%	1%
2014 Data 314 Report	227	299,229	50	141,103	20%	47%

Staff conducted a technology assessment of RPCs (referred to as RP below) that was conducted by the University of Missouri – Rolla Coatings Institute (UMR) and completed in November of 2005. The following is a conclusion of that study:

“The overall results for the Phase III testing can be broken down into two categories, RP and IMC. Specifically for RP coatings, the low-VOC products had superior dry time characteristics, prohesion, and flash rusting. They were similar in terms of hide, taber abrasion, impact resistance, and adhesion (Battele).”

The technology assessment was designed and developed by the Technology Advancement Committee, which consisted of members representing industry, other regulatory agencies, academia, the National Paint and Coatings Association, an engineer, and a specifier. They determined the appropriate performance tests to conduct and the coatings to test. The testing was performed by UMR, cyclic prohesion and flash rust tests were recommended and conducted to assess the corrosion protection of the rust preventative coatings. Those tests demonstrated the superior performance of the low-VOC coatings.

As a result of the technology assessment, the Governing Board concluded that the 100 g/L VOC limit was technologically feasible. Based on the Rule 314 data, the percent of compliant products sold had increased from 2008 to 2012 but has since started to decline, as noted in the following table:

Table 6: Compliant versus Non-Compliant Rust Preventative Sales

Year	Sales ≤ 100g/L (gal)	SCE Sales- >100g/L (gal)	Non-Compliant Sales or Sell Through - > 100g/L (gal)	Total Sales (gal)	% Sales ≤100g/L
2008	74,990	123,411	146,090	344,491	22%
2009	104,247	145,367	88,463	338,077	31%
2010	174,590	171,675	17,434	363,700	48%
2011	174,281	190,586	10,284	375,150	46%
2012	200,068	149,381	8,736	358,186	56%
2013	166,289	158,027	7,407	331,722	50%
2014	141,103	151,237	6,889	299,228	47%

The following table demonstrates the potential emission reductions from the restrictions on the SCE:

Table 7: Estimated Emission Reductions from Small Container Exemption Restriction

Category	Estimated Emission Reduction (tpd)	Effective Year
Flat Coatings	0.002	01/01/19
Industrial Maintenance Coatings	0.01	01/01/19
Color Indicating Safety Coatings	N/A	01/01/19
High Temperature IM	0.001	01/01/19
Non-Sacrificial Anti-Graffiti Coatings	N/A	01/01/19
Zinc Rich Primers	0.003	01/01/19
Nonflat Coatings	0.15	01/01/19
Reactive Penetrating Sealers	0.0001	01/01/18
Rust Preventative Coatings	0.63	01/01/19
Shellacs	0.0007	01/01/18
Tub and Tile	0.01	01/01/18

Rule Clean Up

Staff is proposing to remove the effective dates that have now passed. In addition, provisions that have passed their sunset dates have been struck (i.e. averaging compliance option).

ALTERNATIVES ANALYSIS

CM#2012 CTS-01 – Further VOC Reductions from Architectural Coatings had three options for achieving the 2 – 4 tpd reductions:

1. Lower the VOC limits of flat, nonflat and PSUs to 25 g/L
2. Include transfer efficiency standards

3. Phase out or restrict the SCE

During the rule making process, the 25 g/L option was deemed to be of the most concern to manufacturers, and staff met with the most resistance to this approach. This change would require extensive reformulations, and feedback from the manufacturers was the performance and application properties of the coatings would be compromised. In addition, if staff moved forward with this change, there would have to be many subcategories carved out where the high-VOC coatings were needed. An alternative approach suggested by manufacturers was to alter the fee structure in Rule 314. The lower fees for coatings containing less than 25 g/L will reflect the lower cost of compliance for those coatings. The proposal is being removed to allow time for additional data analysis and research regarding the impact of a recent court decision regarding fees.

In regard to transfer efficiency, staff decided not to include spray equipment requirements to improve the transfer efficiency for applying architectural coatings. Instead, staff is going to work with industry, the Los Angeles Painting and Finishing Contractors Association, and possibly local retailers to develop a Best Practices Guideline for painting architectural structures, including a certification program for contractors and end users. This could serve as a pilot project to improve transfer efficiency and reduce paint usage in the SCAQMD.

Staff is moving forward with the proposed restrictions on the SCE, but is not proposing to phase out the exemption entirely. Staff acknowledges that the exemption is useful for specialty uses, and for introducing innovative products into the marketplace. Staff will continue to monitor all coating categories that will retain the exemption, and consider conducting a technology assessment of high usage categories such as stains and tile and stone sealers as new, lower-VOC technology become available.

COMPARATIVE ANALYSIS

The following analysis compares Rule 1113 with the CARB SCM and the USEPA Architectural Coatings rule. The comparison includes proposed changes to Rule 1113 where applicable.

Section	Rule 1113 – Architectural Coatings	California Air Resources Board 2007 Suggested Control Measure	40 CFR, Subpart D – National Volatile Organic Compound Emission Standards for Architectural Coatings
Applicability	This rule is applicable to any person who supplies, sells, markets, offers for sale, or manufactures any architectural coating that is intended to be field applied <u>within the District</u> to stationary structures or their appurtenances, and to fields and lawns; as well as any person who applies, stores at a worksite, or solicits the application of any architectural coating within the District. The purpose of this rule is to limit the VOC content of architectural coatings used in the District.	1.1 Except as provided in subsection 3, this rule is applicable to any person who: 1.1.1 Supplies, sells, or offers for sale any architectural coating for use within the District; or 1.1.2 Manufactures, blends, or repackages any architectural coating for use within the District; or 1.1.3 Applies or solicits the application of any architectural coating within the District.	(a) Except as provided in paragraphs (b) and (c) of this section, the provisions of this subpart apply to each architectural coating manufactured on or after September 13, 1999 for sale or distribution in the United States. (b) For any architectural coating registered under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Section 136, et seq.), the provisions of this subpart apply to any such coating manufactured on or after March 13, 2000 for sale or distribution in the United States.
Definition Modifications and VOC Content Limits	Bond Breakers (350 g/L) and Form Release Compounds (100 g/L)– phased out	Bond Breakers (350 g/L) and Form Release (250 g/L) remain	Bond Breakers (600 g/L) and Form Release (450 g/L) remain
	Building Envelope (100 g/L) – New Category	No Category	No Category
	Color Indicating Safety Coatings (480 g/L) – subcategory of IM coatings that was sold under SCE	Fall under IMC (250 g/L), sold under SCE	Fall under IMC (450 g/L), sold under SCE
	Default Coatings (50 g/L) – defined instead of just referenced	Un-defined coatings fall under Flat (50 g/L), Nonflat (100 g/L) or Nonflat – High Gloss (150 g/L)	Un-defined coatings fall under Flat (250 g/L) or Nonflat (380 g/L)
	Faux Glaze (350 g/L) – includes wet-in-wet and wet-in-dry applications (artistic as well as architectural uses)	Faux Glaze (350 g/L) includes textured coatings	Faux Glaze (700 g/L) only includes wet-in-wet techniques
	Flat Coatings (50 g/L) – references gloss test method	Flat Coatings (50 g/L) – equivalent definition	Flat Coatings (250 g/L) – equivalent definition

	Lacquer (275 g/L) – specifies they are only topcoats and sanding sealers	Lacquer (275 g/L) – includes undercoaters	Lacquer (680 g/L) – includes clear lacquer sanding sealers, not lacquer stains
	Mastic Coatings (100 g/L) – excludes roof coatings	Mastic Texture Coating (100 g/L) – does not exclude roof coatings	Mastic Texture Coating (300 g/L) – does not exclude roof coatings
	Nonflat (50 g/L) – removed clause stated they are not defined by another category as those coatings could fall under default	Nonflat (100 g/L) – equivalent definition but also includes a Nonflat – High Gloss (150 g/L)	Nonflat (380 g/L) – equivalent definition
	Reactive Penetrating Sealer (350 g/L) – changed the 2% water vapor transmission rate to provide a breathable waterproof barrier	Reactive Penetrating Sealer (350 g/L) – includes the 2% water vapor transmission rate	Waterproofing Sealers and Treatments (600 g/L) – no performance requirements
	Recycled Coatings (150 g/L) – VOC limit change only	Recycled Coatings (250 g/L)	Recycled Coatings - adjusted-VOC content is determined by multiplying the percentage of postconsumer content of the coating by the VOC content of the recycled coating, which is then subtracted from the VOC content of the end product.
	Tile and Stone (100 g/L) – new subcategory of waterproofing concrete/masonry sealer	Concrete/Masonry Sealer (100 g/L) – Broader Category	Waterproofing Sealer and Treatments (600 g/L) – Broader Category
	Topcoat – new definition as the term is used in several proposed definitions	Not defined	Not defined
	Tub and Tile Refinishing Coatings (420 g/L) – new high-category that was sold under SCE	Tub and Tile Refinishing Coatings (420 g/L) – equivalent definition	Industrial Maintenance (450 g/L) – due to the immersion in water and heavy abrasion clauses
	Varnish (275 g/L) - specifies they are only topcoats	Wood Coatings (275 g/L) - could include undercoaters	Varnish (450 g/L) – could include undercoaters
	Wood Coatings (275 g/L) – modified from Clear Wood Finish definition to address pigmented lacquers and varnishes	Wood Coatings (275 g/L) – includes undercoaters, penetrating oils, clear stains, wood conditioners, and wood sealers	No umbrella category, just Lacquer (including sanding sealers) (680 g/L) and Varnishes (450 g/L)
	Wood Conditioners – new category to provide clarification, products used to fall under PSU	Wood Coatings (275 g/L) – includes wood conditioners	Primers, Sealers, and Undercoaters (450 g/L) – broader category
Requirements	Default limit (50 g/L) applies or VOC limits specified in the Table of Standards on listed effective dates.	Coatings default to Flat (50 g/L), Nonflat (100 g/L) or Nonflat – High Gloss (150 g/L) or VOC content not to exceed applicable limit in Table	Coatings default to Flat (250 g/L) or Nonflat (380 g/L) or VOC content not to exceed applicable limit in Table 1 to Subpart D.

		1.	
Sell-Through Provision	Removed ACO language	No ACO provision	No ACO provision
Administrative Requirements	Require VOC and date of manufacturer on colorant containers	No requirements for colorants	No requirements for colorants
New Test Methods	VOC Test Methods: Method 313 [Determination of Volatile Organic Compounds VOC by Gas Chromatography-Mass Spectrometry] in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual. ASTM Test Method 6886 (Standard Test Method for Determination of the Weight Percent Individual Volatile Organic Compounds in Waterborne Air-Dry Coatings by Gas Chromatography).	Requires Reference Method 24	Requires Reference Method 24
	Reactive Penetrating Sealer: Included ASTM D6490 (Standard Test Method for Water Vapor Transmission of NonFilm Forming Treatments Used on Cementitious Panels along with ASTM E96/96M.	Only references ASTM E96/96M.	No Reactive Penetrating Sealer Category
	Building Envelope Test Methods: ASTM E2178 (Standard Test Method for Air Permeance of Building Materials). ASTM E331 (Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference). ASTM E96/96M (Standard Test Methods for Water	No Building Envelope Category	No Building Envelope Category

	Vapor Transmission of Materials).		
	<p>Tub and Tile Refinishing Coatings</p> <p>ASTM D3363 (Standard Test Method for Film Hardness by Pencil Test)</p> <p>ASTM D4060 (Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser)</p> <p>ASTM D4585 (Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation)</p> <p>ASTM D714 (Standard Test Method for Evaluating Degree of Blistering of Paints)</p> <p>ASTM D3359 (Standard Test Methods for Measuring Adhesion by Tape Test).</p>	Same test methods referenced	No Tub and Tile Coatings category
	<p>Tile and Stone Sealer</p> <p>ASTM C373 (Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products, Ceramic Tiles, and Glass Tiles).</p> <p>ASTM C97/C97M (Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone).</p> <p>ASTM C642 (Standard Test Method for Density, Absorption, and Voids in Hardened Concrete).</p> <p>Static Coefficient of Friction by American National Standard Specification for Ceramic Tile (ANSI A137.1).</p> <p>ASTM E96/96M (Standard Test Methods for Water Vapor Transmission of Materials).</p>	No Tile and Stone Sealers category.	No Tile and Stone Sealers category.
Exemptions	Small Container Exemption: Effective January 1, 2016, remove exemption for:	Rule does not apply to any architectural coating that is sold in a container with	The provisions of subpart D do not apply to any architectural coating that is sold in a

	<p>Concrete-Curing Compounds For Roadways and Bridges; Magnesite Cement Coatings; Multi-Color Coatings; Pre-Treatment Wash Primers; Roof Primers, Bituminous; Sacrificial Anti-Graffiti Coatings; Stone Consolidants; Repair and Other Swimming Pool Coatings; and Wood Preservatives</p> <p>Effective January 1, 2018, remove exemption for: Tub and Tile Coatings; Clear and Pigmented Shellacs; and Reactive Penetrating Sealers</p> <p>Effective January 1, 2019, limit exemption to 8 fluid ounce touch up for: Flats, Nonflat, and Rust Preventative Coatings</p> <p>Effective January 1, 2019, limit exemption to one liter for touch up only, limit sales to non-retail for: Industrial Maintenance Coatings, including Color Indicating Safety Coatings, High Temperature IM Coatings, Non-Sacrificial Anti-Graffiti Coatings, and Zinc-Rich IM Primers</p>	<p>a volume of one liter (1.057 quart) or less</p>	<p>container with a volume of one liter or less</p>
<p>Averaging Compliance Option</p>	<p>Removed all references to ACO, including Appendix A as ACO sunset effective January 1, 2015</p>	<p>No ACO provision</p>	<p>No ACO provision</p>

SUMMARY OF POTENTIAL EMISSION REDUCTIONS

The following table represents the potential emission reductions:

Table 8: Summary of Potential Emission Reductions from PAR 1113

Rule Change	Estimated Emission Reduction (tpd)	Effective Year
VOC Limit Change		
Building Envelope Coatings	0.01	01/01/19
Recycled Coatings	0.06	01/01/19
SCE Restrictions		
Flat Coatings	0.002	01/01/19
Industrial Maintenance Coatings	0.01	01/01/19
High Temperature IMC	0.001	01/01/19
Zinc-Rich Primers	0.003	01/01/19
Nonflat Coatings	0.15	01/01/19
Reactive Penetrating Sealers	0.0001	01/01/18
Rust Preventative Coatings	0.63	01/01/19
Shellacs	0.0007	01/01/18
Tub and Tile Coatings	0.01	01/01/18
Totals	0.88	

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The proposed amendments to Rule 1113 - Architectural Coatings has been reviewed pursuant to CEQA and an appropriate CEQA document has been prepared, and will be considered for certification concurrently with the consideration for adoption of PAR 1113.

COST EFFECTIVENESS

VOC Reductions (Recycled Coatings and Building Envelope Coatings)

The reductions for recycled coatings will not have any associated costs as the coatings are already formulated at the lower level. Staff has found no evidence of any recycled coatings currently being offered for sale that exceed the proposed VOC limit. Staff received feedback that extra VOC testing would be required because of the proposed lower VOC limit. Staff addressed this by extending the effective date of the lower limit to January 1, 2019 to allow time for the higher-VOC coatings collected at drop off sites to be processed into recycled coatings. Overtime, there will be less of the high-VOC coatings collected and more low and near-zero VOC coatings collected.

The building envelope coatings may have a high cost associated with reformulation and recertification, if the manufacturer decides to certify the coatings (this is not a requirement of Rule 1113). Staff found only one currently compliant coating that was over the proposed 50 g/L VOC limit. The sales volume of this product was so low that the manufacturer will likely stop

sales within the SCAQMD instead of re-formulating. That same manufacturer has a product that meets the 50 g/L VOC limit.

SCE Phase out for Specialty Products (Reactive Penetrating Sealers, Shellacs, & Tub and Tile Coatings)

For reactive penetrating sealers, there is only one product that is slightly over the VOC limit (by 27 g/L). This manufacturer also has several compliant coatings and will likely discontinue the higher-VOC product.

For Shellacs, there are three out of ten products over the 550 g/L VOC limit for pigmented shellacs and one out of twenty four products over the 730 g/L VOC limit for clear shellacs. The manufacturer can either slightly reduce the VOC content or discontinue marketing those coatings in the SCAQMD. There are new waterborne shellac replacements currently available and staff questions the need for pigmented and clear shellacs available for sale and use in the SCAQMD with a VOC limit of 550 and 730 g/L.

Tub and tile coatings are a new carve out requested by industry as the SCE is being restricted for flat, nonflat and IM coatings. Staff set the limit consistent with the CARB SCM as to not be less restrictive. The VOC limit agreed upon by CARB and industry back in 2007 was 420 g/L, and yet the seven out of twelve coatings reported as tub and tile coatings under Rule 314 exceed this VOC limit. Based on manufacturer's feedback, the reformulated coatings are estimated to cost 20% more than current formulations. These products are supplied in quarts, and the increase would be approximately \$9/quart.

SCE Phase out for High-Volume Products (Flats, Nonflats, IMCs, & RPCs)

For the SCE restrictions, the lower-VOC products are already available by most, if not all manufacturers. There will be some higher-VOC product lines that will no longer be available in the SCAQMD, but in all instances, significant quantities of compliant coatings are currently being sold:

Table 9: Small Container Exemption - Compliant versus non-Compliant Sales

Category	2014 Sales		
	Compliant Sales (gal)	SCE Sales (gal)	% Compliant Sales
Flat Coatings	11,311,224	5,983	100%
Industrial Maintenance Coatings	677,054	2,687	100%
Color Indicating Safety Coating	0	0	
High Temperature IMC	4,377	PD	99%
Non-Sacrificial Anti-Graffiti	0	0	
Zinc Rich Primers	9,670	PD	100%
Nonflat Coatings	11,566,568	83,772	99%
Reactive Penetrating Sealers	PD	PD	77%
Rust Preventative Coatings	141,103	151,237	48%
Shellac	PD	PD	96%
Tub and Tile Coatings	PD	PD	19%

PD = Protected data, less than three companies reported sales.

In the case of RPCs, the restriction on the SCE could result in some reformulation costs and/or reduced profit margins for the manufacturers who have not already switched to compliant technologies. In those instances, the manufacturer could choose to only sell their compliant product lines in the SCAQMD and the market share from the high-VOC sales would be redistributed amongst the available compliant products. Consumers who otherwise would purchase the high-VOC products could purchase the lower-VOC products without a compromise in performance. Alternatively, the manufacturers selling the high-VOC products could replace the higher-VOC products sold in quarts with their compliant products that they now sell in gallons. As previously stated, all manufacturers have a compliant RPC product line. Shelf surveys of the coatings currently being offered for sale in the field, the exempt product formulations of RPCs cost a few cents less than the higher-VOC RPCs sold in quart containers. Packaging and shipping in gallon containers instead of 4 quarts is also less expensive for the manufacturer. One manufacturer has indicated that their waterborne line of RPCs is less expensive due to the resin cost and the cost of water versus solvent. Based on this, staff feels that the removal of the SCE will lead to an overall cost savings. However, one manufacturer has indicated that the change in formulation will yield a 100% increase to the cost of their quart containers. This manufacturer is the same one selling the exempt solvent version of their product for several cents less than the high-VOC product. Staff acknowledges that some exempt solvents and low-VOC replacement solvents are more expensive than conventional solvents. As for reformulation costs for switching to the exempt solvent version of RPCs, feedback from the one manufacturer who does not feel the waterborne coatings perform adequately indicated the only work needed is color matching of their current product line.

Staff estimates that the cost per ton for PAR 1113 is \$46,013.93 per ton. As described previously, there are additional reasons for removing the SCE for certain categories other than VOC emissions reductions (circumvention, pricing disincentives for consumers, and competitive disadvantages).

SOCIOECONOMIC ASSESSMENT

PAR 1113 affects all architectural coating manufacturers who sell architectural coatings into or within the SCAQMD. The purpose of PAR 1113 is to implement, in part, Control Measure CM#2012 CTS-01 – Further VOC Reductions from Architectural Coatings, limit the small container exemption for certain categories, propose new categories with VOC limits and eliminate categories once they are regulated under a different rule, reduce the VOC limit of some architectural coating categories to reflect currently available inventory, clarify rule language, strengthen the enforceability of the rule, and remove and update outdated provisions.

Affected Facilities

The proposed amendments will affect 28 facilities. Twenty of the affected facilities are located in Los Angeles County, while six facilities and two facilities are located in Orange and San Bernardino Counties respectively. The affected facilities belong to the sectors of Chemical Manufacturing (NAICS 325), Petroleum and Coal Products Manufacturing (NAICS 324), and Non-Metallic Mineral Product Manufacturing (NAICS 327). Table 10 shows the distribution of these facilities by industry.

Table 10: Number of Affected Facilities

Industry (NAICS)	Number of Facilities
Chemical Manufacturing (325)	21
Petroleum and Coal Products Manufacturing (324)	3
Non-Metallic Mineral Product Manufacturing (327)	4
Total	28

Cost of Compliance

Based on the assumptions in the staff report for PAR 1113, the annual cost of compliance of \$46,000 is estimated to be approximately \$15,000 on average, from 2016 to 2019. As Table 11 illustrates, manufacturers of tub and tile coatings would incur 100% of this cost.

Table 11: Coating Categories with Socioeconomic Impact

Rule Change	Annual Cost
Rust Preventative Coatings (RPCs)	(\$17,590.80)
Tub and Tile Coatings	\$46,013.93
Total	\$46,013.93*

* Total does not include potential cost saving from RPCs because they represent the status quo.

Manufacturers of waterborne RPCs will not incur any additional costs from PAR 1113 given that waterborne RPCs are 37 cents cheaper than their higher VOC, solvent-based counterparts in the current marketplace. Given this price differential, the annual cost-savings for waterborne RPCs is about \$18,000 and represents business as usual in this analysis. If manufacturers choose to continue working with exempt solvents rather than switching production to solely waterborne ed RPCs, then these manufacturers will incur additional production costs. This will likely have no impact on consumers who can switch to waterborne RPCs, which are not only cheaper, but have also been shown to be equal to, if not superior than, higher VOC RPC products.¹

It has been standard socioeconomic practice that, when the annual compliance cost is less than one million current U.S. dollars, the Regional Economic Impact Model (REMI) is not used to simulate jobs and macroeconomic impacts. This is because the impact would most likely be diminutive and would fall within the noise of the model. REMI results constitute a major component of the SCAQMD's socioeconomic analysis. Therefore, when annual compliance cost is less than one million dollars and REMI is not used, the socioeconomic report can be brief and be included in the staff report, unless otherwise determined on a case-by-case basis.

LEGISLATIVE AUTHORITY

The California Legislature created the SCAQMD in 1977 (The Lewis Presley Air Quality Management Act, Health and Safety Code Section 40400 et seq.) as the agency responsible for developing and enforcing air pollution controls and regulations in the Basin. By statute, the SCAQMD is required to adopt an AQMP demonstrating compliance with all state and federal ambient air quality standards for the Basin [California Health and Safety Code Section 40440(a)]. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP [California Health and Safety Code Section 40440(a)].

AQMP AND LEGAL MANDATES

The California Health and Safety Code requires the SCAQMD to adopt an AQMP to meet state and federal ambient air quality standards in the South Coast Air Basin. In addition, the California Health and Safety Code requires the SCAQMD to adopt rules and regulations that carry out the objectives of the AQMP.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE

Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the hearing. The draft findings are as follows:

Necessity - The SCAQMD Governing Board has determined that a need exists to amend Rule 1113 - Architectural Coatings to clarify rule language, reduce emissions from the use of

¹ See Response to Comment 3-12.

architectural coatings, including previously unregulated colorants that are used to tint the coatings at the point of sale, and improve rule compliance.

Authority - The SCAQMD 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 - The SCAQMD Governing Board has determined that the proposed amendments to Rule 1113 - Architectural Coatings, are written and displayed so that the meaning can be easily understood by persons directly affected by them.

Consistency - The SCAQMD Governing Board has determined that PAR 1113 - Architectural Coatings, is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, federal or state regulations.

Non-Duplication - The SCAQMD Governing Board has determined that the proposed amendments to Rule 1113 - Architectural Coatings do 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 SCAQMD.

Reference - In adopting these amendments, the SCAQMD Governing Board references the following statutes which the SCAQMD hereby implements, interprets or makes specific: Health and Safety Code Sections 40001 (rules to achieve ambient air quality standards), 40440(a) (rules to carry out the Air Quality Management Plan), and 40440(c) (cost-effectiveness), 40725 through 40728 and Federal Clean Air Act Sections 171 et seq., 181 et seq., and 116.

REFERENCES

40 CFR Part 59, Subpart D – National Volatile Organic Compound Emission Standards for Architectural Coatings, September 11, 1998.

COMMENTS AND RESPONSES

The following are the comment letters and emails, which have the paragraphs numbered to reference staff responses, that were received after the August 25th Public Workshop and the September 17th Public Consultation Meeting.

The following are comments from the Institute for Research and Technical Assistance – Comment Letter #1.

Institute for Research and
Technical Assistance
a nonprofit organization



August 28, 2015

Comment Letter #1

Heather Farr
South Coast Air Quality
Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Ms. Farr:

I am writing with comments on the proposed changes to Rule 1113 "Architectural Coatings." I am Director of the Institute for Research and Technical Assistance (IRTA), an environmental technical nonprofit organization that develops and demonstrates low-VOC, low toxicity alternatives, primarily in solvent applications. I attended the workshop on August 26 and provided testimony; I am following up the testimony with written comments.

1-1

My letter focuses on two issues that are related. First, the District is proposing to exempt 2-methyl-2-amino propanol (AMP), a chemical used in coating formulations as a pH adjuster. SCAQMD asked Dr. Julia Quint to evaluate the toxicity of AMP. Dr. Quint is a toxicologist and the former head of the Hazard Evaluation System and Information Service (HESIS), a state agency concerned with worker exposure. Dr. Quint indicates that AMP may be a developmental toxicant and that the chemical itself or impurities in it may lead to the formation of nitrosamines which are potent carcinogens. She goes on to say that, unless it can be demonstrated that these toxic endpoints will not arise, the District should not exempt the chemical. Her review and references was sent to you and is in the record.

The District has asked OEHHA to evaluate the toxicity of AMP and that evaluation is apparently still underway. If the OEHHA review indicates that the developmental toxicity endpoint and nitrosamine formation are not viable, then the District could move forward with the exemption. IRTA agrees with Dr. Quint and opposes the exemption unless OEHHA determines that these endpoints are not of concern.

1-2

The second issue concerns an exemption the District adopted many years ago for tert-butyl acetate (TBAC) in Industrial Maintenance (IM) coatings. TBAC forms a metabolite, tert-butyl alcohol, which is a carcinogen. The issue of exempt chemicals and toxicity has been a problem for the District in several rules over the last three or four years. In two other rules, Rule 1107 "Coating of Metal Parts and Products" and Rule 1168 "Adhesives and Sealant Applications," amendments were cancelled because the District proposed an exemption for TBAC in certain applications and the issue became controversial. In Rule 1168, the District proposed exempting TBAC for use in adhesive applications used in roofing. The District's CEQA staff calculated very high risks to workers and community members based on a cancer unit risk value OEHHA had developed earlier. The District argued that Personal Protective Equipment (PPE) could be used to reduce the risk to workers but there was a question as to the effectiveness of PPE and whether or not the District had the authority to require it. The risks calculated by the CEQA staff also indicated the risk to surrounding community members was very high and, in that case, PPE could not be used for mitigation.

To address the issue of exempt chemical toxicity, which had become an important policy question, the District held a symposium in October of last year where experts provided presentations on the topic. Virtually all the participants indicated that the best option for reducing or eliminating the risk of a toxic chemical is to use a safe alternative and that PPE should be used only as a last resort.

8579 Skyline Drive
Los Angeles, CA 90046
Phone (323) 656-1121 Fax (323) 656-1122

1-2
cont.

The District prepared white papers on various topics over the last several months. The VOC white paper addressed the issue of exempt chemical toxicity and it stated that the District would use the precautionary approach to exempting chemicals. The precautionary approach means that chemicals should not be used unless it can be shown that they do not pose a risk. When a chemical is exempted, its use is encouraged and, indeed, promoted. Based on OEHHA's evaluation of toxicity for TBAC and the District's white paper position, TBAC should not have an exemption in any District rule.

Because TBAC became so controversial and because it does pose a carcinogenic risk, OEHHA conducted a further analysis to decide on a final proposed cancer unit risk. In OEHHA's earlier evaluation, the agency indicated that the cancer unit risk factor was 4×10^{-7} per microgram per meter cubed. Dr. Quint, when she was Chief of HESIS, had calculated a risk to workers using the OEHHA risk factor of 74,000 in a million at the current Permissible Exposure Limit (PEL). OEHHA's new evaluation, which is on their website, is that the cancer unit risk factor is now higher, at 1.9×10^{-6} per microgram per meter cubed. This translates into a worker risk of 350,000 in a million at the current PEL. Another way to put the new unit risk factor in perspective is to note that it is almost twice the cancer unit risk factor for methylene chloride which is a potent carcinogen.

Based on the revised OEHHA value for TBAC and the fact that the District is using a precautionary approach, IRTA is requesting that the District remove the exemption for TBAC in Rule 1113. Removing an exemption does not necessarily restrict a chemical. Rather it simply removes the preference given it by reason of the exemption. Once the exemption is removed, it is just considered to be a VOC like many other chemicals. Over the next few months, because of the risk posed by TBAC, the District should also consider covering it in a toxics regulation so users would have to meet the significance level when they use it.

In summary, then, IRTA opposes the exemption of AMP in Rule 1113 unless or until OEHHA indicates the chemical is definitively not a developmental toxin and does not lead to the formation of nitrosamines. IRTA also requests that the District remove the exemption in Rule 1113 for TBAC in industrial maintenance coatings.

I appreciate the opportunity to comment on this important issue. If you have questions on my comments, please call me at (323) 656-1121.

Sincerely,



Katy Wolf, Ph.D.
Director

cc: Philip Fine, Jill Whynot

Response to comment 1-1

As mentioned in the staff report, the OEHHA analysis on AMP was released September 15, 2015. Based on the RELs, which are expected to be the final RELs unless further studies are conducted and submitted for review, staff has removed the proposal to exempt AMP from the definition of a VOC.

Response to comment 1-2

OEHHA is still in the process of finalizing their analysis on tBac. Until there is a final peer reviewed analysis on tBac, staff will not propose any changes to the current tBac exemption.

The following are comments from the Angus Chemical Company– Comment Letter #2.



Comment Letter #2

August 31, 2015

Ms. Heather Farr
Air Quality Specialist
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: Comments on Draft Rule for 1113

Dear Ms. Farr,

ANGUS Chemical Company (ANGUS) supports the South Coast Air Quality Management District's (SCAQMD) recent proposal to exempt 2-Amino-2-Methyl-1-Propanol (AMP) as a volatile organic compound (VOC) according to Rule 1113 covering Architectural and Industrial Maintenance (AIM) coatings.

ANGUS appreciates the opportunity to comment on the amendments to Rule 1113. The following comments are specific to the VOC exemption for AMP.

As you are aware, AMP's use in AIM coatings is not a new application. AMP has been used for decades without adverse health effects as a multifunctional additive in paints and coatings. Only recently have paint manufacturers moved away from AMP, due to AMP's classification as a VOC. As stated during the public workshop, SCAQMD has learned that paint manufacturers prefer to use AMP over ammonia in many of their low to zero-VOC paints.

In the final ruling exempting AMP as a VOC, the U.S. EPA wrote that "AMP's performance as a multifunctional neutralizer, combined with its reduced ozone potential and favorable toxicity data, makes this product a preferred one compared to more toxic chemicals used for the same purpose."

The U.S. EPA agreed with the findings of Dr. Carter from the University of California, Riverside who determined that AMP forms negligible to no tropospheric ozone, and that under certain scenarios AMP can actually inhibit the formation of tropospheric ozone to a small degree. The U.S. EPA also concluded that AMP has a low potential to contribute to global warming and AMP will not deplete stratospheric ozone. As a result, exempting AMP as a VOC will assist SCAQMD in meeting its clean air goals.

AMP is an established, widely studied compound which is typically used in concentrations at or below one percent of a total formulation. As a specialty amino alcohol, AMP cannot be used in high concentrations in the manner associated with industrial solvents. In addition to AIM coatings, it is used in personal care applications such as hair sprays, hair gels, semi-permanent and permanent hair colors as well as hand sanitizers, where it is valued for its buffering capacity as well as its mildness. AMP also has FDA clearance to be used in adhesives for indirect food contact (such as food packaging).



In summary, AMP provides paint manufacturers a safe alternative for improving the performance of their low- to -zero-VOC paint formulations. In anticipation of a favorable assessment from the Office of Environment Health Hazard Assessment in September, we support and look forward to SCAQMD's recommendation and approval to exempt AMP as a VOC at its upcoming board meeting currently scheduled for November.

Thank you for the opportunity to provide comments. Please contact me at your convenience if you have any need for additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Lewis". The signature is written over a horizontal line.

Mike Lewis
Business Vice President
ANGUS Chemical Company
E mdlewis@angus.com
O +1 847 808 3436
M +1 847 828 5986

Response to comment 2

As mentioned in the staff report and in response to comment 1-1, based on the OEHHA analysis on AMP, staff is no longer proposing to exempt AMP from the definition of a VOC due to toxicity concerns and potential AMP exposure during painting.

The following are comments from the Dunn-Edwards Corporation– Comment Letter #3.

Comment Letter #3



**THE #1 CHOICE OF
PAINTING PROFESSIONALS®**

DUNN-EDWARDS CORPORATION
4885 East 52nd Place, Los Angeles, CA 90058

ENVIRONMENTAL AFFAIRS
Phone: (323) 826-2663
Fax: (323) 826-2663

September 3, 2015

VIA EMAIL

hfarr@aqmd.gov

Heather Farr
Air Quality Specialist
SOUTH COAST AQMD
21865 Copley Drive
Diamond Bar, CA 91765

RE: PROPOSED AMENDED RULES 1113 & 314

Dear Ms. Farr:

Dunn-Edwards Corporation is a California-based manufacturer and distributor of architectural coatings, serving the Southwestern United States. Our Main Office, one of two factories, and almost half of our retail outlets are located in the South Coast Air Quality Management District (SCAQMD), where we employ more than 800 people directly, and contribute indirectly to the livelihoods of thousands more professional painting contractors and maintenance staff painters throughout the region.

This letter is a follow-up to the oral comments offered on behalf of Dunn-Edwards Corporation at the Public Workshop on Proposed Amended Rules 1113 (Architectural Coatings) and 314 (Fees for Architectural Coatings) on Wednesday, August 26, 2015. Comments are presented here in order by rule section.

RULE 1113: ARCHITECTURAL COATINGS

(a) Applicability

3-1

We agree with the deletion of reference to averaging of coatings, since the Averaging Compliance Option is no longer operative in the rule. We notice, however, that the first sentence of this paragraph, through an apparent mis-wording, inadvertently excludes from rule applicability manufacturers located outside the District: "This rule is applicable to any person who...manufactures any architectural coating in the District...." This can be remedied by moving

Heather Farr
September 3, 2015
Page 2

3-1
cont.

the phrase "in the District" (or "within the District" to be consistent with the second half of the sentence) as follows: "This rule is applicable to any person who supplies, sells, markets, offers for sale, or manufactures any architectural coating that is intended to be field applied to stationary structures or their appurtenances **within the District....**" etc.

(b) Definitions

3-2

(21)(c) GLAZES: While the definition is now accurate and acceptable, we think a minor change in the first sentence would make the intent clearer, as follows: "GLAZES are coatings formulated and recommended **to be used** (or **to be** mixed with another coating) for." etc.

3-3

(23) FLAT COATINGS: Unlike the definition of Nonflat Coatings, this definition lacks specification of the test method to be used for determination of gloss levels. We recommend including the same language used in the Nonflat Coatings definition, as follows: "FLAT COATINGS are coatings that register a gloss of less than 15 on an 85-degree meter or less than 5 on a 60-degree meter **according to ASTM Test Method D 523 as specified in paragraph (e)(5).**"

3-4

(81) WOOD COATINGS: In the interest of maintaining consistent definitions of categories, which we believe promotes efficient compliance and enforcement, we suggest making this definition functionally equivalent to the definition given this category when it was created in the ARB 2007 SCM, as follows: "WOOD COATINGS are film-forming coatings **formulated and labeled for application only to wood substrates, including floors, decks, and porches. The Wood Coatings category includes all lacquers, varnishes, and sanding sealers, whether clear, semi-transparent or opaque. This category also includes penetrating oils, clear stains, wood conditioners for use as undercoats, and wood sealers for use as topcoats.**"

The Draft Staff Report indicates that the proposed definition was intended "to clearly indicate that it only applies to Lacquer and Varnish topcoats and not to undercoaters." This seems to us inappropriate, since Wood Coatings are typically applied as finishing systems that involve multiple coats of multiple products. An opaque lacquer system applied to bare wood, for example, requires an undercoater to penetrate and seal the wood before application of topcoats. Options are limited; ideally, an opaque lacquer undercoater would be used. Latex and alkyd undercoaters are not compatible with lacquer topcoats. The only currently available viable product would be pigmented shellac, which has much higher VOC content than the opaque lacquer undercoater – the material VOC content of pigmented shellac is 4 to 5 times greater than that of an opaque lacquer undercoater.

3-5

(82) WOOD CONDITIONERS: This new definition includes the word "used" in a way that would prevent any coating from being categorized as a Wood Conditioner before it is applied. A better wording, consistent with other definitions, would be: "WOOD CONDITIONERS are coatings that

Heather Farr
September 3, 2015
Page 3

3-5
cont.

are **formulated and recommended** to prepare bare wood for staining, to provide uniform penetration of stain.”

(c) Requirements

(2) No person within the District shall add colorant at the point of sale that is listed in the Table of Standards 2 and contains VOC in excess of the corresponding VOC limit specified in the Table of Standards 2 after the effective date specified.

3-6

Because the effective date specified in Table of Standards 2 is proposed to be deleted, the above paragraph should delete reference to the effective date. Also, the wording of this paragraph is somewhat awkward, making it vague and ambiguous as to what the colorant is being added to, what is being sold, and what is listed in the Table of Standards 2. A simple rewording would clarify this paragraph greatly, as follows:

(2) No person within the District shall, at the point of sale of any architectural coating subject to paragraph (c)(1), add to such coating any colorant that is listed in the Table of Standards 2 and contains VOC in excess of the corresponding limit specified in the table.

TABLE OF STANDARDS 1

3-7

The table includes a proposed new VOC limit for Recycled Coatings, at 150 g/L to be effective on January 1, 2016. We believe this is inappropriate, and may be based on a misunderstanding of the process by which Recycled Coatings are manufactured. The Draft Staff Report indicates that Recycled Coatings “are manufactured from locally available unused paints.” This is not, however, the case: unwanted leftover paints used by recyclers to make Recycled Coatings can come from all over the Western United States, or from even further away, and may be as much as 10 to 15 years old. All such usable coatings are blended together, with only minor adjustments to color, to make Recycled Coatings. These products are not “formulated” in the same manner as virgin paints. Sorting by VOC content is not a feasible option because labels are often obscured by paint drips, torn, or partly missing. Also, such a sorting process would be too time- and labor-intensive, and would make the price of Recycled Coatings too high for market acceptance. This category should have been made exempt from Rule 1113, although recyclers accepted the 250 g/L limit as equivalent to exemption, since all latex coatings manufactured in the past 20 years or more were at or generally below that level. We recommend leaving the 250 g/L limit in place.

(4) Sell-Through Provision

3-8

Previously, this paragraph was amended to add certain recordkeeping requirements applicable to those manufacturers who made use of the rule’s Averaging Compliance Option and its

Heather Farr
September 3, 2015
Page 4

3-8
cont.

special Sell-Through Provision in Appendix A, Section (K). The portions of this added language that make specific reference to the Averaging Compliance Option are now proposed to be deleted, leaving other portions intact. This would have the effect of imposing special recordkeeping requirements on all manufacturers, not just those who made use of the Averaging Compliance Option. This is burdensome and unnecessary, since adequate recordkeeping requirements are already included in Rule 314 (Fees for Architectural Coatings). We recommend deleting all of the language following the first sentence of this paragraph, leaving the original Sell-Through Provision, as follows: "Any coating that is manufactured prior to the effective date of the applicable limit specified in the Table of Standards 1, and that has a VOC content above that limit (but not above the limit in effect on the date of manufacture), may be sold, supplied, offered for sale, or applied for up to three years after the specified effective date."

(d) Administrative Requirements

3-9

Paragraphs (1) and (3) of this section are proposed to be amended to make containers of colorants subject to requirements for displaying date of manufacture and VOC content. As a practical matter, it appears that most colorant manufacturers are already doing so. As a new requirements for any colorant manufacturer, however, we believe it must include an effective date such that the requirements apply only to colorants manufactured on and after the effective date. This is because, without that provision, it is not clear who would have responsibility for relabeling containers of colorants, wherever they may be located: at the manufacturer's warehouse, a distributor's warehouse, or numerous retail locations. Restricting the new requirements to product manufactured on and after the effective date means that a relatively short implementation period is possible, even as little as six months.

(1): This paragraph should be reworded to include the effective date in either one of two ways, as follows:

"Containers for all coatings, and for colorants manufactured on and after [effective date], subject to this rule shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturers of such coatings and colorants shall file with the Executive Officer of the Air Resources Board an explanation of each code."

OR

"Containers for all coatings and colorants subject to this rule shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturers of such coatings and colorants shall file with the Executive Officer of the Air Resources Board an explanation of each code. The provisions of this paragraph (d)(1) shall not apply to any colorant manufactured prior to [effective date]."

Heather Farr
September 3, 2015
Page 5

3-10 (3): This paragraph needs to have a new subparagraph (E) added, as follows: (E) For colorants manufactured on and after [effective date], the VOC per liter of colorant (less water and exempt compounds).

(f) Exemptions

(1) Small Container Exemption

3-11 (B): It seems that the exclusion of numerous categories of coatings that are acknowledged to have made little, if any, use of the Small Container Exemption is an unnecessary complication to the rule and accomplishes nothing of value. The Small Container Exemption remains a necessary "safety valve" in the rule, to allow for small quantities of specialty coatings for uses that may not be anticipated.

(C): As we have discussed previously, Dunn-Edwards would be adversely impacted by deletion of the Small Container Exemption for Rust Preventative Coatings, since it would cause the shutdown of our Los Angeles Factory, which today manufactures only solventborne alkyd Rust Preventative Coatings that are distributed primarily under the Small Container Exemption in the SCAQMD, our major marketing region. This would result in the loss of high-paying union jobs, while having no measurable impact on air quality.

3-12 Dunn-Edwards manufactures waterborne Rust Preventative Coatings at our factory in Arizona, as well as the solventborne alkyds in Los Angeles. The performance characteristics of solventborne alkyd Rust Preventative Coatings cannot be fully duplicated in lower-VOC waterborne alternatives at present. Solventborne alkyds have better penetration and adhesion on lightly rusted substrates; require less surface preparation and priming; develop higher gloss and harder finishes; and protect better because of superior film build, flow and leveling.

Additionally, our solventborne alkyds contain primarily low-reactivity mineral spirits (ARB Hydrocarbon Bin 11, MIR value: 0.7) and therefore have little, if any, impact on ozone formation. If no longer available, we believe that some portion of the solventborne alkyd Rust Preventative Coatings would be replaced by aerosol Rust Preventative Coatings, which emit more VOC, and more reactive VOC, per unit of area coated.

For these reasons, among others, we request that the Small Container Exemption for Rust Preventative Coatings be retained. We believe that off-setting emission reductions might be claimed in a variety of alternative ways, and we look forward to discussing these with you at future meetings.

Heather Farr
September 3, 2015
Page 6

RULE 314: FEES FOR ARCHITECTURAL COATINGS

3-13

(g)(2)(A)(i): It is difficult to evaluate whether the proposed graduated fees are appropriately “revenue neutral” as intended, given the limited data available to us. Consequently, we request certain data that were likely used in developing the proposed fees, specifically the following: (1) total 2014 gallons reported under Rule 314; (2) total 2014 Annual Quantity Fees paid; (3) a breakdown of 2014 total gallons by VOC range as given in the Fee Rate table, including a further breakdown of the first range into 0 to 5 g/L and >5 to 10 g/L; and the number of gallons that would fall into the “above applicable VOC limit” category. In addition to the numeric data requested, we would also like to know any assumptions that may have been relied upon in setting the proposed fees.

Thank you for your consideration of our comments. If you have any questions regarding this letter or the suggested revisions, please feel free to call me at (323) 826-2663, or respond by email to <robert.wendoll@dunnedwards.com>

Very truly yours,

DUNN-EDWARDS CORPORATION



Robert Wendoll
Director of Environmental Affairs

cc: David Darling, ACA

Response to comment 3-1

Staff concurs with this suggested rule change, but altered the suggested language slightly to address another manufacturer’s concern about coatings sold at a retailer outside of the SCAQMD that, unbeknownst to the retailers, is applied within the SCAQMD.

Response to comments 3-2, 3-3, 3-5, 3-6, 3-8, & 3-9

Staff concurs with these suggested rule changes.

Response to comment 3-4

Staff attempted to harmonize the definition of a wood coating in Rule 1113 with the definition in the SCM, but the 2007 SCM definition of a wood coating is much more broad than the Rule 1113 clear wood finish definition. The proposed amendment to the definition was to address the inconsistency of having white pigmented lacquers as a subcategory of *clear* wood finishes, and not to expand the definition. The CARB definition includes:

- Penetrating oils and clear stains, which are categorized as stains in Rule 1113 with a VOC limit of 100 g/L or 250 g/L.
- Wood Conditioners, which are categorized as PSU in the current version of Rule 1113 (a separate category is being proposed) with a VOC limit of 100 g/L.
- Undercoaters, which are categorized as PSUs with a VOC limit of 100 g/L.

In regard to lacquer undercoaters, which have never been included in the definition of a lacquer by Rule 1113, there are waterborne alternatives to solvent based lacquers. The statement that the only alternative to lacquer undercoaters are shellacs, which have a higher VOC limit, is not true. Switching to a waterborne lacquer system would result in lower VOC emissions.

Response to comment 3-7

Staff worked with the local recycled coating manufacturers on the suggested change to the VOC limit and there was a consensus that delaying the implementation date to January 1, 2019 would alleviate concerns over the lower VOC limit. This time frame would also allow for the current labels on the containers to be consumed to avoid re-labeling costs. Staff found one major recycled coating manufacturer already labels their products as less than 100 g/L, which is lower than the suggested VOC limit. Further, Dr. Dane Jones of California Polytechnic University in San Luis Obispo, where numerous architectural coatings are tested for the VOC content, stated that in the last four years they have tested over 250 recycled coatings and none were over 120 g/L, most were under 80 g/L. According to the Rule 314 data, the highest VOC reported for recycled coatings in 2014 was 130 g/L.

Response to comment 3-10

Staff agrees with the statement that clarification is needed on how to determine the VOC content for colorants. Paragraph (d)(3) contains language for determining the VOC content of multi-component coatings, concentrates, low solids coatings, etc. Staff included colorants in subparagraph (d)(3)(A) as the metric for determining the VOC content of colorants is the same as for architectural coatings packaged in a single container.

Response to comment 3-11

Staff is proposing to phase out the exemption for the SCE in part to prevent backsliding. During the rule amendment process, industry argued that they should get SIP credit for market driven emissions reduction as the current 2014 inventory (approximately 11 tpd) is below the inventory that was projected for 2014 in the 2012 AQMP (12.2 tpd). The USEPA's counterpoint to this argument is industry could just reformulate to the VOC limits at any time so the reductions that have been achieved are not permanent or enforceable. By proposing to remove the exemption for coating categories that do not take advantage of the ability to sell high-VOC coatings, staff is preventing backsliding. Industry's argument that we should retain the exemption in case there is a need in the future reinforces the position of the USEPA and SCAQMD.

Response to comment 3-12

In regard to the statement that the removal of the SCE for rust preventative coatings will result in the shutdown of Los Angeles plant. Based on the following statement from Dunn Edwards, they have more than 120 stores and 80 dealers throughout the Southwest:

“With more than 120 company stores in California, Arizona, Nevada, New Mexico and Texas, and more than 80 authorized dealers throughout the Southwest, Dunn-Edwards is one of the nation’s largest independent manufacturers and distributors of architectural, industrial and high performance paints and paint supplies. Dunn-Edwards Paints international presence includes authorized dealers in China, Guam, Lebanon, Lithuania, Mexico, Nigeria, Philippines, Saipan, Singapore and South Korea. The company is dedicated to preserving and protecting the environment, and produces its coatings in the world’s first and only LEED® Gold-certified manufacturing plant. Based in Southern California, the company is composed of approximately 1,500 employees.”

According to the list of stores available from the Dunn Edward’s website, 58 out of 120 stores are located in the SCAQMD. While the SCAQMD likely represents a significant market share for the company, this is not the only location where their coatings are sold. Prior to the adoption of Rule 314, staff traditionally estimated coating sales in the SCAQMD based on CARB surveys and based the sales volumes on population. The sales in the SCAQMD were estimated to be approximately 45% of California sales. Dunn Edwards also sells their products in Arizona, Nevada, New Mexico and Texas. The loss of sales for the high-VOC rust preventative coatings in the SCAQMD cannot be the sole cause of the closure of the Los Angeles manufacturing facility.

In regard to the performance differences between solvent based and waterborne rust preventative coatings, this issue was already addressed by the technology assessment conducted back in 2005. The overall results showed that for RPCs, the low-VOC products had superior dry time characteristics, prohesion, and flash rusting. They were similar in terms of hide, taber abrasion, impact resistance, and adhesion (Battele). These results were based on third party testing and resulted in the SCAQMD Governing Board concluding that the 100 g/L VOC limit was technologically feasible in 2006. Since that time, the technology has only improved and advanced. There is also an alternative to switching to waterborne technology, which is exempt solvents. We have multiple statements by another major manufacturer of high-VOC rust preventative coatings the exempt solvent formulation performs just as well as their higher-VOC counterparts. In addition, we have statements from a manufacturer of waterborne rust preventative coatings those products perform just as well. The MIR value of the exempt solvent formulation would be even lower than the current formulations and this would eliminate any need to transition into aerosol products. Further, a switch to exempt solvent formulations would allow Dunn Edwards to retain manufacturing solvent based RPCs for sale in the SCAQMD at their Los Angeles facility.

The following is an evaluation of the MIR of rust preventative coatings with different VOC contents that was conducted during the 2006 rule amendment:

	VOC Regulatory Ranges (grams/liter)														
	0 - 50	51 - 100	101 - 150	151 - 200	201 - 250	251 - 300	301 - 350	351 - 400	401 - 450	451 - 500	501 - 550	551 - 600	601 - 650	651 - 700	> 700
RPC		0.04	0.11	0.14	0.22	1.25	1.36	0.41	0.64	0.42					1.3

The MIR values would be even lower if the rust preventative coatings were formulated with exempt solvents.

Response to comment 3-13

Staff is no longer proposing to amend Rule 314 at this time.

The following are comments from the Rust-Oleum Corporation– Comment Letter #4.

Comment Letter #4

Rust-Oleum Corporation

11 Hawthorn Parkway • Vernon Hills, IL 60061 • 847-367-7700 • Fax 847-816-2300



September 8, 2015

RE: SCAQMD Rule 1113/Rule 314 Amendments; Rust-Oleum comments

Rust-Oleum appreciates the opportunity to submit written comments on the proposed amendments to Rules 1113 and 314. We also appreciate the time staff has dedicated to meeting with us regarding these amendments.

4-1

In a conversation with Heather Farr on 9/3/2015, Rust-Oleum was told the draft Rule 314 will be revised to remove the \$0.051, 0.061 and 0.071 fee tiers. This would leave a maximum fee of \$0.041 per gallon for coatings that comply with their category VOC limit. Rust-Oleum supports this change and thanks staff for the consideration given to comments made during the public workshop. Rust-Oleum does not oppose the proposed fee of \$0.41 per gallon for coatings sold over VOC limits. We feel this will incentivize reformulation of products sold under the small container exemption to lower VOC where feasible.

Rust-Oleum opposes the elimination of the small container exemption for rust preventative coatings from Rule 1113.

4-2

We do not believe this rule amendment is necessary. Staff has presented the amendments as being necessary to achieve 2012 AQMP goals. However, current VOC emission reductions from architectural coatings already far exceed the 2-4 tons per day committed to in the 2012 AQMP (preliminary 2014 Rule 314 data indicate a 9 tpd reduction over 2008 baseline). If historical trends continue, emissions will be even lower by the 2019 goal date. Staff acknowledges this, but states the amendments are intended to prevent backsliding. However this argument lacks merit as, if coatings sales increase, VOC emissions have the potential to increase no matter where VOC regulatory levels are set.

Staff has also stated the small container exemption elimination for rust preventative coatings is necessary to prevent rule circumvention. Staff points to examples of paint stores offering “Buy 3 get 1 free” deals for small containers and contractors buying many small containers and combining the contents in one large container. However, these actions are in violation of Rule 1113 as currently written. Adequate tools are already at the District’s disposal to punish illegitimate use of small containers like these. The conduct of these bad actors should not be used as an excuse to deprive those who need small containers of coatings with unique properties access to these products.

The elimination of the small container exemption for rust preventative coatings will lead manufacturers of these coatings, like Rust Oleum, with few options for compliance. The District has pointed to waterbased alkyd enamel technology as a viable option for low

An  Company

Rust-Oleum Corporation

11 Hawthorn Parkway • Vernon Hills, IL 60061 • 847-367-7700 • Fax 847-816-2300



VOC rust preventative coatings. Rust-Oleum has obtained competitor's products listed by the district as examples of this technology – Vista's Protec 9900 and Dunn Edwards W10 Syn-Lustro. We tested these two alkyd enamel products against Rust-Oleum's Stops Rust product in a salt fog chamber. This is a standardized corrosion test method, used to check corrosion resistance of surface coatings. These panels are normally tested for 300 hours. The Dunn Edwards and Vista products had both **rusted completely in less than 92 hours and had to be removed from the test chamber**. We have included pictures of the Vista and Dunn Edwards salt fog panels after 92 hours in the chamber. For contrast, we've also attached pictures of the Rust-Oleum Stops Rust panels after 334 hours in the chamber. The Stops Rust panels look far superior to the Vista and Dunn Edwards panels, even after running 3.5 times as long in the salt fog chamber. Currently marketed waterbased alkyd enamel products fail at the primary purpose of a rust preventative coating: preventing corrosion.

The preliminary draft staff report states "One factor suppressing the market share of lower-VOC technology, is the availability of the older high-VOC technology at similar or lower prices. Staff has received feedback from a manufacturer who has made the switch to lower-VOC coatings, stating that if the SCE remains in place, they will go back to reformulating the higher-VOC product because they are currently giving up market share to their competitors. "Staff has presented data indicating low VOC and exempt, higher VOC products are sold at approximately the same cost per gallon to consumers. The reason lower VOC coatings are giving up market share is due to results like those seen in our salt fog chamber testing: consumers are choosing higher VOC products because they work better, not because they cost less.

4-2
cont.

If the small container exemption is eliminated for rust preventative coatings our only option would be to reformulate these products with exempt solvents in order to provide our customers the performance they expect from a Rust-Oleum Stops Rust paint. Given the solvents currently exempted by the District for architectural coatings, we anticipate the consumer would see the cost of one quart of our Stops Rust paint increase by nearly 100% in the South Coast. By any measure, this would be a significant impact on Rust-Oleum and the consumer living in the greater Los Angeles area.

Although we do not feel further VOC reductions from architectural coatings are necessary for the aforementioned reasons, if Staff insists on realizing these reductions, Rust-Oleum would be more in support of lowering the VOC limit for primers, sealers and undercoaters to 50 g/L than the currently proposed small container exemption elimination. In the October 30, 2014 PAR1113 Working Group Meeting Slides, Staff states that a reduction in the VOC limit for PSU to 50 g/L would result in a 0.57 ton per day VOC reduction. This is virtually equivalent to the 0.63 tpd reduction that would be realized from eliminating the small container exemption. This has the added benefit of not forcing the elimination of the small container exemption for flats, non-flats and industrial maintenance coatings to avoid manufacturer reclassification. Rust-Oleum

An  Company

Rust-Oleum Corporation

11 Hawthorn Parkway • Vernon Hills, IL 60061 • 847-367-7700 • Fax 847-616-2300



4-2
cont.

believes this compliance option was abandoned too early in the Working Group process and would like to reopen this topic for discussion.

In conclusion, Rust-Oleum urges the district to continue to allow the use of low reactivity solvents, such as the mineral spirits commonly used in solventborne alkyds (ARB Hydrocarbon Bin 11, MIR value: 0.7) in rust preventative coatings. To continue using these solvents with low ozone forming potential, the small container exemption for rust preventative coatings must be maintained. Staff is proposing a fee of \$0.41 cents per gallon for coatings sold over VOC limits, which Rust-Oleum supports. This fee will naturally drive manufacturers using the small container exemption towards lower VOC options as technology allows while not forcing them to market inferior coatings.

Thank you for your consideration of our comments. Please contact me with any questions or concerns regarding the above position, or any other matter related to Rules 1113 and 314.

Regards,

Megan Gaughan
Manager, US Regulatory
Rust-Oleum Corporation

Stops Rust Gloss White
334 Hours B117 Salt Fog
9/1/15



Dunn Edwards W10 WB Syn-Lustro
92 Hours B117 Salt Fog
8/21/15



Vista Protec 9900
92 Hours B117 Salt Fog
8/21/15



Response to comments 4-1

Staff appreciates Rust-Oleum's support on the proposed fee changes in Rule 314 but is no longer proposing a tiered sales fee.

Response to comments 4-2

Staff credits the strides the coatings industry has made in reducing VOC emission above and beyond the rule requirements. While staff acknowledges these trends and that the trends are demonstrated in the Rule 314 Annual Quantity and Emissions Reports, these market driven reductions are not permanent or enforceable. The industry makes that point when they argue against reducing the VOC limits to reflect the currently available inventory (e.g. recycled coatings and building envelope coatings) or phase out the SCE for categories not using the exemption. For emission reductions to be submitted for SIP credit they need to be permanent and enforceable. During the 2012 AQMP, the SCAQMD committed to achieving 2 – 4 tpd VOC reductions from architectural coatings. Staff is proposing to achieve approximately 1 tpd from this amendment and find another 1 – 3 tpd from another VOC or Area Source rule. The USEPA will not accept the currently achieved market driven reductions in place of enforceable and permanent reductions.

In regard to the rule circumvention staff cited in the staff report, issues of end users taking advantage of the SCE cannot be fully addressed through enforcement. The SCAQMD covers over 11,000 square miles with countless jobsites and inspectors cannot be at every job site on any given day. When staff finds violations, they issue violations. The 'buy 3 get 1 free' specials are not technically violations of the rule, they just add market incentives for end users to purchase the higher-VOC products.

The manufacturers have multiple options for formulating compliant coatings, as can be demonstrated by the quantity of compliant coatings already in the market place. Based on Rust-Oleum's statements, their exempt solvent based formulations perform just as well as their conventional high-VOC solvent based coatings, the only drawback is the cost/loss of profits. Rust-Oleum's claims regarding the low performance of the waterborne alkyd enamel technology is also refuted by the manufacturers of waterborne products. They acknowledge that more surface preparation is needed for the waterborne products, but question the test protocol that was used for the testing, salt spray (ASTM B117 developed between 1910 – 1920 and standardized in 1939) versus cyclic prohesion (ASTM D5894 adopted in 1996 and revised in 2005 and 2010). During the 2005 Technology Assessment, the Technical Advancement Committee also agreed that cyclic prohesion and not salt spray testing was the most appropriate accelerated test method to evaluate corrosion. The work was conducted at UMR, the lead professor on the project, Dr. Michael R. Van De Mark, stated that at least since the 1990s, it has been known throughout the coatings industry that salt spray results do not reflect real world results. The testing may be appropriate for marine coatings, hence the higher VOC-limits allowed for marine coatings

Staff found a report from the manufacturer of the testing equipment (*Prohesion Compared to Salt Spray and Outdoors Cyclic Methods of Accelerated Corrosion Testing* by N. D. Cremer, Managing Director - c. & W. Specialist Equipment Ltd., Shropshire, England, presented at Federation of Societies for Coatings Technology 1989 Paint Show) that questions the validity of the salt spray test and how the results relate to real world conditions:

“With the continual development of paint systems, there are many coatings available today which are capable of standing the most severe of environments. However their performance is essentially dependent on the adhesion of a primer to the base metal. Laboratory tests such as ASTM B117 Salt Spray, Humidity and Sulphur Dioxide influence the development of coatings yet

they still allow coatings into the market place which then fail in practice. These accelerated tests consequently bear little or no resemblance to natural weathering.

Foremost among these tests is the hot Salt Spray for example ASTM B117. This test method has been and is still widely used and accepted as the definitive accelerated test to assess reliability. However, it is in reality totally unrealistic, as the majority of products are not exposed to the conditions of this test in their working environment.

When a chemist is looking at his results after Salt Spray testing, he often decides a coating with good salt spray performance is accepted over a coating with poor salt spray performance. Consequently if a coating passes its laboratory examination, then it is considered suitable and often introduced to the market place.

If a coating fails its laboratory examination then it is discarded. With this philosophy a chemist could have thrown away an ideal product for the natural world and a winner in the market place!”

The paper states the salt spray test is useful for marine coatings but is now used across the board to predict long term weathering for many types of coatings. As early as 1962, it was observed coatings that performed excellent in outdoor environments tested poorly by salt spray. This led to the development of a cyclic test which allows for the wetting and drying of each test specimen to allow samples the opportunity to absorb more water than in a continuous spray test. The conclusion of the paper is:

“Salt spray testing provides answers which are unrealistic in the natural world, yet Prohesion provides realistic results which correlate with long term exterior exposure. These results also show that with a change in raw material input, the long term performance of a coating can be effected exactly opposite to what is predicted by salt spray testing. Results obtained from Prohesion testing suggest that as an accelerated corrosion test method, it correlates with natural weathering consequently providing realistic results.”

The following are some photographs from the paper cited above that demonstrate this point:

Two Coat Latex
 Poor correlation between salt spray and industrial exposure.
 Fairly good correlation between Prohesion and exterior exposure.

SALT SPRAY 500 Hrs.	EXTERIOR 4 Years	PROHESION 500 Hrs.

Acrylic Latex Primer/Topcoat System; PVC 34%, Volume Solids 40%; Inhibitor Loading 0.75 lbs/gal; applied 2 mils per coat (4 mils total) to ground test panels.

Medium Oil Alkyd, Inhibitor A
 All panels exhibit good performance.

SALT SPRAY 600 Hrs.	EXTERIOR 4 Yrs.	PROHESION 600 Hrs.

Medium Oil Alkyd System; PVC at 45%; Volume Solids 42%; Inhibitor Loading 1.5 lb/gal; primer applied to ground test panels at 1.5 mils dry film thickness.

High Solids Epoxy
 Excellent performance in salt spray with little blistering, no scribe creepage or undercut corrosion. Exterior exposure shows severe delamination from scribe and no correlation with salt spray. Prohesion shows blistering and delamination, correlating with exterior exposure.

SALT SPRAY 1400 Hrs.	EXTERIOR 14 Months	PROHESION 1400 Hrs.

High Solids Epoxy System; PVC 30.7%; Volume Solids 74%; Inhibitor Loading 1 lb/gal; applied 3.5 mils dry film thickness to ground test panels.

Medium Oil Alkyd, Inhibitor B
 A sharp contrast between industrial site exposure and salt spray. Salt spray shows complete failure. Prohesion and Exterior exposures show good performance.

SALT SPRAY 600 Hrs.	EXTERIOR 4 Yrs.	PROHESION 600 Hrs.

Medium Oil Alkyd System; PVC at 45%; Volume Solids 42%; Inhibitor Loading 1.5 lb/gal; primer applied to ground test panels at 1.5 mils dry film thickness.

Vista's Protec 9900 waterborne alkyd emulsion underwent prohesion testing (ATM D 5894) on steel panels for 1,000 hours and found no corrosion. Rust-Oleum does not list performance testing (prohesion or salt spray) for their Sops Rust® brand, although, they do for their industrial tint based alkyd (which states it was formerly Stops Rust® Tint Base High Gloss Finish):

CYCLIC PROHESION Rating 1-10 10=best
 METHOD: ASTM D5894, 3 cycles, 1008 hours
 RESULT: 10 per ASTM D714 for blistering
 RESULT: 9 per ASTM D610 for rusting

There are no salt spray results. The technical datasheet appears to be old, with a revision date of 05/04 but the results of the cyclic prohesion for the waterborne Vista product appear almost exactly the same as the solvent based Stops Rust® product. In addition, one of the low-VOC coatings that was tested in the 2005 Technology Assessment was a Rust-Oleum product. A near zero-VOC product from their Sierra Performance line. This coating demonstrated superior performance to the high-VOC solvent based coatings. Again, the product datasheet does not list salt spray results but does include the following prohesion results:

PROHESION (1 coat DTM)
 Rating 1-10 10=best
 METHOD: ASTM D5894, 1,000 hours

RESULT: 10 per ASTM D714 for blistering

RESULT: 6 per ASTM D1654 for corrosion

RESULT: 10 per ASTM D610 for rusting

Based on the two results that are listed for both coatings (blistering and rusting), the Sierra product outperformed the Stops Rust® coating. The Sierra product is currently being used successfully at several local oil and gas facilities. Further, if the salt spray results were such a critical test for Rust-Oleum's RPCs, those results would be included in the technical datasheets.

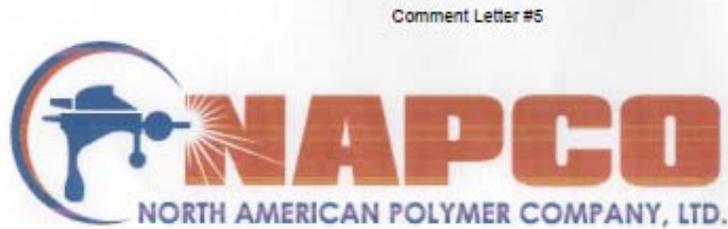
Regarding the cost difference of using exempt compounds versus conventional solvents, this is not unique to RPCs. There are manufacturers who serve as whistle blowers on their competitors who can distinguish non-compliant gallons of concrete/masonry waterproofing sealers just based on the cost. If the cost is too low and the product is not waterborne they call staff to notify which manufacturer is not producing compliant products. They do this to help keep a level playing field. That is all that staff is trying to achieve by phasing out the SCE, a leveling of the playing field. This is not a technology forcing change; compliant high performing coatings already exist in the market place, with the biggest issue presented to staff as a loss of profit margin or high cost to the customer. This is a cost other manufacturers have already had to bear. In addition, a switch to waterborne rust preventative coatings would result in cost savings and not an increased cost. Rust-Oleum's own prohesion testing indicates comparable performance to a competitor's waterborne rust preventative coating.

Regarding the proposal to lower the VOC limit on the primer, sealer, undercoater category (PSU), staff did not receive any support for this concept when it was initially introduced, including from Rust-Oleum. The comment letter from the ACA states why lowering the VOC for PSUs is problematic. Of all the original proposals, the one which staff received the most negative feedback was lowering the VOC limit on PSUs. In order to reduce this limit, staff would have to break out multiple specialty categories, or the high-VOC niche products would otherwise be driven to the SCE. The PSU category encompasses multiple types of products and the only category that could easily be reduced would be drywall primers, and they are already below 50 g/L, so no reductions would be achieved. Staff still believes that reducing the VOC limits for large volume categories (flat, nonflat, & PSU) is feasible, but has changed direction during this rule amendment due to the overwhelmingly negative response from industry as a whole. This is a concept staff may return to in the future as the technology continues to advance.

Response to the attached pictures

The pictures represent the performance of the coatings exposed to salt spray, which staff illustrated in response to comment 4-2 is not the appropriate test for corrosion of architectural coatings. That test is more appropriate for marine coatings, where the SCAQMD allows for higher VOC limits. In addition, this is not third party testing. The effect of surface preparation and film thickness is critical for the performance of coatings. All of the coatings performed significantly better with the application of two coats, but none of the product datasheets explicitly recommend or require two coats for proper protection. This is an indication corrosion protection is not the primary purpose of these coatings. Unlike industrial maintenance products, where application instructions are explicit in order for the coatings to perform as intended, rust preventative coatings are used for a wide variety of applications, not all of which require superior corrosion protection. Again, based on the prohesion results found in the product datasheets, the protection offered from the waterborne alkyd offered by Vista and Rust-Oleum's waterborne acrylic outperform the Stops Rust® product.

The following are comments from the North American Polymer Company, LTD. – Comment Letter #5.



September 8, 2015

Ms. Heather Farr (HFarr@aqmd.gov)
Office of Planning, Rule Development, and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Proposed SCAQMD Rule 1113 Amendments; Tub and Tile Refinish Coatings

Dear Ms. Farr:

North American Polymer Company, Ltd. (NAPCO) recommends the District retain the Small Container Exemption (SCE) for the Tub and Tile Refinish category since we are struggling with the proposed 420 g/l limit. While we had hoped to have products to meet the 420 g/l limit, we have not been able to get there. While other California Air Districts have adopted the 420 g/l – the critical difference is that other CA Districts have the SCE as a fall back, and many have exempted TBAC. NAPCO recommends retaining the Small Container Exemption for the Tub and Tile Refinish category.

In addition, if over our objection the District does eliminate the Small Container Exemption for Tub and Tile Refinish coatings, a longer compliance date would be needed, since the proposed compliance date of 1/1/2016 is too early, we recommend the 1/1/2019 compliance date (same date as the Flat, Nonflat, Rust Preventatives and Industrial Maintenance categories).

Since the Tub and Tile Refinish category it is a small volume category with limited emissions, this change will have little if any impact on VOC emissions in the District.

Steve Coven



President
NAPCO LTD
scoven@napcoltd.com
Office: (800) 888-1081
Cell: (847) 274-8887

7315 Hamlin Avenue - Skokie, IL 60076-3902 - Phone (847) 7796464 - Toll Free: (800) 888-1081
Fax (847) 779-6465 - www.napcoltd.com

Response to comment letter 5

Draft Staff Report Proposed Amended Rule 1113

Twenty percent of tub and tile coatings sold in the SCAQMD are compliant with the 420 g/L VOC limit. Staff acknowledges that the VOC reductions are small and has agreed to shift the phase in date from 01/01/2016 to 01/01/2018.

The following are comments from the Tnemec Company Inc. – Comment Letter #6.

Comment Letter #6



September 8, 2015

Ms. Heather Farr
Office of Planning, Rule Development, and Area Sources
South Coast Air Quality Management District
21865 Copely Drive
Diamond Bar, CA 91765

RE: Comments for Proposed Amendments to SCAQMD Rule 1113 and Rule 314

Dear Ms. Farr,

Thank you for the opportunity to provide comments on the PAR Rule 1113. Tnemec Company recognizes the need for environmental stewardship and VOC regulations in California. We support VOC limits for architectural and industrial maintenance coatings based on technically feasible field proven coatings technology. We offer the following comments regarding the proposals for revisions to Rule 1113:

Rule Changes Are Not Needed

6-1

The cost of compliance with VOC regulations is extremely high and this is especially true for small and mid-sized companies. The district has surpassed the limit on both technical feasibility and VOC reduction potential. Going after extremely small reductions measured in lbs. per day is not cost effective and only leads to stifling economic growth. The fact that the rule 314 data shows that the emissions are lower than expected and that the district is meeting the 2019 air quality management plan targets must be considered. This data demonstrates that additional VOC reductions are not needed at this time. The district should look to other industries for additional reductions.

Small Container Exemption

6-2

The small container exemption is critical for field touch-up of shop applied IM coatings. Many building construction products are fully coated in a shop environment and then put together in the field. This can encompass products such as window and door frames, metal hand rails, light poles and numerous other metal parts and products. The coatings are touched up from damage that may have occurred during the installation process. Touching up with a different product will lead to significant performance and appearance problems. At 20 lbs. per day the elimination or restriction of the IM exemption is not justified.

6-2
cont.

We appreciate staff's recognition that field touch-up of shop applied coatings is a critical piece for the quart exemption by adding the language to allow for these applications. This was part of the original intent of this exemption and it is still valid today. While this addresses our primary concern we don't feel it is necessary change anything with regards to the quart exemption for IM coatings.

The assumption that rust preventative coatings will be relabeled as industrial maintenance coatings is not proven and adding restrictions to the IM quart exemption only adds complexity to an already difficult rule. This complexity will lead to confusion for people trying to understand the rule requirements.

TBAc Exemption

The exemption for TBAc (tertiary butyl acetate) is needed to comply with the stringent 100 g/L VOC limit for industrial maintenance coatings. There are very few products that can comply with a 100 g/L without the use of exempt solvents and the ones that do comply have severe limitations with regards to application properties and require expensive complex equipment. In addition there are certain types of coatings that cannot be made to comply with these stringent requirements without exempt solvents. The district should fully exempt TBAc from the definition of VOC to be consistent with the EPA list of exempt compounds.

6-3

We support using chemicals in a manner that protects human health and the environment. Many of the risks of exempt solvents are no different than the risks with existing solvents which are being effectively managed with both engineering controls and/or PPE. The assessment that was done previously determined that TBAc can be safely used for industrial maintenance coatings. Removal of the exemption should only be done after a peer reviewed risk assessment is conducted based on all available scientific data using reasonable risk factors and conclusions are made that it is unsafe for use in industrial maintenance coatings.

The assertion that PPE is not effective at preventing worker exposure is unfounded. While we do recognize that engineering controls are the preferred method for protection it has been recognized by the Occupational Safety and Health Administration (OSHA) that PPE is an effective means for preventing worker exposure. The same PPE that is used to effectively manage exposure to TBAc is being used to manage exposure to other solvents and chemicals currently being used in paint formulations. In addition, worker exposure is outside the scope of the SCAQMD and is a responsibility of OSHA.

Tnemec Company, Inc.
PAR Rule 1113 and PAR Rule 314 Comments
9/8/2015

Page 3 of 3

Rule 314 Fees

6-4

Increasing fees is not a good choice in the current economic climate. The California coatings market is already being stifled by the current fees and taxes being imposed and the market cannot support any additional increases. Additional fees will only serve to shrink economic growth of an already mature market.

The proposal to shift the fees in a revenue neutral manner is not something we would necessarily be opposed. There needs to be transparency as to how this "neutrality" was determined. The data and calculations should be made publically available and ample time should be allowed for public review and comment before these changes are adopted.

Thank you for your consideration of these comments. Please feel free to contact me if you have any questions or if you need any additional information.

Regards,

Tnemec Company, Inc.



Kyle R. Frakes
Manager Environmental, Health, and Safety

Response to comment 6-1

The Rule 314 data demonstrates there are more than sufficient technically feasible, commercially available, low-VOC products in the market place to justify VOC reductions. The changes being proposed are not technology forcing changes; the change to the SCE will result in making the manufacturers comply with VOC limits established and proven to be technically feasible back in 2006.

Staff does look to other industries for VOC reductions, but committed in CTS-01 from the 2012 AQMP to achieve 2 – 4 tpd reductions from architectural coatings. Staff acknowledges the current VOC inventory is lower than projected in 2012, but cannot submit the market driven reductions for SIP credit as explained in response to comment 4-2. This proposed amendment will achieve around 1 tpd, and staff is committed to look into other industries to achieve the other 1 – 3 tpd.

Response to comment 6-2

As stated in the staff report, the proposal to eliminate the SCE from IMCs was included to prevent RPCs from simply being re-categorized as IMCs. Staff has seen this type of creative marketing many times in the past. Staff worked with industry to alleviate the concerns of restricting the SCE by creating a higher VOC category for color indicating safety coatings and allowing the continued sale of one liter containers for touch up for IMCs. Based on industry feedback, staff allowed the continued use of the one liter exemption with restrictions that these coatings can only be used for touch up and not be sold at retail outlets to accommodate the larger touch up projects encountered in some industrial settings. Most IMCs are not sold at the retail level, so this should not be a significant burden. Also, an end user attempting to touch up a factory applied coating on a component being installed in an industrial setting is not likely to be going to their local paint store to find the coating. The end user would have to contact the shop that coated the part to determine what coating was originally used. That product is not likely available at the local paint store. The amendment is not intended to restrict touch up for IMC.

Response to comment 6-3

As stated in response to comment 1-2, staff is not proposing changes to the tBAC exemption until OEHHA's final peer reviewed assessment has been released. At that time, it is expected the latest CARB architectural coatings survey should be available which will indicate how much tBAC is currently being used in IMCs.

Response to comment 6-4

Staff is no longer proposing a tiered sales fee in Rule 314.

The following are comments from the American Coatings Association. – Comment Letter #7.



AmericanCoatings
ASSOCIATIONSM

Comment Letter #7

September 9, 2015

Ms. Heather Farr
Office of Planning, Rule Development, and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: SCAQMD Rule 1113/Rule 314 Amendments; ACA Comments

Dear Ms. Farr:

The American Coatings Association (ACA) would like to provide the following comments on the issues discussed at the August 26, 2015 South Coast Air Quality Management District (SCAQMD or the District) Rule 1113/Rule 314 meeting, and VOC Workgroup meeting. We also incorporate by reference previously submitted ACA comments on Rule 1113/Rule 314.¹

A. There is No Justification for Sweeping Changes to Rule 1113 Since the District has Already Met its 2012 AQMP Commitments for the Architectural Coatings Source Category

There is no justification for further regulatory action to reduce VOCs from AIM coatings since the District and industry have already met and exceeded the inventory goals of 2-4 tons per day (tpd) for this source category from a VOC inventory perspective. There is a clear downward trend in VOC emissions from this source category. Notably, VOCs from architectural coatings in the South Coast Air Basin have decreased by over 75% over the course of the last decade from 2002 to 2013.²

Past SCAQMD estimates have regularly estimated slight increases in emissions while actual VOC numbers have continued to tumble as Rule 314 data comes out each year. The preliminary 2014 Rule 314 data indicates that the 2014 AIM coatings inventory is nearly five tpd lower than the 2012 AQMP estimate for 2014: approximately 10 tpd instead of the estimated 15.5 tpd.³ In fact, the 2014 Rule 314 data demonstrates that the District has already achieved, and well exceeded, the CTS-01 2019 targets of 12.2-14.2 tpd by over 2 tpd for the source category. Given this, there is no basis for further VOC reductions, and the District should consider other approaches to reduce VOCs from architectural coatings while also looking to other source categories. We welcome the opportunity to work with the District to consider other options and novel approaches.

¹ ACA's previous comment letters are dated: July 8, 2015; April 30, 2015; March 10, 2015; and January 20, 2015.

² The South Coast Air Quality Management District 2007 Air Quality Management Plan, Appendix III; SCAQMD Staff Presentation, August 26, 2015.

³ SCAQMD Staff Presentation, August 26, 2015.

B. The District is Correctly Retaining the VOC Limits for Flats, Nonflats, and Primer Sealer Undercoaters Since Lowering the Limits is Not Technically Feasible

7-2

We strongly support SCAQMD's decision to retain the current VOC limits for Flats, Nonflats, and Primer Sealer Undercoaters (PSU) since the District has determined that lower VOC limits for these categories are not technically feasible. Currently, manufacturers are making Zero-VOC interior Flat and Non-Flat latex products. It is the Exterior Flat, Exterior Non-Flat and the entire Primer Sealer Undercoater categories where it would be technically infeasible to lower the VOC content limits to 25 g/l because of performance issues. SCAQMD would need to look at the sales weighted averages as well, in addition to the technical performance issues, to determine if a category could be lowered. As the District rightly concludes, lowering the limits for these categories would compromise performance for a range of applications and effectively eliminate the use of certain coatings technologies within these categories without an adequate substitute.

Flat, Nonflat, and PSUs are designed for a range of important functions, from painting interior walls to application on a variety of substrates under different exposure conditions. Higher VOC PSUs, for example, are necessary for specific applications on wood, metal, masonry and concrete tilt-up. Also, Primers perform significantly better at higher-VOC levels as concrete block fillers, thin-film elastomeric primers, and higher performing multi-purpose primers that are used on various substrates including metal. For these reasons, we support the District's conclusion.

C. The Proposed Rule 314 Amended Fee Structure Will Further Encourage Lower-VOC Coatings and Yield Significant VOC Emissions Reductions

7-3

The amended Rule 314 fee structure concept is designed to encourage lower-VOC products without the need to lower the VOC limits for Flats, Nonflats, and PSU to 25 g/l or eliminate the small container exemption for any categories. The amended fee structure provides coatings manufacturers with formulation flexibility while creating powerful market incentives to further reduce the VOC content of products similar to the U.S. Environmental Protection Agency's (EPA) National AIM Rule. Like the fee in the National AIM Rule, the 314 Rule fee is a market-based option that incentivizes manufacturers to formulate lower-VOC products to reduce its fee burden since manufacturers pay more for higher-VOC products. ACA continues to believe that the SCAQMD can take credit for the significant reductions achieved through the District's incentive fee program.

We are aware that the District is now considering a modification to the proposed fee structure outlined in the August 2015 Draft Staff Report. As we understand it, the new proposed structure would impose a uniform fee on all coatings that comply with the Table of Standards with two caveats: The District would impose an increased fee on products sold under the small container exemption, and would reduce the fees on super-compliant products. ACA believes this proposal, if structured appropriately, would still serve the goal of incentivizing lower-VOC products while ensuring the fees do not disproportionately impact manufacturers that sell products in compliance with the Table of Standards.

7-3
cont.

Lastly, we appreciate that the District has confirmed that the fees collected under the restructured program as a whole will remain revenue neutral under the new approach. We ask that the District provide supporting data based on 2013 and 2014 Rule 314 reporting.

D. The Small Container Exemption is a Critical Compliance Option and the District Should Retain it for all Categories

ACA strongly believes the District should retain the current small container exemption as a compliance option for Flats, Nonflats, Industrial Maintenance (IM) Coatings, and Rust Preventative Coatings. ACA also believes there is no justification for eliminating the small container exemption for the 11 other categories cited in the Proposed Amended Rule 1113, especially the Tub and Tile category. The small container category would not be necessary for these newly created categories in the SCAQMD if the limits for these categories is set based on the current range of product VOCs. However, the small container exemption is the only remaining alternative compliance option, or safety valve, in Rule 1113, and continues to be a critical for the paint and coatings industry. ACA recommends that the District refrain from considering any effort to eliminate the small container exemption until after the revised Rule 314 fees have been implemented since the volume of products sold under the small container exemption will likely decrease due to the increased fees affecting both manufacturers and consumers.

7-4

There is no basis for eliminating the small container exemption. The 2014 AIM VOC inventory indicates that the goals of the 2012 AQMP CTS-01 have already been achieved by a significant margin, and the proposed fee restructuring will further incentivize lower-VOC products so manufacturers can avoid higher fees. In addition, the District historically examined whether the category had an "exponential increase in sales" to determine whether to eliminate a category from the small container exemption. To the contrary, sales of Flats, Nonflats, IM and Rust Preventative coatings have been flat or decreasing over time, so it does not meet this criterion.

The District's concerns over alleged rule circumvention and noncompliance are unfounded, and do not justify the elimination of the small container exemption for any coatings categories either. Nearly all of the cited incidents in the Staff presentations and Staff Report reflect either blatant violations of Rule 1113 or could easily be addressed through modification of the rule language. None of these examples would be addressed by eliminating the small container exemption, and noncompliance could continue to occur regardless. These problems can only be addressed through targeted enforcement and compliance efforts, and with minor amendments to the rule language where necessary. As previously mentioned, ACA welcomes the opportunity to work with the District to shore up Rule 1113 to prevent true circumvention. As per previous ACA comments, additional changes could be made to Rule 1113 to address potential noncompliance including:

- Restricting any type of marketing or price discounts and grouping for small container sales, including buy three get one free deals, rebates, etc.
- Prohibiting retailers from selling empty prelabeled small container cans, or labels for small containers.

<p>7-4 cont.</p>	<ul style="list-style-type: none"> • Ensuring that Rust Preventative Coatings are properly labeled “For Metal Substrates Only” and enforcement in situations where these products are misapplied. <p>Lastly, as the District ratcheted down the VOC limits in Rule 1113 in the past, the District has defended lower-VOC limits by arguing that manufacturers can always use the small container exemption as an alternative option. This proposal runs counter to the District’s historical position. If the District eliminates or limits the small container exemption as proposed, companies will be forced to comply with any new limit in a future amendment. This is problematic, and ACA believes the District must consider the lack of any real alternatives during future rulemakings, and provide additional options such as higher-VOC limits and extended compliance dates.</p> <p>We provide the following additional comments with respect to the small container exemption for individual coatings categories:</p>
<p>7-4a</p>	<p>1. <u>Flat Coatings</u></p> <p>We urge the district to retain the small container exemption for flat coatings since the emissions reductions resulting from this change would be negligible (estimated 0.002 tpd or 4 pounds per day), and do not justify reducing necessary flexibility in Rule 1113.</p>
<p>7-4b</p>	<p>2. <u>Non Flat Coatings</u></p> <p>ACA urges the District to establish a “Door, Trim and Cabinet” category so that these products may continue to be sold via the small container exemption, since these higher-VOC products provide greater durability and wear resistance for doors, trim, and cabinets. These same characteristics are not available in lower-VOC products. Further, the emissions reductions resulting from this change would be small (an estimated 0.15 tpd), and do not justify the elimination of the small container option for Nonflat Coatings.</p>
<p>7-4c</p>	<p>3. <u>Industrial Maintenance Coatings</u></p> <p>ACA opposes the elimination of the small container exemption for IM coating. The emissions reductions resulting from the elimination of the small container exemption for IM coatings would be negligible (an estimated 0.01 tpd or 20 pounds per day), and do not justify reducing flexibility in Rule 1113. While we oppose the modification of the small container exemption for IM coatings, we appreciate that the District is retaining the one liter touch-up option. This option is useful for IM coatings intended for touch-up of building construction products that are damaged during shipment. However, ACA recommends that the District clarify that IM and Zinc Rich Primers may be sold at retail outlet if they are restricted to behind the counter or back room sales, as current policy dictates.</p>
<p>7-4d</p>	<p>4. <u>Rust Preventatives</u></p> <p>The small container exemption remains a critical compliance option for Rust Preventative Coatings, and we urge the District to retain this safety valve. Higher-VOC Rust Preventatives</p>

protect substrates better than lower-VOC products. They require less surface preparation, and do not require a primer, which eliminates the need for a second application. Consumers demand traditional coatings formulations that are quick-drying and have high-performance coatings attributes that provide superior flow, leveling, and appearance. Lower-VOC products dry slower, and ultimately, it takes longer before the object can be returned to service. Please refer to ACA's April 30, 2015 comments outlining additional concerns.

From a technical standpoint, the District should not compare certain IM, Direct-to-Metal, and water-based alkyds with Rust Preventatives. ACA is concerned that Staff considers IM, Direct-to-metal, and water-based "alkyd" products Rust Preventatives Coatings. Rust Preventative Coatings have unique corrosion inhibition and rust preventative properties that distinguish them from other products. In addition, IM, water-based alkyds, and direct-to-metal products require surface preparation and application of a primer coat, and tend to cause flash rusting.

ACA supports the comments provided by Rust Oleum at the August 26, 2015 Public Workshop, and subsequent written comments. Here is a summary of the comments: The District has pointed to water-based alkyd enamel technology as a viable option for low-VOC rust preventative coatings. Rust Oleum obtained and tested products given by the District as examples of this technology, and found that these products fail after one freeze thaw cycle, whereas other Rust Preventatives, which rely on mineral spirits as a solvent and are sold under the small container exemption pass 10 freeze thaw cycles. Other water-based alkyd enamel products performed poorly in standardized corrosion tests for surface coatings compared to conventional solvent-based Rust Preventative technologies.

The District has noted some benefits of low-VOC Rust Preventative coatings, including better gloss retention, durability, dry time and cohesion and reduced chalking and yellowing, but provided no evidence to support these claims, and did not claim that low-VOC coatings provide superior corrosion protection, which is the central function of Rust Preventatives.

There were several problems identified with the SCAQMD Rust Preventative Technology Assessment work completed a number of years ago, and referenced on page 22 of the Staff Report. First, the products selected may not be representative "Rust Preventatives." In addition, "rust prevention" was not actually tested, and the "Flash Rusting" results were not included in the report. This Assessment should not form the basis for eliminating the small container exemption for Rust Preventative Coatings. For these reasons, we do not believe the District should eliminate the small container exemption for Rust Preventative Coatings.

5. Tub and Tile Coatings

ACA strongly recommends that the District retain the small container exemption for the Tub and Tile Refinish category since the industry is struggling to meet the 420 g/l limit. While the industry is striving to develop products to meet the 420 g/l limit, it appears that manufacturers have not been able to achieve this limit to date. While other California air districts have adopted the 420 g/l, manufacturers can still rely on the small container exemption as a fallback in those jurisdictions. It is also important to note that the Tub and Tile Refinish category is a small volume category with limited emissions.

7-4d
cont.

7-4e

6. Additional Categories

7-4f

The District has not provided an adequate justification for eliminating the small container exemption for these additional categories since manufacturers do not utilize the exemption for these categories, and no emission reductions will result from this change. In addition, while the SCE has not been utilized for these categories in the past, manufacturers may look to the small container option to solve a new issue in the field in the future. Further, if for example a company makes a technology breakthrough but the product does not meet the category limit, these technologically superior products could not make it to the marketplace.

Further, if the 11 additional categories cannot be sold via the small container exemption, companies will likely need to review and change their labels and product literature to ensure their products are in conformance with the appropriate definitions. Companies will need more than two months to complete this review and make potential label changes. ACA suggests including a January 1, 2017 compliance date to minimize the burden on manufacturers.

The District should also consider the ozone potential of various categories based on the MIR value of each of the solvents used in coatings. All VOCs are not created equal and do not have the same ozone potential.

E. Colorant Labeling

ACA suggests the District include a January 1, 2017 implementation date for labeling colorants to minimize the burden and cost of this change. Manufacturers need time to change labels to include the VOC content and date code, and clear all products that are not properly labeled from the distribution pipeline. This abrupt change will also increase fuel usage by forcing manufacturers to collect unlabeled products, and will increase the generation of solid waste if companies are forced to dispose of unlabeled, half-empty products. The District has historically allowed additional time for label changes in past rule amendments, and we urge the District to do the same with colorants.

ACA recommends either:

7-5

“Containers for all coatings, and for colorants manufactured on and after January 1, 2017, subject to this rule shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturers of such coatings and colorants shall file with the Executive Officer of the Air Resources Board an explanation of each code.”

OR

“Containers for all coatings and colorants subject to this rule shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturers of such coatings and colorants shall file with the Executive Officer of the Air Resources Board an explanation of each code. The provisions of this paragraph (d)(1) shall not apply to any colorant manufactured prior to January 1, 2017.”

Also a new subparagraph (E) is needed, as follows: (E) For colorants manufactured on and after [effective date], the VOC per liter of colorant (less water and exempt compounds).

F. Recycled Coatings

7-6

The District should not lower the VOC limit for Recycled Coatings to 150 g/l since this will increase the cost of recycling, and reduce the use of recycled coatings. The 150 g/l limit will force recyclers to perform additional VOC determinations and spend more time separating higher-VOC products. The lower limit will also force recyclers to dispose of more products, increasing waste disposal costs. In turn, the PaintCare program will incur higher costs, resulting in increased costs to manufacturers and consumers. Given these concerns, ACA believe the District should retain the current limit for recycled coatings.

G. Building Envelope Coatings

7-7

ACA does not support lowering the Building Envelope Coating VOC limit to 50 g/l at this time. Building Envelope Coatings represent a new category, and the California Air Resources Board and SCAQMD have not yet gathered accurate sales data on these products. We suggest that the District use the next few years to gather accurate data, and then determine whether to reduce the VOC limits on this category. This is especially important considering the considerable cost of testing Building Envelope Coatings such as air barriers. In addition to reformulation, manufacturers would be forced to retest each product according to the three test methods in the category definition at a cost of approximately \$30,000-40,000 per product.

H. Exempt Compounds

7-8

ACA supports the proposed exemption for AMP (2-Amino-2-Methyl-1-Propanol) from VOC status for purposes of Rule 1113. This exemption will help the District achieve critical VOC reductions, and provide paint manufacturers with formulation flexibility to further reduce VOCs. ACA also supports the comments provided by the ANGUS Chemical Company.

The District should also fully exempt TBAC (tertiary butyl acetate) from the definition of VOC to maintain consistency with the U.S. EPA list of exempt compounds. Until TBAC is formally listed as a TAC or carcinogen, air regulatory agencies such as SCAQMD should make no changes to their rules based on OEHHA's unsanctioned risk factors. For the past 11 years, TBAC has been safely used in numerous applications in 49 states and in Canada and has reduced ozone levels by an estimated 660 Million pounds (300 Kilotons). California remains the only State that does not recognize the Federal VOC exemption of TBAC or benefit from its exemption.

The District should also fully exempt DMC (Dimethyl carbonate) from the definition of VOC to maintain consistency with the U.S. EPA list of exempt compounds.

I. Spray Efficiency

ACA still believes that the District can obtain additional permanent and enforceable VOC emissions reductions through “Best Practice Guidelines” and mandatory requirements for spray application. The District should include these requirements and work practice standards in Rule 1113 to make these provisions an enforceable part of the AIM coatings regulatory framework. ACA suggests the following in addition to the previous SCAQMD proposal to strengthen the provisions so the District can calculate the resulting emissions reductions:

- 7-9
- a. Keep spray pressure as low as possible; Use the smallest tip size possible; Coatings must be spray applied according to the product manufacturer’s instructions, including the specified spray pressure, coverage rate, tip size, and any other recommendations for spray application.
 - b. Spray gun should be no further than 12 inches from the surface being painted.
 - c. Maintain a 90-degree direct angle of the spray gun to the surface being painted; Avoid “fanning” the gun from side to side, and never exceed a 30-degree variance from a 90-degree direct spray application;
 - d. Do not over thin paint material; Paint thinners must be compliant with SCAQMD Rule 1143, and thinned products may not exceed the Rule 1113 limits.
 - e. Cleaning solvent must be compliant with SCAQMD Rule 1171.
 - f. Do not “overreach” when working from a ladder or other lift equipment (where the spray gun or wand is more than 12 inches from the surface being painted).
 - g. Always use the gun trigger to begin and end each application stroke.
 - h. Adjust the application overlap to fully cover the surface being painted to minimize paint usage.
 - i. All architectural coating or colorant containers from which the contents are used by pouring, siphoning, brushing, rolling, padding, ragging or other means shall be covered and closed when not in use; these containers include, but are not limited to drums, buckets, cans, pails, trays or other storage or application containers.
 - j. Applicators applying coatings in SCAQMD must successfully complete the SCAQMD’s Architectural and Industrial Maintenance Coatings training program or contractor association equivalent, and hold a certificate issued by the Executive Officer evidencing that such individual is in good standing in this program (similar to Rule 463 and Rule 1178).

J. Method 313

1. Precision and Bias

7-10

The District should include a precision and bias statement in Method 313. To date, the District has only evaluated the internal precision/bias of Method 313. The evaluation of three operators using the same piece of equipment resulted in an error band of 5 g/l material VOC. While this is useful information, the regulated community must also understand how other labs conducting Method 313 compare to the SCAQMD results. This information is especially critical for coatings manufacturers since they must formulate below the regulatory limit to account for precision differences between their testing equipment and the District’s.

ACA suggested completing a Method 313 “roundrobin,” or as an alternative, that the District include the ASTM D6886 precision statements as guidance for Method 313 (SCAQMD participated in the ASTM D6886 roundrobin). In response, SCAQMD and EPA Region 9 both claim that the results of any future Method 313 roundrobin and the D6886 roundrobin results are not applicable since “industry labs did not follow the ASTM D6886 method and will not follow the Method 313 method.” Now, SCAQMD is preparing to validate Method 313 via EPA Method 301 “Field Validation of Pollutant Measurement Methods from Various Waste Media.” ACA appreciates that the District is trying assess the precision and bias of the SCAQMD Method 313 equipment, but this validation will not help with assessment of external “interlaboratory” precision since the Method 301 is only inward looking.

7-10
cont.

ACA is also concerned that the three proposed matrices – flat, nonflat and simplified resin only – are not representative of all the categories or coating chemistries in Rule 1113 (e.g., bituminous-based coatings). These categories are also not representative of coatings in the other coatings rules where Method 313 will be incorporated. ACA requests a demonstration that the chosen matrices will be compatible with each different technology covered by Rule 1113 and other coatings rules. Also, it would be more realistic if, for example, EPA developed the Matrices for SCAQMD to analyze instead of SCAQMD knowing the matrices beforehand. This “blind sampling” would result in more meaningful results.

On page 15 of the Draft Staff Report the district mentions that “The SCAQMD has participated in round robin studies M313 versus D6886 with strong correlation between the two methods.” Given this strong correlation between the two methods, ACA suggests SCAQMD simply incorporate the ASTM D6886 precision statements.

Further, on page 15 of the Draft Staff Report, the District mentions that “For compliance purposes, [the District] will provide a guidance document to explain the differences between the two methods such that a manufacturer utilizing ASTM D6886 will be aware of how their results could differ from results obtained by the SCAQMD laboratory.” The District gave a presentation on August 26 which provided the key similarities and key differences between Method 313 and D6886, and the changes to D6886 that would be required to align it with Method 313. However, this qualitative information does not provide quantifiable information on how manufacturers’ test results may differ from the results obtained by the SCAQMD laboratory. The D6886 roundrobin precision statements are the only data that can answer this key compliance question.

2. Scope

7-11

The District should clarify and limit the scope of Method 313. In early discussions with the District, the District indicated that Method 313 was intended to be used for coatings that had a material VOC content of less than 150 g/l. However, language in the draft indicates that Method 313 would be used for any material when EPA M24 does not reach a stable weight, with a demonstrated additional weight loss of greater than 0.2% absolute or 3% relative difference (whichever is greater) after one additional hour of oven heating.

Not all products currently subject to R1113 will reach stable weight using M24 (this includes both higher- and lower-VOC formulations). The main point being the assumption that M24 is

unstable is not exclusively attributed to lower-VOC formulations. In fact, weight loss instability and poor repeatability/reproducibility would be the expected outcome for both aqueous and nonaqueous coatings containing semi-volatile complex hydrocarbon mixtures when tested for volatile content under Method 24. It is recommended the district consider Thermal Gravimetric Analysis (TGA) methods for products with these stated parameters.

While the non-film forming oils used in form release compounds will now be moved to Rule 1161, there are still other non-film forming oils used in Rule 1113 including stains and waterproofing sealers which are problematic with regards to Method 313.

7-11

ACA recommends the following changes to the Scope of Method 313:

Method 313 applies to materials such as paints, coatings, solvents, and other liquid/dispersed solid materials containing less than 150 g/L VOC material as measured by SCAQMD Method 304-91 or Environmental Protection Agency Reference Method 24 (EPA M24). It may also be used for materials which do not reach a stable weight by EPA M24, with a demonstrated additional weight loss of greater than 0.2% absolute or 3% relative difference (whichever is greater) after one additional hour of oven heating. This method is not to be used for two-component coatings or Ultraviolet/Electron Beam (UV/EB)-cured coatings but may be used for samples requiring ASTM D5095 "Determination of the Nonvolatile Content in Silanes, Siloxanes and Silane-Siloxane Blends used in Masonry Water-Repellent Treatments". Coatings containing semi-volatile complex hydrocarbon mixtures should be analyzed by ASTM E1868 "Standard Test Methods for Loss-On-Drying by Thermogravimetry."

3. Exclusion Pathway

ACA appreciates the time and effort that the District has committed to developing an exclusion pathway. ACA once again requests that the Staff Report and Board Resolution mention that the District is receptive to additional pathways including a future pathway for Amines. We specifically request the District include the following footnote in the Exclusion Pathway Flowchart:

7-12

The exclusionary pathway is intended for unreactive compounds and will need to be amended to correctly classify components such as amines that interact with other components when the paint is being formulated.

On page 18 of the Staff Report, the District mentions that "Note: the only compound that has been demonstrated thus far to stay in the film of the coating was pentaethylene glycol (EG5)". ACA requests the District clarify that the District has only tested film retention for Glycerin, Propylene Glycol and Pentaethylene Glycol. Also ACA requests the District state which oils are not considered VOCs (e.g., canola oil).

ACA requests the second box of the exclusion pathway be changed from "The measured or modeled VP of the compound of interest is lower than MP" to "...is equal to or lower than MP".

7-12
cont.

Since Vapor Pressures vary and are difficult to measure and model at low levels, ACA suggests that the threshold in box 2 be changed to less than or equal to " <0.01 ". This change will have little impact since the compounds still need meet the stringent requirement of Box 3, retainment in the film. As an example, the EPI Suite vapor pressure modeling data for methyl palmitate is estimated to be 0.0634 Pa at 25C (log value -1.197). However, in the SCAQMD graph of vapor pressures, the log vapor pressure of methyl palmitate is shown as less than -2 based on a measured value (A log of -2.19 would correspond to a vapor pressure of .00634, which is an order of magnitude lower than the .0634 Pa modeling data). Alternatively, we suggest the vapor pressure of the compound of interest be lower than the upper fall within the error bands of the measured or modeled vapor pressure of Methyl Palmitate. Again, since the third step is so stringent, a slight increase in the vapor pressure in the second box will have little impact. Finally, setting the threshold at less than or equal " 0.01 " may address ACA concerns over Amines.

Also, ACA suggests that the District's choice of dibutyl phthalate as a surrogate for methyl palmitate in the Exclusionary Pathway Flowchart for Early Eluting Semi-Volatile Organic Compounds (Box 3) is problematic. The purpose of the exclusionary pathway is to determine whether or not a compound or complex hydrocarbon mixture is less volatile than methyl palmitate, not dibutyl phthalate, which appears to have a significantly lower vapor pressure than methyl palmitate. An appropriate surrogate would have the same volatility as methyl palmitate. ACA believes that tetraethylene glycol may be a good surrogate since it has the same vapor pressure as methyl palmitate and behaves almost identically to methyl palmitate as a neat compound in thermal gravimetric analysis. It is also easy to incorporate into waterborne coatings, especially compared to dibutyl phthalate.

Vapor pressure:

Methyl palmitate = 6.04×10^{-5} mmHg@25C (Perry RH, Green D; Perry's Chemical Handbook. Physical and Chemical data. NY, NY: McGraw-Hill 6th ed (1984))

Dibutyl phthalate = 1×10^{-5} mmHg@25C (US EPA Air Toxics Web Site)

2.01×10^{-5} mmHg@25C (Jour. of Chromatography A 749:123-129, (1996))

ACA also requests additional information on the scope and how the exclusion pathway is to be used. For example, now that the District has determined that PEG has met the three exclusion criteria, how will PEG actually be excluded? Could coatings manufacturers exclude PEG from their VOC content determinations, or would the District not consider PEG in an enforcement situation? Also, please clarify whether the exclusion pathway be included with Method 313.

K. Unused Coatings

7-13

The SCAQMD currently assumes that 100% of architectural coatings that are sold in the District are applied in the District, and as a result all associated VOC emissions count towards the SCAQMD's VOC inventory. EPA has documented that 10% of architectural coatings remain unused. The architectural coatings inventory should be adjusted to account for unused paint, alleviating further pressure to reduce VOC emissions from this source category. ACA requests an update on the status of the District discussions with EPA.

L. Architectural Coating Product Database

7-14

The District should take credit for emission reductions that result from the architectural coating product database. Once it is launched, the database will provide yet another market incentive to drive down AIM VOC emissions in SCAQMD since architects, specifiers, contractors, and consumers can search the database to find low-VOC products.

From a practical perspective, it is important that discontinued products are not included in the database. The District should utilize the current averaging box to identify discontinued products in Rule 314 so they can be excluded.

M. Additional Changes

We suggest the following changes in the proposed Rule 1113 language.

1. Applicability

7-15

ACA suggests moving the phrase “in the District” (or “within the District” to be consistent with the second half of the sentence) as follows: “This rule is applicable to any person who supplies, sells, markets, offers for sale, or manufactures any architectural coating that is intended to be field applied to stationary structures or their appurtenances within the District....”.

2. Glazes

7-16

(21)(c) GLAZES: “GLAZES are coatings formulated and recommended to be used (or to be mixed with another coating) for:” etc.

3. Flat Coatings

7-17

(23) FLAT COATINGS: “FLAT COATINGS are coatings that register a gloss of less than 15 on an 85-degree meter or less than 5 on a 60-degree meter according to ASTM Test Method D 523 as specified in paragraph (e)(5).”

4. Wood Coatings

7-18

(81) WOOD COATINGS: “WOOD COATINGS are film-forming coatings formulated and labeled for application only to wood substrates, including floors, decks, and porches. The Wood Coatings category includes all lacquers, varnishes, and sanding sealers, whether clear, semi-transparent or opaque. This category also includes penetrating oils, clear stains, wood conditioners for use as undercoats, and wood sealers for use as topcoats.”

5. Wood Conditioners

7-19

(82) WOOD CONDITIONERS: “WOOD CONDITIONERS are coatings that are formulated and recommended to prepare bare wood for staining, to provide uniform penetration of stain.”

7-20 6. Sell-Through Provision

We suggest deleting the averaging compliance language) -“Any coating that is manufactured prior to the effective date of the applicable limit specified in the Table of Standards 1, and that has a VOC content above that limit (but not above the limit in effect on the date of manufacture), may be sold, supplied, offered for sale, or applied for up to three years after the specified effective date.”

7-21 7. (c) Requirements

(2) No person within the District shall, at the point of sale of any architectural coating subject to paragraph (c)(1), add to such coating any colorant that is listed in the Table of Standards 2 and contains VOC in excess of the corresponding limit specified in the table.

7-22 8. Concrete Form and Concrete Mold Release Compounds

As the District is moving Form Release and Concrete Stamp Mat Release Compounds to Rule 1161, it is important to note that Rule 1113 Form Release compounds and stamped concrete mold releases that are used in an outdoor environment are different than mold release compounds used in a factory setting. Products that are used outside need a higher-VOC limit than release compounds used in a factory setting. In addition, the VOC content for stamped concrete mold release compounds may need to be higher than form release compounds; if the stamped concrete mold release compound does not evaporate and the concrete sticks to a mold, both the mold and the concrete surface could be ruined. Whereas a small amount of concrete sticking to a concrete form may not be as much of an issue.

ACA requests a limit of 100 g/l for both the form release and concrete stamp mat release products, and requests that the District determine if Dodge oil and other oils are VOCs via Method 313. Please see ACA’s comments from April 30, 2015.

Thank you for your consideration of our comments. Please do not hesitate to contact us if you have any questions.

Sincerely,

/s/

/s/

David Darling, P.E.
Senior Director, Environmental Affairs

Timothy Serie, Esq.
Counsel, Government Affairs

Cc: Philip Fine, SCAQMD
Jose Gomez, ARB
Ravi Ramalingam, ARB
Stan Tong, EPA
Wienke Tax, EPA

Sent via email

Please see response to comments 4-2 and 6-1.

Response to comment 7-2

Staff did not conclude the lower VOC limits for flats, nonflats, and PSUs were technologically infeasible, but instead decided to take industry's suggestion to lower the fees in Rule 314 instead of lowering the VOC limits at this time (however, this approach is no longer being proposed). Staff presented a significant amount of data early in the process demonstrating that the lower-VOC limits were technically feasible. That said, there could be specialty products within each of these categories that might need to be carved out, especially for the PSU category, but the change in direction was a response to industries' comments and not an indication that the lower-VOC limits were not technically feasible.

Response to comment 7-3

Staff appreciates industries support of the proposed fee structure, which was proposed not only for coatings sold under the SCE but for any coating reported over the VOC limit. Staff is no longer proposing to amend Rule 314 at this time.

Response to comment 7-4

Based on the sales volumes and emissions of the SCE, staff feels this exemption is being utilized to a great extent to stifle sales of lower-VOC products for certain categories. For the specialty categories, staff does strive to set the VOC limit at an appropriate level, working with the affected industry. It is somewhat surprising when a small niche category is carved out based on staff's work with industry on the appropriate VOC limit and then to see multiple products being offered for sale above that VOC limit, within the SCE. Staff is proposing to adopt the VOC limit from CARB's 2007 SCM for the tub and tile category, as Rule 1113 cannot be less stringent than the SCM. The SCE is intended to be for small niche applications and for touch up; it is not meant as a safety valve for the VOC limits. Staff is always open to inquiries or requests to carve out niche categories where necessary.

As for delaying the proposed phase out of the SCE until the higher fees go into effect, staff delayed the implementation date of the higher fees (but not the lower fees) based on feedback from industry to wait until the phase out of the SCE went into effect. Staff is no longer proposing to amend the fee rate in Rule 314 at this time.

Staff acknowledges the emissions from architectural coatings have been decreasing but PAR 1113 still must achieve the reductions that were committed to in the 2012 AQMP. In the case of the clear wood finishes, the exponential increase in sales was the basis for eliminating the SCE for that category. In the case of RPCs and nonflats, the large volume of sales and the currently available compliant coatings is the driver for the change. The SCE makes up 1% of the current coatings sales, but represents 23% (this number increased from 2013 - 2014) of the emissions.

In regard to rule circumvention, as previously mentioned, enforcement staff cannot be at all job sites at all times. Further, the enforcement staff finds examples of rule circumvention that could not have been foreseen, such as the empty labeled quart containers.

As for the SCE being available as an alternative option, there is precedent for eliminating the exemption as was done for clear wood finishes in 2006. The proposal is not to eliminate the exemption for all categories at this time, but to restrict the exemption for categories using it for large volume sales, for categories that do not use or need it, and for small niche categories where there is already a high-VOC

limit allowed. Staff has proposed further limiting the SCE in the past, (as recently as during the 2011 amendment) so this proposal is not counter to our historical position.

Response to comment 7-4a

It is staff's position that since the SCE is only being used for very small quantities for flat coatings, the exemption and flexibility is not needed.

Response to comment 7-4b

Staff investigated the coatings reported under the nonflat high gloss category and found that 94% of those products meet the current VOC limit of 50 g/L. Based on the compliance rate, staff found no justification to carve out a higher VOC category for 'Door, Trim and Cabinet' coatings. As for the nonflat category as a whole, they are second only to RPCs in the sales volume of coatings sold over the VOC limit and third highest in emissions, based on the 2013 Rule 314 sales data. There were over 100,000 gallons of non-compliant nonflat coatings sold in 2013. The high sales volume is the reason staff is proposing to phase out the exemption for nonflat coatings.

Response to comment 7-4c

As indicated in response to comment 6-2, the proposal to restrict the SCE for IMCs is based on potential rule circumvention and not for the emission reductions. Staff has accommodated the requests from industry to allow for the sales of one liter or small containers above the VOC limit for touch up of factory applied coatings, provided they are not sold at a retail outlet. The question of what it entails to be sold at the retail outlet has come up before in regard to local manufacturers who produce or store coatings over the VOC limit for shipment to other jurisdictions. This practice has been allowed provided evidence can be shown that coatings supplied, sold, offered for sale, marketed for sale, manufactured, blended, repackaged or stored in the SCAQMD are for shipment outside of the SCAQMD. A similar principle can be applied for sales at a retail outlet; the high-VOC IMCs sold under the SCE can be on site and sold at a local retail outlet as long as they are not displayed on the retail shelf or advertised for sale. Staff addressed this comment by rewording the restriction to indicate the products cannot be displayed or advertised for sale at a retail outlet. The coatings cannot be displayed on the shelves but could be made available for touch up use only by storing them behind the counter or as a special order.

Response to comment 7-4d

Please see the response to comment 3-12 and 4-2 for further discussion on the performance testing of RPCs.

Feedback from the segment of industry who produces solvent based RPCs indicate the exempt solvent based products work just as well as conventional solvent based products. Feedback from manufactures who produce waterborne RPCs, indicate that their products are as good if not better than solvent based RPCs. Staff can find no technical or performance reason to keep the SCE for RPCs, other than the profit margin argument. Staff acknowledges the exempt solvent technology will be more expensive to produce; this is an issue that many other segments of industry have faced. Industry pursued the inclusion of exempt solvents in Rule 102 – Definitions, as a tool for lowering the VOC content of coatings, even with the associated higher costs. Parachlorobenzotrifluoride (pCBtF, commercially available as Oxsol-100) is an expensive solvent compared to conventional solvents (around \$2/pound versus less than \$1/pound for mineral spirits). However, there are other options available, including one from TBF Environmental Technologies (certified under the Clean Air Solvents (CAS) protocol as less than 25 g/L), as replacements for conventional solvents.

Staff already demonstrated that low-VOC RPCs perform as well as their higher-VOC counterparts in the technology assessment conducted in 2005. Industry, academia, a contractor, and other regulatory agencies were included in the design of the test as well as the selection of the coatings. This study was presented and accepted by the Governing Board prior to the 100g/L VOC limit being adopted.

Staff is not confusing IMCs with RPCs, the restriction of the SCE for IMCs is to prevent rule circumvention through creative marketing. As for the need for surface preparation, there is nothing in the definition of a RPC that indicates they only include coatings requiring no surface preparation.

In response to freeze thaw, this is not a major concern in the SCAQMD. In fact, based on feedback from recycled coating manufacturers, coatings collected through PaintCare or house hold waste collections that are up to 15 years old are still acceptable raw material for their products. If there were freeze thaw issues, these coatings and the newer low-VOC and near-zero-VOC coatings would not be viable.

ACA states that they support the comments provided by Rust-Oleum, which includes lowering the VOC limit on PSUs. However, the ACA's letter also indicates that lowering the VOC limit for PSUs is a problem for industry.

Response to comment 7-4e

Please see the response to comment letter 5.

Response to comment 7-4f

Please see the response to comment 3-11.

Response to comment 7-5

Staff included a phase in date of January 1, 2017 for the colorant labeling requirement,

Response to comment 7-6

Please see the response to comment 3-7. Staff extended the effective date to January 1, 2019 to allow for more time for high-VOC coatings to work their way through the system. During this time, more low and zero-VOC coatings will become available for recycling to offset the occasional high-VOC product. Staff does not believe that there will be an increase in waste or cost associated with the manufacturer of recycled coatings and received overall agreement from the local recycled coating manufacturers on the proposed change.

Response to comment 7-7

The 50 g/L VOC limit that is in proposed amended Rule 1113 was based on feedback received from the building envelope manufacturers. In addition, staff evaluated the building envelope coatings that are currently being offered for sale in the SCAQMD. Staff found that all but three meet the future limit; of those three two do not meet the current limit and therefore are not legal to sell in our jurisdiction. Those three coatings need to be reformulated to be compliant with the future VOC limit effective January 1, 2019, and two of the three need to be removed from our jurisdiction until they are reformulated to meet the current 100 g/L limit.

Response to comment 7-8

Please see the response to comment letters 1 and 2.

Response to comment 7-9

Staff supports the concept of transfer efficiency in the form of a Best Practice Guidelines and a training/certification program to further reduce the emissions inventory from architectural coatings. Staff will commit in the resolution to develop a Best Practices Guideline and training opportunities to improve transfer efficiency. As this program matures, staff will work on including enforceable provisions in Rule 1113 in the future.

Response to comment 7-10

SCAQMD laboratory staff is working with the USEPA to validate M313 and determine an acceptable precision and bias statement for the method. Staff will continue to keep industry involved during this process by holding quarterly meetings with interested stakeholders. The precision and bias study will meet the USEPA requirements, which may or may not include a round robin study. SCAQMD laboratory staff is not in favor of using the M6886 round robin results as M313 contains significantly more quality control requirements. Staff has concerns about conducting another round robin specifically for M313 as no laboratories are currently performing the method. Staff is not confident that laboratories will significantly change their analytical procedures to reflect the extensive quality control requirements in M313.

Based on subsequent conversations regarding the suggested matrixes for the exclusionary method, staff concluded that there was a misunderstanding regarding the suggested matrices. The flat, nonflat, and resin matrix concepts were intended for the exclusionary spiking study and not the precision and bias study.

Upon USEPA approval, staff commits to using the ASTM D 6886 round robin study until the validation of Method 313 is completed.

Response to comment 7-11

M313 has historically been used for a variety of samples, including the CAS samples, which do not reach a stable weight in the oven during a M24 analysis. The majority of work that has been conducted thus far is to address the largest deficiency in M24, which is the lack of precision for high-water, low-VOC samples. That is what the work has focused on. Staff agrees there is a small subset of coatings that may benefit with a TGA method. A TGA method would be easier than the GC method. That said, ASTM E1868 was developed for metal working fluids, which have a limited service life. The time and temperature parameters (110 minutes versus 60 minutes, but at 81°C instead of 110°C) are much less stringent than M24 and will not result in equivalent results. Staff will commit to working with industry and the USEPA on these non-film forming coatings to develop an appropriate test method. Staff is open to the concept of a TGA method with equivalent parameters and results to M24.

Response to comment 7-12

Staff will include a resolution to continue to work with industry and the USEPA to consider if certain amines should be excluded in the VOC calculation. Staff agrees the current exclusionary method is only meant for un-reactive compounds.

Staff agrees only a limited number of compounds have been tested in the proposed spiking method, those results agree with the previously conducted film extraction testing that found few if any compounds were retained in the film. For the spiking method, staff focused on those compounds that were slightly retained or not retained in the previous studies. The concept behind the exclusionary method is industry will conduct the test the compounds of interest and present their results to the SCAQMD and USEPA for consideration and validation. The oils that are not measured as VOCs, include non-methoxylated bio-

based fats and oils such as linseed, canola, soy, olive, grapeseed, tung, and safflower oils as well as fats such as beef tallow and pig lard. Essentially, if these oils are injected into a GC, they never elute. Staff will dedicate a webpage on the SCAQMD website on this work and the conclusions of the work, including references to excluded compounds and the methods used to demonstrate a compound should be excluded.

Staff agrees to change the screening step to less than or equal to the vapor pressure of MP.

Staff disagrees with the suggestion that tetraethylene glycol (EG4) should be used as a surrogate for MP in the spiking method. Although staff agrees the neat properties of EG4 are closer to MP than DBP, all the work conducted during this method development has shown compounds behave very differently neat than when in a fully formulated coating. The original goal of all this work was to demonstrate equivalency between M24 and M6886. Equivalency can be demonstrated by showing the compound does not leave the film during a M24 analysis. The work thus far, shows that EG4 does leave a paint film while DBP does not leave to a significant extent. Of all the compounds studies so far, EG5 stays in the film to the greatest extent and would serve as a better surrogate than EG4.

Staff will include the excluded compounds on the SCAQMD website once the USEPA has approved the procedure and results. For compliance purposes, when EG5 is detected in the sample during a M313 analysis, it will not be included in the VOC calculation.

Response to comment 7-13

Staff is in discussions with the USEPA on this concept of reducing the emission inventory for architectural coatings to account for un-used coatings. Any data provided by the ACA would be helpful; thus far this has only been a concept with no data to back-up the claims of 10% in un-used coatings.

Response to comment 7-14

Staff agrees the publically searchable database will be a great resource for end users, contractors and specifiers to find compliant and super-compliant coatings sold in the SCAQMD, but does not think it will lead to permanent and enforceable emission reductions. Staff is working on a mechanism to allow manufacturers to flag products that are being discontinued, such that they are not displayed.

Response to comment 7-15

Please see the response to comment 3-1.

Response to comment 7-16, 7-17, 7-19, 7-20, 7-21,

Staff concurs with these comments.

Response to comment 7-22

This comment will be considered in the rule making process for Rule 1161.

The following are comments from Sherwin Williams – Comment Letter #8.



Comment Letter #8

SHERWIN-WILLIAMS.

Corporate Headquarters
101 Prospect Avenue NW
Cleveland, Ohio 44115-1075

Wednesday, September 09, 2015

SCAQMD HEADQUARTERS
21865 Copley Drive - Diamond Bar, CA 91765
SCAQMD PAR 1113 VOC Test Method Comments

The Sherwin-Williams Company (Sherwin-Williams) appreciates the opportunity to comment on Rule 1113. Sherwin-Williams supports the comments filed by the American Coatings Association. Sherwin-Williams would also like to address issues regarding use of Method 313 as the analytical method for volatile organic compounds (VOC) compliance used by the SCAQMD for Architectural and Industrial Maintenance (AIM) coatings. Sherwin Williams believes that the SCAQMD is generally applying Method 313 for the correct reasons. However, there are important facts that clearly indicate the method is not appropriate for use when measuring VOC from certain coating technologies employed in AIM coatings regulated by Rule 1113.

It is widely recognized that EPA Method 24 (M24) is increasingly antiquated and unreliable for determining the VOC content of products containing: 1) significant amounts of semi-volatile materials when tested for volatile content under ASTM D 2369 Standard Test Method for Volatile Content of Coatings and 2) increasing amounts of water in lower VOC formulations (i.e., <150 g/L material).

The SCAQMD has developed Method 313 Determination of Volatile Organic Compounds (VOC) by Gas Chromatography/ Mass Spectrometry/ Flame Ionization Detection (GC/MS/FID) to address shortcomings related to M24. Method 313 (M313) is similar to ASTM method D 6886; however, we understand that M313 is considered more robust for enforcement purposes by the SCAQMD.

Sherwin-Williams agrees that M313 is an appropriate analytical method for most AIM formulations containing water and having a material VOC of 150 g/L or less. However, the District has neglected to address certain materials that are subject to Rule 1113, which do not achieve reproducible and defensible analytical results sufficient to support an enforcement action using M313. The problematic materials are semi-volatile, complex hydrocarbon mixtures containing a wide range of relatively high carbon number compounds (e.g., C15 – C50) that straddle the endpoint quantitation marker of M313 (methyl palmitate), itself a semi-volatile compound.

When will Method 313 be used?

Here is an excerpt from the Draft M313 version 2013.

"Method 313 applies to materials such as paints, coatings, solvents, and other liquid/dispersed-solid materials containing less than 150 g/L VOC material as measured by SCAQMD Method 304-91 or Environmental Protection Agency Reference Method 24 (EPA M24). It may also be used for materials which do not reach a stable weight by EPA M24, with a demonstrated additional weight loss of greater than 0.2% absolute or 3% relative difference (whichever is greater) after one additional hour of oven heating. "

Please note the assumption that Method M313 is intended to be used on coatings that are 150g/L or less VOC. Under the above referenced scenario, M313 may be used anytime a stable weight under M24 is not achieved, even if the VOC is not 150 g/L or less. There is no basis for this application of M313, and it ignores the District's own actions to the contrary. In fact, instability of weight loss for certain coatings using M24 is a good indication that a different method should be used, but the use of M313 is not appropriate, accurate or even reproducible for certain coatings technologies.

The following examples are designed to highlight the shortcomings of using M313 as the only other method to be employed besides M24, as described in the M313 preamble.

Example 1

Efforts by South Coast to develop an appropriate protocol for measurement of VOC content of semi-volatile, complex hydrocarbon mixtures during the rulemaking to amend SCAQMD Rule 1144 Metalworking Fluids and Direct Contact Lubricants resulted in development, validation and approval of ASTM E 1868 Standard Test Method for Loss-On-Drying by Thermogravimetry, which was selected by District Staff for inclusion in Rule 1144, along with ASTM D 4017 for water content and SCAQMD Method 303 for exempt solvent content. Although work was also done to develop a chromatographic method, SCAQMD Method 313-L Determination of VOC Hydrocarbon Compounds in Lubricants (a modified version of Method 313), Method 313 did not achieve the agreed upon validation criteria and was not included in Rule 1144.

Example 2

The District's proposal for the aforementioned revisions to Method 313 (released 8/14/13) includes a provision in Section 1.0 Scope and Application that makes Method 313 applicable to materials containing less than 150 g/L VOC material as measured by Method 304, including materials that do not reach a stable weight by ASTM D 2369, behavior that is typical of semi-volatile compounds and mixtures used in architectural coatings. Some of these products are similar to the complex hydrocarbon mixtures found in metalworking fluids and direct contact lubricants and are in a carbon number range that will elute numerous compounds both prior to and after the quantitation endpoint marker (methyl palmitate), making valid results using Method 313 difficult, if not impossible, to achieve (please see example 1).

Example 3

The District has indicated that form release compounds will be removed from Rule 1113 and regulated under a new rule 1161. Although early in the process, the information provided at the first workgroup meeting indicated that the District is removing these materials from Rule 1113 due to the difficulty in analyzing components commonly found in the form-release agents using M313. Of note, materials used in many form-release compounds are similar or identical to the previously mentioned semi-volatile, complex hydrocarbon mixtures containing a wide range of relatively high carbon number compounds (e.g., C15 - C50).

Example 4

The District has proposed the inclusion of Method 313 into Rule 1113. Unfortunately Rule 1113 does not address or include the critical issue of when it is appropriate to use Method 313. This approach is flawed since the criteria for appropriate use of Method 313 should be subject to the rulemaking process. By simply referring to Method 313 but not addressing the appropriate use issue in Rule 1113, the District is circumventing due process and avoiding the discussion in a public forum.

Example 5

The District has proposed an exclusion pathway concept that is incomplete and not comprehensive. For enforcement purposes, the SCAQMD is required to provide a fair and reproducible method to determine VOC content for its enforcement activities. The exclusionary pathway has not been tested for each different coating technology covered under Rule 1113. Instead, the District is proposing using its exclusionary pathway concept with only a scant three matrices. The District currently does not know if this concept will work until each of the different coating technologies covered by the rule is tested.

Conclusions

Test methodology that has been validated and is capable of meeting data quality requirements is critical for determination of compliance status and for enforceability of Rule 1113. The District has an obligation to provide manufacturers with appropriate test methods for determining compliance of products with the District's VOC rules. The methodology(ies) must be robust and reproducible. Accordingly, we strongly recommend that the District establish ASTM E 1868 as the method for determination of volatile content when an architectural coating or associated raw material does not reach stable weight as defined in draft Method 313 and the individual compounds contained in semi-volatile mixtures elute both before and after methyl palmitate. Run conditions for ASTM E 1868 should remain the same as those required by Rule 1144 (81°C for 110 minutes) since results of the District's research on non-volatile, semi-volatile and volatile organic compounds at 81°C for 110 minutes most closely replicates ambient evaporation under extreme conditions (40°C for six months).

Thank you in advance for your attention to this matter as it is very important to The Sherwin-Williams Company.


Barrett L. Cupp
Director of Product Compliance

Response to comment letter 8

Staff appreciates the support from Sherwin Williams for including M313 and M6886 in Rule 1113 for low-VOC coatings containing high water content. Those coatings represent the largest volume of coatings where M24 loses precision. There is a much smaller volume of coatings that have issues with SVOCs. The vast majority of coatings samples received by the SCAQMD laboratory reach a stable weight when analyzed by M24, most exceptions are outside of the architectural coatings world, such as the CAS Certification Program where many bio-based oils are submitted for testing. Staff has come across form release compounds, some of which are also formulated with almost 100% bio-based oils. The laboratory staff has a long history performing M313 on CAS samples and this is the most accurate method for their analysis.

The analysis of very complex hydrocarbon mixtures by gas chromatography is a time-tested procedure, as exemplified by:

- **ASTM D2887 Standard Test Method for Boiling Range Distribution of Petroleum Fractions by Gas Chromatography (55°C to 538°C) ASTM D 6352 Standard Test Method for Boiling Range Distribution of Petroleum Distillates in Boiling Range from 174 °C to 700 °C by Gas Chromatography.**
- **EPA SW-846 Method 8015B Non-Halogenated Hydrocarbons by Gas Chromatography,** applicable to gasoline range organics (GRO) and diesel range organics (DRO).

These and similar methods are routinely used by the petroleum industry, regulatory bodies, and consulting laboratories for analyzing complex hydrocarbon mixtures over large carbon-number ranges, with good repeatability. There is no technical reason why complex hydrocarbon mixtures cannot be analyzed by Gas Chromatography with reproducible and defensible results, since similar methods are used regularly for enforcement and commercial purposes. In reality, the highest carbon numbers addressed by M313 is between C19 and about C20, since that is where the chromatographic cutoff point exists.

Example 1: Not including M313 in Rule 1144 – Metalworking Fluids and Direct-Contact Lubricants. This was not due to issues with the validation criteria, but because of the lack of participation by industry laboratories. In fact, there is no way to determine if M313 meets the criteria or not, due to the lack of completion by several laboratories which had expressed an interest in participating and received samples. The interlaboratory was designed using ASTM protocol and without a sufficient number of participating laboratories, a final ASTM-type statement of repeatability and reproducibility could not be determined.

Example 2: Please see response to Example 1. Also, please note the range of hydrocarbons that will be encountered in M313 is not the overly broad characterization, but is limited from C6 to no more than C20.

Example 3: The proposal to remove form release compounds from Rule 1113 has nothing to do with the VOC test method; staff would not propose to remove a category because a test method was inadequate.

Staff is developing Rule 1161 – Release Agents to address multiple release agents that are currently unregulated. Because Form Release Compounds and Bond Breakers serve a purpose that is more in line with proposed Rule 1161, staff is proposing to remove them from Rule 1113. Staff is open to finding a faster and simpler test for evaluating certain form release compounds, but M313 works for these complex matrices. During the method development in 2011, laboratory staff evaluated a form release compound that was a petroleum oil with less than 2% water by M313, M24 and the less stringent ASTM E1868 and found the following:

	VOC (g/L)		
	M313	M24	E1868
Oily Form Release Compound	200	230	60

The relative agreement between M313 and M24 and significantly lower results for ASTM E1868 demonstrates staff's concern over using this method, which was developed for metal working fluids and lubricants.

Sherwin Williams repeatedly alleges, without evidence, M313 is irreproducible for SVOCs. And yet clearly, many gas chromatographic methods are employed today to analyze even more challenging carbon ranges than those under M313's applicability.

Example 4: The statement of the range of samples which can be reasonably analyzed by the subject method is found in the "applicability" section of all methods, including USEPA and ASTM procedures. The "applicability" section of M313 is being developed with the full review and participation of interested parties, including Sherwin Williams. The SCAQMD welcomes their comments to improve the method.

Example 5: The SCAQMD is providing a reproducible method for enforcement of VOC content, which is Method 313. Any exceptions to the method are for industry to petition to the District and the USEPA. The District is simply trying to provide a reliable procedure which will generate sufficient data, of reasonable quality, by which exceptions can be petitioned and evaluated by regulatory bodies.

The work on the exclusionary method began because industry had concerns M313 was not equivalent to M24. All of the work conducted thus far has shown that M313 is consistent with M24 and all, but maybe one of the 100 compounds industry cited as compounds of concern have been shown to leave the paint film, e.g. what is measured as a VOC in M24 is measured as a VOC in M313. The SCAQMD and the USEPA will continue to work with industry as the last remaining details are worked out and both Methods 313 and 319 (the exclusionary method) are validated. The SCAQMD does not intend to test every possible matrix or coating to demonstrate if a compound should be excluded. The concept of the exclusionary principle is to test several representative matrices that are recommended by industry and approved by the SCAQMD and USEPA, and make a determination if the compound leaves or stays in the paint film. The concept was never intended to exempt specific compounds from specific coating formulations as this would be extremely complicated and burdensome on both the regulated community as well as the regulating agencies. As stated above, the concept was for the SCAQMD to develop a protocol for industry to use to validate if a compound should be excluded, the SCAQMD never intended or committed to test every possible matrix; this would be an endless task. In fact, throughout this process, the SCAQMD tried to put the burden of developing a test method on industry but very little work was produced, other than the extensive work conducted at Cal Poly SLO. From the point of view of the SCAQMD, setting the endpoint at MP resolved the analytical uncertainty with M313 and solved the issue of equivalency. The SCAQMD was open to addressing industry's concerns about SVOCs and has spent at least two years intensely studying this issue. Methods 313 and 319 will address the vast majority of the volume of coatings sold where M24 loses precision. No analytical method is going to resolve every possible scenario, but what has been developed is a great improvement over the status quo and it is time to move forward and adopt these test methods.

Lastly, ASTM E1868 has been seen to be far less stringent than M24 (the national standard) when determining VOC of semi-volatiles. The USEPA does not allow method changes that significantly reduce stringency of enforcement. The differences in results between the ASTM method E1868 and M24 are dramatic; a point which staff will bring to the USEPA.

Unlike ASTM E1868, M313 was evaluated against M24. In addition, the cutoff embedded in M313 is consistent with the dividing line used by modelers to distinguish VOC from SVOCs. In addition, the proposed method itself is subject to another flaw which is that it cannot reliably analyze the VOC content of samples which contain water in anything other than trace levels. Upon USEPA approval, staff is open to the development of a TGA method that is equivalent to M24 as this could serve as simpler method for the analysis of a small sub-set of architectural coatings (non-film forming samples containing trace amounts of water). This would serve as a time and cost saver for both industry and regulatory agencies, but not because M313 is not an appropriate VOC test method.

The following are comments from the Roof Coatings Manufacturers Association – Comment Letter #9.



www.roofcoatings.org

Comment Letter #9

September 11, 2015

Ms. Heather Farr
Office of Planning, Rule Development, and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: SCAQMD Proposed Amended Rules 1113 and Rule 314 on Architectural Coatings and Fees

Dear Ms. Farr:

The Roof Coatings Manufacturers Association (RCMA) and its member companies appreciate the opportunity to provide the following comments on the issues discussed at the August 26, 2015 South Coast Air Quality Management District (SCAQMD or the District) Rules 1113 and 314 meeting, and VOC Workgroup meeting. RCMA wishes to convey to SCAQMD Staff our position, in order to find a reasonable solution on the proposed regulations and the clean air benefit.

RCMA appreciates SCAQMD Staff's willingness to explore regulatory and non-regulatory options to achieve VOC emissions reductions to satisfy its commitments from the 2012 Air Quality Management Plan (2012 AQMP) for the South Coast Air Basin. Furthermore, we support these efforts and welcome the opportunity to continue discussions with the District.

Background on the Roof Coatings Manufacturers Association

For over 30 years, RCMA has served as the national trade association representing a large majority of the manufacturers of asphaltic and solar reflective roof coatings and the suppliers to the roof coatings industry. Roof coatings protect commercial and residential roofs against water, chemicals, and physical damage. This can extend the life of the roof system, reducing building-owner costs and tear-off waste. Roof coatings have numerous benefits to energy use and the environment. Reflective roof coatings lead to lower roof temperatures, which in turn reduce the Urban Heat Island Effect, air conditioning costs, and peak energy use. The vast majority of RCMA member companies are family-or employee-owned, privately held small businesses. One of RCMA's primary roles is to translate complex regulatory language into actionable easy to understand directives and information pieces for its members that improve compliance with these regulations.

Over the last few decades, ninety percent of VOC content has been eliminated from roof coatings. Of significant concern to RCMA members are the ever-increasing regulations governing volatile organic compounds (VOC) in coatings. VOCs are contained in roof coatings for several reasons. Solvent-based coatings can be used as an alternative to waterborne technologies; especially where freeze/thaw resistance and product application and storage in cooler climates or in winter months is required. VOCs are used to dissolve solids to keep coatings in a liquid phase, allowing for them to be applied prior to the solvent flashing out and the product curing to form a solid layer. Furthermore, coatings may be formulated with VOCs because of the solvents' ability to soften the substrate that the coating is being

National Press Building • 529 14th Street, NW, Suite 750 • Washington, DC 20045 • Phone: 202.591.2452 • Fax: 202.591.2445 • www.roofcoatings.org

applied to, improving the application and ultimate performance of the coating. As VOC content limits are lowered in different roof coating architectural and industrial categories, the effectiveness of the product is compromised.

Proposed Definitions

RCMA appreciates the proposed revisions and edits made by SCAQMD during the working group meetings. Below are suggested revisions for further clarification and to minimize confusion:

9-1

A. Roof Coatings

RCMA and its members know of the variety of uses and benefits to roof coatings. We suggest adding the various uses of roof coatings to round out the definition. Similar to the definition of Driveway Sealers (18), revising the definition of roof coatings to read:

“Roof Coatings are coatings formulated for application to exterior roofs for the primary purpose of preventing water penetration into the underlying surface; or reflecting heat and ultraviolet radiation, or sealing and protecting the substrate or restoring or preserving the surface appearance.”

B. Mastic Coatings

RCMA recommends clarifying that the mastic coatings definition excludes roof coatings products. Highly used are references of flashing cement as mastics in the roofing industry, which can lead to regulatory confusion. RCMA suggests adding “excluding roof coatings” to this definition to clarify the difference in products. We recognize that “flashing cement” is regulated under Rule 1168 for adhesive and sealant applications, but feel it’s important to clarify for purposes of the rule definition. Revised, the definition would read:

“Mastic Coatings are coatings formulated to cover holes and minor cracks and to conceal surface irregularities, excluding roof coatings, and applied in a thickness of at least 10 mils (dry, single coat).”

Industry Considerations

9-2

A. Limited Justification for Extensive Changes to Rule 1113

As mentioned during the Workshop, the District has already met its 2012 AQMP Commitments for the Architectural Coatings Source Category. RCMA commends the District for making reductions that exceed the inventory goals of 2 to 4 tons per day (tpd) for this source category. We believe these efforts, as demonstrated through the downward trend summary from 2008 until 2014, should be celebrated and not to enforce further regulatory action to reduce VOCs from AIM coatings. Preliminary Rule 314 data from 2014 demonstrates that the District has already achieved, and well exceeded, the CTS-01 2019 targets of 12.2-14.2 tpd by over 2 tpd for the source category. Therefore, the District should consider other source categories to reduce VOCs.

9-3

B. Incorporation of Rule 314 Fee Rate in SCAQMD State Implementation Plan

RCMA supports the SCAQMD's efforts to include Rule 314 in the District's State Implementation Plan (SIP) to validate and track volatile organic compound (VOC) emissions from architectural and industrial maintenance (AIM) coatings and demonstrate attainment with the South Coast Air Quality Management Plan's VOC emissions reductions targets.

As mentioned above, SCAQMD is exceeding tpd goals for the AIM source category. To ensure the District is accurately tracking Rule 314 data and meeting its SIP commitments, we recommend good faith measures to assist the timely manner that manufacturers report VOC product emissions. These good faith measures or incentives could be to waive the application fee of \$187.85 for low-VOC products, or the standard evaluation fee for the following year.

9-4

C. Exempt Compounds

The District should fully exempt tertiary butyl acetate (TBAC) and di-methyl carbonate (DMC) to be consistent with the Environmental Protection Agency. TBAC was exempted for industrial maintenance coatings after SCAQMD staff conducted a very conservative risk assessment and found that TBAC-based coatings would not pose a health threat. DMC has successfully been used in a number of coatings formulations. An exemption for DMC would provide another useful tool for formulators. DMC is VOC exempt in almost all areas of the US except the South Coast. We suggest that the District exempt both compounds for industrial and architectural coatings.

9-5

D. Building Envelope Coatings

RCMA does not support lowering the Building Envelope Coating limit. This is a new category with lack of accurate sales data by CARB and SCAQMD. In a similar fashion to the product sale data, SCAQMD should spend a few years gathering accurate data to determine if this category should be reduced.

Considering the substantial cost associated with the testing of air barriers, or building envelope coatings, the District should reconsider this category. Industry estimates show that reformulation and retested by the three test methods defined in the category definition will cost of approximately 30-40k per product.

Test Methodology

9-6

A. Method 313 and Incorporation of ASTM D6886 Precision Statements

RCMA is concerned by the unfamiliarity of other labs in conducting Method 313. To date, the District has only evaluated the internal precision of Method 313. This evaluation of three operators using the same piece of equipment resulted in an error band of 5 g/l material VOC. While RCMA believes the District has made great progress with Method 313, we are concerned with how other labs conducting Method 313 will compare to the SCAQMD results. This information is especially critical for coatings manufacturers since they need to know how far below the regulatory limit they need to formulate to account for precision differences between their testing equipment and the District.

Additionally, the preparation of "validation" of Method 313 by EPA Method 301 "Field Validation of Pollutant Measurement Methods from Various Waste Media" is a concern.

9-6
cont.

Especially, when the assessment of validation is derived via external "interlaboratory" (from lab to lab) precision.

During the workshop, SCAQMD staff spoke highly of ASTM D6886 as reliable and that they understood that it's more widely used in laboratories for manufactures. However, the District will not consider a suggestion by the American Coatings Association (ACA) to use ASTM D6886 precision statements for measuring volatility compared to Method 313. This is highly confusing to RCMA and we agree with ACA on this issue. We understand that for reporting purposes ASTM D6886 is an accepted test method - however, should a product be pulled from the shelf and tested, it will be via Method 313. There is no uniform measurement if the results between a manufacturer utilizing D6886 and the results from Method 313 differ, especially if obtained by the SCAQMD laboratory. Furthermore, there are no other third-party laboratories that the manufacturer can test a product for volatility via Method 313. Without some concession on the incorporation of precision statements from the more universally accepted method ASTM D6886, we fear there will be a comparison of apples to oranges during the regulatory enforcement and lead to more complications of compliance.

Further on page 15 of the Staff report, the District cites, "for compliance purposes, [the District] will provide a guidance document to explain the differences between the two methods such that a manufacturer utilizing D6886 will be aware of how their results could differ from results obtained by the SCAQMD laboratory". And, the presentation on August 26 provided the key similarities, key differences, and required changes to D6886 that would need to be made to make D6886 similar to Method 313. However, this does not solve the concern if manufactures are allowed to report of VOC emissions via D6886, but not accepted if submitting a rebuttal to a Notice of Compliance – cited by SCAQMD laboratory results via Method 313. RCMA once again, agreed with ACA and suggests that the D6886 round robin precision statements be accepted, and they are the only data we have that can answer this key compliance question.

9-7

B. Exclusion Pathway

RCMA appreciates the time and effort that the District has committed to developing an exclusion pathway. And, we suggest that the District's choose an appropriate surrogate that would have the same volatility as methyl palmitate, not dibutyl phthalatae. The purpose of the exclusionary pathway is to determine whether or not a compound or complex hydrocarbon mixture is less volatile than methyl palmitate. Dibutyl phthalate appears to have a significantly lower vapor pressure than methyl palmitate. Therefore, we suggest selecting a surrogate with the same volatility as methyl palmitate.

Conclusion

RCMA and its member companies are dedicated to developing products that minimize negative impacts on air quality while offering coatings with performance characteristics consumers require. We are pleased with the progress that SCAQMD has made to exceed VOC emissions goals, but would like to continue the progress in a feasible manner that does not impact quality of the end-product. RCMA suggests considerations are made for Rules 1113 and 314 on the definitions, test methodology, and based on the industry's observations in the field.

The Association appreciates the positive relationships we have built with the South Coast Air Quality Management District and looks forward to continuing collaboration to work toward improved air quality and achievable regulatory activities.

Sincerely,



John Ferraro
Executive Director
Roof Coatings Manufacturers Association (RCMA)
750 National Press Building
529 Fourteenth Street, NW
Washington, D.C. 20045

Response to comment 9-1

This is the first time staff has heard of this confusion from industry but does not see an issue with the proposed change.

Response to comment 9-2

Please see the response to comment 4-2 and 7-1.

Response to comment 9-3

Staff will continue to work with the USEPA to determine if submitting Rule 314 to the SIP could result in creditable reductions. At this time, staff's understanding is this will not result in SIP creditable reductions.

Response to comment 9-4

Staff will not propose any change to the tBAC exemption until the final, peer reviewed analysis is released in early 2016. Staff is not considering an exemption for DMC primarily due to toxicity concerns, but also because no case was made for the need to exempt DMC. During the year and a half long process, DMC was never a serious topic of concern. Staff is not proposing major reductions to the VOC limits such that DMC is needed.

Response to comment 9-5

Staff has evaluated the coatings that are currently being supplied into and within the SCAQMD and all but one of the compliant coatings meet the future VOC limit. Staff does not want to allow time for higher-VOC coatings to enter the market to justify a higher VOC limit. The current sales weighted average of 22 g/l supports the proposed 50 g/L to go into effect January 1, 2019. Further, the manufacturers of these products initially supported the proposed 50 g/L limit.

Response to comment 9-6

Please see the response to comment 7-10. As for formulating below the VOC limit to account for the test method, the error bands in place provide a large buffer such that this should not be a concern. It is not uncommon to formulate below the VOC limit to account for batch to batch differences, but switching to a

more accurate test method should not be the cause for reformulation. M313 is far more accurate than M24 for low-VOC coatings so, if anything, the coatings can be formulated closer to the VOC limit without the risk of faulty results from the test method.

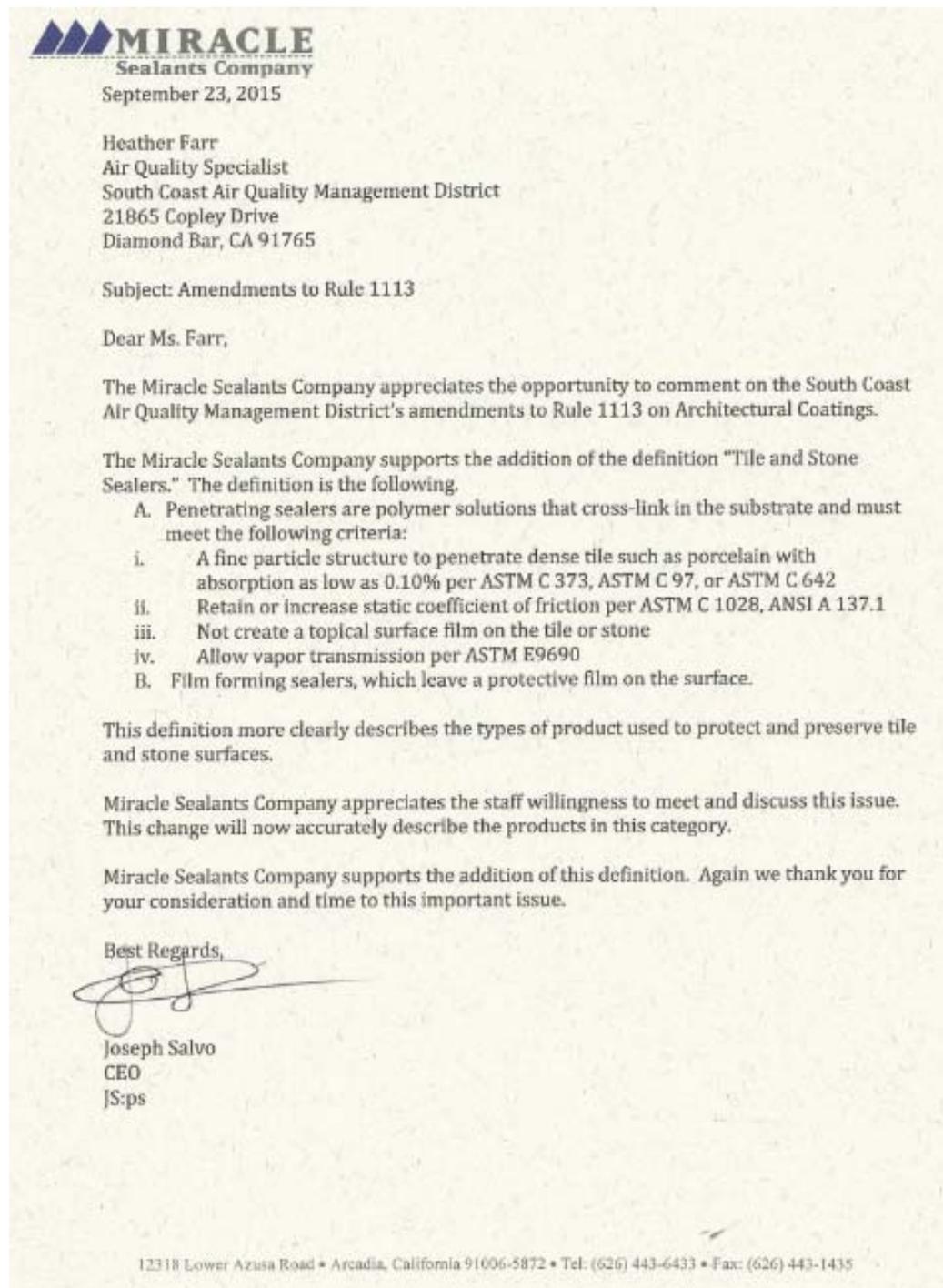
Staff included M6886 in Rule 1113 so manufacturers could rely on those test results for labeling and reporting their VOCs. This is no different than the current rule language that allows for manufacturers to rely on formulation data to report their VOCs. That does not preclude the SCAQMD from using a more similar method with more quality control standards for compliance purposes. It is additional quality control standards that make staff reluctant to adopt the round robin results for M6886. While the SCAQMD laboratory participated in the ASTM round robin for M6886 and their results were close to the median of all the laboratories, the results were not included in the statistical analysis of the error bands because the method was different. The same logic applies to the SCAQMD not wanting to adopt the results of the ASTM round robin.

Differences between laboratory results in the case of an NOV is not a new situation brought on by the inclusion of M6886 and M313. The SCAQMD has had to address these issues in the past either between two laboratories using the same test method (e.g. M24) or between formulation data and laboratory results. Staff will address these situations on a case-by-case basis with the manufacturers and/or the laboratory that analyzes the samples.

Response to comment 9-7

Please see the response to comment 7-12.

The following are comments from the Miracle Sealants – Comment Letter #10.



Response to comment letter 10

Staff appreciates the input from Miracle Sealants in crafting the definition and the support letter.

The following are comments from Raymond Regulatory Resources – Comment Letter #11.

Comment Letter #11



Raymond Regulatory Resources (3R) LLC

Doug Raymond 5857 Trumbull Rd. Geneva, OH 44041
[diraymond@req-resources.com](mailto:dிரaymond@req-resources.com) 440-474-4999

September 23, 2015

Heather Farr
Air Quality Specialist
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: Zinc Rich Coatings

Dear Ms. Farr,

Raymond Regulatory Resources (3R), on behalf of its clients appreciate the opportunity to comment on the South Coast Air Quality Management Districts amendments to Rule 1113.

First and foremost 3R appreciates the staffs willingness to meet and discuss the issues of the amendments, these meetings are invaluable to being able to work out issues between workgroup meetings.

11-1

There are two issues that 3R will comment on. 3R supports the addition of the Tile and Stone Sealer category. This new definition more appropriately describes products used for protection of these surfaces.

11-2

Next, 3R opposes the inclusion of the Zinc Rich Coating category in the prohibition of sales from retail outlets that is included in the small container amendments for the following reasons:

- Zinc Rich Coating has a specific definition, which is difficult to circumvent.
- Staff has stated that IM and Zinc Rich categories were added to prevent crossover from Rust preventative coatings. Due to the specific definition of Zinc Rich it is unlikely this switch can happen.
- The district never discussed the Zinc Rich category inclusion into the IM prohibition until August 19. This is very late in the process.

11-2
cont.

- Staffs own calculations show less than 0.01 TPD of emissions reduction from all IM coatings. This emission reductions will be even less for Zinc Rich Coating category.
- There is absolutely no history of the Zinc Rich Coating category being used instead of Rust Preventative Coatings.
- Staff acknowledges that using a small container of IM or Zinc Rich Coatings for touch up is better than recoating the entire surface.
- Zinc Rich Coatings are needed in small containers for touch up and should not be subject to a retail sales prohibition.

Thus, 3R opposes the Zinc Rich Coating inclusion into the prohibition for retail sales. Small containers of Zinc Rich Coatings are used for touchup.

Thank you for your consideration to these issues. If you need further information please do not hesitate to contact me.

Sincerely,



Douglas Raymond

Response to comment 11-1

Staff appreciates the comment in support of the proposed definition.

Response to comment 11-2

Staff concurs there will not be crossover between RPCs and zinc-rich primers. This restriction would fit better amongst coating categories not using the SCE. An average of 100 gallons of zinc-rich primer was sold annually under the SCE since 2008. These are not coatings offered for sale at retail outlets. These products are used for large projects involving structural steel, such as bridge projects, where corrosion is critical. This is not an application where one liter or smaller containers would be useful. Staff included the zinc-rich primers in subparagraph (f)(1)(E) to allow for one liter sized containers for touch up.

The following are comments from Cal Poly San Luis Obispo – Comment Letter #12.

Comment Letter #12



September 23, 2015

Heather Farr
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Ms. Farr:

I'm writing in support of the inclusion of AQMD Method 313 and ASTM Method D6886-14 as approved VOC measurement methods to be included in the revision of Rule 1113.

Our lab has been at the forefront of VOC method development in the US for nearly twenty years. We developed ASTM Method D6886 and related direct VOC methods.

The addition of these direct methods will at last codify what has been a *de facto* situation for the past several years, mainly the use of direct, gas chromatographic-based methods for analysis of low VOC waterborne coatings. These coatings cannot be reliably analyzed using indirect methods based on EPA Method 24.

I am also writing to support the inclusion of your proposed exclusionary pathway method for semi-volatile materials. This approach will allow for the exclusion of semi-volatile compounds which have been shown to be less volatile than your VOC marker, methyl palmitate. I also support the use of tetraethylene glycol as the surrogate for methyl palmitate in these tests, based on the experimental work I sent you earlier.

Please let me know if you have any questions.

Regards ,

Dane Jones, Ph.D.
Professor Emeritus

Response to comment letter 12

Draft Staff Report Proposed Amended Rule 1113

Staff appreciates all the contributions and support to the test method development from Cal Poly SLO. Their contributions have been invaluable to this process and staff is encouraged that all the hard work is coming to fruition as Methods 313 and M6886 are being proposed for inclusion in Rule 1113. There will be further development on the exclusionary principle and the precision and bias analysis. Staff looks forward to further discussions and working group meetings, including discussions on the appropriate surrogate compound for the film spiking method. For further discussion, please see staff's response to comment 7-12.

The following are comments from the American Coatings Association received after the September 17, 2015 Public Consultation Meeting – Comment Letter #13.

Comment Letter #13



September 25, 2015

Ms. Heather Farr
Office of Planning, Rule Development, and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: SCAQMD Rule 1113/Rule 314 Amendments; ACA Comments

Dear Ms. Farr:

The American Coatings Association (ACA) would like to provide the following comments on the issues discussed at the September 17, 2015 South Coast Air Quality Management District (SCAQMD or the District) Rule 1113/Rule 314 meeting. We are only addressing specific issues discussed at the September 17, 2015 meeting and incorporate by reference all previously submitted ACA comments on Rule 1113/Rule 314.¹

Zinc Rich Primers

13-1

ACA requests that the Small Container Exemption be retained for Zinc Rich Primers since for the following reasons:

- a. The District did not propose this change until the very last moment on August 19, so we have not had an opportunity to discuss this issue in depth.
- b. The zinc rich primer category is very specific, so circumvention via this category is highly unlikely.
- c. Zinc Rich Primers are very useful and their sale should not be limited.
- d. District Staff have acknowledged that using Zinc Rich Primers for touch-up applications is preferable to recoating an entire surface.
- e. The District will achieve negligible emission reductions through this change – less than 0.01 tons per day – while imposing a significant burden on manufacturers.

Tub and Tile Coatings

13-2

ACA strongly recommends that the District retain the small container exemption for the Tub and Tile Refinish category since the industry is struggling to meet the 420 g/l limit. As mentioned at the September 17 2015 meeting, during the California Air Resources Board's 2007 Suggested Control Measures negotiations, the industry believed that the 420 g/l limit was achievable, especially since it appeared at the time that TBAC would to be exempted in all California Air

¹ ACA's previous comment letters are dated: July 8, 2015; April 30, 2015; March 10, 2015; January 20, 2015 and September 10, 2015.

13-2 cont. [Districts. Unfortunately, TBAC was not exempted throughout California, and several companies are now struggling to meet the 420 g/l limit. Fortunately, these companies can utilize the small container exemption. However, this option will no longer be available in the SCAQMD. While we appreciate the extended compliance deadline of January 1, 2017, we request that the District retain the small container exemption for Tub and Tile coatings, or include a January 1, 2019 compliance date.

Industrial Maintenance Coatings “Not for Retail”

13-3 [The District should clarify in its Staff Report and Q/A memo that “not for retail” means that IM coatings may be sold at retail outlet if they are restricted to behind the counter or back room sales, as current policy dictates.

Recycled Coatings

13-4 [The District should not lower the VOC limit for Recycled Coatings to 150 g/L since ensuring compliance with this limit would drastically raise the costs of recycling, and reduce the use of recycled coatings by pricing them out of the market. A 150 g/L VOC limit would force paint recyclers to attempt to sort incoming recycled paints by VOC content, which is labor intensive, time-consuming, and not always possible when labels are torn, missing, or obscured by paint. In this case, recyclers would be forced to dispose of more product, thus increasing waste disposal costs. Recyclers would also be forced to submit a sample from every batch for VOC content testing at an independent laboratory, further adding to recycling costs.

A market for recycled paint exists only when the price to consumers is substantially less than virgin paint; every increase in the price of recycled paint reduces its potential market. Finally, the PaintCare program will incur higher costs, resulting in increased costs to manufacturers and consumers. Given these concerns, ACA believe the District should retain the current limit of 250 g/L, which was endorsed by the paint recycling industry specifically because it would not require unnecessary and expensive sorting and testing to ensure compliance, since all latex paints manufactured in the past 30 years have met this limit.

Method 313 and Method 319

13-5a [ACA appreciates all the work that staff has done with respect to Method 313 and the Exclusion Pathway. We have the following additional comments:

A. As discussed at the September 17, 2015 meeting, we are concerned that the internal instrument precision that SCAQMD is considering is different than the external instrument precision we have requested. While the internal precision may be helpful to determine how precise one instrument at SCAQMD may be, stakeholders also need to understand how precise outside lab instruments are compared to SCAQMD instruments. Coatings manufacturers need this information as they formulate products to meet the VOC limits. For example, if the precision between labs was plus or minus 10%, then manufacturers would formulate their coatings slightly less than 10% below the limit to ensure the coating will still meet the limit, including the precision “buffer.”

- 13-5b [B. We are encouraged that the District is considering referencing the ASTM D6886 precision until EPA approves “internal” precision and bias for Method 313. A simpler path forward would be to designate the current “error band” as internal precision, and permanently designate the D6886 precision as “external” precision.
- 13-5c [C. We are also encouraged that the District is considering completing a Method 313 round robin with external certified laboratories. We are concerned that the District is only using three laboratories, since ASTM recommends a minimum of six laboratories for a round robin to be representative. If the District decides to use industry laboratories, we can provide industry contacts. Finally, ACA urges the District to use blind samples.
- 13-5d [D. We appreciate the District’s willingness to specify that the exclusion pathway – new Method 319 – is for unreactive compounds. However, we request that the Staff Report and Board Resolution mention that the District is receptive to additional pathways including a future pathway for Amines.
- We specifically request that Exclusion Pathway Flowchart or the scope of Method 319 include the following footnote:
- “The exclusionary pathway is intended for unreactive compounds and will need to be amended to correctly classify components such as amines that interact with other components when the paint is being formulated.”
- 13-5e [E. To clarify “the use of the upper bound of error bar,” we suggest that the District include an error band for methyl palmitate (measured versus modeled) such that compounds with a vapor pressure (either measured or modeled) that resides within this range pass Step 2.
- 13-5f [F. The compounds that have already been excluded through the method development should be included in the Rule 1113 Staff Report and on the SCAQMD website so that stakeholders can reference this information.
- 13-5g [G. The District should use tetraethylene glycol instead of dibutyl phthalate as a surrogate for methyl palmitate in the Exclusionary Pathway Flowchart for Early Eluting Semi-Volatile Organic Compounds (Box 3). Dibutyl phthalate appears to have a significantly lower vapor pressure than methyl palmitate, whereas tetraethylene glycol has the same vapor pressure as methyl palmitate and behaves almost identically to methyl palmitate as a neat compound. Tetraethylene glycol is also easier to incorporate into waterborne coatings, especially compared to dibutyl phthalate. Furthermore, tetraethylene glycol is greater than 95% nonvolatile via EPA Method 24. This material should not be considered a VOC. And based on its vapor pressure and volatility, it represents a much better choice for a VOC cutoff marker compound for Method 313 than methyl palmitate, which is not easily incorporated into low VOC waterborne paint. This conclusion is supported by Dane Jones from Cal Poly, and we believe the District should embrace this approach.

13-5h

H. Semi-volatile complex hydrocarbon mixtures, including paraffinic or naphthenic oils, that are used in some non-film forming architectural coatings often do not reach a stable weight via Method 24. Therefore, these compounds should be analyzed by Method 313 even though they may have a VOC content greater than 150 g/l. Unfortunately, as illustrated on slide #8 of the attached SCAQMD presentation from 2012, there are difficulties with applying Method 313 to these architectural coatings since they have a broad molecular weight distribution. The chromatogram on the left side of slide #8 demonstrates how these oils straddle the end point marker of methyl palmitate, which elutes at about 30 minutes. Given this large number of unresolved and, arguably, unresolvable peaks under Method 313 run conditions, valid results are difficult to achieve.

The following procedure should be included in Method 313 to address semi-volatile complex hydrocarbon mixtures such as paraffinic or naphthenic oils that are used in some non-film forming architectural coatings:

“Semi-volatile complex hydrocarbon mixtures (including paraffinic or naphthenic oils) that are used in some non-film forming architectural coatings that (a) do not reach a stable weight via Method 24, and (b) Elute a very large number of unresolved peaks via Method 313 both prior to and after the quantitation Methyl Palmitate endpoint marker, should be tested via TGA utilizing conditions similar to Method 24 (temperature and time).”

Thank you for your consideration of our comments. Please do not hesitate to contact us if you have any questions.

Sincerely,

/s/

/s/

David Darling, P.E.
Senior Director, Environmental Affairs

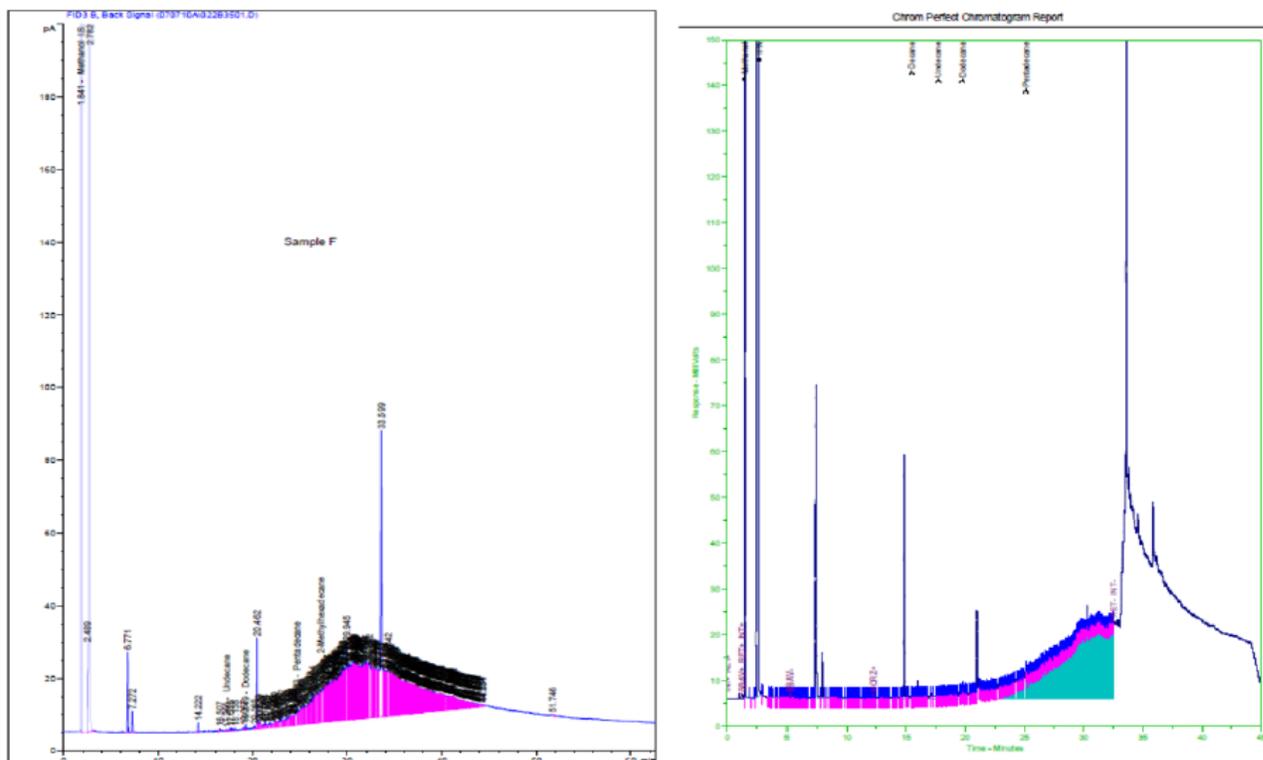
Timothy Serie, Esq.
Counsel, Government Affairs

Cc: Philip Fine, SCAQMD
Jose Gomez, ARB
Ravi Ramalingam, ARB
Stan Tong, EPA
Wienke Tax, EPA

****Sent via email****

Test Method Development

SCAQMD Method 313-L (cont.)



Response to comment 13-1

Please see the response to comment 11-2.

Response to comment 13-2

Staff extended the effective date of the change to January 1, 2018 to allow time to reformulate the tub and tile VOC limit that was agreed upon back in 2007.

Response to comment 13-3

Please see the response to comment 7-4c.

Response to comment 13-4

Please see the response to comment 3-7 and 7-6.

Response to comment 13-5a

Paint formulators should not use the inherent error in any test method to guide their coatings formulation. The manufacturer knows what they are adding to the coatings and should formulate at or below the VOC limit, relying on formulation software. Laboratory testing serves as a confirmation of the formulation calculations and as a compliance tool for regulatory agencies. The establishment of a precision and bias

statement is not to allow for formulators to game the system and formulate a certain percentage above the required VOC limits. The currently accepted test method M24, can vary +/- 100% for coatings that approach zero-VOC but this is not a justification for manufacturers to formulate 100% over the VOC limits.

Response to comment 13-5b and 13-5c

Staff continues to believe that the precision and bias of M313, both internal and external precision, is superior to M6886 due to the increase quality control, and will continue to work with industry and the USEPA to validate the method. This validation may or may not include some sort of round robin, depending on what is required for the validation.

Response to comment 13-5d

Staff will incorporate a statement in the Method 319 that the exclusionary method, as written, is for non-reactive compounds, and that reactive compounds such as amines, are still being evaluated. As previously stated, staff is open to reviewing data presented by industry to validate that certain amines react and become part of the paint film. That said, if no compelling evidence is presented, there will be no need to amend the exclusionary pathway; therefore, including a statement the method will be amended is premature.

Response to comment 13-5e

Staff has agreed to change Step 2 of the exclusion pathway to less than or equal to MP as previously suggested by industry.

Response to comment 13-5f

Staff will include excluded compounds on the SCAQMD website once the write up of the exclusionary method is completed and approved by the USEPA.

Response to comment 13-5g

Please see the response to comment 7-12. In addition, the SCAQMD laboratory results do not indicate that EG4 is 95% non-volatiles by M24. EG5 is 95% non-volatiles but EG4 is around 60% non-volatile. The third step for the exclusionary method is whether the compound of interest leaves the paint film and early testing shows that it does. Once the matrixes have been selected and EG4 can be tested by the officially accepted test method, staff will issue a conclusion on the status of EG4. At this time, it is premature to state that EG4 should not be measured as a VOC. Initial testing using film extraction performed at Cal Poly SLO showed EG4 leaving the paint film and initial work using the spiking method also showed it leaving the paint film.

Response to comment 13-5h

The SCAQMD presentation referenced in the letter discusses the relative merits and difficulties of M24, proposed SCAQMD M313L (a proposed GC method for lubricants and metal working fluids), and ASTM E1868-10 (the approved TGA VOC method for lubricants and metal working fluids) when applied to lubricants. It specifically mentions integration parameters, baseline placement, and endpoint retention times as M313L problem areas, which would also apply to M313 analysis of non-film-formers.

During the technical evaluation of M313L, staff discovered lubricant samples do indeed require special attention to integration parameters, baseline placement, and endpoint retention. The issues arise from - and are resolved- as follows:

- 1) Integration parameters: Lubricants usually elute as nearly-featureless “humps” which are challenging for the automated integration software used with GCs. This is solved by setting integration parameters to be very sensitive to small changes in slope.
- 2) Baseline setting: Lubricants elute over minutes, which obscures the underlying baseline. In order to integrate “to baseline”, a baseline from a previous (blank) run must be applied. This means that baselines must be repeatable, so instruments must be cleaned between injections, and blanks must be injected between samples to monitor baseline drift.
- 3) Endpoint: A few lubricants straddle the MP endpoint at their peak. (Most do not, and some are even bimodal.) Small changes in endpoint retention time could potentially change the final result. Methyl palmitate is injected with each batch to monitor the endpoint retention time. However, this problem appears to be more theoretical than actual, since retention times rarely shift by more than 0.05 minutes and the estimated VOC changes associated with such a shift would be small. This is a different argument than re-defining the endpoint, which was also a goal of the lubricant representatives.

Proposed SCAQMD M313 addresses all of the issues that were encountered during M313L evaluation. However, SCAQMD laboratory staff has never seen this kind of peak distributions in paints and coating samples, this issue was specific to the lubricant and metal working fluid samples. The heavier hydrocarbons mixtures found in lubricant and metal working fluids would likely never leave the paint film, leaving the films too soft and tacky. The petroleum-distillate fractions in paints and coatings disappear well before the endpoint and are relatively restricted in carbon number.

Other materials which are non-film-forming include methoxylated soy oils, ethoxylated surfactant alcohols (SAEs), dibasic esters (DBEs), phthalates, and various glycol ethers/esters. These materials are analytically straightforward in molecular weights applicable to VOC testing and therefore, can accurately be measured by M313.

As far as TGA is concerned, it has the disadvantage of not being able to directly measure VOCs in samples containing water or exempts. For those samples, determining VOC would once again rely on analyzing for water and/or exempts and subtracting the results from the total volatiles. That approach reintroduces the same M24 problems.

For solvent based samples, TGA has the potential to be a repeatable, low(er) cost method. However, TGA (in its implementation for VOCs of lubricants) produces results that are dramatically lower than either M24 or M313, leading to the conclusion that ASTM E1868, with the specific parameters required by R1144, is far less stringent than either the national standard or the SCAQMD proposed GC alternative.

If TGA is developed as a method for measuring VOCs of non-water-containing samples that do not reach a stable weight under M24 conditions, the results would have to be evaluated to ensure that the test method is at least as stringent as M24. If a TGA method can be developed that is acceptable to the USEPA and provides comparable results to M24, the SCAQMD laboratory would be open to including this method. Staff looks forward to continuing to work with industry on the VOC test methods.

The following are comments from Hao Jiang, P.E. of Disneyland Resort – Comment Letter #14.

From: Jiang, Hao <Hao.Jiang@disney.com>
Sent: Thursday, September 17, 2015 12:01 PM
To: Heather Farr; David De Boer
Subject: PAR1113 & 314

Importance: High

Heather and David,

I was planning to attend your work group meeting this am but something urgent happened that kept me here. I hope you don't mind to read my comments below.

- (1) Japans definition R1113(b)(21)(D). Please consider to make it consistence with the Japans definition in R1136(b)(28). If cannot, please consider to delete the words "... used by Motion Picture and Television Production Studios...." Or change it to "... used by Motion Picture, **theme parks** and Television Production Studios...."
- (2) Are the words "pure concentrated pigment" in R1113b)(21)(D) and the words "pure pigment" in R1136(b)(28) Japans definitions the same as the "colorant"? Paint industry actually uses these words interchangeably.
- (3) Table 1. Please consider to use the "definition number" instead of "category code". All the paints in Table 1 defined in subsection (b), so it would be easier for end-users to reference them to definition number.
- (4) Graphic Arts (Sign) coating. Please consider to change the VOC standard to 250 g/l instead of 200 g/l as currently proposed. We have difficulty to land a sign coating with less than 200 g/l VOC.
- (5) Table 2. Please consider to add a new colorant VOC standard at 350 g/l for "colorant used in Faux finishing coating". This is consistence with 350 g/l VOC for Japans. See my #2 comment above as well.
- (6) SCE R1113(f)(1). Please move "non-sacrificial Anti-graffiti coatings" from subsection (B) to (C). Table 1 SCE column has a note number 4 for this category.
- (7) SCE R1113(f)(1)(D)(i) is unnecessary
- (8) SCE R1113(f)(1). please consider to change the word "any quantity" in (C)(ii) and (D)(ii) to "any size contained"
- (9) SCE R1113(f)(2). Please consider to change the subparagraph references from (f)(1)(B) to (f)(1)(C)(i) in R1113(f)(2)(B) and (C).

Thank you so much!

Hao Jiang, P.E.
Environmental Affairs
Disneyland Resort
PO Box 3232
TDA 224C
Anaheim, Ca 92802
714-781-4504, hao.jiang@disney.com

Response to comment 14-1

Japan coatings are a high-VOC, specialty coating strictly used in the television and motion picture industry. Staff does not want to open the usage of these specialty, artistic coatings for further usage. The reason staff retained this category exclusively for the television and motion picture industry is the short timeframes available to create a production set. Staff did a demonstration with lower-VOC waterborne products that works just as well, but could involve considerable more time to apply. If there was an issue with an effect create by the solvent based japan coatings, the artist could just wipe off the substrate and instantly start again. With the waterborne products, the artist would have to allow the coatings to dry, re-prime the substrate and begin the work again. Staff felt the tight schedules involved with television and movie production was a justification to allow for this very small usage of these products, but does not want to open this up for theme parks, which are not under the same time constraints. Staff worked with Disney on their specific need for Japan Coatings and have resolved this issue.

Response to comment 14-2

The phrase ‘pure concentrated pigment’ used in the japan definition is not the same as the term colorant used in Rule 1113. Japan faux coatings are thick, concentrated coatings, which are usually thinned, and applied to create artistic effects on television and movie production sets. For the purposes of Rule 1113, colorants are used to tint coatings to a desired color. These are two very different terms for the purposes of Rule 1113.

Response to comment 14-3

The use of category codes in the Table of Standards is to assist the manufacturer in their Rule 314 reporting as these category codes are not found in the rule. The categories are listed alphanumerically in the definition section, thus making it relatively easy to find.

Response to comment 14-4

One of the major manufacturers of Graphic Arts coatings is reformulating their waterborne line to 200 g/L, so these coatings should be available in the market place if the rule is adopted.

Response to comment 14-5

Japan coatings are not tinted; they are supplied as concentrated pigments that are sometimes thinned prior to use. There is no need to add colorant to a faux japan.

Response to comment 14-6

This was an oversight, staff intended to include all of the subcategories under the IMC umbrella in subparagraph (f)(1)(E). It will be easier to remember the restrictions if they are the same for all IM coatings and it will allow for one liter touch up to continue for all the subcategories.

Response to comment 14-7

Clause (f)(1)(D)(i) in the pre-Public Hearing version of the rule, (f)(1)(E)(i) in the Set Hearing Package version is necessary. Paragraph (f)(1) now says the VOC limits do not apply to one liter containers exempt in the cases listed in the following subparagraphs. Clause (f)(1)(E)(i) – (iii) states that the VOC limits for IMC do not apply to one liter containers, used for touch up that are not displayed for sale at a retail outlet.

Response to comment 14-8

Draft Staff Report Proposed Amended Rule 1113

Clauses (f)(1)(D)(ii) and (f)(1)(E)(ii) state that the VOC limit applies for coating sold for purposes other than touch up. The statement “any quantity” or “any size container” is not necessary and staff removed the reference to quantity.

Response to comment 14-9

Staff appreciates the feedback and corrected the references.



October 9, 2015

Ms. Heather Farr
Office of Planning, Rule Development, and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Ms. Cynthia Carter
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

**RE: SCAQMD Rule 1113/Rule 314 Amendments; Supplemental ACA Comments
and CEQA Comments**

Dear Ms. Farr and Ms. Carter:

The American Coatings Association (ACA) would like to supplement the comments that we submitted on September 25, 2015 with regards to eliminating 11 categories from the Small Container Exemption (SCE), especially with regards to Stone Consolidants and Reactive Penetrating Sealers. Also there appears to be several typos in the proposed Rule 1113 Table of Standards. We have also included CEQA comments as well. Finally, we incorporate by reference previously submitted ACA comments on Rule 1113/Rule 314.¹

As ACA mentioned in our September 25 comments, ACA believes that the District has not provided an adequate justification for eliminating the small container exemption for these additional categories since manufacturers do not utilize the exemption for these categories, and no emission reductions will result from this change. In addition, while the SCE has not been utilized for these categories in the past, manufacturers may look to the small container option to solve a new issue in the field in the future. Further, if for example a company makes a technology breakthrough but the product does not meet the category limit, these technologically superior products could not make it to the marketplace. Therefore we do not support eliminating the SCE for these or any categories.

These comments supplement our September 25, 2015 comments specifically with respect to Stone Consolidants and Reactive Penetrating Sealers and have included supplementary information regarding ongoing modern building preservation research in the District.

¹ ACA's previous comment letters are dated: September 25, 2015; September 10, 2015; July 8, 2015; April 30, 2015; March 10, 2015; January 20, 2015.

Stone Consolidants

15-1

We again appreciate the District adding the Stone Consolidants category to Rule 1113 in the 2013 amendments. ACA recommends not eliminating this category from the Small Container Exemption. The category definition as written is extraordinarily narrow with regards to allowable project use. While many registered historic landmarks incorporate natural stone substrates, the technology has been successfully utilized in the repair of otherwise irreparable architectural materials including concrete and adobe.

Stone Consolidants represent a niche subcategory of materials designed to repair historic structures that have been damaged by weathering or other surface decay mechanisms. As building inventory ages, the mix of architectural substrates with identified preservation problems shifts. ACA recommends the small container exemption be maintained.

Table of Standards and Small Container Exemption

15-2

There seems to be several discrepancies between the August 19, 2015 PAR Rule 1113 Table of Standards and the Small Container Exemption (SCE) provision. The Table of Standards includes a check and Footnote 3 designation for Reactive Penetrating Sealers, Wood preservatives (below ground and others) and Recycled Coatings, however these categories are not listed in the Small Container Exemption provision, nor are these categories listed in the Staff report (page 19) or the Staff slide number 35 from the August 26, 2015 meeting. ACA assumes (and supports) that there is a typo in the Table of Standards and that the District is not going to eliminate the SCE for these categories. In addition, the Table of Standards has a Footnote 4 designation indicating that the Color Indicating Safety Paint category is to be eliminated from the SCE on 1/1/2019, however the Staff Report and the August 26, 2015 slide 35 indicate a 1/1/2016 date. ACA does not support eliminating this or any categories from the SCE, however if over our objection the District proceeds forward, the 1/1/2019 date is preferred.

Reactive Penetrating Sealers

15-3

We again appreciate the District adding the Reactive Penetrating Sealer category to Rule 1113 in the 2013 amendments. Just in case the typo mentioned earlier is not a typo, ACA recommends not eliminating the Small Container Exemption for Reactive Penetrating Sealers since these sealers allow a narrow range of high-performance water and chloride ion screening technologies used in commercial, institutional and highway and bridge deck applications. While the Small Container Exemption may not have been used extensively, there could be a need for higher VOC products to solve emerging architectural substrate protection problems in the future.

South Coast AQMD Area Modern Building Preservation

15-4

Los Angeles and surrounding areas are in the midst of an emerging modern building preservation crisis. Multiple task forces and working groups have been formed under the umbrella of the Los Angeles Conservancy Modern Committee and through The Getty Conservation Institute. A

15-4
cont.

substantial number of modern structures feature concrete façades and exposed structural elements subject to the same intragranular decay mechanisms as natural stone.

The National Park Service listed ten case study homes in the National Register of Historic Places as part of a pilot project. <https://www.laconservancy.org/issues/case-study-houses>
Many structures of similar age exist outside of this protected status. The Getty's Conserving Modern Architecture Initiative is focused on a number of identified decay and preservation issues. http://www.getty.edu/conservation/our_projects/field_projects/cmait/

The Initiative recently convened a meeting of experts to study the conservation of concrete heritage with the modern building preservation problem in mind.
http://www.getty.edu/conservation/our_projects/field_projects/cmait/cmait_experts.html

The resulting report pointed to a number of unresolved technology issues yet to be fully researched. Coatings designed to protect substrates without visible changes in appearance will be part of the solution. That may or may not include existing Stone Consolidant and Reactive Penetrating Sealer technologies – either would be outside the scope of current restrictive category definitions. The solution could include new technologies that do not fit the 50 g/L Default limit. Either path points to a need for ongoing regulatory flexibility provided by the Small Container Exemption.

15-5

CEQA Considerations

ACA suggests that the California Environmental Quality Act (CEQA) requires that projects potentially affecting historical resources weigh the costs and benefits in the project Environmental Impact Assessment (EIA). ACA believes there is a direct link between the lack of availability of specialty coatings for historical structures (since the District is eliminating the Small Container Exemption Stone Consolidants and Reactive Penetrating Sealers) and potential for permanent and negative impairment of same in the currently proposed SCM revisions. For your convenience, a section from CEQA follows:

§ 21084.1. Historical resource; substantial adverse change

A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. For purposes of this section, an historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources included in a local register of historical resources, as defined in subdivision (k) of Section 5020.1, or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, are presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. The fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources, not included in a local register of historical resources, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 shall not

ACA Comments on SCAQMD Rule 1113 & Rule 314 Amendments

September 9, 2015

preclude a lead agency from determining whether the resource may be an historical resource for purposes of this section.

Thank you for your consideration of our comments. Please do not hesitate to contact us if you have any questions.

Sincerely,

/s/

David Darling, P.E.
Senior Director, Environmental Affairs

/s/

Timothy Serie, Esq.
Counsel, Government Affairs

Cc: Philip Fine

Sent via email

Response to comment 15-1

As mentioned, staff worked with the manufacturers during the 2010/2011 rule amendment and agreed to allow the higher- VOC category for stone consolidants to address the needs of historic preservation. At the time, the manufacturers requested a 450 g/L VOC limit and did not indicate their products needed a higher VOC limit. These products could have been legally sold prior to that amendment under the SCE, but staff carved out a higher VOC limit to allow for sales in gallon sized containers. The following is from the 2011 staff report:

“Usage for this category is expected to be very small, approximately 142 gallons per year. The proposed VOC limit for this category is 450 g/L; the estimated foregone emissions are 0.001 tpd. Staff intends to monitor this category through the Rule 314 Annual Quantity and Emissions Reports to ensure that the sales do not exceed the estimated usage, and may consider sales caps for this category if actual sales are well above the estimated usage.”

The usage estimate has been exceeded every year other than the most recent year. The sales volumes are protected as there are fewer than three manufacturers who produce stone consolidants, but the averages sales volume is over 200 gallons annually. The sales weighted VOC for 2014 is 100 g/L and there has never been a product reported over the 450 g/L VOC limit. When staff estimated the foregone emissions, sales of higher-VOC non-compliant product in small containers was not considered. Staff created a category for this niche product which eliminates the need for the SCE.

Response to comment 15-2

Staff appreciates the ACA pointing out this discrepancy and staff did intend to restrict the flagged categories in the SCE. Staff will address reactive penetrating sealers in our response to 15-3. In regard to Wood Preservatives, this is another category where there has never been a coating reported as sold under

the SCE; therefore, staff intends to remove the SCE as of January 1, 2016. The manufacturers clearly have no need for a higher VOC limit product sold in one liter containers or smaller; therefore, to avoid backsliding staff is proposing to restrict the exemption. As for recycled coatings, staff will remove the flag in the table of standards as there is also a proposal to reduce the VOC limit for this category. This is another category where there has never been a coating reported over the VOC limit and is also a category that is not usually supplied in one liter or smaller containers.

Response to comment 15-3

The reactive penetrating sealer category is another high-VOC carve out included in the 2011 rule amendment. The following is the discussion from the staff report:

“Staff is proposing to add a category for Reactive Penetrating Sealers in response to comments from the California Department of Transportation and the California Office of Historical Preservation. The definition will mirror the CARB SCM with an additional restriction that these coatings are only for use on reinforced concrete bridge structures for transportation projects within 5 miles of the coast or above 4,000 feet elevation or restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect. With the added restriction, usage for this category is expected to be very small, approximately 290 gallons per year. The proposed VOC limit for this category is 350 g/L; the estimated foregone emissions are 0.001 tpd. Staff intends to monitor this category through the Rule 314 Annual Quantity and Emissions Reports to ensure that sales do not exceed the estimated usage, and may consider sales caps for this category if actual sales are well above the estimated usage.”

The following represent the sales volumes reported under Rule 314:

Category	Sales per year (gallons)			
	2011	2012	2013	2014
Reactive Penetrating Sealers	PD	PD	2,117	1,402

PD = protected data, less than three companies reported sales.

The sales from the initial year far exceeded staff’s assumptions when this category was allowed to be sold under Rule 1113. In addition, CalTrans released a study of reactive penetrating sealers indicating that all the products they tested could not meet the stringent requirements set forth in the Rule 1113 definition. Staff has concerns whether any of the products being sold can meet the definition and therefore qualify for the 350 g/L VOC limit. The Rule 314 data indicates that there is only one product sold slightly over the 350 g/L VOC limit. The same company also sells several compliant versions of this product, one at a significantly higher sales volume. The sales weighted average VOC for reactive penetrating sealers is 329 g/L for the 2014 sales. Staff does not see any justification for allowing higher-VOC coatings. Staff committed to considering sales caps if the sales volume exceeded the projections, which it has. At the minimum, staff would like to cap the VOC to the previously agreed upon VOC limit. In addition, staff intends to conduct independent testing to confirm if the products being sold under this category actually meet the stringent requirements in the definition.

Response to comment 15-4

If a new technology emerged that fell under the Rule 1113 default category and is above the 50 g/L VOC limit, that product can be sold over the VOC limit under the SCE as staff is not proposing a complete restriction of the SCE.

