APPENDIX C

COMMENTS ON THE NOTICE OF PREPARATION AND INITIAL STUDY AND RESPONSES TO COMMENTS

COMMENTS ON THE NOTICE OF PREPARATION AND INITIAL STUDY

Kessler & Associates, Inc.

July 12, 1999

Mr. Jim Nyarady
Manger, Strategy Evaluation Section
Stationary Source Division
California Air Resources Board
2020 L Street
PO Box 2815
Sacramento, California 95812

Dear Mr. Nyarady,

SUBJECT: COMMENTS ON NOTICE OF PREPARATION FOR CARB SUGGESTED CONTROL MEASURE FOR ARCHITECTURAL COATINGS

Kessler & Associates, Inc., a government affairs firm, represents the Dunn-Edwards Corporation (Dunn-Edwards) a Los Angeles, California-based manufacturer and seller of quality architectural coatings. This letter is in response to California Air Resources Board's (CARB's) Notice of Preparation (NOP) prepared for the proposed Suggested Control Measure (SCM) for Architectural Coatings.

Thank you for allowing us the opportunity to comment on the potential impacts of this proposed control measure.

INTRODUCTION

1-1 Regulation of paint impacts the environment in various ways, depending on the nature of the regulation. For example, reducing VOCs under certain conditions may actually contribute to ozone nonattainment because of the concept of negative reactivity.[1] CARB is currently examining promulgating a SCM for paint – a measure intended to have a positive impact on ozone non-attainment in California. The true impact on the environment of regulating the VOCs is currently the subject of debate and varied opinions. CARB's ultimate decision may very well dictate whether regulating VOCs will have a beneficial or detrimental impact on preventing ozone non-attainment in California.

1-2 To answer questions (not only on the state level, but the federal as well) regarding reactivity, Congress funded the construction of an air chamber to be built at the University of California at Riverside. Congress mandated that this chamber be utilized for the specific purpose of determining if and when the reduction of VOCs in paint is warranted. While Dunn-Edwards understands that drafting this SCM is currently

[1] During 1998, representatives, officers and owners of the Dunn-Edwards Corporation communicated with CARB on issues relating to reactivity. Comments made by Dunn-Edwards during those meetings are incorporated by reference into this document.

underway, we believe that any VOC reduction should be postponed until the results of the chamber tests are known. This is warranted scientifically as well as from a policy
1-2 position. With the "answer on the way," there is no need to have any potentially negative environmental (or economic) impact due to haste. If CARB determines that other reasons dictate the issuance of its SCM, Dunn-Edwards recommends that CARB incorporate the chamber's findings once they are published.

An SCM/state-wide approach might be counter-productive and/or inefficient because of: (a) differences in reactivity among areas, (b) differences in air quality problems among
1-3 areas (i.e. stringent rules may not be required in same areas), (c) differences in uses/needs/exposure for architectural coatings, (d) different meteorological conditions, and, (e) the necessity to have stringent and extreme cost-ineffective rules.

SPECIFIC COMMENTS

INTRODUCTION

Page 1-1 states, "the proposed project is essentially a model rule intended to reduce volatile organic compound emissions from architectural coatings." This SCM does not recommend regulating VOC emissions, but rather regulating the VOC content of
1-4 architectural coatings. All VOCs may not contribute equally, if at all, to ozone formation. The SCM needs to focus on VOC emissions. If reliance on test method 24 is the basis for VOC content, then Dunn-Edwards recommends changing/modifying this test method to more accurately reflect VOC emissions from the application of paint.

Various parts of this section deal with the SCM as well as the NOP being utilized as a model for individual air districts. Dunn-Edwards is concerned that such an approach does
1-5 not adequately address the significant environmental/ecological/meteorological variations found within the state. Due to these variations, individual districts must alter CARB's EIR to such a degree that, in reality, air district resources may not, in the long run, be saved. Each district will still have to comply with CEQA to a level that reliance on the NOP/Program EIR may not provide any true assistance.

Page 1-2 to 1-3 state that CEQA "guidelines allow a lead agency to prepare a Program EIR for a series of actions that can be characterized as one large project **and** are related: (1) geographically, (2) as logical parts in a chain of contemplated actions, or (3) in connection with the issuance of rules, regulations, plans, or other general criteria to
1-6 govern the conduct of a continuing program." (Emphasis added.) The first part of this statement – that this Program EIR is one large project is, we believe, inaccurate. Throughout the NOP, CARB states that individual districts will have to decide the environmental impact of the rule. In addition, by its very nature, this SCM may or may not be adopted by specific districts. Furthermore, what rule each district adopts may differ significantly from the SCM. As such, this project is not one large project, but

1-6 rather a series of smaller ones each of which is within each district's jurisdiction to decide to use or not.

1-7 In addition, Dunn-Edwards believes that the SCM is not related geographically because, in addition to the statements above about each districts discretion, the state is made up of different airsheds, each with its own "needs" regarding reactivity as well as VOCs from paint emissions volume. Neither Section (2) nor Section (3) apply because this is not part of a chain of actions (again, the discretion of each district), nor is it a continuing program (CARB does not have direct authority to regulate VOCs from paint).

As such, Dunn-Edwards believes that a Program EIR may not be appropriate in this matter.

PROJECT DISCRIPTION

1-8 This section makes statements concerning uniformity. Dunn-Edwards is concerned that the regulations based on specific reactivity needs of the different airshed not be sacrificed to rules based on the policy decision that uniformity is required.

ALTERNATIVES

1-9 We strongly encourage the inclusion and consideration of the alternatives listed on page 1-9, particularly: performance-based standards, reactivity, product line averaging (based upon the VOC categories and levels mandated by South Coast Air Quality Management District, or examining the specific VOC categories and numbers found the federal architectural coating rule), and a seasonal approach. In addition, we urge CARB to consider an alternative based on the availability of specific VOCs emitted from paint to become available and part of an ozone nonattainment chemical reaction.

1-10 It is important that CARB understand that these alternatives, and specifically averaging, are necessary parts of a paint rule. Averaging must be required when lowering VOC content to allow consumers the ability to choose a durable high-quality coating that meets their needs without, based on CARB's current thinking, sacrificing air quality. Such alternatives allow manufacturers the flexibility to produce high-quality coatings that maintain desired performance characteristics.

1-11 We also urge CARB staff to consider including a provision wherein local districts perform a Technology Assessments similar to that found in South Coast Air Quality Management District's recently adopted changes to Rule 1113, to ensure that high quality durable coatings are available in the future.

REACTIVITY

1-12 The Draft EIR should evaluate the possibility that limiting solvent content in coating formulations may actually increase ground-level ozone formation (page 2-8). A reactivity-based regulatory scheme will provide CARB with the means to reach and maintain the ozone standard in a manner that is more cost-effective and equitable in its impact on the regulated community. A reactivity-based approach is consistent with the mandates of the Clean Air Act (Sections 183(e)) with its specific reactivity mandate

1-13 If the environmental assessment is to have a beneficial impact, it must consider reactivity. Otherwise, the rule may be detrimental to air quality. VOCs in paints need to be examined from a negative vs. positive reactivity posture. As part of the Reactivity Research Working Group and NARSTO, Dunn-Edwards has developed/obtained data that supports a reactivity-based VOC rule. Dunn-Edwards looks forward to sharing this technical data with CARB.

REGIONAL DEREGULATION

1-14 CARB should not start with the assumption of statewide regulation. Instead, regulations should be tailored to regional differences to optimize environmental benefits and minimize costs.

AIR QUALITY

1-15 Limiting VOC content may or may not reduce ozone. Whether limiting VOC content of architectural coatings actually reduces emissions, and whether reducing emissions actually reduces ozone formation, should be discussed in the air quality analysis to be contained in the EIR.

During the Rule 1113 rulemaking, SCAQMD District staff indicated that current Urban Airshed Models could not demonstrate measurable results from a source as small as CARB's estimate for the entire coatings category. Therefore, implementation of the SCM may not result in a measurable reduction in ozone formation.

1-16 The air quality analysis contained in this Program EIR should also consider the levels of ozone non-attainment in the 35 different California air districts. As indicated in Figure 1-2, the number of days the state ozone standard was exceeded as well as the peak ozone varies greatly by air district. This may be the result of numerous factors including differing meteorological conditions, types of industrial processes, reactivity of various VOC emissions, and ratio of VOCs:NOx in those areas. Such factors should be considered in determining whether or not a local architectural coatings rule based on SCM regulation results in measurable air quality benefits.

1-17 The initial study incorrectly states that there is no possibility that there will be a significant (negative) impact on air quality problems for criteria pollutants. This is inconsistent with CARB's decision to consider the "Seven Deadly Sins," set out on pp. 2-7 to 2-8.

Dunn-Edwards appreciates CARB's efforts in examining innovative and meaningful approaches to dealing with ozone nonattainment. We look forward to working with you on this and other important technological issues. These issues are the keys to the viability of our industry and our mutual goal of clean air.

Sincerely yours,

Howard Berman
Senior Vice President and
Environmental Counsel

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FEDERAL EXPRESS NO. 809764184792
EARLY MORNING DELIVERY

July 21, 1999

Mr. Jim Nyarady
Manager, Strategy Evaluation Section
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Dear Mr. Nyarady,

The Sherwin-Williams Company is pleased to have this opportunity to comment on the Notice of Preparation (NOP) of a Draft Program Environmental Impact Report (EIR) and on the Initial Study for the Draft Program Environmental Impact Report (EIR) for the Suggested Control Measure for Architectural Coatings. The Sherwin-Williams Company is one of the largest coating manufacturers in the world, with 1998 annual sales close to five billion dollars. We maintain manufacturing facilities throughout the country, including several within the State of California. We maintain company-owned and operated Stores throughout the country. These are the exclusive distributors / retailers for the Sherwin-Williams brand. In addition to this distribution, our products, under a variety of additional brand names, are distributed through mass merchandisers, do-it-yourself outlets, hardware stores, and by independent distributors. Our product lines include some of the best known brands, including – but not limited to – Minwax®, Thompsons®, Pratt & Lambert®, Martin-Senour®, Dutch Boy®, Rust Tough®, Cuprinol®, Ralph Lauren®, and H&C®. In the architectural and industrial maintenance product areas these coatings are used for their decorative and protective properties.

2-1 We believe that it is premature to develop the NOP, the Draft Program EIR, and the Final EIR before the SCM rule is finalized, or – at least – closer to finalization. This is especially important since the expectation is for the EIR to be used by Districts wanting to adopt the final SCM. With that as the primary goal of the EIR, it is important that it be focused to include the specific provisions of the SCM. Thus, we suggest that the Draft Program EIR development be postponed until after the SCM rule is closer to completion, rather than at the beginning of the process.

2-2 We also want to stress that it is important for the parameters included in the Draft Program EIR and the EIR to include all possible regulatory options that may be included in the final rule. If the final proposal or the rule as adopted includes modified VOC content limits from those limits currently under consideration or additional categories, then the Draft Program EIR must include a thorough evaluation of these effects and the impacts of these limits. There have been Environmental Assessments produced by Districts which consider only broad options, e.g. considering to adopt or not to adopt the proposed rule. However, we consider such broad options as these to be inadequate to fully address the Environmental Impacts of the specific rule provisions to be adopted. By considering the impact of various specific limits, the State will be able to decide on the best option, i.e. the most environmentally beneficial and least harmful specific option. Thus, we strongly support including specific variations on

2-2 the "VOC Content Limits and the Final Compliance Deadlines" as one of the alternatives to be included in the Draft Program EIR.

We also support including the following Alternatives, which were provided in the NOP and Initial Study as "under consideration:"

1. A Low Vapor Pressure Exemption – since this exemption exists in the Consumer Products regulation and has been used for solvent-types of materials in these products, it is fair to include it in the SCM and in the EIR.

2-3 2. VOC Content Limits / Final Compliance Deadlines – since it is hoped that the final compliance dates and the VOC content limits will be modified from this initial draft, we believe it is crucial that such modifications be included in the EIR. This should include consideration of VOC limit changes in increments of 50 grams per liter. In addition, consideration should include altering the units for the VOC limits from the current units of grams of VOC per liter of coating less water and exempt compounds to units of grams of VOC per liter of material.

3. Regional Deregulation – This appears to be another plan which might have potential, if adequate information on the specific geographic locations could be included (for example, describing both the regulated and de-regulated areas by city, zip code, and FIPS code).

A number of alternatives are apparently under consideration about which we have strong reservations.

2-4 1. Performance-based Standards – Apparently the State is considering developing emission standards on the basis of VOC emissions per area covered per year, rather than on the VOC content of coatings. Such a plan would appear to be unenforceable, since it could not be based on actual area / emissions per year. It might be based on manufacturer recommendations. However, how would a manufacturer's recommendations for different substrates and substrate conditions be handled? How could such recommendations be compared to "reality?" (There do not appear to be any measurement tools for such units for emissions.) The obstacles to such a plan seem overwhelming – especially in the time frame under consideration.

2-5 2. Reactivity – while the concept of voluntarily adjusting the reactivity to achieve equivalence seems promising, reactivity data on the VOC's found in Architectural Coatings has not been developed. In addition, there does not seem to be a practical mechanism for the use of a voluntary reactivity plan in just a few districts – and yet, with District regulations, that would be needed. In other words, it is impractical to suggest that a manufacturer create another unique formulation for some parts of the State. Currently, the Sherwin-Williams Company has three separate formulations for a number of product lines. For example in the nonflat area, we have three separate sets formulations: the national formulations, the 380 g/l formulations for the regulated areas in New York, New Jersey, Kentucky, Oregon, Washington, and Massachusetts, and the 250 g/l formulation for the regulated areas in California and Maricopa County, Arizona. To add to this a variety of reactivity adjusted formulations for some, but not all, of the regulated areas of California, as well as to reduce the VOC content of the products, will

2-5 be a challenge and may not prove to be practical. It would appear to be more practical if such a plan was developed for statewide usage.

3. Product Line Averaging – For many reasons, we do not consider Product Line Averaging to be practical. One reason is the issue of individual District requirements and tracking of individual products into multiple numbers of such small areas. (Some Districts are not even the size of an entire County, but are only part of a County.) In addition, many customers operate their own warehouses: we ship to their warehouse, 2-6 they ship to final points of sale. Such warehouses may be in the State and serve several States and they may be outside of the State and serve this State, as well as other states. If we had to depend on information from each such customer to determine our compliance and averaging status, such a plan would not be practical. Not only would District-specific implementation require manufacturers to tailor and track distributions into each specific District, but it might also require us to have our Distributors do likewise.

4. Seasonal Approach – This would appear to require manufacturers and retailers to stock and unstock / restock and re-unstock products throughout the year: Jan – March would 2-7 have higher VOC coatings; these would need to be removed and replaced with lower VOC coatings for April – October; and these would be removed and replaced with the higher VOC coatings for October – March. Such stocking / unstocking / re-stocking is extremely expensive for retailers, distributors, and manufacturers and is ultimately impractical.

2-8 However, if these concepts are under consideration for inclusion in the SCM, then the EIR will need to consider the effects of each of these.

There are several additional divisions / categorizations which we believe may allow some category VOC's to be lowered, while maintaining product quality. These divisions are shown below:

1. Division of the stain category into the following subcategories with different VOC limits:
   a.. Interior semi-transparent stains
   b. Exterior semi-transparent stains
   c. Interior and exterior opaque (solid color) stains

2-9

2. Division of the industrial maintenance category into subcategories based on performance requirements / markets – examples (not complete nor all inclusive) would include the 2-10 following:
   a. Immersion service – petrochemicals, chemicals, water, wastewater
   b. Bridges
   c. Zinc Rich Coatings

3 Division of the primer, sealer, and undercoater categories into the following:
   a. Interior primers and undercoaters
2-11 b. Exterior primers and undercoaters
   c. Interior sealers
   d. Exterior sealers

2-12 4. Division of the nonflat category into the following:

a. Floor coatings – single component residential versus multi-component industrial maintenance
b. Rust preventative coatings (for residential structures)
c. Interior high gloss nonflats
d. Exterior high gloss nonflats
e. Interior nonflats (not high gloss)
f. Exterior nonfats (not high gloss)

2-12

4. Division of the flat category into the following:
   a. Interior flat coatings
   b. Exterior flat coatings

2-13

Consideration of these possibilities should be included in the EIR since it is likely that some or all of them could be included in the final SCM to allow maximum VOC reductions with minimum environmental harm and expense.

In addition to the discussion included in the Initial Study for the Draft Program Environmental Impact Report for the Suggested Control Measure for Architectural Coatings, the following Environmental Factors are potentially affected:

1. Water – the proposal depends on extensive use of waterborne coatings by paint manufacturers. Paint manufacturing operations located within the State will be using more water than currently in paint production. Such increased use of water has the potential to deplete groundwater supplies and lower the local groundwater table level. In addition, since the use of waterborne coatings require much more careful surface preparation, power washing of structures prior to coating applications will become more frequent. This will place an additional burden on the water resources of the State. Thus, the potential depletion of groundwater supplies and the groundwater table level should be considered.

2-14

In addition, the increased use of waterborne coatings may generate increased amounts of wastewater from coating applications. This increase in wastewater may require new or expansion of current water facilities and / or wastewater treatment facilities which may have environmental effects. These need to be considered.

2-15

2. Transportation / Circulation – The seasonal deregulation option will result in a significant increase in the number of deliveries to each retail outlet (this will be doubled) and the number of trucks arriving to pick up "out of season" merchandise (from zero currently to twice a year). In addition, these trucks will need to deliver the returned coatings to warehouses (a trip which does not currently occur.) Such increased deliveries will have multiple serious impacts: it may result in inadequate emergency access to the transportation networks; it can also result in inadequate parking. In addition, such an option and such increased traffic can cause severe environmental harm by increasing emissions from these trucks. (The current regulatory plan can be represented as having "one truck to store encounter" per year; under a seasonal regulatory plan this would be increased to "four truck to store encounters" per year (one to remove high VOC, two to deliver low VOC, three to remove low VOC, and four to deliver high VOC.) Such a four-fold increase in truck traffic needs to be considered.

2-16

3. Energy and Mineral Resources – As discussed above the seasonal deregulation option will result in a significant increase in the number of truck "visits" to each retail outlet per year. These extra trips use extra gasoline, that would not have been consumed otherwise.

2-17

2-18 In addition, if a category labeling requirement is adopted, labels or data pages will become obsolete faster. This will necessitate production of additional new labels, at a significant cost to environment. This cost will be without a corresponding environmental benefit, since including the category on the label (or on a data sheet) does not reduce emissions, nor does it make it more likely or less likely that the category is correct for the District rules. With seventeen Districts within the State currently regulating architectural coatings and with nine additional areas regulating these coatings, there is a high potential for amendments. These amendments would result in revision of the data pages or labels. With 26 areas involved, it is probable that such amendments and revisions could occur multiple times each year. All of the natural resources and energy expended in the production of and printing on paper would be without environmental benefit, since such a labeling requirement does not provide emission reductions.

2-19 4. Hazards – In section IX (b) the handling of hazardous materials within ¼ mile of a school may have a Potentially Significant Impact. The possible use of acetone (which is hazardous based on its high flammability) and the use of glycol ethers (potentially in waterborne coatings) and diisocyanates (in polyurethane coatings) in the neighborhood of a school, as well as in school structures themselves should not be ignored.

2-20 It is important to consider that currently the most prevalent solvent used in solventborne architectural coatings is mineral spirits, and that mineral spirits are neither carcinogenic nor teratogenic. Additionally, ethylene glycol ethers and ethylene glycol ether acetates are commonly used in water-borne architectural coatings. Since the proposed VOC limits will essentially eliminate the use of mineral spirits and will increase dramatically the percentage of the market based on waterborne technologies, it is logical to assume that more ethylene glycol ethers and ethylene glycol ether acetates will be used than are currently in use. It is important for the potential health effects of this switch in solvents be considered in the EIR.

2-21 In addition, the discussion of hazards did not include a discussion of the increased use of sand blasting to prepare surfaces for coating with waterborne systems. Such sand blasting can cause exposures to crystalline silica, a Proposition 65 carcinogen. Again, this can happen at a school, as well as within ¼ mile, and is more likely under the current proposal, since it essentially eliminates solventborne primers and will thus necessitate more thorough substrate preparation. Waterborne coatings require more thorough surface preparation, compared to solventborne coatings. Abrasive blasting will be needed more often to prepare these architectural surfaces than is currently the situation. These operations generate hazards associated with some of the abrasion elements, as well as noise (see below). In addition, since architectural coatings used in residential settings will require such abrasive blasting more often then currently, and since such settings may expose young children to such hazards, these impacts need to be considered. The lack of solventborne primers is especially critical in this discussion, since currently they can serve as a preparatory step prior to the application of a waterborne topcoat.

2-22 5. Noise – The Initial Study for the Draft Program EIR discussed the idea that with the adoption of reduced VOC content limits, more coatings would be waterborne. However, the discussion failed to consider that waterborne coatings require more thorough surface preparation, compared to solvent-borne coatings. More often power washing and abrasive blasting will be needed to prepare these architectural surfaces. These operations generate noise, as well as hazards associated with some of the abrasion elements (see above). Evaluation should consider that waterborne coatings are less forgiving than solventborne coatings, and thus require more extensive surface preparations, including abrasive blasting. In addition, since architectural coatings used in residential settings will require such abrasive

blasting more often then currently, and since such settings will expose young children to such noises, these impacts need to be considered. The lack of solventborne primers is especially important in this respect. We expect either a substantial temporary, periodic, or permanent increase in ambient noise levels above the levels currently existing may occur and should be evaluated (response to X c) and d) should be Potentially Significant Impact.)

2-22

6. Public Services – We believe there are some additional Potentially Significant Impacts that need to be considered. The proposal removes single component solventborne coatings from all effected categories. This will increase the use of waterborne coatings, and reduce the painting season to the warmer and drier months. Thus, pubic facilities – and especially parks – may not be available for use as often as they are currently. In addition, if the extreme reductions in VOC's result in more frequent applications of coatings, then all facilities – including public services – may be severely impacted and unavailable for periods of time when they otherwise would have been available.

2-23

7. Solid / hazardous waste – The discussion should include the potential for increased sand blasting and the wastes associated with this operation. In addition, the proposed limits for industrial maintenance coatings will result in increased usage of multi-component systems, where single component systems are currently used. These multi-component systems have a limited pot life (i.e. the time period allowed from mixing the components to application); once the pot life is exceeded the material is waste. Thus, the increased use of multi-component systems can result in increased non-waterborne solid and hazardous wastes.

2-24

8. Aesthetics and Cultural Resources – The proposal may jeopardize the maintenance of historic buildings. The unavailability of traditional coating technologies to maintain these structures will – at a minimum – make maintenance of these buildings more difficult; in the worst case scenario it may not be possible to find acceptable substitute products to maintain both the historical integrity and the physical integrity of these structures. This is especially problematic with the elimination of solvent-borne primers, as well as for the second tier reductions with flat and nonflat coatings at 50 g/l.

2-25

We hope our comments on the Notice of Preparation (NOP) of a Draft Program Environmental Impact Report (EIR) and on the Initial Study for the Draft Program Environmental Impact Report (EIR) for the Suggested Control Measure for Architectural Coatings are helpful.

If additional information is needed, please feel free to contact me by telephone at (216) 566-2630, by facsimile at (216) 263-8635, or by electronic mail at mkharding@sherwin.com.

Sincerely,

Madelyn K. Harding Administrator,
Product Compliance & Registrations

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July 22, 1999

Mr. Jim Nyarady,
Manager,
Strategy Evaluation Section,
Stationary Source Division,
California Air Resources Board
2020 L Street
Sacramento, California 95812

Dear Jim:

Thank you for affording the National Paint and Coatings Association (NPCA) the opportunity to comment on the Initial Study for the Draft Program Environmental Impact Report for a Suggested Control Measure (SCM) for Architectural Coatings, dated June 1999.

As was stated in the June 1999 document, the Initial Study is intended to provide information about the proposed project in order to allow comment on the scope of the environmental analysis and possible project alternatives of the Draft Program Environmental Impact Report (EIR). We understand from this that there will be an additional opportunity to comment on the Draft Program EIR itself when it is issued.

We have been actively involved with your agency's recent efforts and those of the South Coast Air Quality Management District (SCAQMD) to establish lower VOC limits for AIM coatings. In this connection we have attended workshops held by CARB on this matter and have submitted initial comments on the SCM. Also in connection with the SCAQMD's recent revisions to Rule 1113, we provided comments to that agency's Initial Study for the draft Subsequent Environmental Assessment (SEA), in particular the scope of the environmental analysis and possible project alternatives. Because the VOC limits proposed in the SCM are similar to the revised limits of Rule 1113 and because the SCM relies heavily on the conclusions of the SCAQMD concnring the Rule 1113 revisions, we have attached a copy of our comments on the SCAQMD's SEA. (See APPENDIX A.)

Our comments on CARB's EIA follow.

SUGGESTED ALTERNATIVE EFFECTIVE DATES

Crucially affecting the environmental impact of the SCM will be the effective dates of the revised VOC limits.

We question whether it is necessary for the SCM to specify compliance dates at all, in as much as the SCM is only a suggested measure for consideration by the
3-1 local air districts which must in turn adopt it through formal rulemaking before it could be effective. This is particularly true in light of the technology forcing nature of the proposed limits. As we commented concerning the limits as they were being considered by the SCAQMD, many are not within the reasonably foreseeable technology of the industry. A more reasonable approach may be to specify time frames when it is believed (hoped) that technology may be available to meet lower VOC limits.

In this regard we note that the June 1999 Notice of Preparation states the following:

> The primary objective of the proposed SCM is to set VOC limits and other requirements that are feasible (**based on existing and currently developing coatings technology**) and that will achieve significant reductions in VOC emissions from architectural coatings. (page 1-7)

3-2

As you know from our discussions with CARB and the SCAQMD, we have serious reservations about the ability of the industry to develop effective coatings at the VOC limits specified in the SCM, based on "existing and currently developing coatings technology". (See Appendix A.)

Also to the extent that technology might be developed, the longer time period that is afforded, the more improved are the opportunities for technology developments.

With this in mind, we suggest that the EIR evaluate the implementation of a first round of reductions for 2004. A second round of reductions should not be considered until there has been some experience with the first round of
3-3 reductions. Instead of a second round of reductions being specified in the SCM, an Increments of Progress Program should be established for a second round of reductions effort, under which industry would supply information concerning the feasibility of additional reductions in VOC emissions from AIM coatings.

SUGGESTED ALTERNATIVE SCM PROVISIONS

In our June 7, 1999 comments concerning the SCM, we made several suggestions for changes to its provisions. These are attached in Appendix B
3-4 and we incorporate them by reference. The EIR should evaluate the impact of making these changes. We believe that the over all efficacy of the rule would be

3-4 improved by the adoption of our suggestions. Additionally, there are several other specific comments from our members that we draw your attention to and endorse for your consideration.

PROJECTED EMMISSIONS REDUCTIONS

3-5 The projected emissions reductions should be evaluated in the EIR on the basis of the assumption that many of the projected VOC limits will not be technologically feasible. The impact of no effective coatings being available for many of the current applications should be considered as a distinct possibility and should be assessed for its impact upon projected emissions reductions.

THE LISTED ALTERNATIVES

3-6 We concur in the consideration of the alternatives listed at page 1-9. We note here that the last listed alternative that is raised for consideration includes the possibility of different VOC content limits and compliance dates than those specified in the SCM, a point we have suggested.

THE ENVIRONMENTAL CHECKLIST

3-7 We agree with the determination that the proposed project may have a significant effect on the environment and an environmental impact report is required.

3-8 With respect to the delegation of cost considerations to the Economic Impact Analysis, we believe that there would be significant costs associated with proposed limits and that they must be addressed. We concur in the delegation of their consideration to the Economic Impact Analysis.

3-9 With respect to the water environmental impacts, we believe that there may be substantial negative effects if lower VOC coatings are required for the water and sewage system infrastructures. The same would be true for tank lining and piping of infrastructure that contains or holds hazardous materials, the release of which could contaminate water supplies.

3-10 With respect to aesthetic considerations, we believe that the elimination of existing effective anti-graffiti coatings should be considered as an impact.

3-11 With respect to recreation considerations, the possibility of lower VOC coatings not adequately meeting the needs of the infrastructure at such facilities should be considered.

3-12 With respect to solid waste/hazardous waste issues, there is the possibility that there would be increased use of higher solids two pack systems, and that this could affect hazardous waste considerations.

APPENDIX A

December 1, 1998

Mr. Darren W. Stroud
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RE: Comments on the Initial Study for the Draft Subsequent Environmental Assessment for Proposed Amended Rule (PAR) 1113 - Architectural and Industrial Maintenance (AIM) Coatings

The NPCA is providing comments on the South Coast Air Quality Management District's Initial Study for the draft Subsequent Environmental Assessment (SEA), in particular the scope of the environmental analysis and possible project alternatives. In addition we are our submitting our initial comments on a number of other pertinent issues that are involved in this rulemaking. Further detailed comments on the proposed revisions to Rule 1113 (definitions, limits and compliance dates, etc.) will be provided during the remainder of the rulemaking process.

General Comments on Proposed Amended Rule (PAR) 1113

3-13 The District is unnecessarily moving ahead on a fast track rulemaking schedule before all of the pertinent data is available to the District which is essential to making an informed decision concerning the technological and economic feasibility of the proposed revised VOC limits under Rule 1113.

This pertinent data includes the National Technical System (NTS) comparative study and the CARB AIM emissions inventory. The District's fast track rulemaking schedule precludes sufficient time for an open and thorough

examination and discussion of the results of these two extremely important studies.

We have four major recommendations for the District:

3-14

- Postpone the currently scheduled February 12, 1999 presentation on the PAR 1113 to the SCAQMD Board until both the NTS comparative study and the CARB inventory are completed and the regulated community, which includes chemists with extensive knowledge of the paint technology issues involved in this matter, has an opportunity to review and discuss the findings of the studies with District staff.

3-15

- The NTS should be expanded to include ongoing real world weathering and durability testing that manufacturers and applicators can monitor in the future.

16

- The District relies for much of its proposed lower VOC coatings limits on currently available low VOC coatings technology. A low VOC product technology may be successfully used currently to meet the performance requirements of one particular application and exposure environment of a general class of coatings. However, there must first be a thorough evaluation of this technology before it can be mandated as being feasible for all or even most of the application, performance, and exposure requirements of the general class of coatings to which it belongs. For example, an expectation that currently availablel ow VOC non-flat coatings could effectively replace **all** other non-flat coatings currently in the market place is completely at odds with the history of advances in coatings technology. Reliance on such an expectation to guide the District's inquiry would be dangerously misguided. There is no substitute for a thorough, open minded, and objective evaluation of existing and reasonably foreseeable coatings technologies in setting future VOC limits.

3-17

- The SCAQMD AIM rule should adopt the national AIM rule as a template, incorporating the national rule's product definitions, reporting and labeling requirements, as well as the national rule's "less than or equal to" one liter package size exemption. It must be acknowledged that the SCAQMD will specify much lower VOC limits for coatings than those of the national rule. This may necessitate the greater division of separate coatings categories in the SCAQMD AIM rule than those that exist in the national rule. But the basic components of both rules should be as uniform as possible to reduce the inefficiencies associated with having to address the special VOC reduction needs of the SCAQMD.

Alternatives

3-18 The Initial Study lists seven possible alternatives that are currently under consideration for inclusion in the Draft SEA. Below are our initial comments on each of these possible alternatives along with some suggestions for additional alternatives that merit discussion.

Low Vapor Pressure Exemption

3-19 The effect of establishing a low vapor pressure exemption may only have limited impact on the ability of the manufacturers to meet the currently proposed VOC limits. The impact would depend on where the exemption would be set and the solvents that would be thereby exempted. Further public discussion of this possible alternative is needed. This exemption should be addressed in the Draft SEA.

Performance-based Standards

3-20 Use of performance-based standards looks like a viable alternative approach but it is fraught with numerous problems and controversies particularly for the DIY (do-it-yourself) market products. For certain specialized categories of coatings, such as industrial maintenance (IM) coatings, it may be a viable alternative. Most IM products already are formulated and certified to meet a specific set of performance requirements established by a professional standard setting group such as ANSI/ NSF/ASTM. The draft SEA should discuss this alternative approach.

Reactivity

3-21 The use of reactivity in setting regulatory limits holds out the possibility of providing coatings manufacturers with additional flexibility in meeting the revised limits and may allow some current coatings technologies to continue to be marketed. Our support for using reactivity as a regulatory criterion will depend on how it is employed by the District. We would oppose its employment in a manner that would only add to regulatory burdens without any tangible benefits for the environment, e.g., requiring reformulations of coatings that already have been reformulated to reduce VOC content for some marginal additional improvement in reducing ozone on the basis of reactivity. In any case, we support the continued evaluation and research concerning the possible application of this alternative. The draft SEA should address this alternative.

Product Line Averaging

3-22 Again this alternative may offer the possibility of added flexibility for the manufacturer in meeting the revised VOC limits. The current administrative requirements of the averaging provision seem to be unnecessarily burdensome particularly for national or regional marketers of AIM products. It would be of interest to know how many companies have taken advantage of this alternative since it was incorporated into Rule 1116 in 1996. We are awaiting the further discussion of this alternative.

Regional Deregulation

3-23 Of the several alternatives proposed by the District, this is the most difficult to currently evaluate in that it is contingent on an anticipated fundamental change in the District's VOC/NOx mix. In principle, however, we believe it is worth while to explore all avenues that offer the possibility of cost-effective measures to reduce ozone formation in the District.

Seasonal Approach

3-24 The use of a seasonal approach to the regulation of AIM products appears attractive, allowing for the use of higher VOC products during periods when ozone does not form. However, the great majority of coatings manufacturers have very serious reservations about how such a program could be implemented as a practical matter.

VOC Content Limits/Final Compliance Deadlines

It is the position of the NPCA that the VOC Limits and Compliance deadlines proposed in the attached Appendix A - Proposed Amended Rule (dated October 23, 1998) are arbitrary and are not technically and economically feasible on the basis of reasonably foreseeable coatings technology developments. The NPCA and individual member companies will provide more detailed comments on this matter during the future rule development process. But for the present it is important to note that we have carefully reviewed these limits with coatings technology experts in our member companies, several of which have staked out low VOC coatings as a major market and have for decades devoted millions of dollars to research and development of such coatings.

3-25 It is the consensus of our membership that all of the proposed revised VOC limits proposed in this rulemaking suffer from on or more of the following defects:

- There is no reasonably foreseeable technology that would achieve the limit.
- The limit might be completely appropriate for some applications in a coatings category but completely inappropriate for others.
- The limit might be achieved but at unacceptably high additional costs (e.g., limiting IM coatings to two-pack systems).

We again urge the District to hold off any further drafting of the proposed revisions to Rule 1113 until the results of the NTS comparative study and the CARB 1998 architectural emission inventory are available and have been discussed in a public forum.

Additional Regulatory Alternatives

Development of More Specific Categories

As the District moves to lower the VOC content limit of an AIM coatings category, the number of coatings that can exist under that category for particular requirements are diminished unless the lower VOC technology mandated by the new limit can accommodate such coatings. Unfortunately, this is not always feasible and this is particularly true at the very low VOC limits being proposed. As the District looks to lower the VOC content of AIM products, the District should work with coatings manufacturers and users to identify those specific applications that can not be technically or economically reformulated or replaced by a lower VOC product at the proposed limits.

3-26

The District has indicated that such a process is impractical. Aside from the District's obligation to thoroughly evaluate the technological and economic feasibility of its proposed limits, which would include determining which applications would be eliminated by its proposed limits and the impact of the elimination, we note that this process of further refining coatings categories already has been accomplished in the development of the national AIM rule. The national rule provides category definitions on which a discussion of the identification and expansion of the list of categories for Rule 1113 could begin. The expansion of the number of categories will allow the District to lower the VOC limits for those coatings applications where the lower limits can be effectively achieved while ensuring that the limits do not apply to coatings applications for which they would not be feasible.

Alternative Methods for Determining VOC Content of Low VOC Products

As the VOC limits of AIM coatings are lowered the District needs to evaluate the use of alternative methods for determining VOC content. For very low VOC (less than 75 g/l) coatings, Method 24 (the less water method) can give false and erroneous VOC determinations. This situation is analogous to the situation with low solids coatings where the District and EPA have recognized the need for a modified test to determine VOC content. We believe that the Draft SEA should include a discussion of the test method for determining VOC content of low VOC products.

3-27

Fees

3-28 The draft SEA should explore an option that would allow purchases of noncompliant coatings on payment of a fee, similar to the system that exists in the national AIM coatings rule.

Environmental Checklist

We believe that the PAR 1113 could have significant effects on the environmental factors identified in Chapter 2 pages 2-3 to 2-14 of the Draft Environmental Assessment Initial Study. We also want to identify areas of concern in addition to those identified by the District that should also be addressed in the Draft SEA document.

IX. Hazards

We do not agree with the District's finding that "...the project-specific human health impacts associated with the implementation of PAR1113 are considered insignificant...." As manufacturers are forced to supply lower and lower VOC products, the number of formulating options will be more limited and the focus will be on the use of higher and higher molecular weight polymers. As the molecular weight of the polymers increases so do the risks of increased safety
3-29 and health impacts. Higher molecular weight polymers are by their nature more reactive and thus potentially present increased exposure hazards.

For example – with the move to a 50 g/l VOC limit for a non-flat coating in 2005, there will be increased pressures for the use of specialized coatings (e.g., two-pack systems) in high traffic commercial and the do-it-yourself (DIY) market. This could in turn increase the exposure of untrained applicators and DIY'ers to increased skin and inhalation hazards. The District should include an evaluation of these hazardous in the Draft SEA.

XII. Utilities and Service Systems

c. Landfills.

3-30 With the expected increase in the use of two-pack systems, particularly by untrained applicators, there no doubt will be an increase in the amount of unusable cured two-pack materials that have solidified before they could be applied. Thus a foreseeable impact on both solid and hazardous waste disposal handling facilities and landfills will be an increase in these waste streams.

We greatly appreciate the opportunity to comment on this initial draft and we look forward to further participation in the revision of the rule.

Sincerely,

Robert J. Nelson
Director, Environmental Affairs

Jim Sell
Senior Counsel

APPENDIX B

Initial Comments 6/7/99

NPCA Recommended Changes to the ARB's 5/19/99 Draft Suggested Control Measure for Architectural Coatings

1. **Effective Dates**

3-31

The effective date for the first revision of the VOC limits should be no earlier than July 1, 2004. If shown to be technical feasible, the effective date for the second round of VOC emission reductions would be no earlier than July 1, 2008. We would be happy to discuss our reasoning for these recommended changes in effective dates.

2. **Proposed Limits**

3-32

The proposed changes to the Table of Standards of VOC limits should be the focal point of discussions at the July 1, 1999 workshop. NPCA will reserve its comments on individual limits until the NOP is released. For the second round of VOC emission reductions, the reduction of individual category limits should be eliminated and replaced by a " Increments of Progress Program". A detailed description of such a program will be provided before the next workshop.

3. **Categories and Definitions**

General Recommendations for the Revision of SCM

33

As we stated in our earlier comments to the ARB staff, the ARB should adopt the national rule as a template, incorporating all of the national rule product definitions, reporting and labeling requirements. Due to the unique conditions in the portions of California, we acknowledge that ARB may have to specify lower VOC limits for some categories of coatings than those in the

national rule. But the basic components of both rules should be as uniform as possible to reduce the inefficiencies associated with having to address the special VOC reduction needs of portions of California. The adoption of the national rule as a template, with its sixty-one categories and subcategories, would assist industry in more readily identifying categories where additional VOC reductions might be obtained, In part this is true because these coatings are sold in large volumes on a national basis and thus are the beneficiaries of focused research and development efforts to lower VOC content.

3-33

Additional Categories and Subcategories:

As a practical matter as the ARB considers the lowering of the current VOC limits for some of the largest and most important categories of AIM products (Industrial Maintenance, Flats, Non-flats, Primers, Sealers and Undercoaters, Stains and Waterproofing Sealers) the ARB must also consider the further subcategorizing of these national recognized categories and the inclusion of additional coatings categories for a number of special end use high performance AIM products that are currently covered by one of these board coatings categories. By doing this the ARB may be able to lower the VOC limit for a general category or subcategory of coatings within a broad category to take advantage of the availability and/or emerging technology while ensuring that the limits do not apply to coatings applications for which they would not be feasible and thus causing irreparable harm to manufacturers and coatings users of the these special products.

3-34

- At a minimum following categories should be added to the Table of Standards (TOS):
    1. Tank Lining and Piping Coatings
    2. Specialty Primers
    3. Interior Semi-Transparent Stains

In addition, a separate category for "High Gloss Non-Flats should be considered.

- The SCM should also incorporate any additional changes in the definitions that are made to the SCAQMD Rule 1113 during the ninety day review period.

- The following definitions for all of these new categories should be included in the Definitions Section of the rule.

TANK LINING AND PIPE COATINGS means an industrial maintenance coating formulated and recommended for application to the interior surfaces of storage tanks and reservoirs and associated piping exposed to immersion in water, wastewater, organic solvents and chemical solutions (aqueous and non-aqueous solutions).

3-35

(This category would replace the chemical storage tank coating category that has been added to Rule 1113)

INTERIOR-SEMI-TRANSPARENT STAIN is a coating formulated for interior use that produces a dry film with minimal coloring that does not completely conceal substrate or its natural texture or grain pattern.

SPECIALTY PRIMER is a coating formulated and recommended for application to a substrate to block stains, odors, or efflorescence; to seal fire, smoke or water damage; or to condition excessively chalky surfaces.

An excessively chalky surface is one that is defined as having chalk rating of four or less as determined by ASTM D-4214 - Photographic Reference Standard No.1 or the Federation of Societies For Coatings Technology "Pictorial Standards for Coatings Defects".

Prepared June 7, 1999

PDCA
PAINTING AND DECORATING CONTRACTORS OF AMERICA
Voice of the Professional Painting and Decorating Contractor

STEPHEN B. MURPHY
PDCA EXECUTIVE COMMITTEE

RESPOND TO:
Murphy Industrial Coatings
2704 Gundry Avenue
Signal Hill, CA 90806
Tel: 562/427-7720
Fax: 562/426-6751
e-mail: steve.murphy@ ibm.net

June 29, 1999

State of California
Air Resources Board
2020 L Street
Sacramento, CA 95812

FAX & MAIL

Attention: James Nyarady

Reference: SCM For Architectural Coatings

Subject: Proposed Changes

Per our meeting this morning, PDCA is strongly opposed to CARB's proposed changes to the Suggested Control Measure (SCM) for Architectural Coatings. PDCA strongly recommends the following process to deal with any proposed changes to the SCM to avoid the errors that SCAQMD made in its May 14, 1999 approval of the proposed amendments to its Rule 1113:

1. Establish a joint agency/industry working group with consensus goals, procedures, and timeframe to develop recommended proposed changes.

4-1

2. Move the target completion date from year-end to June of next year to allow time for this process to work.

3. CARB should assume the leadership role in dealing with an ongoing issue that has national ramifications, now that SCAQMD has failed in its leadership.

4. CARB should re-establish trust in the regulatory process by working with industry in a more reasonable and credible manner than SCAQMD.

4-2 The recent initial steps taken by CARB in developing the proposed changes appear to mirror SCAQMD's approach. SCAQMD's approach ended on May 14, 1999 in a disaster resulting in litigation and the loss of industry's trust in working with a governmental agency. The same process proposed by CARB will provide the same results.

4-3 CARB right now has an opportunity to serve the people of California by establishing itself as a leading regulatory agency that can meet and resolve issues by developing a working relationship with industry to find the best ways of protecting our environment while meeting the needs of industry and consumers.

Please call me if you have any questions concerning PDCA's recommendation.

PDCA

Stephen B. Murphy
President

SBM:nb

c: PDCA California Council
PDCA Golden State Council
NPCA
SSPC
EL RAP

Subject: CARB Comments (corrected copy)
Date: Fri, 23 Jul 1999 16:52:39 -0400
From: Monica Pierce <pierce@sspc.org>
To: "Jim Nyarady" <jnyarady@cleanair.arb.ca.gov>
CC: "Bernard Appleman" <appleman@sspc.org>

Mr. Nyarady,
Bernie did make a few changes. Here is the final version.

-Monica

July 20, 1999

Air Resources Board
2020 L St, P O Box 2815
Sacramento, CA 95812
Attention: Mr Jim Nyarady

Subject: SSPC Comments on ARB Suggested Control Measures for Architectural Coatings

SSPC is a not-for-profit technical organization representing facility owners (public and private), applicators, and suppliers of materials, equipment and services. SSPC has a history of cooperating with environmental health and safety regulatory organizations to minimize the impact of coatings operations on the health and welfare of the public and the work force.

SSPC's members use or supply coatings in the class defined as industrial maintenance.
SSPC's comment are primarily directed at this category, although they may also be
applicable to related categories such as rust preventive coatings.

SSPC's comments are as follows:

1. Industrial Maintenance Coatings: 2002 level of 250 g/l

The ARB has proposed the levels issued by SCAQMD. The latter have encountered
considerable opposition from industry groups including SSPC.

The technology for coatings at 250 g/l is not proven for several types of exposure.
5-1 These include linings for tanks containing aggressive chemicals such as acids, bases,
solvents and oxidizers. For potable water tank linings the technology is marginally
available at 250 g/l but there is a steep learning curve for the specifiers and applicators,
and three years is insufficient time for these to be implemented (e.g., requalification by
NSF standards, laboratory, and service testing). In addition, SSPC has contacted IM
coating suppliers to determine the VOC level achievable for exterior aggressive
exposure (e.g., UV along with moisture, salt, chemical fumes, temperature extremes).
5-2 Perhaps the most successful product for this application has been polyurethanes, which are not available with VOCs less than 300 to 320 g/l. This proposed SCM would essentially eliminate the current generation of polyurethanes. Any replacements would be based on
as yet unproven technology or on use on often cumbersome and expensive component
equipment. The imposition of this rule is expected to result in early failure and the need for

more frequent repainting.

2. Industrial Maintenance Coatings: 2006 level of 100 g/l

This level was also based on SCAQMD's rule making. This level is unachievable with today's technology. So ARB, like SCAQMD, is suggesting a rule based on speculation on advances in technology. This approach is not appropriate. In our view, it is not
5-3 normally a major problem to formulate a coating with reduced or zero level of VOC. Any competent formulator can achieve this level. However performance and application properties are needed for industrial maintenance (as well as other) coatings. There is little if any substantiated performance data on coatings with VOC of 100 g/l or less except for a few specialized applications (e.g., floor coatings).

3. Metallic Filled Coatings

The ARB proposed definition of this category excludes zinc. This exclusion is very surprising in view of the fact that virtually all other regulatory bodies have included zinc. Zinc-rich coatings are the foundation of many IM coating systems. Zinc-rich coatings at 250 g/l have not been proven for field application (e.g.,
5-4 Caltrans has used waterborne inorganic zincs for 20 years but they are not specified for field applications). Waterborne inorganic zinc (which has close to zero VOC) is considered by the vast majority of applicators and specifiers to be unsuited for field application. The industry has experienced far too many failures with these products. We are not aware of any advances in equipment or materials handling or application properties of these coatings which would be needed to make these coatings suitable for field application.

SSPC appreciates the opportunity to submit these comments and would be willing to discuss in further detail any of the above comments.

Respectful submitted,

Bernard R. Appleman
Executive Director, SSPC: The Society for Protective c"0

Monica Pierce
Accounting/Administration Specialist
SSPC: The Society for Protective Coatings
40 24th Street, 6th Floor
Pittsburgh, PA 15222

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Visit us at www.sspc.org
Join us at SSPC'99 in Houston, Texas Nov. 14-19!

Subject: CARB comments
Date: Tue, 20 Jul 1999 17:01:22 -0400
From: Monica Pierce <pierce@sspc.org>
To: "Jim Nyarady" <jnyarady@cleanair.arb.ca.gov>
CC: "Bernard Appleman" <appleman@sspc.org>

Before Bernard Appleman left this afternoon for Cleveland, he asked me to edit his comments and send them to you. There may be some technical inaccuracies due to my lack of knowledge/terminology and his (Bernie) absence to proof. He will return to the office on Friday 7/23. If you have any questions you may call me at ext 213 or Bernie at ext. 234. Please confirm receipt of this email.

Sincerely,

Monica Pierce
Temporary Executive Secretary

July 20, 1999

Air Resources Board
2020 L St, P O Box 2815
Sacramento, CA 95812
Attention. Mr Jim Nyarady

fax: 916-322-6088
email: jnyarady@arb.ca.gov

Subject: SSPC Comments on ARB Suggested Control Measures for Architectural Coatings

SSPC is a not for profit technical organization representing facility owners (public and private), applicators, and suppliers of materials, equipment and services. SSPC has a history of cooperating with environmental health and safety regulatory organizations to minimize the impact of coatings operations on the health and welfare of the public and the work force.

SSPC's members use or supply coatings in the class defined as industrial maintenance. SSPC's comment are primarily directed at this category, although they may also be applicable to related categories such as rust preventive coatings.

SSPC's comments are as follows:

1. Industrial Maintenance Coatings: 2002 level of 250g/l
The ARB has proposed the levels issue by SCAQMD. The latter have encountered considerable opposition from industry groups including SSPC. The technology for coatings at 250g/l is not proven for several types of exposure. These include linings for tanks containing aggressive chemicals such as acids, bases, solvents and oxidizers. For potable water tank linings the technology is marginally available at 250g/l but there is a steep learning curve for the specifiers and applicators, 3 years is insufficient time for these to be implemented (e.g., re-qualification by NSF standards, laboratory, and service testing). In addition, SSPC has contacted IM coating suppliers to determine the VOC level achievable for exterior aggressive exposure (e.g., UV, moisture, salt, chemical fumes temperature extremes). Perhaps the most successful product for this application has been polyurethanes, which are not available with VOC's less than 300 to 320 g/l. This proposed SCM would essentially eliminate the current generation of polyurethanes. Any replacements would be based on as yet unproven technology to use on often cumbersome and expensive component equipment. The position of this rule is expected to result in early failure and the need for more frequent repainting.

2. Industrial Maintenance Coatings: 2006 level of 100g/l
This level was also based on SCAQMD's rule making. This level is unachievable with today's technology. So ARB, like SCAQMD is suggesting a rule based on speculation of advances in technology. This approach is not appropriate. In our view, it is not normally a major problem to formulate a coating with reduced or zero level of VOC. Any competent formulator can achieve this level, however performance and application properties are needed for industrial maintenance (as well as other) coatings. There is little if any substantiated performance data on coatings with VOC of 100g/l or less except for a few specialized applications, (e.g., floor coatings).

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SSPC appreciates the opportunity to submit these comments and would be willing to discuss in further detail any of the above comments.

Respectful submitted,

Bernard R. Appleman
Executive Director, SSPC: The Society for Protective Coatings

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1890-1973

EMERITUS
ERNEST M. CLARK, JR.

June 25, 1999

VIA FEDERAL EXPRESS

AIR RESOURCES BOARD MEMBERS
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Sacramento, California 95814

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Ms. Sally Rakow
Public Member

Ms. Barbara Riordan
Public member, Mojave Desert
AQMD Member

Mr. Ron Roberts
Supervisor, San Diego County
San Diego AQMD Member

Re: Architectural Coatings Suggested Control Measure

Dear ARB Board Members:

Introduction

We are counsel for the Environmental, Legislative, and Regulatory Advocacy Program of the California Paint and Coatings Industry Alliance (the "California Paint Alliance"), a leading California paint industry trade association on regulatory matters, the Allied Local and Regional Manufacturers Caucus (the "ALARM Caucus"), a national paint industry trade association

concerned with such matters, and various individual paint manufacturers, retail paint dealers, and painting contractors who are headquartered or do substantial business in California.

Our clients received a letter, dated May 5, 1999 from your staff inviting them to a public workshop on June 3, 1999 to discuss draft proposed changes to ARB's suggested control measure (last amended in 1989) on architectural coatings. On May 6, 1999 your staff wrote a letter to South Coast AQMD expressing "support" for amendments to its Rule 1113 which would outlaw virtually all architectural coatings on the market. On May 14, 1999 your staff personally appeared before the South Coast AQMD board at a public hearing and, again, expressed "support" for adoption thereof.[1] Our clients have also received the staff's May 19, 1999 letter enclosing "the draft proposed SCM," which is very similar to the South Cost AQMD's amendments. That letter discusses both (a) the approach of "more closely aligning" the proposed SCM with recent amendments, adopted November 8, 1996 and
6a-1 May 14, 1999, to South Coast AQMD's Rule 1113 and, alternatively, (b) the staff's supposed collaboration with districts "to harmonize the SCM's provisions as much as possible" with EPA's architectural coatings regulation imposed nationwide, including in California, on September 11, 1998. We appeared at the June 3 workshop, and your staff appears determined to continue in its effort to follow South Coast AQMD.

A quick look reveals to anyone that it is impossible to "harmonize" the SCM with EPA's new national rule and also to "closely align[]" it with South Coast AQMD's recent amendments. EPA's and South Cost AQMD's actions are based on fundamentally conflicting rationales. The limits in South Coast AQMD's radical and unprecedented new amendments are many times lower than those in EPA's rule.

The ARB staff's recent statements to South Coast AQMD, its draft proposed SCM, and its posture at the workshop make quite clear that the staff has concluded that (1) ARB should amend its SCM at this time, (2) ARB should not "harmonize" those amendments with the new EPA rule, (3) ARB should, instead, "closely align[]" those amendments with the new South Coast AQMD amendments, and

---

[1] One of the few board members to express his reasons for voting for the bans cited the ARB staff's "very clear statement."

6a-1 (4) no prior independent economic nor environmental review by ARB was needed to support those conclusions. -

In this letter, our clients make and defend four basic points:

6a-2
- **ARB SHOULD NO LONGER REGULATE ARCHITECTURAL COATINGS.** As a result of EPA's new nationwide regulation of architectural coatings, promulgated September 11, 1998, California regulations, including the SCM and the proposed amendments thereto, are no longer consistent with federal law and, therefore, now violate state law. Indeed, California regulations covering the manufacture and sale of paint are now unconstitutional, because they have been preempted by EPA's new rule under the Supremacy Clause of the U.S. Constitution.

6a-3
- **ANY ARB REGULATION OF ARCHITECTURAL COATINGS SHOULD SET REASONABLE LIMITS AND DEADLINES.** Most state and local jurisdictions in America have elected not to regulate architectural coatings at all. The few agencies which have done so have, in the overwhelming number of cases, set reasonable limits and deadlines aimed at reducing excess organic compounds, not outlawing products. ARB set limits in 1981 and again in 1984, as did EPA in 1998, which refrained from counter-productive and anti-competitive bans. Most limits set by most districts in California have also avoided such extreme consequences. Even most of the rulemaking actions taken by South Coast AQMD, itself, during the past 22 years have been supported or unopposed by industry. If ARB continues to be active in this unique field at all, it should follow this well-established consensus in the regulatory community.

6a-4
- **ARB SHOULD AVOID THE CATASTROPHIC ERROR OF OUTLAWING VIRTUALLY ALL PAINTS.** South Coast AQMD, alone among all agencies in the nation, has recently lost its senses and banned most architectural coatings. This irrational step, and the growing public outcry it is exciting, will discredit South Coast AQMD in particular and all clean air regulation in general. The ARB staff should rethink the irresponsible position it prematurely took in May. The ARB board should not follow this approach and, indeed, should exercise

6a-4 leadership to restore reason to the statewide clean air program. It should rebuke South Coast AQMD's ill-considered and, we believe, ill-fated action, and it should decline to endorse any similar recommendation from the ARB staff.[2]

6a-5 • **ARB MAY NOT PROCEED FURTHER WITHOUT THE REQUIRED ECONOMIC AND ENVIRONMENTAL ANALYSES.** Proposing and adopting SCM amendments, especially amendments as revolutionary as those favored by your staff, presuppose careful analyses of the economic and environmental consequences thereof and of viable alternatives thereto. Indeed, such analyses are mandated under the Administrative Procedure Act and the California Environmental Quality Act. ARB's staff has jumped to its absurd conclusions without having performed these analyses. The board must insist that such analyses be performed promptly, if ARB is determined to proceed further at all.

The factual and legal support for the above four points is detailed in part II below. But, first, because the ARB board members are new to this subject, which has not been considered by ARB since 1989, we set out certain key background information in part I.

I. FACTUAL BACKGROUND

A. OZONE POLLUTION AND ARCHITECTURAL COATINGS

6a-6 As you know, excessive amounts of ozone, although both natural and invisible, cause transient irritation to the lungs of active or sensitive persons during summer afternoons. Ozone is the type of air pollution to which federal, state, and local regulators devote most of their regulatory attention.

The primary precursors of ozone are oxides of nitrogen, emitted mainly by motor vehicles, but also other industrial combustion sources. National Research Council, *Rethinking The*

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[2] Our clients intend to petition ARB to revoke its prior adoption of the South Coast AQMD's 1996 amendments as SIP revisions, and not to adopt its 1999 amendments.

6a-6 *Ozone Problem In Urban and Regional Air Pollution* (National Academy Press, Washington, D.C.,1992) at 7, 11.

6a-7 Organic compounds may also play some role in ozone nonattainment in some areas at some times. Hundreds of such compounds are emitted into the air, primarily by vegetation and motor vehicles, but also by various other evaporative sources, including thousands of commercial processes and consumer products. To be an ozone precursor, even in Los Angeles, an organic compound must be sufficiently volatile to rise into the ambient air and also sufficiently reactive to chemically react there with NO_x to contribute to excessive ozone concentrations. Some emissions of some organic compounds contribute negligibly or not at all to, or even reduce, ozone pollution. *Id.* at 153-54, 170.

6a-8 The predominant organic compounds in water-borne architectural coatings are a class of resins and additives (co-solvents) which include ethylene glycol and propylene glycol. The best scientific evidence is that these glycol compounds are low in volatility. Harley et al., "Respeciation of Organic Gas Emissions," *Environ. Sci. Technol.* (1992) 2395 at 2400. Indeed, as you know, as used in some products, glycol compounds are deemed by EPA and ARB to be insufficiently volatile to be problematic. For example, ARB's consumer product regulations exempt organic compounds with vapor pressures less than 0.1 mm Hg at 20° C. EPA's national consumer product regulation also exempts organic compounds with such low vapor pressures. Our clients believe that it is probable that the glycol compounds in water-borne coatings are similarly non-problematic.

6a-9 The predominant organic compounds in solvent-borne architectural coatings are a class of petroleum distillate carriers referred to as mineral spirits. The best scientific evidence is that mineral spirit compounds are low in reactivity. Harley at 2401. Congress has mandated, 42 U.S.C. § 7511b(e), and ARB and South Coast AQMD have often recognized, as you know, that organic compound regulations must take relative reactivity into account. ARB's low emission vehicle regulations implement such a strategy with the use of reactivity adjustment factors. Our clients deem it very likely that the mineral spirit compounds in solvent-borne coating are similarly non-problematic insofar as ozone pollution is concerned.

6a-10 EPA, ARB, and South Coast AQMD have never shown that the organic compounds in paints contribute materially or at all to ozone nonattainment.[3] California Paint Alliance and ALARM Caucus, based on the best scientific evidence and hypotheses, assert that **paints do not pollute.** In short, outlawing architectural coatings does not help one Californian breathe one easier breath. Please think about this basic point as you consider whether or not to outlaw virtually all paint products and, thereby, to destroy a major California industry.

B. HISTORY OF PAINT REGULATION

6a-11 Notwithstanding the absence of a solid scientific foundation, for 22 years EPA, ARB, and South Coast AQMD have led a very determined effort to regulate architectural coatings formulas in the name of clean air. Certain aspects of the effort have constituted what amounts to nothing short of a brutal war on paint manufacturers, dealers, and contractors, their employees, and the paint-consuming public.

Given the extreme and radical nature of the South Coast AQMD's recent amendments, and your staff's public support thereof and current proposal based thereon, we submit that ARB must become familiar with the history of such regulation at all three levels of government, including the dark spots as well as the bright.

6a-12 (1) ARB Regulation

ARB has made substantive policy choices for Californians about paint regulation on four major occasions during the past 22 years.[4]

In 1977 ARB took the lead in establishing California's so-called "model rule" on architectural coatings. Unregulated

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6a-10 [3] EPA estimates that organic compound emissions from architectural coatings (even assuming they were both highly volatile and highly reactive) constitute about 1% of such emissions from all sources.

6a-13 [4] State implementation plans containing architectural coatings rules, we understand, have typically been approved and transmitted to EPA by the staff, not the board. The board occasionally considers district plans, containing numerous possible control measures, including some relating to architectural coatings, but rarely the specifics of such measures.

solvent-borne coatings generally exceeded 400 g/L of organic compounds (predominantly mineral spirits), and unregulated water-borne coatings generally fell below 250 g/L of organic compounds (predominantly glycols). The initial model rule would have subjected all coatings to a 250 g/L limit over a period of five years. The basic theory was to outlaw the remaining solvent-borne coatings, thereby forcing makers, sellers, and users to switch to water-borne coatings. This led to litigation under the APA brought by the Ad Hoc Committee of Small California Paint Manufacturers against ARB. Within two years of its adoption, a widespread consensus arose among most regulators and regulated parties alike that ARB's adoption and district implementation of the model rule had been, and would be, an economic and environmental disaster. For example, in 1981 South Coast AQMD effectively repealed the model rule's drastic 250 g/L limit for non-flats.

6a-12 In 1981 ARB, then chaired by Mary Nichols (recently appointed as Secretary of the California Resources Agency), reviewed that limit. Health & Safety Code § 41500(b). After extensive public hearings, ARB established in South Coast AQMD the restrictive, but not unreasonable, limit of 380 g/L for non-flats. *Id.* at § 41504. The principle behind ARB's limit was to remove all excess or unnecessary organic compounds from solvent-borne non-flats without banning the products. Other districts followed ARB's lead, and this has been the non-flat limit in most areas ever since.

In 1984 ARB extensively reviewed the model rule limits for all specialty coatings based on technological assessments by outside experts. These limits were thereupon raised by ARB to the 350-420 g/L range. Again, these reasonable reformulation limits have been widely implemented and enforced at the district level for many years and, we believe, have stood the test of time.

In 1989 ARB revisited the issue and, as in 1977, once again became more venturesome. It adopted, over the vigorous opposition of our clients, the current SCM. The SCM fixed limits which would have effectively banned most formulas used to make solvent-borne paints. The theory of the SCM was, as in 1977, to compel the marketplace to substitute water-borne for solvent-borne coatings. Again, as in 1977, the SCM was a flop. A majority of California districts — San Diego APCD, for example — declined to adopt the SCM. Others were ambivalent, such as

Colusa APCD, which adopted the SCM and, then, promptly repealed it. A few districts which did attempt to implement the SCM, were sued, along with ARB, by our manufacturer, contractor, and dealer clients. *Colusa APCD v. Superior Court*, 226 Cal.App.3d 880 (1991). One court invalidated Bay Area AQMD's amendments under CEQA. *Dunn-Edwards Corp. v. Bay Area AQMD*, 9 Cal.App.4th 644 (1992). Ventura APCD's amendments were also invalidated on the same grounds after a second trial before a second judge. Furthermore, most of South Coast AQMD's amendments were invalidated in a third proceeding. *Dunn-Ewdards Corp. v. South Coast AQMD*, 19 Cal.App.4th 519, 522 (1993).

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In short, ARB's record during the last two decades has been mixed. When it sets limits designed to remove excess compounds from paint products, but not to ban those products, it succeeds. Local districts follow, and industry does not challenge the action. But when ARB has attempted to outlaw coatings (even only solvent-borne coatings) it has failed. Local districts and regulated parties rebel and prevail.

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(2) EPA Regulation

Initially, EPA regulated architectural coatings indirectly through the states. Sections 110, 172, and 182 of the Clean Air Act, 42 U.S.C. §§ 7410, 7502, 7511, mandate that states in ozone nonattainment areas prepare state implementation plans to be approved by EPA. In particular, Section 182(b)(1)(A)(i) mandates that California shall provide for organic compound emissions reductions by 1996 of 15%. Sections 110(k)(5) and 172(d) provide that EPA shall require states to correct plan deficiencies. Federal courts occasionally order districts to implement federally-approved plans. *E.g., CBE v. Deukmejian*, 731 F.Supp. 1448 (N.D. Cal. 1990); *CBE v. Deukmejian*, 746 F.Supp. 976 (N.D. Cal. 1990); *CBE v. Wilson*, 775 F.Supp. 1291 (N.D. Cal. 1991). However, the CAA does not require any state or local regulator to forego his or her usual quasi-legislative discretion not to adopt, or to repeal, an unwise rule. *Trustees For Alaska v. Fink*, 17 F.3d 1209, 1211-13 (9th Cir. 1994); *Coalition Against Columbus Center v. New York*, 967 F.2d 764, 773-75 (2nd Cir. 1992).[5]

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[5] If the CAA were treated as a federal mandate "commandeering" local and state regulators, it would violate the Tenth Amendment of the U.S. Constitution. *Printz v. U.S.*, 117 S.Ct. 2365, 2379, 2384 (1997); *Brown v.*

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More recently, EPA has begun to regulate architectural coatings and other products directly. In 1990 Congress enacted Section 183(e) which authorized EPA to (a) study, (b) list, and (c) regulate, under a highly specific regulatory process, products emitting organic compounds. 42 U.S.C. § 7511b(e). In 1995 (preliminarily) and 1998 (finally) EPA listed architectural coatings for immediate regulation. Section 183(e)(1)(A) and (3)(A) mandate that such regulations shall require "best available controls," or the degree of emissions reduction
6a-15 determined, on the basis of "technological and economic feasibility" and "environmental . . . impacts," is achievable through application of "the most effective" measures.

On September 3, 1996 EPA proposed and on September 11, 1998 it adopted a final national rule on architectural coatings. Again, Ms. Nichols, then as the head of EPA's air program, was in charge of these determinations. EPA's limits are in line with the California consensus, as generally reflected in ARB's 1981 and 1984 actions and virtually all actions of all districts. For example, the limit for nonflat coatings is 380 g/L, the limit for flat coatings is 250 g/L, the limit for industrial maintenance coatings is 450 g/L and the limit for primers is 350 g/L. The
6a-17 theory behind EPA's rule was to extend regulation to water-borne, as well as solvent-borne, coatings, but to remove excess compounds through reformulation only, not to ban any products and force substitution of low- or no- OC paints on non-paint substrate protection products.

(3) South Coast AQMD and Other District Regulations

Some California air districts have never regulated architectural coatings. Others have done so infrequently and moderately. As discussed above, only a few have attempted to
6a-18 embrace ARB's 1989 SCM.

Even South Coast AQMD, itself, has generally acted reasonably. It has amended its paint rule 22 times in 22 years. With several exceptions, most of those actions were widely seen as fair and sensible, as they aimed at removing unnecessary organic compounds from paints, not banning products.

6a-16 *EPA*, 521 F.2d 827 (9th Cir. 1975), vacated and remanded *EPA v. Brown*, 431 U.S. 99, 103 (1977), on remand *Brown v. EPA*, 566 F.2d 665 (9th Cir. 1977).

6a-19 South Coast AQMD, however, has recently gone off the deep end. It has in 1996 and 1999 adopted limits, not to remove excess compounds, nor even to ban only solvent-borne coatings, but to ban virtually all architectural coatings, water-borne included.[6] Its rule amendments will in the early part of the next decade, by imposing limits as low as 100 g/L, outlaw all solvent-borne paints and the best water-borne paints. They will later in the decade, by imposing limits as low as 50 g/L, ban virtually all the rest of the coatings used today.

6a-21 This is not the time or place to detail the sorry performance of the South Coast AQMD staff, certain outside interest groups, or the decision-making process of the South Coast AQMD board majority. Suffice it to say that our clients contend that the 1996 and 1999 actions were not taken on the merits. South Coast AQMD has made a grave mistake which, we believe, will not stand.

6a-22 These draconian actions were taken without widespread public support. The 1999 South Coast AQMD amendments were critiqued extensively by local and national news media. For example, the *Los Angeles Daily News* editorialized that its new rules were "radical" and "drastic." The *Long Beach Press—Telegram* opined that South Coast AQMD regulators are "leaning toward make-believe when it comes to paints" and trading "an all but impossible price to pay" for "improvements in air quality [which] could be next to nothing."

6a-20 [6] These bans cannot be excused on the basis of the widely-held (but highly dubious) theory of "technology-forcing." *See, e.g., International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 623, 629, 634, 636, 641, 642, 649, 650 (D.C. Cir. 1973) (use by clean air regulators of technology-forcing theory is "drastic medicine," a "dangerous game of economic roulette," and "shock treatment," and rulemakers, therefore, must avoid "crystal ball" gazing or "prophecy" at the time of adoption and, if necessary, allow an "escape hatch" or "safety valve" at the time of effectiveness). Here, low-OC and no-OC products have been manufactured and marketed by most companies as low-odor products (and by a few national companies more aggressively) for a number of years, and two-component systems with low-OC or no-OC have also been used in industrial settings for many years. However, virtually no professional nor do-it-yourself painters freely elect to buy and use these either unsuitable or expensive and difficult-to-use products. In short, these new limits do not force the development of new technology; instead, they force the use of existing, but wholly inadequate, technology.

The *Daily News* conducted this poll: "Do you favor tougher standards for the paint industry?" There were about 500 responses, 94% of which were "no." The *Orange County Register* asked its readers this question: "Do you think new paint formula regulations will force smaller manufacturers out of business?" Of 184 responses, 91% answered "yes."

The board member who spearheaded the 1996 ban of flats gave this pathetic rationale in his summation: ". . . [W]e're at a serious turning point in the history of this District and in
6a-22 our effectiveness as an organization. If we can't pass this we are, in effect, saying that we are failing in our ability to move forward."

Another board member, an elected official whose constituency is larger that those of all other elected official board members combined, voted "no" in 1996 and again in 1999. He cited the amendments' massive costs and nominal benefits, stating in 1996 that his colleagues were taking "a step backward," as well as "a sharp turn to the left."

Whether South Coast AQMD's recent steps are forward or backward, right or left, one thing is certain: its steps are
6a-23 huge and unlike any others taken before. South Coast AQMD is now alone, isolated from the mainstream, and, we perceive, the object of widespread and growing public ridicule. Unfortunately, ARB's staff has now stepped out into the same untenable and exposed position.

II. OUR CLIENTS' FOUR MAIN POINTS

A. THE NEW NEED TO ABSTAIN

(1) Policy Reasons

For 22 years EPA, ARB, and South Coast AQMD have "triple-teamed" paint manufacturers, dealers, and contractors, their workers, and the paint-using public. Now, due to federal
6a-24 action last year, there is absolutely no reason why this wasteful and unfair triplication should continue.

Even if paints pollute, which we deny, it is unconscionable that more than one level of government should continue to regulate. All three agencies are powerful, well-financed, and aggressive. Any one of the three has certainly

proven itself ready, willing, and able to handle the task. The assaults by the other two, at this point, are wholly gratuitous.

Accordingly, at least two of the three levels of government currently regulating architectural coatings should immediately stop doing so. Taxpayers will thereby save two totally wasteful sets of regulatory costs. More significant, the public will save the even larger costs inherent in complying with, not one, but three, sets of rules — which usually conflict.

6a-24 ARB is the most obvious candidate of the three to abstain. EPA is the only agency with explicit rulemaking authority over architectural coatings, 42 U.S.C. § 7511b(e), and it has now definitively exercised that authority. Districts also claim the power to regulate all "sources" of "air pollution".[7] On the other hand, the Legislature has explicitly denied ARB authority to regulate architectural coatings. Health and Safety Code § 41712.

In short, the fact the ARB has been involved in the regulation of architectural coatings in the past has been an anomaly, and now it is also an anachronism. ARB should gracefully retire from the field.

Of course, rulemaking at the district level is "[s]ubject to the powers and duties" of ARB. Health and Safety Code § 40001(a); *People v. A-1 Roofing Service, Inc.*, 87 Cal. App. 3d Supp. 1, 10 (1978). To coordinate district activity and ensure compliance with state standards, ARB shall review district rules to determine whether they are sufficiently effective to achieve and maintain such standards. Health and Safety Code § 41500(b). If ARB finds that district rules will not likely do
6a-25 so, it may establish for a district rules it deems necessary to do so. *Id.* at § 41504(a). This statutory scheme empowers ARB to "oversee" the effectiveness of district regulations with "ultimate authority" to establish them. *Stauffer Chemical Co. v. ARB*, 128 Cal. App. 3d 789, 793 (1992). Furthermore, ARB is authorized to "coordinate" district efforts. Health and Safety Code §§ 39003, 39500. It may also provide "assistance" to any district. *Id.* at § 39605(a). Finally, ARB has the

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[7] *Cf., WOGA v. Orange County APCD*, 14 Cal.3d 411, 417 (1975) (districts lack statutory authority to regulate contents of fuel in motor vehicles).

6a-25 responsibility to conduct "research" into the causes of and solution to air pollution.

After 22 years of painful experience in the field of architectural coatings regulation, it is doubtful whether districts any longer need ARB's assistance, and whether there is any longer a need for ARB to exercise its oversight powers by adopting model rules. If any ARB oversight actions are deemed appropriate, they would best be limited to two types. First, ARB
6a-26 could coordinate district efforts to harmonize California rules with the EPA rule. Second, ARB could research the volatility of glycols and the reactivity of mineral spirits to determine whether any paints and, if so, which ones are the proper targets of clean air regulation.

(2) Federal Inconsistency

Indeed, continued ARB involvement in this issue is now problematic on legal as well as policy grounds. Because EPA has now adopted nationwide limits on paint contents, state law prohibits inconsistent ARB standard-setting.

ARB is required under the APA to prepare and publish an initial statement of reasons describing its efforts to avoid "conflicts with federal regulations . . . addressing the same issues." Government Code § 11346.2(b)(6). It is also bound to include in a notice of rulemaking an informative digest containing a concise and clear summary of "existing laws and regulations . . . related directly to the proposed action" and, if the action "differs substantially from an existing comparable federal regulation or statute," the digest shall include a
6a-27 "description of the significant differences." *Id.* at § 11346.5(a)(3). An ARB regulation is approveable only if it complies with the standard of "[c]onsistency." *Id.* at § 11349.1(a). That means it must be "in harmony with, and not in conflict with or contradictory to," existing law. *Id.* at § 11349(d). These provisions ensure that ARB's regulations are consistent with CAA Section 183(e) and EPA's national paint rule thereunder. *Engelmann v. State Board of Education*, 2 Cal.App.4th 47, 62 (1991).[8]

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[8] Proposal and any adoption of the draft proposed SCM are subject to
6a-28 APA. The APA is applicable to the exercise of "any quasi-legislative power" conferred upon a state agency by statute. Government Code § 11346. "No state

Where, as in the matter now before you, a state law on a particular subject forbids what a federal law on the same subject permits, the two are inconsistent. *California v. FERC*, 495 U.S. 490 (1990) (state law imposing 30-60 cfs minimum on dam operator conflicts with federal law permitting 11-15 cfs minimum); *National Broiler Council v. Voss*, 44 F.3d 740, 747 (9th Cir. 1994) (state law imposing poultry label standards inconsistent with federal law); *California v. FCC*, 39 F.3d 919, 933 (9th Cir. 1994) (state's more stringent requirements on telephone company internet services conflict with more permissive federal law); *Vietnamese Fishermen v. California Department of Fish & Game*, 816 F.Supp. 1468, 1474-5 (N.D. Cal. 1993) (state prohibition of gill nets below 38° north latitude inconsistent with federal rule allowing such use); *Southern Fisheries Assn. v. Martinez*, 772 F.Supp. 1263, 1267-68 (S.D. Fla. 1991) (state law restricting fishermen to 2.99 million pounds per year in conflict

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agency shall issue, utilize, enforce, or attempt to enforce any . . . standard of general application . . . which is a regulation as defined in subdivision (g) of Section 11342, unless the standard of general application . . . has been adopted as a regulation . . . pursuant to this chapter." *Id.* at § 11340.5. Section 11342(g) defines a regulation as follows: "Regulation means every . . . standard of general application . . . adopted by any state agency to implement the law enforced or administered by it . . ." *Id.* at § 11342(g). The definition is interpreted broadly. *Tidewater Marino Western v. Bradshaw*, 14 Cal.4th 557, 569-71 (1996). In particular, ARB shall adopt standards and regulations in accordance with the provisions of the APA. Health & Safety Code § 39601(a). ARB normally follows the APA in carrying out its quasi-legislative activities. *E.g., Western Oil & Gas Assn, v. ARB*, 37 C.3d 502, 524-29 (1984) (ARB adoption of state air quality standards); *Western States Petroleum Assn. v. Superior Court*, 9 C.4th 559, 565 (1995) (ARB adoption of vehicular source regulation); *Clean Air Constituency v. ARB*, 11 C.3d 801, 815-16, 818-19 (1974) (ARB postponement of effective dates of previously adopted vehicular source regulations); *Stauffer Chemical*, 128 C.A. 3d at 793 n.4, 794, 796 n.5 (ARB review of district rule and establishment of stricter district rule). Where, as here, a state agency adopts standards to be followed by local or other state agencies, their proposal and adoption are subject to APA. *Engelmann*, 2 Cal.App.4th at 55-56; *San Marcos v. California Highway Comm.*, 60 Cal.App.3d 383, 403-10 (1976); *Ligon v. State Personnel Board*, 123 Cal.App.3rd 583, 587, 588 (1981); *Armistead v. State Personnel Board*, 22 Cal. 3d. 198, 202-04 (1978). The Office of Administrative Law has determined that a model law adopted by a state environmental agency for consideration and potential adoption by local environmental agencies is, itself, a regulation subject to APA. *In re Ventura County*, 199 OAL Determination No. 19 at 608 (the definition of regulation "does not require that [general] applicability of the challenged rule stem from the adopting agency").

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with federal law allowing up to 3.14 million pounds). Significantly, this type of inconsistency has been found in a similar case in the clean air context. In *American Motors Corp. v. Blum*, 603 F.2d 978, 981 (D.C. Cir. 1979) the court compared a California air pollution control regulation with a corresponding federal regulation under the CAA,, saying:

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> ". . . Congress . . . mandates that with respect to small manufacturers a lead period of two years is necessary . . . We conclude . . . that the California regulation, which denies to AMC a lead time of two years, is inconsistent with [the CAA]."

Thus, under state law, ARB may not adopt nor enforce SCM provisions more restrictive than the EPA regulation adopted on September 11, 1998.

(3) <u>Federal Preemption</u>

Furthermore, any SCM provisions more strict than federal law are also now unconstitutional. Article VI, Clause 2 of the U.S. Constitution provides that ". . . the laws of the United States . . . shall be the supreme law of the land." Under this clause, state laws which interfere with federal laws on the same subject are invalid. *See, generally, McCulloch v. Maryland*, 4 Wheat 316 (1819); *Gibbons v. Ogden*, 9 Wheat. 1, 211 (1824); *Cooley v. Board of Wardens*, 12 How. 299, 319 (1851). Two lines of implied preemption cases are especially pertinent to the matter at hand.

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First, where a state law on a particular subject forbids what a federal law on the same subject permits, the two are in conflict, as discussed above, and the state law is, therefore, unconstitutional. *American Motors*, 603 F.2d at 981; *FERC*, 495 U.S. at 490; *National Broiler*, 44 F.3d at 747; *FCC*, 39 F.3d at 933; *Vietnamese Fishermen*, 816 F.Supp. at 1474-5; *Southern Fisheries*, 772 F.Supp. at 1267-68.

Here, it is clear that each of the proposed limits (among other provisions) would prohibit manufacture, sale, and use of coatings which the corresponding EPA provision permits. Therefore, each would be conflicting and, for that reason, invalid under the Supremacy Clause.

Under a second line of implied preemption cases, where Congress intends to establish uniform standards governing products which move in interstate commerce, state laws frustrating such national uniformity are preempted. *Ray v. ARCO*, 435 U.S. 151, 166 (1978) (oil tanker design); *International Assn. of Independent Tanker Owners v. Locke*, 148 F.3d 1053 (9th Cir. 1998) (same); *Independent Energy Procedures v. California PUC*, 36 F.3d 848, 854 (9th Cir. 1994) (co-generation facilities).

A district court in California and the Ninth Circuit have explicated the above principles in the context of regulating mobile goods to reduce air pollution. In *California v. Navy*, 431 F.Supp. 1271 (N.D. Cal. 1977) ARB and a California air district sued the U.S. Navy alleging violation of California rules regulating pollution emitted from the immobile concrete structures in which moveable jet engines were tested. The court held that the structures could be regulated, but not the engines. The court explained that the general scheme of the CAA is that EPA regulates "moving" sources, but states retain residual authority over "stationary" sources. *Id.* at 1275. It noted the need for national "uniformity" for moveable products. *Id.* at 1284, 1288 n. 14. It stated that CAA preemption protects engine
6a-29 manufacturers "against the 'chaos' of multiplex standards for entities which readily traverse state lines." *Id.* at 1285. The court found that the federal interest was to protect against varying state regulation of the "performance, design, manufacture, operation, etc." of moving products. *Id.* at 1285, 1287. On appeal, *California v. Navy*, 624 F.2d 885 (9th Cir. 1980), the Ninth Circuit agreed, finding that the district court had "extensively and excellently" analyzed implied preemption principles in the context of air pollution regulation of moveable goods. *Id.* at 888, 889. It stated that a purpose of federal preemption of aircraft engine regulation was national "uniformity" of standards. *Id.* at 889. It stated that "federal interests . . . would be impaired" if the engines, themselves, "must be altered to accommodate state law." *Id.* at 889.

California v. Navy was followed by a California appellate court in a state air pollution case. *Harbor Fumigation, Inc. v. San Diego APCD*, 43 Cal.App.4th 854, 867 (1996) (district regulation of methyl bromide as a pesticide would be preempted).

In the matter now before ARB, it is clear that Congress intended to promote national uniformity of standards governing

mobile products by enacting CAA Section 183(e). The legislative history so demonstrates. The Report of the House Committee on Energy and Commerce specifically expressed concern about "the potential burden which different States[']standards might impose on manufacturers of products sold nationwide." H.R. Rep. No. 101-490 (May 17, 1990) at 254. Section 183(e)(9) was intended to encourage cooperation in "developing uniform regulation" of such products. *Id.* "Where national regulation and uniformity is necessary, the legislation so indicates." *Id.* at 163. Products ". . . can be more effectively controlled at a national level . . ." *Id.* at 248. Indeed, the House Report specifically contemplated that architectural coatings ". . . will be covered by a national rule . . ." *Id.* at 251. The statement of the Senate managers similarly noted that Section 183(e)(9) is intended to "encourage national uniformity."

Furthermore, EPA's own statement supporting its promulgation of a national regulation of architectural coatings provides further support for this proposition:

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> "A Federal rule is expected to provide some degree of consistency, predictability, and administrative ease for the industry . . . [A] national rule helps reduce compliance problems associated with noncompliant coatings being transported into nonattainment areas from neighboring areas and neighboring States . . ." 61 Fed.Reg. at 32731.[9]

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[9] Section 183(e)(a) alludes to, but does not explicitly authorize, state regulations of products. This may allow states to regulate the intrastate use of paint. But it does not negate preemption of the regulation of interstate manufacture and sale thereof. *Wisconsin Public Intervener v. Martier*, 501 U.S. 597, 613-14, 615 (1991); *Washington State Building and Construction Trades Council v. Spellman*, 684 F. 2d 627, 630 (9th Cir. 1982); *Casper v. E.I. Dupoint de Nemouns & Co.*, 806 F. Supp. 903, 905-07 (E.D. Wash. 1992). In addition, certain general provisions of the CAA, which were originally enacted in 1970, state that air pollution control at its source is the primary responsibility of the states and that nothing in the CAA precludes the right of any state to adopt any standard, limit, or requirement respecting control of air pollution. 42 U.S.C. §§ 7401(a)(3); 7416. However, such ancient and general provisions do not prevent preemption. *FERC*, 495 U.S. at 496-507; *Independent Energy Producers*, 36 F.3d at 857 n.14. The U.S. Supreme Court was unable to find in a similar CAA provision "any clear and unambiguous declaration" of residual state power. *Hancock v. Train*, 426 U.S. 167, 180-81 (1976). Indeed, the court was "not able to draw . . . any support" from Section 116, itself, for the state's argument against preemption. *Id.* at 186

6a-29 Thus, the federal mandate that mobile products, including paints, be regulated uniformly on a national basis impliedly preempts all state and local limits, including the proposed SCM amendments, which frustrate the federal limits.

B. REASONABLE CONSENSUS LIMITS

If, for some reason, ARB determines that it will stay in the paint game, despite EPA's 1998 rulemaking, it should follow the example of EPA (and most districts, as well as its own examples in 1981 and 1984) and adopt limits which are reasonable, that is, which remove unnecessary organic compounds, but do not actually ban socially valuable paint products.

6a-30 EPA's 1998 national rule adopted limits which most California manufacturers have found reasonable. These limits require reformulation to remove excess organic compounds for both solvent-borne and water-borne coatings, but they generally do not outlaw product lines. They are now operative in all states, including California.

6a-31 All knowledgeable and candid observers acknowledge that paint bans have massive economic costs. They also acknowledge that any ozone reduction benefits of paint bans are dubious at best, due to low volatility of glycol compounds in water-borne coatings, low reactivity of mineral spirit compounds in solvent-borne coatings, and increased paint usage of low-quality coatings (and, therefore, increased emissions). *Dunn-Edwards v. Bay Area AQMD*, 9 Cal.App.4th at 657-58. Indeed, paint bans will produce still other adverse environmental impacts (aesthetic, health, safety) in either a badly-painted or an unpainted California. Given these facts, precipitous action of the type your staff proposes is wholly unwarranted.

6a-32 Most California air districts, on almost all occasions they have addressed the issue, have regulated architectural coatings — if they have done so at all — by imposing limits and deadlines which required reformulation to remove excess organic compounds, but they did not cross the line and ban products to force substitution of low-quality paints or non-paint products. The consensus at the local level has been so strong that ARB's

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6a-29 n.47. Section 116 is not "the kind of clear and unambiguous authorization necessary" to avoid preemption. *Id.*

1989 SCM, which attempted to outlaw certain solvent-borne coatings, has had no real effect in most local areas.

6a-32 ARB, itself, has on key occasions honored this consensus of reason. In 1981, ARB established the 380 g/L limit for non-flats in South Coast AQMD, after which the entire state followed. In 1984, ARB amended its model rule to raise limits for specialty coatings and, again, all districts did the same.

6a-33 Finally, on September 11, 1998, after years of reporting and scheduling activity purporting to comply with the detailed study and listing mandates and the stringent, but sensible, rulemaking standard of CAA Section 183(e), EPA promulgated limits applicable in every state of the union, including California. These limits, too, force California manufactures to remove excess compounds from all their products. But they do not force them to stop making, or their customers to stop using, such products.

6a-34 If ARB believes (we contend erroneously) that it must continue to act, then it should, indeed, "harmonize" the SCM with the new EPA rule and also with the vast majority of all district rules, as well its own rulemaking actions of 1981 and 1984. The regulatory consensus was at least reasonable and is the only defensible type of continued activity.

C. SOUTH COAST AQMD MISTAKE

In stark contrast, South Coast AQMD's recent actions are no example for ARB or any other agency to follow.

6a-35 To any astute observer, it was obvious that the South Coast AQMD staff members who recommended the new amendments, the interest groups which supported them, and the South Coast AQMD board members who voted for them, did not act on the basis of the environmental and economic merits, but on the basis of extraneous factors. These radical and extreme actions were driven not by reason but by power and emotion.

What will be the consequences of South Coast AQMD's irresponsible actions? Of course, no one can predict the future with any certainty. But here is our best speculation at this time: South Coast AQMD's recent proposal mobilized public opposition as never before, and its adoption will surely intensify that mobilization. The fight against unreasonable

rules during the past 22 years has been led primarily by a few Southern California paint manufacturers. South Coast AQMD's actions are sure to motivate manufacturers across the nation to become much more actively involved in the crusade. Indeed, large multi-national manufacturers which have in the past not opposed, or even supported, regulation may well join the fight. Contractors and dealers, most of which have to this point been only moderately active, are expected to come forward in the thousands. The same is true of the hundreds of thousands of workers who make, sell, or apply paint for a living. Finally, architects, decorators, and industrial, commercial, and residential users of paint products, who are outraged at the senseless bans, we predict, will become active in a new nationwide campaign to reverse them.

How will that new and indignant force of opposition go about attempting to reverse the product bans? Again, please allow us to risk some predictions: Heretofore, Southern California manufacturers have relied primarily upon courteous
6a-35 presentations to regulators of the scientific and economic merits and on occasional law suits to prevent or invalidate rule adoptions. These basic methods of social action will continue. But, in addition, regulators in the future should expect to encounter new responses. Any future litigation will have to consider seeking monetary relief in addition to rule invalidation.[10] Manufacturers, dealers, contractors, workers, and consumers can also be expected to take their just grievances to the Legislature and the Congress. The issue could also well become a major subject of press attention and, indeed, a prime example of regulatory failure in the mind of the public. For

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[10] For example, trade secrets, including product formulas, are protected property interests. *Formulabs, Inc. v. Hartly Pen Co.*, 275 F.2d 52, 56 (9th Cir. 1960); *Clark v. Bunker*, 453 F.2d 1006, 1009 (9th Cir. 1972); *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 474-75 (1974); *Pachmayr Gun Works, Inc. v. Olin Mathieson Chemical Corp.*, 502 F.2d 802, 807 (9th Cir. 1974). A taking by the government of intangible property for public use requires the payment of just compensation. *Oakland v. Oakland Raiders*, 32 C.3d 60, 66-69 (1982). This principle embraces trade secrets, such as chemical product formulas. *ITT Telecom Products Corp. v. Dooley*, 214 C.A.3d 307, 318 (1989); *Anchem Products, Inc. v. Costle*, 481 F.Supp 195, 199 (S.D.N.Y. 1979); *Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1000-14 (1984). Paint manufacturers use thousands of formulas to make and sell their products in California. The amendments in question will render useless and valueless and, thereby, "take" those formulas overnight. The fair market value of the formulas in question is about $400 million.

example, imagine millions of paint cans and pails on retail shelves and delivery trucks and at job sites bearing stickers crying "Save Paint" and thousands of signs in paint stores, home centers, lumber yards, and hardware stores bearing the same
6a-35 message. Imagine also millions of shoppers and homeowners being handed brochures telling the story of what paints have been outlawed, by whom, for what reason, and with what effect. In short, holding appointed and elected officials accountable for unjust and irrational regulatory actions will likely be the new paradigm.

D. ARB STUDY DUTIES

6a-36 Before taking any form of quasi-legislative action, ARB must first analyze the environmental and economic effects of the major alternative approaches. This the staff did not do, but the board must insist that it do, before any further public statements.

(1) Environmental Impacts

ARB is bound under CEQA to submit written documentation, containing environmental information, as to any project which may have a significant effect on the environment. Pub. Res. Code § 21080.5(a). Such documentation is required to include a description of the proposed activity with alternatives thereto and measures to minimize any significant adverse environmental impact thereof. *Id.* at § 21080.5(d)(3)(i); 14 Cal. Code Regs. § 15252. Under Section 21080.5 an agency must prepare documentation which is the "functional equivalent" of a full environmental impact report. *City of Coronado v. California*
6a-37 *Coastal Zone Conservation Commission*, 69 C.A.3d 570, 581 (1977); *Gallegos v. State Board of Forestry*, 76 C.A.3d 945, 953 (1978). Indeed, the information required in such a document is "essentially duplicative" of that which would be included in a full EIR. *Citizens For Non-Toxic Pest Control v. Department of Food & Agriculture*, 187 C.A.3d 1575, 1584 (1986). An agency subject to Section 21080.5 must adhere to CEQA's "substantive criteria" and "broad policy goals." *Environmental Protection Information Center, Inc. v. Johnson*, 170 C.A.3d 604, 618, 620 (1985). ARB is "responsible" for complying with CEQA, has to "meet its own responsibilities," and "shall not rely" on other

6a-37 agencies. 14 Cal. Code Regs. § 15020; *Dunn-Edwards v. Bay Area AQMD*, 9 Cal.App.4th at 656.[11]

Prior to offering "support" for South Coast AQMD's amendments and floating the draft proposed SCM, ARB's staff failed to prepare an EIR-equivalent analyzing the following adverse environmental impacts of the proposed amendments: (1) aesthetic impacts of first and second set of limits, (2) health and safety impacts thereof, (3) increased volatility of emissions after first set, (4) increased reactivity thereof thereafter, (5) increased emissions thereafter, and (6) adverse ozone impacts of
6a-38 substitutes for paint products. Alternatives must also be assessed. These adverse environmental impacts and alternatives are discussed extensively in our April 21, 1999 letter to SCAQMD. A copy of this letter will be sent to you under separate cover.

ARB's staff took a shot in the dark by taking extremely important, and harmful, regulatory positions in public before analyzing the adverse environmental effects of those positions. At the June 3 workshop, ARB's staff promised to prepare a draft EIR-equivalent by the end of June. Unfortunately, that will come two months after the staff's damaging actions.

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[11] The term "project" is broadly defined in CEQA Section 21065(a), as follows: "[Project] means an activity which may cause . . . a reasonably foreseeable indirect physical change in the environment, and which is . . . [a]n activity directly undertaken by any public agency. . . ." Pub. Res. Code § 21065(a); see also 14 Cal. Code Regs. § 15378(a). The term "project," as used in CEQA, is given a "broad" interpretation by the courts. *Friends of Mammoth v. Board of Supervisors*, 8 C.3d 247, 259-62 (1972). Indeed, such broad interpretation is "[t]he foremost principle under CEQA." *Laurel Heights Improvement Assn. v. Regents*, 47 C.3d 376, 390-91 (1988). The projects to which the mandate of CEQA Section 21080.5 applies involve the "adoption or approval of standards . . . or plans for use in the regulatory program." Pub.
6a-37 Res. Code § 21080.5(b)(2). ARB's program has been so certified to involve "the adoption, approval, amendment or repeal of standards . . . or plans to be used in the regulatory program." 14 Cal. Code Regs. § 15251(d). The first of several governmental approvals of a project requires CEQA compliance. *Citizens Assn. For Sensible Development of Bishop Area v. County of Inyo*, 172 C.A.3d 151, 164-68 (1985). The first step of a multi-step project must be the subject of appropriate environmental review under CEQA. *City of Carmel-By-The-Sea v. Board of Supervisors*, 183 C.A.3d 229, 240-49 (1986). Environmental review documentation meeting CEQA requirements must be prepared at the earliest possible stage. *Id.* at 249-52.

6a-39 We note that on June 11, 1999 ARB published an initial study and a notice of preparation of an EIR-equivalent. It appears that ARB does not intend to address certain impacts, including (1), (2), and (6) above, nor certain alternatives, including manufacturer disclosures.

(2) Economic Impacts

The APA requires that any state agency think very carefully and in specific ways about the economic and other effects of a proposed quasi-legislative standard before adopting it. In particular, the agency shall assess whether and to what extent the proposed standard will affect the elimination of existing businesses or jobs within California. Government Code §§ 11346.3(b); 11346.54. It shall also assess the potential for adverse economic impact on California business enterprises and individuals, avoiding the imposition of unnecessary or unreasonable regulations. *Id.* at § 11346.3(a). Agency action shall be based on adequate information concerning the need for, and consequences of, the action. *Id.* at § 11346.3(a)(1). The agency shall consider the impact on business, including the ability of California business to compete with out-of-state business. *Id.* at § 11346.3(a)(2).

6a-40 To ensure that such assessments and considerations are performed, an agency shall prepare, submit to the Office of Administrative Law, and make available to the public an initial statement of reasons for proposing the adoption or amendment of a regulation. *Id.* at § 11346.2(b). The initial statement shall include: (1) a description of the problem, requirement, condition, or circumstance the regulation is intended to address; (2) a statement of the specific purpose thereof, the rationale for determining that it is reasonably necessary, and the reasons why any prescriptive standards are required;[12] (3) an identification of each study or report upon which the agency relies; (4) a description of any alternatives considered, including performance standards and alternatives that would lessen the adverse impact on small business, and the reasons for

[12] A prescriptive standard is a regulation that specifies the sole means of compliance with a performance standard by specific actions, measurements, or other quantifiable means. *Id.* at § 11342(f). A performance standard, on the other hand, is one that describes an objective with the criteria stated for achieving the objective. *Id.* at § 11342(d).

rejecting them;[13] and (5) evidence relied upon to support a finding that the action will not have a significant adverse economic impact on business.

Furthermore, the public notice mandated by APA shall include various information, including an informative digest containing a concise and clear summary of the effect of the proposed action. *Id.* at § 11346.5(a)(3). If the proposed action affects small business, it shall also include a policy statement overview explaining the objectives. *Id.* at § 11346.5(a)(3)(B). An agency shall determine whether the action may have a significant adverse economic impact on business. *Id.* at §§ 11346.5(a)(7), (8). If it may, the notice shall so state, identify types of businesses affected, and solicit proposals for alternatives, including exemptions, differing timetables, and performance standards, that would lessen the impact. *Id.* at § 11346.5(a)(7). If not, it shall so declare and provide evidence to support the declaration. *Id.* at § 11346.5(a)(8). The notice shall also include a statement of potential cost impact, *i.e.*, the reasonable range of costs, or a description of the type and extent of direct or indirect costs. *Id.* at § 11346.5(a)(9). It shall further include a statement as to any significant effect on housing costs. *Id.* at § 11346.5(a)(11). Finally, the notice shall include a statement that the agency must determine that no alternative considered would be more effective or as effective and less burdensome. *Id.* at § 11346.5(a)(12).

6a-40

Upon adoption of a regulation, an agency shall prepare and submit to OAL a final statement of reasons. *Id.* at § 11346.9(a). The final statement shall update the information in the initial statement. *Id.* at § 11346.9(a)(1),(b). It shall include a determination, with supporting information, that no alternative would be more effective or as effective and less burdensome. *Id.* at § 11346.9(a)(4). It shall also include an explanation setting forth the reasons for rejecting any proposed alternatives that would lessen the adverse economic impact on small business. *Id.* at § 11346.9(a)(5).

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[13] A small business is one which is independently owned and operated and not dominant in its field of operation. *Id.* at § 11342(h)(1). The term does not include a manufacturer with more than 250 employees, a contractor with more the $5,000,000 in annual gross receipts, or a retail dealer with more than $2,000,000 in such receipts. *Id.* at § 11342(h)(2)(I)(iii), (iv), (J).

6a-40 OAL shall review regulations and make certain determinations. *Id.* at §§ 11349; 11349.1(a). It shall approve the regulation if it complies with APA. *Id.* at § 11349.1(a). OAL shall return any regulation failing to comply with certain provisions of APA. *Id.* at §§ 11349.1(d), (f); 11349.3.

6a-41 Again, ARB's staff has supported, and proposed, draconian regulation without having performed any of these economic analyses, including: (1) manufacturers' formulas taken, (2) costs of successful reformulation, (3) costs of unsuccessful efforts to reformulate, (4) costs to retailers, (5) costs to contractors, (6) effects on small business (7) anti-competitive impacts, (8) job losses, and (9) losses suffered by consumers. The staff has also failed to identify alternatives (such as directions for use, seasonal use restrictions, and harmonization with EPA's rule) and analyze the various alternatives for cost-effectiveness. A comprehensive discussion of these economic impacts is contained in our May 7, 1999 letter to SCAQMD. A copy of the letter will be sent to you under separate cover.

ARB's staff clearly jumped the gun. It has taken an extreme public position — that the California paint industry should do without virtually all of its existing products — without having even thought about the economic consequences of that unprecedented approach. Indeed, the staff indicated at the June 3 workshop that it intended to press forward without performing an economic analysis under APA. The ARB board must correct this serious (and already disastrous) failure at once.

Conclusion

In 1763 Parliament thoughtlessly and arrogantly imposed on the American Colonies the so-called Townshend Duties, under which various products imported from England to America — including **paints** — were subjected to severe burdens. The Colonists were outraged and, even though Parliament repealed the statute in 1765, the short-lived legislation was a major cause of our glorious American Revolution.

6a-42 South Coast AQMD has similarly made a blunder of cosmic proportions. ARB's staff has aided and abetted that blunder and is now proposing that the ARB board follow suit. No.

6a-43 Our clients submit that ARB should get out of the business of triple-teaming the paint industry, now that EPA has

taken over. If it insists on staying in the business, ARB should harmonize its SCM with EPA's national rule, most districts rules, and ARB's own 1981 and 1984 actions. ARB should avoid making the
6a-43 grievous mistake made by South Coast AQMD. Finally, ARB must not take any further action without first conducting its own environmental review under CEQA and its own economic review under APA.

Very truly yours,

William M. Smiland/mme

William M. Smiland

WMS/mme

cc: Michael P. Kenny (Duplicate By Fax)
Peter Venturini (Duplicate By Fax)
Dean C. Simeroth (Duplicate By Fax)
Jim Nyarady (Duplicate By Fax)
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August 17, 1999

Mr. Jim Nyarady
Manager, Strategy Evaluation Section
Stationary Source Division
Air Resource Board
Post Office Box 2815
Sacramento, CA 95812

Re: Draft Environmental Impact Report for Suggested Control Measure for Architectural Coatings

Dear Mr. Nyarady:

This firm represents the California Paint Alliance, a leading California paint industry trade association on regulatory matters, the Allied Local and Regional Manufacturers Caucus, a national paint industry trade association concerned with such matters, and various individual paint manufacturers, retail paint dealers and painting contractors who are headquartered or do substantial business in California and this letter is written on their behalf in response to the Notice of Preparation of a Draft Program Environmental Impact Report for ARB's proposed amendments to the architectural coatings Suggested Control Measure ("Notice").

6b-1 As you correctly state in the Background section (at 1-3), volatile organic compounds ("VOC") are not classified as criteria pollutants and no federal or state ambient air quality standards exist for such compounds. Thus, regulation of VOC should be undertaken only if, and to the extent, the VOC to be regulated participate in promoting ozone concentrations in excess of the standards. However, the Notice goes on to state (at 1-3), "In general, ambient VOC concentrations in the atmosphere are suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis, even at low concentrations." No citations in support of this statement are listed. I request that you provide me with a complete bibliography of any studies, articles, reports or other documents that you contend support this statement about the impacts ambient VOC are "suspected" to cause.

6b-2 In the Alternatives section (at 1-9) the Notice lists seven alternatives that are under consideration for inclusion in the Draft Program EIR. We strongly support the inclusion and comprehensive analysis of each of the listed alternatives. In particular, a regulatory strategy incorporating exemptions for low vapor pressure and negligibly reactive compounds is consistent both with the objective of achieving ozone attainment and similar regulatory programs developed by ARB.

6b-3 The Environmental Checklist (at 2-11) states that the proposed project will have no impact on use of non-renewable resources in a wasteful and inefficient manner. ARB must face the reality that the draconian limits its proposes will drive home and property owners away from the unsatisfactory coatings that remain on the market to non-paint alternatives such as vinyl or aluminum siding for exterior use and wall coverings for interior use. The effect of this switch has the potential to adversely impact use of non-renewable resources.

6b-4 The Checklist also states (at 2-15) that the project will have no impact on aesthetics. CEQA provides that it is the policy of California to take all actions necessary to provide its people with "enjoyment of aesthetic, . . . scenic, and historic environmental qualities." Pub. Res. Code §21001(b). The environment must be pleasing to the senses and intellect of man, and regulations must provide a decent home and satisfying living environment for every Californian. *Id.* at §§21000(b), (g); 21001(d). Under the CEQA Guidelines, a project is deemed to have a significant effect on the environment if it will have a "substantial, demonstrable negative aesthetic effect." 14 Cal. Code Regs., App. G(b).

In *Quail Botanical Gardens Foundation, Inc. v. City of Encinitas*, 29 Cal.App. 4th 1597, 1603-07 (1994) the court set aside the certification of a negative declaration based upon the city's failure to analyze the aesthetic impacts (impaired ocean views) of the project (a residential subdivision). The court found substantial evidence supporting a fair argument of the possibility of such impact. It ruled that Appendix G(b) of the Guidelines established "a rebuttable presumption" that aesthetic impacts are significant. *Id.* at 1604. The court found it "self-evident" that the project would have negative effects on "beauty." *Id.* at 1604, 1606. Any assertions to the contrary by the city were not adequate to support a decision to dispense with environmental analysis of the aesthetic impacts. *Id.* at 1607.

Obviously, banning over 90% of the coatings now available may have significant impacts on the living environment of every Californian.

6b-5 In addition to the omissions noted above, the Checklist fails to adequately address the potential health and safety impacts of the project, as well as increased reactivity and volatility and increased emissions. The radical nature of the proposed project demands that any Draft Program EIR address substantially more impacts than are identified in the Notice.

Yours very truly,

Christopher G. Foster

CGF/cam

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June 24, 1999

Note: Confidential information contained in this letter was redacted as requested by Textured Coatings of America, Inc.

Via Facsimile (916) 322-6088 and Federal Express Overnight

Mr. Jim Nyarady, Manager
Strategy Evaluation Section, Stationary Source Division
Air Resources Board
2020 "L" Street – Fourth Floor
Sacramento, CA 95814

Dear Mr. Nyarady:

I am writing to explain to you why the California Air Resources Board should establish the following coatings as specialty coatings at the recommended VOC limits. In addition, I have included comments as to why mastic textured coatings should remain at 300 grams per liter as the SCAQMD has done.

7-1

- concrete protective coatings — 400 grams of VOC per liter of coating
- anti-graffiti coatings — 600 grams of VOC per liter of coating
- specialty primer coatings — 350 grams of VOC per liter of coating
- mastic textured coatings — 300 grams of VOC per liter of coating

I understand that you will require information concerning three factors justifying the coatings categories and the recommended limits: 1) technical justification for the coating and why lower VOC coatings are not an adequate substitute; 2) the additional VOC emissions that would be associated with the coatings at the recommended VOC levels; and 3) why the averaging provisions cannot be effectively used to keep these coatings in the market.

CONCRETE PROTECTIVE COATINGS

Technical Justification: We sell a Concrete Protective Coating XL-70® (basic chemistry vinyl toluene acrylic copolymer resin). This chemistry requires a VOC content of 400 grams per liter to achieve the coatings required performance and application characteristics.

7-2

The product is a solvent-base vinyl toluene acrylic copolymer system that is designed to go through form oils and release agent materials that are used in the forming of the concrete and remain on the surface of the concrete. Lower VOC products cannot penetrate these materials and provide the required adhesion. This product has been extensively tested over bare concrete. It was designed to meet the GSA Federal specification T.T.C 555 B for cement masonry surfaces.

It is also specified for bare old or new "green" concrete bridges by D.O.T.'s of many states, as well as architects for poured-in-place concrete and tilt-up. In all these cases the choice of textures and the high film built (16 miles dry) permit the product to bridge hair line cracks and diminish surface imperfections.

You will note that the coating uses an acrylic copolymer resin. The acrylic resin coatings chemistry has been identified by staff as presenting opportunities for lower VOC products and this was a consideration in selecting it for this coating. The performance characteristics that require the higher VOC content which cannot be met by lower VOC materials include that it is a primer-less, one coat system which is 15 to 20 times thicker than normal paint to provide protection for periods of over 20 years without requiring recoating and to meet similar strict performance requirements and specifications.

7-2

The prevention of the deterioration of concrete buildings, bridges, and other structures, which are not easily maintained or rebuilt, is the coating's primary purpose. The chemistry, which results in the hardness and long durability of the coating, is a high solids chemistry, which results in a dense coating. Because of its high solids and density and thus enhanced protective qualities, the chief beneficial characteristic of the coating which distinguishes it from other coatings that might otherwise be used, it requires a higher VOC content to perform and to be effectively applied. This coating, when applied, achieves excellent adhesion to the concrete and cures to a hard thick protective coating. Exposed concrete structures, which are increasingly being built in lieu of steel structures, require protection from extreme weather conditions, salt spray, and from water and chloride ion intrusion which can break down the concrete and thereby deteriorate the structure. An example of an extreme weather condition which the coating is designed to protect against is a hail or heavy rain storm, which would breakdown less durable coatings and thereby expose the concrete to salt spray and chloride ion intrusion. While such extreme conditions may be rare, they can be highly destructive of less durable coatings over large areas of concrete surfaces greatly increasing the probability of deterioration of the structure if not repainted. The coating's single coat application, primer-less, and longevity features not only reduce VOC emissions, they also reduce worker safety risks because the total number of man-hours that otherwise would be required to coat and recoat the difficult and often dangerous to paint concrete structures are greatly reduced.

Additional VOC Emissions:

It is expected that as the use of tilt up concrete structures increases in the District there will be more demand for the coatings However, these structures will require some type of coating in any event. Use of our coating reduces the repainting that would otherwise occur and thereby reduces VOC emissions over time.

7-3

Inability to Use Averaging: We are a specialty high performance coating manufacturer and therefore do not manufacture coatings which lend themselves to very low VOC content, e.g., flat interior coatings. We do make every effort to lower the VOC content of our coatings, however,

7-4

as evidenced by our use of acrylic technology for our concrete protective coatings. The averaging provisions can only be effectively used by companies with diverse coating lines and
7-4 thus penalize a company like Textured Coatings of America which has devoted its efforts to developing niche market coatings that otherwise would not have been developed because the volumes are too small to interest large manufacturers with diverse coating lines. This product represents our entire product line in the industrial maintenance coatings area.

ANTI-GRAFFITI COATINGS

Technical Justification: Our anti-graffiti coatings are solvent borne polyurethane products. The coating provides a permanent as opposed to a temporary anti-graffiti system and the chemistry to accomplish this requires a VOC content of at least 600 grams per liter. It is important to understand why permanent systems are required for anti-graffiti systems. Besides
7-5 eliminating the need for successive recoatings (the permanent systems can be cleaned of subsequently applied graffiti) the systems also provide the only effective anti-graffiti protection for surfaces that cannot be repainted, such as murals. The clear hard coating of our product can be cleaned and still protect the underlying mural without having to reapply the anti-graffiti product again. In fact, during the last Olympic games held in Los Angeles, it was our anti-graffiti system that was used on the city's murals. Our anti-graffiti system is approved by the city of Los Angeles under their Research Report #25054-T and is identified as Graffiti Gard IIIS.

Additional VOC Emissions:

Use of our coating reduces the repainting that would otherwise occur after each graffiti
7-6 episode and thereby reduces VOC emissions over time. Moreover, based on the Air Resources Board's Architectural Coatings Survey, it does not appear anti-graffiti coatings represent any substantial emissions. In fact, your survey failed to identify any sales gallons reported.

Inability to Use Averaging: We are a specialty high performance coating manufacturer and therefore do not manufacture coatings which lend themselves to very low VOC content, e.g., flat
7-7 interior coatings. We do make every effort to lower the VOC content of our coatings. The averaging provisions can only be effectively used by companies with diverse coating lines and thus penalize a company like Textured Coatings of America which has devoted its efforts to developing niche market coatings that otherwise would not have been developed because the volumes are too small to interest large manufacturers with diverse coating lines.

SPECIALTY PRIMERS

Technical Justification: We sell three specialty primers. Our XL-70[20] Masonry Primer is used primarily to prime poured-in-place concrete and tilt-up concrete (pre-formed concrete that is
7-8 delivered to the building site and then is "tilted-up" into place, see enclosed photographs). The product is a solvent-base vinyl toluene acrylic copolymer system that is designed to go through form oils and release agent materials that are used in the forming of the concrete and remain on the surface of the concrete.

Lower VOC products (including latex systems) cannot penetrate these materials and provide the required adhesion.

7-8 Our other two major specialty solvent based primers, namely Primer 27 and Primer 62, were specifically designed to go over less than ideal wood surfaces and chalky paint. The higher VOC (350 grams per liter) solvent primers penetrate the chalky surfaces and provide excellent adhesion for subsequent topcoats. Waterborne products cannot do the same, and thus require far more surface preparation. Latex primers are not recommended for cement masonry block, brick and mineral surfaces that have been previously treated with silicone-type water repellents. They require a special solvent-based primer to be used. TCA's primers XL-70®, Primer 27 or Primer 62 are ideal for these surfaces. Other surface types requiring specialty primers with VOC levels of 350 grams per liter are galvanized metal, aluminum, copper, stainless steel, ferrous metal and baked enamels.

Additional VOC Emissions:

7-9 **Inability to Use Averaging:** We are a specialty high performance coating manufacturer and therefore do not manufacture coatings which lend themselves to very low VOC content, e.g., flat interior coatings. We do make every effort to lower the VOC content of our coatings, however, as evidenced by our use of acrylic technology for our concrete protective coatings. The averaging provisions can only be effectively used by companies with diverse coating lines and thus penalize a company like Textured Coatings of America which has devoted its efforts to developing niche market coatings that otherwise would not have been developed because the volumes are too small to interest large manufacturers with diverse coating lines.

MASTIC TEXTURED COATINGS

These coatings have the appearance and consistency of liquid stucco. This is a highly specialized coating system that Textured Coatings of America, Inc. has manufactured for over thirty-nine years.

The solvent-based mastic is specified by architects for commercial application and also available to the Home Improvement market via contractors. The mastic textured coatings will weatherproof for fifteen to twenty years. This system meets Federal Specification TTC 555 B.

7-10 **Technical Justification:** The highlights of this specification are: (1) Resistant to 98 miles per hour wind driven rain (2) Permeability requirement (3) Minimum 60% solids (4) Flexibility and (5) Impact resistance.

It also has a Class A Fire Rating per ASTME 84, and has passed a 7,500 hours weatherometer test. The challenge in applying this coating at a specification of 50 square feet per gallon is to maintain a wet edge in the coating, especially when making multiple drops on a stage for high-rise buildings. A solvent film will stay wet longer than a latex mastic and will accept subsequent coating application for uniformity. Under the same conditions, a latex mastic forms a dry skin before the next application coat is applied. This results in line humps leaving an undesirable
7-10 appearance. In addition, hot weather conditions have undesirable effects with latex mastics, producing bubbling due to fast surface skinning over a liquid base.

Please note your survey data for mastic textured coatings does not show any sales volume above 150 grams per liter of VOC. All of TCA's products within this category are above 150 grams per liter.

Our solvent based mastic VOC's can vary depending on the texture and variation on perlite absorption. The perlite is used for different gradations of texture. We request that the VOC of 300 grams per liter be sustained. This category was never considered for reduction by the SCAQMD. TCA does not understand why this agency is choosing to attack this category when the total volume sold in California is insignificant. These products play a vital role protecting this state's infrastructure and the 50 grams per liter savings does not represent any significant VOC reductions.

Additional VOC Emissions:

Inability to Use Averaging: We are a specialty high performance coating manufacturer and therefore do not manufacture coatings which lend themselves to very low VOC content, e.g., flat interior coatings. We do make every effort to lower the VOC content of our coatings. The
7-11 averaging provisions can only be effectively used by companies with diverse coating lines and thus penalize a company like Textured Coatings of America which has devoted its efforts to developing niche market coatings that otherwise would not have been developed because the volumes are too small to interest large manufacturers with diverse coating lines.

In conclusion we urge that this board mandate the inclusion of the additional coating categories referenced above, put forth in this document and recommended by the NPCA. I believe that more time is needed before a sound decision can be made regarding the Air Resources Board's massive proposed reductions of VOC limits. This would allow a more thorough review of technologies and results of a recent AIM coatings performance survey commissioned by the SCAQMD.

Please recognize that TCA currently employs 65 people. If these limits go into effect, one of the
7-12 outcomes for TCA will be to close its Los Angeles factory and re-locate it outside of the state of

7-12 California. This would eliminate the livelihood all of our California employees as well as thousands of other people who make their living by selling and applying TCA's products in the state of California. This could be economically and socially devastating for many of our employees, some who have been employed with TCA in excess of 25 years or more and whose livelihoods depend on the operation of this factory.

Sincerely,

Kevin Worrall

Kevin Worrall
Chief Chemist

Enclosure (tilt-up photographs)

AMERON
INTERNATIONAL

Christine Stanley
V.P. Technology

PROTECTIVE COATINGS GROUP
Headquarters
Brea, California 92821

FAX!

FROM:	Christine Stanley	**DATE:**	July 20, 1999
TO:	CARB	**FAX:**	916/322-6088
ATTN:	Jim Nyarady	**PAGES:**	2 (Including cover sheet)
SUBJECT:	SCM FOR ARCHITECTURAL COATINGS, COMMENTS ON NOP		

Following are our comments on the NOP. These include an overview of the comments made to you during our telephone conference of 6/16 and include the data on nuclear coatings you requested.

8-1 1. We do believe there is a need for the Chemical Storage Tank Coating category as in South Coast's Rule 1113.

8-2 2. We do believe there is a need for Nuclear Coatings as defined in the National AIM Rule. Our research shows that an average nuclear power plant will use up to 500 gallons per year on maintenance of Level 1 and Level 2 areas. The worst case would be if a plant completely repainted all these areas which would require approximately 4000 gallons per unit. This is an unusual occurrence and not normally expected through the life of the plant but gives you an idea of worst case.

8-3 3. The definition of tint base could be misinterpreted to include job sites and traditional paint stores only and exclude warehouses; we suggest that the definition used in South Coast's Rule 1113 be used.

8-4 4. We cannot envision all the technology needs for the industrial maintenance market to meet the limits set forth for 2006. We believe, at this time, that these limits need not be set and that the second tier limits can be worked on after the effective date of the first tier when it will be clearer as to the available technology.

8-5 5. We believe that to meet the 2002 Industrial Maintenance Limits, some provision has to be made for low volume, non-compliant special use products. This could be averaging, variance procedure and/or small volume exemption. It is not possible for us to know every present use or foresee every future use of our products. As our customers change their products and processes, so their coatings needs change. As you reach the limits proposed, many technologies are no longer available to meet these new needs and we do not know if those remaining will do the job.

8-6

6. We believe that some consideration must be given to atmospheric conditions during application of coatings. The South Coast has a very moderate climate that lends itself to easier coatings applications. This is not true for the rest of California where both very high temperatures, low temperatures and high humidity environments can exist. High temperatures can drive solvent from a coating very quickly and thinning with very slow solvents can be necessary to apply a continuous film. Low temperatures lead to thicker material that requires fast solvent to thin the material to achieve atomization during spraying or flow and leveling during brush and roll applications. In low temperatures and high humidities, water-based products will not dry and consequently, these coatings cannot be used in these conditions. We would suggest a higher limit for applications that have such conditions. Since all the technology needed to meet the 2002 limits is not yet available, we find it very difficult to determine what that limit should be but suggest that 340 gms/liter may be appropriate.

Please call me if you have any questions at 714/529-1951, Ext. 212.

CS:rb

Phone: 714/529-1951, Ext. 201, 202, or 213 \ Fax: 714/529-1768

The Euclid Chemical Company 19218 Redwood Road Cleveland, Ohio 44110-2799
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William F. (Pim) VanSlooteren
Director of Marketing and
Technical Services

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July 9, 1999

Mr. Jim Nyarady,
Manager Strategic Evaluation Section,
Stationary Source Division
Air Resources Board
2020 L Street, P.O. Box 2815
Sacramento, CA 95812

Subject: Suggested Control Measure for Architectural Coatings

Dear Mr. Nyarady:

Thank you very much for your e-mail dated June 1999. Although the information you provided is clear, I would like to point out to you, but perhaps unnecessarily, the final ruling of the EPA, wyth regard to the necessity of a separate category for curing and sealing compounds, allowing a VOC limit of 700 g/l for this category.

I am sending you a copy of this document; the relevant text starts on page 72.

The arguments with regard to low temperature can also be made for a high temperature environment, if not even stronger here in California with our relatively low humidity

9-1 As you may know, the compressive strength of concrete is usually tested at 28 days. In warm and dry weather, one can find considerably lower strength in the same concrete mix design when this concrete is cured with a curing compound with a VOC limit of 350 g/l as opposed to using a curing and sealing compound with a VOC limit of 700 g/l. This difference can have an immediate and long-term effect on the quality and durability of the structure.

This occurs because concrete needs moisture to properly gain strength.

Consider the moisture loss of these two different classes.
Curing compounds - 0.055 g/cm2 at 200 ft. per gallon.
Curing and sealing compounds (30% solids, solvent based material, with a VOC limit off 625 g/l - 0.030 g/cm2 at 300 ft. per gallon.

A huge difference in performance!

Good curing is of vital importance to the quality of the concrete. The effects of poor curing, or using sub- standard materials can cause rapid wear on concrete surfaces, especially those surfaces subjected to hard rubber and steel wheels. Curing affects primarily the concrete in the cover (top 1 ½ - 2") to the reinforcement, and by definition, this is the concrete that protects the reinforcement from corrosion by the ingress of aggressive agents.

9-1

Also, most commercial projects desire a final surface that is more durable and attractive than can be achieved with lower solids materials. Both ASTM and at least two federal agencies recognize the need for curing and sealing compounds.

If you consider the re-coating requirements with a lower solids material, you may conclude that substantially more VOC's will be released than with a one-time application of a higher solids material from the curing and sealing category.

I hope that this information will be considered in your deliberations and that a VOC limit of 700 g/l can be universally adopted in California as well. Thank you very much for your attention in this matter.

Sincerely,

William F. (Pim) VanSisseren

P.S. Please add us to your mailing

Encl: 1

6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 59

[AD-FRL-6149-7]

RIN 2060-AE55

National Volatile Organic Compound Emission Standards for Architectural Coatings

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action promulgates national volatile organic compound (VOC) emission standards for architectural coatings pursuant to section 183(e) of the Clean Air Act (Act). This final rule is based on the Administrator's determination that VOC emissions from the use of architectural coatings have the potential to cause or contribute to ozone levels that violate the national ambient air quality standards (NAAQS) for ozone. Ozone is a major component of smog which causes negative health and environmental impacts when present in high concentrations at ground level. The final rule is estimated to reduce VOC emissions by 103,000 megagrams per year (Mg/yr) (113,500 tons per year [tpy]) by requiring manufacturers and importers to limit the VOC content of architectural coatings.

EFFECTIVE DATE: The effective date is [insert date of publication in the FEDERAL REGISTER]. The incorporation by reference of certain publications listed in the regulation

EPA has retained the VOC content limit of 250 g/l for roof coatings in the final rule.

Concrete curing compounds. Several commenters commented on the proposed VOC content limit of 350 g/l for concrete curing compounds, which are used predominantly in highway construction. Seven commenters stated that the proposed limit for concrete curing compounds is achievable based on existing technology, and one of these commenters maintained that the limit could be lowered to 300 g/l. On the other hand, one commenter took issue with the achievability and performance at the proposed limit of 350 g/l. The latter commenter suggested a VOC content limit of 625 g/l for this category, arguing that the proposed limit would eliminate most concrete curing membranes from the market, and that many companies do not sell curing compounds in States that have the 350 g/l limit.

In addition to consideration of these comments, the EPA reviewed the VOC content limits for this category in State rules. Several States, including Arizona, California, Massachusetts, New Jersey, and New York have had a VOC content limit of 350 g/l for concrete curing compounds for several years. The availability of compliant products in these States suggests that the limits are achievable, notwithstanding that not all manufacturers have chosen to market in those States. Based on the information provided

by the commenters in favor of the proposed limits and upon the existing State rules, the EPA has concluded that the proposed VOC content limit of 350 g/l for concrete curing compounds is technologically achievable and has retained this limit in the final rule.

Graphic arts coatings. Two commenters indicated concern about the performance of shop-applied graphic arts coatings at the proposed VOC content limit of 500 g/l. One commenter's specific concerns with coatings at this level included difficulty in achieving variation in gloss levels, variation in the required drying times in the drying room (implying shop-applied coatings), need for greater application amounts, and higher costs. Graphic arts coatings recommended by the manufacturer solely for shop applications are not required to meet the 500 g/l VOC content limit. As discussed earlier, the EPA has revised the definition of architectural coating to clarify that coatings recommended by the manufacturer solely for shop application are not subject to the rule. In addition, the definition of graphic arts coatings has been modified by removing the reference to in-shop coatings, and a definition of "shop application" has been added to the rule.

Based on a review of the 1990 VOC emission inventory survey and State architectural coating rules, the EPA

argued that multipurpose waterproofing sealers at 400 g/l do not meet minimum performance criteria for clear waterproofing sealers (that is, 60-percent water repellency for wood and 1 percent or less water absorption for brick). The representatives stated that 400 g/l products are high-solids products that may leave an oily residue or cause darkening of the surfaces to which they are applied and, thus, product performance may not meet industry standards. Combining clear and opaque waterproofing treatment sealers into one category is consistent with all existing State rules, which do not divide the category into clear and opaque waterproofing sealers and treatments. The State architectural coating VOC content limits for waterproofing sealers and treatments are either 400 g/l (for example, Arizona and California) or 600 g/l (Massachusetts, New Jersey, and New York).

E. Addition of New Coating Categories

The EPA received requests to establish 20 new coating categories in the final rule. In response to these comments, the EPA has established seven new categories: (1) calcimine recoaters; (2) concrete surface retarders; (3) concrete curing and sealing compounds; (4) conversion varnishes; (5) zone markings; (6) faux finishing/glazing; and (7) stain controllers. The EPA also evaluated requests, but did not establish new categories, for the following

coatings: (1) adhesion promoters; (2) asbestos and lead-based paint encapsulation; (3) concrete/masonry conditioners; (4) porcelain repair coatings; (5) marine/architectural coatings; (6) alkali-resistant primers; (7) tung oil finishes; (8) lacquer stains; (9) elastomeric high performance industrial finishes; (10) low solids coatings; (11) oil-modified urethanes; (12) thermoplastic (treatment) sealers; and (13) zinc-rich coatings. In general, new categories were not established for these coatings because the EPA determined that it is technologically and economically feasible for coating manufacturers and importers to achieve compliance with the rule. Further discussion of the rationale for the EPA's decisions on the new categories is contained in section 2.2.4.2 of the Architectural Coatings BID referenced under the ADDRESSES section of this preamble.

In general, the EPA considered creation of new categories if commenters submitted information supporting higher VOC content limits for such products than the otherwise applicable limits. The EPA considered the data submitted by commenters and obtained all reasonably available additional data to evaluate these requests. In cases where the EPA concluded that the proposed emission limits were not achievable, the EPA established a separate

category with an appropriate emission limit. The following is a discussion of the rationale for each of the new coating categories and its VOC content limit.

Calcimine recoaters. Under the proposed standards, calcimine recoaters would have been subject to the VOC content limit for interior flat coatings (250 g/l). However, several commenters stated that calcimine recoaters have a higher VOC content of 475 g/l, cannot be reformulated, are low-volume coatings, and serve a unique function of recoating water soluble calcimine paints. These paints are used in Victorian and Early American homes, especially on ceilings. Due to their low density, calcimine recoaters do not disbond the existing calcimine ceiling coatings, as conventional (250 g/l VOC) high-solids flat alkyd paints would tend to do. If a calcimine recoater is not used, the only alternative is to remove the existing coating, which is labor-intensive and expensive. Because these low-volume coatings reportedly cannot be reformulated, their composition is unique, and there is no substitute for these products, the EPA has added a separate category for calcimine recoater products to the rule with a VOC content limit of 475 g/l.

Concrete curing and sealing compounds. Under the proposed rule, these coatings would be subject to the 350 g/l VOC content limit for concrete curing compounds.

However, commenters presented information not previously considered by the EPA demonstrating that compounds designed for curing and sealing, as opposed to those designed for curing only, have different technical specifications that make it difficult to achieve the 350 g/l level. Concrete curing and sealing compounds function as longer term sealers that provide protection, aesthetic benefits, and durability in addition to curing. Commenters pointed out that there are separate American Society for Testing and Materials (ASTM) methods available for each of these categories and that ASTM Committee experts and at least two government agencies consider them distinct categories with different performance requirements.

Through follow-up phone calls with several concrete curing and sealing coating manufacturers, the EPA confirmed that concrete curing and sealing products are typically sold at levels much higher than 350 g/l. While waterborne products below 350 g/l are available, some industry representatives cited drawbacks such as poor low-temperature performance and stability. Since these products must often be used in low-temperature environments, the EPA agrees that the VOC content limit should reflect this usage. Therefore, the final rule includes a new category for concrete curing and sealing compounds. Based on an analysis of VOC content

and sales data for these products, the EPA has established the VOC content limit at 700 g/l.

Concrete surface retarders. Concrete surface retarders do not fall within any of the proposed categories except the general category for interior flat coatings with a VOC content limit of 250 g/l. These products are generally used in a manufacturing setting at a precast facility, but a small volume of products are field-applied. Commenters argued that these products cannot meet the 250 g/l level and, furthermore, that they are not coatings and should not be subject to the rule. However, they requested a VOC content limit of 780 g/l if the EPA regulated these products.

The EPA has concluded that concrete surface retarders meet the rule's definition of a "coating." Concrete surface retarders that are recommended by the manufacturer for use in the field at job sites are, therefore, subject to the rule. When retarders are recommended by the manufacturer solely for use in a manufacturing setting, such as at a precast facility, which is the typical situation, they are not subject to the rule. The EPA determined that concrete surface retarders that are used in the field at the actual job location are specialized, low-volume coatings used in limited circumstances, and there is no lower VOC content substitute for the function of these products. Therefore,

the EPA has included a separate category for these products in the final rule, with a VOC content limit of 780 g/l as requested by the commenters.

Zone marking coatings. Under the proposed rule, zone marking coatings were subject to the 150 g/l VOC content limit for traffic marking coatings. Zone marking coatings are those used to mark surfaces such as parking lots, driveways, sidewalks, and airport runways; they are generally applied by small commercial applicators. In contrast, traffic marking coatings are applied to streets and highways and are usually applied by large contractors or State Departments of Transportation. The commenters noted two issues associated with meeting the 150 g/l content limit for zone marking coatings. First, the 150 g/l content limit could only be met with waterborne coatings, which require different application equipment than solventborne coatings. Small applicators would be disproportionately impacted by the cost of acquiring the new equipment that is compatible with waterborne zone marking coatings. Secondly, the commenters asserted that waterborne zone marking coatings do not dry or cure properly during high humidity or low temperatures, conditions under which they must sometimes be applied.

After consideration of these comments, the EPA has added a separate category for zone marking coatings and has

The Valspar Corporation
1101 Third Street South
Minneapolis, MN 55415
612-332-7371

July 22, 1999

Mr. Jim Nyarady
Manager, Strategy Evaluation Section
Air Resources Board
2020 L Street
Sacramento Califonia 95812

Dear Mr. Nyarady:

Subject: Comments Regarding the June 10 SCM for Architectural Coatings

I am writing to express my concern about the reductions in Volatile Organic Content limits for architectural and industrial maintenance coatings under the Suggested Control Measure dated June 10, 1999. My company manufactures many of the coatings that are at issue.

Based on Valspar's product formulating versus product performance experience developed over the past 193 years, I can say that the proposed limits will likely eliminate a number of important coatings which protect homes and commercial buildings in the regulated districts of California. 10-1

Coatings are designed differently for a wide variety of substrates and performance expectations. Contrary to the opinion heard frequently from non-industry people that "paint is paint", coatings are developed differently for application over different surfaces, for different use conditions and different weather or environments. Unique chemistries are used in developing binders for these various coatings. The amounts and types of solvents used depend on application conditions, the length of drying time allowed and the extremes which may be encountered in temperature or humidity. Some coatings, because of the types of binders and application characteristics necessary for a particular application, require the use of higher levels of solvent than others. It may not be possible to develop a low VOC or waterborne version of a particular coating that works.

10-2 The VOC level of 100 g/L proposed for Flat Coatings in 2001 may allow the sales of medium quality flat latex wall paints, but consumers will not be allowed to purchase high quality, performing flats that will stand up to repeated washings and will have excellent application and freeze-thaw stability characteristics. The proposed 2008 limit of 50 g/L will make this possibility even less likely. Freeze-thaw may not be important in certain sections of California, but it is important in the northern states, whose regulators are keeping close watch on what happens in California. That implication is of much concern to us and much of the coatings industry.

10-3 The proposed non-flat limits of 150 g/L and 50 g/L in 2002 and 2006 have similar concerns associated with them. In addition to freeze-thaw, application and film durability issues, there is the concern of poor film formation at lower temperatures. At temperatures between 45 and 60, non-flat latex products will not form a complete, uniform film unless the appropriate type and level of coalescing agent (sometimes called cosolvent) is used. At 50 g/L, especially, this becomes a very large concern.

10-4 We encourage the CARB staff to more thoroughly investigate the effects of VOC reduction on the performance of flats and non-flats before making decisions on the limits.

10-5 We think the VOC levels for floor coatings of 100 g/L and 50 g/L for 2002 and 2006 are too low for acceptable floor paints. Our current latex floor paints are higher than 150 g/L, and they are only marginally acceptable for resistance to heavy foot traffic, repeated washings and the ability to retain adhesion properties while wet. They are only available in an eggshell gloss range. Two component low VOC epoxies can be used for floors, but they are not safe for homeowners to use, and they are more expensive and more difficult for homeowners to use. Most floors are too large to enable practical use of the quart exemption for this product type.

10-6 The VOC limit for Quick Dry Enamels is proposed at 250 g/L for 2002 and 50 g/L for 2006. We think the VOC for this product type needs to be at least 400 g/L. Waterborne enamels don't dry fast enough, are not high enough in gloss, and don't have enough block resistance to be used in areas where QD Enamels are typically used.

10-7 A separate category for Specialty Primers should be established with a VOC limit of 400 g/L. Waterborne primers do not prevent water soluble stains like wood tannins and smoke stains from bleeding through to a waterborne topcoat. High solid solvent borne primers do not dry to recoat quickly enough. The proposed Primers, Sealers, and Undercoaters limits of 200 g/L for 2002 and 100 g/L for 2006 will not allow for the Specialty Primer type. Houses sided with cedar are simply to large to practically use the quart exemption.

10-8 Another category for Masonry Conditioners or Sealers should be established with a VOC limit of 550 g/L. This product type can be used to seal "chalky" surfaces including, but not limited to, weathered concrete or chalky, weathered paint surfaces. Waterborne primers simply <u>do not penetrate</u> chalk sufficiently to insure adequate adhesion.

10-9 The SCM proposes a VOC limit of 250 g/L for semi-transparent stains in 2002. Waterborne semi-transparent stains open the wood grain and dry too fast, resulting in a splotchy appearance. Quarts of solvent borne high VOC stains are not practical on large jobs. High solids solvent borne stains do not penetrate and dry well enough to perform acceptably.

10-10 The limit of 250 VOC waterproofing sealers for wood will essentially require the use of waterborne sealers. The problem with recoating these is that they are formulated to repel water, and therefore a second treatment will not adhere and will peel. Again, quarts of traditional waterproofing sealers are not practical for using on large areas like wood decks.

10-11 In closing, we encourage the CARB staff to research the technological possibilities of achieving the proposed limits, with a mind to not only whether products are currently available, but also whether they are available for the wide variety of performance requirements and environmental conditions that may be encountered in the field. The industry is very much concerned with meeting the needs of its customers, and the net result of many of the VOC reductions will be products with lower performance capabilities at a higher price and with a more frequent need for repainting.

Sincerely,

Kelley Brandt
Director, Regulatory Affairs
The Valspar Corporation
h990722h

SIERRA PERFORMANCE COATINGS

July 22, 1999

Via Facsimile

Mr. Jim Nyarady
Manager
California Air Resources Board
Strategy Evaluation Section
2020 L. Street
P.O. Box 2815
Sacramento, CA 95812

Re: Comments to SCM, NOP and Initial Study

Dear Mr. Nyarady:

On behalf of itself, its customers and others affected by the release of solvents from paints and coatings, Sierra Performance Coatings, Inc., a California corporation that offers a full line of high performance, zero-VOC coatings, respectfully submits the following comments on the California Air Resources Board's (ARB) SCM, NOP, and Initial Study for architectural coatings.

11-1 For the reasons that follow below, ARB's proposed rule for industrial maintenance coatings: (i) sets VOC limits that, at 250 g/l, are too high; and (ii) makes the effective date, currently proposed for July 1, 2002, too late. However obscured by certain industry players, the basic reality of the paint and coatings industry is that the necessary raw materials to make high performance, ultra-low products are already in the market; and a number of paint companies, including Sierra Performance Coatings, are already in the market with ultra-low VOC coatings whose performance is superior to existing solvent-borne products. Accordingly, the ARB should lower the VOC limits for industrial maintenance coatings to 100 g/l and should implement that standard as of January 1, 2001.

Sierra Performance Coatings, Inc.
330 Primrose Road, Suite 502 ■ Burlingame, California 94010 ■ Phone: 650-548-5188 ■ Fax: 650-548-5373

Printed on Recycled Paper

I. THE PROPOSED RULE DOES NOT EMPLOY THE BEST AVAILABLE CONTROLS.

The proposed rule fails to adopt the "best available controls" and therefore the ARB, as the implementing agency, would violate its duty under the federal Clean Air Act if the proposed rule were implemented.

Section 183 (e) of the Clean Air Act requires the Environmental Protection Agency to regulate consumer and commercial products using "best available controls" ("BAC"). 42 U.S.C. § 7511b(e)(3)(A). The Clean Air Act defines BAC to require "the degree of emissions reduction the Administrator determines, on the basis of technological and economic feasibility, health, environmental, and energy impacts, is achievable through the application of the most effective equipment, measures, processes . . . including chemical re-formulation or product substitution." 42 U.S.C. § 7511b(e)(1)(A). According to the EPA, BAC is a "system of regulation that encourages product reformulation to meet VOC content limits" in light of the fact that "pollution prevention is the most effective means of achieving VOC emissions reductions." 42 U.S.C. § 7511b(e)(3)(A) (Preamble). 11-2

The practical problems with the proposed rule are that there are in fact high performance paints and coatings in the market today that contain significantly lower VOC content than the limits proposed by the ARB; and there are commercially available raw materials to produce industrial maintenance coatings at substantially lower levels than proposed:

1. Despite its flaws, the preliminary Phase II Assessment Study commissioned by the South Coast Air Quality Management District indicates that low-VOC products perform generally just as well as high-VOC products and, in fact, outperform them in terms of brushing and sag resistance, rust resistance, and mar resistance. The performance characteristics of low-VOC products show they are technologically feasible as currently designed. 11-3

2. High-performance, low-VOC paint products are commercially available. A wide range of companies - such as Sierra, Sherwin-Williams, Ameron and Carboline - sell high-performance, low-VOC epoxy, urethane, and acrylic products. (See the attached product profile sheets.) All are bread- 11-4

and-butter products with under 250 g/l VOC content that perform just as well or better than solvent-borne products with higher VOC contents.

3. There have been tremendous advances in raw materials technology over the last five years, so that low-VOC resins and curing agents are now common. Shell, Air Products, Rohm & Haas, Vianova, Hoechst, Engineered Polymers Solutions and Specialty Polymers all make state-of-the-art, low-VOC waterborne acrylic, epoxy and polyurethane resins and curing agents that perform as well or better than solvent-borne systems for industrial maintenance coatings. (See the attached product profile sheets.) Shell's epoxy 11-4 technology, for example, may be formulated into sealers, primers, and low to high sheen topcoats for various industrial maintenance and specialty architectural applications with very strong adhesion, humidity resistance, and corrosion resistance properties (see attached product data sheet). Indeed , as long ago as 1994, the Shell Development Company published an article stating that state-of-the-art materials as of that time allow VOC's for metal formulations to be reduced from the 480 g/l for the traditional solvent-based systems to the range of 120-240 g/l.[1] The article concludes that "most significantly, the advances in waterborne epoxy technology have afforded significant VOC reductions along with the necessary corrosion and humidity resistance for coatings that protect metallic substrates. Whereas the prior generations of waterborne epoxy systems have found widespread use primarily on masonry substrates, the latest developments have allowed for their expansion into new applications on metal."[2]

II. A RULE OF 100 G/L VOC's SHOULD BE ADOPTED.

The widespread commercial availability of high-performance, zero-VOC coatings and raw materials -- let alone low-VOC products under 100 g/l -- demonstrate that a 100 g/l limit is technologically and commercially feasible. And, with the necessary raw materials so widely commercially 11-5 available, low-VOC paints and coatings can be produced and/or re-formulated easily and efficiently by any paint companies. Indeed, every raw material supplier provides starting formulae for making paint using their products, much the way a flour company provides recipes for cakes.

[1] "An Overview of Ambient-Cure, Waterborne Epoxy Resin Coating Technology," by Ernest C. Galgoci, Shell Development Company, 2147-94.

[2] Id. at page 1.

1. Preliminary results of the SCAQMD Phase II Assessment Study that compare the performance of zero-VOC, low-VOC, and high-VOC products show that zero-VOC products perform best overall. Zero-VOC products display superior properties as to leveling, wet and dry film, blistering and filiform corrosion resistance, taber abrasion, and adhesion to substrates whereas high-VOC products rate highest only on film appearance and flexibility.

6

2. SQAQMD identified some 55 commercially available high-performance industrial maintenance coatings at 100 g/l VOC content or lower appropriate for virtually every conceivable use and application. 50 of the 55 high-performance industrial maintenance coatings identified are zero-VOC. Zero-VOC products are proven as technologically and commercially available.

Sierra Performance Coatings' product line is a case in point. Sierra has a full-line of 100% epoxy zero-VOC paints and coatings, including concrete floor enamels, industrial DTM metal enamels, and industrial metal primers. Sierra also sells a line of epoxy-acrylic wall and trim finishes and polyurethane DTM metal enamels. As the attached product profile sheets attest, Sierra's products perform at equal or superior levels of similar high-VOC products and, in particular, display superior dry times and adhesion. Sierra's products are widely commercially available with a significant presence in the Western United States. Customers include a national car manufacturer/dealer that painted concrete floor service bays with a non-slip coating; the U.S.S. Hornet, which painted all surfaces of the 300 yard aircraft carrier inside and out with zero-VOC products to encapsulate and protect against rust; a large OEM company which used a DTM on metal frames to achieve high salt spray and impact resistance; and a major fresh food packager that coated steel, masonry, and wall board in a highly sanitary, high-moisture, chilled packaging facility. In every one of these cases, solvent-borne products performed worse than Sierra's zero-VOC coatings.

11-7

3. As a final matter, Sierra strongly objects to the use of an averaging provision as an alternative in the draft program EIR. This provision is a loophole that strangles the entire rule. It has no basis under the Clean Air Act and it has no practical hope of being workable. There is great potential for circumvention of the VOC standards, which could possibly render any limits pointless.

11-8

III. THE FAILURE TO ADOPT THE BEST AVAILABLE CONTROLS WILL CAUSE SERIOUS ADVERSE HEALTH EFFECTS.

VOCs are the main component in forming ground level ozone.[3] Exposure to ground level ozone can damage lung tissue and cause serious respiratory illness.[4]

According to the SCAQMD report on health effects of ozone, "individuals exercising outdoors, children and people with preexisting lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible sub-groups for ozone effects. Short-term exposures (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported.

Ozone exposure under exercising conditions is known to increase the severity of the above mentioned observed responses. Similarly, animal studies suggest that exposures to a combination of pollutants that include ozone are more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes."[5]

11-9

Adverse health effects are even more pronounced for workers in the paint industry who are exposed to high-VOC solvents, even at low levels, according to several studies.

11-10

One 1997 report reviewed a range of occupational studies of paint workers and recommended a reduction of solvent limit values due to a correlation between solvent exposures and neuropsychiatric disorders, mental symptoms, and impaired neurobehavioral performance.[6] A 1995 study found that paint manufacturers exposed to solvents showed diminished memory, reaction time, manual dexterity, and

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[3] EPA Fact Sheet, Final Air Regulation for Architectural Coatings, August 14, 1998.
[4] Id.
[5] South Coast Air Quality Management District, 1997 Air Quality Management Plan, Chapter 2, Air Quality and Health Effects.
[6] Mikkelsen, S., "Epidemiological Update on Solvent Neurotoxicity," 1997 Environmental Research, Vol. 73, Nos. 1/2, pages 101-112.

olfaction.[7] Additionally, two other studies have concluded
10 that exposure to solvents in the painting industry is associated with adverse effects on the central nervous system such as forgetfulness, lassitude, disorientation, and dysphoria.[8]

CONCLUSION

The proposed rule fails to adopt the "best available controls" and is, therefore, inconsistent with ARB's duty under the Clean Air Act. Current feasible technology supports VOC limits much more stringent than those proposed by the ARB. Lower limits are essential both to help non-attainment areas reach their clean air goals and to protect the public's health. The public should not be required to
11-11 continue to be exposed to harmful emissions from paint formulations when cleaner alternatives are currently available. The ARB -- responsible for clean air in California -- must under the Clean Air Act take a lead role in requiring cleaner and safer paints and coatings. The ARB should lower the VOC limits for industrial maintenance coatings to 100 g/l and should implement the rule earlier as of January 1, 2001.

Respectfully Submitted,

Patrick K. Shannon
General Counsel

(attachments to follow via regular mail)

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[7] Bolla, K.; Schwartz, B.S.; Stewart, W; Rigani, J.; Agnew, J.; Ford, D.P., "Comparison of Neuorbehavioral Function in Workers Exposed to a Mixture of Organic and Inorganic Lead and in Workers Exposed to Solvents," 1995-02 American Journal of Industrial Medicine, Vol. 27, No. 2, pages 231-246.

[8] Baker, E., et al., "Neurobehavioral Effects of Solvents in Construction Painters," 1988 Journal of Occupational Medicine, Vol. 30, No. 2, pages 116-123. See also Olson, A, "Effects of Organic Solvents on Behavioral Performance of Workers in the Paint Industry," 1982 Neurobehavioral Toxicology and Teratology, Vol. 4, No. 6, pages 703-708.

Sierra Performance Coatings, Inc.
Comments to CARB SCM, NOP, Initial Study

ATTACHMENTS

1. Sherwin-Williams water based epoxy finish
2. Sherwin-Williams water based epoxy primer
3. Sherwin-Williams water based urethane
4. Sherwin-Williams DTM acrylic coating
5. Sherwin-Williams DTM acrylic primer
6. Ameron Amerlock 400 high-solids epoxy
7. Ameron PSX 700 low-VOC epoxy
8. Carboline cross-linked epoxy 890
9. Carboline cross-linked epoxy 893
10. Carboline acrylic aliphatic polyurethane
11. Carboline modified aluminum epoxy mastic
12. Carboline water-borne acrylic
13. Sierra Performance Coatings product line
14. Shell Epi-Rez low-VOC waterborne resin and curing agent
15. Air Products and Chemicals zero-VOC polyurethane resin
16. Air Products and Chemicals zero-VOC waterborne epoxy resin
17. Specialty Polymers zero-VOC acrylic emulsion
18. Epidemiological Update on Solvent Neurotoxicity
19. Comparison of Neurobehavioral Function in Workers Exposed to Solvents
20. Neurobehavioral Effects of Solvents in Construction Painters
21. Effects of Organic Solvents on Behavioral Performance of Workers in the Paint Industry

Flame Control
COATINGS, INC.

P.O. Box 786, 4120 Hyde Park Blvd.
Niagara Falls, N.Y. 14302 USA
(716) 282-1399
FAX: (716) 285-6303

July 12, 1999

Air Resource Board
2020 "L" Street, P.O. Box 2815
Sacramento, California 95812

Attention: Mr. Jim Nyarady
Manager, Strategy Evaluation Section

Reference: California Code of Regulations
Title 14, 15082(a), 15103 and 15375

Dear Mr. Nyarady:

This letter is in response to the above referenced notice we received, concerning the Air Resources Board's suggested control measure for architectural coatings.

The proposed VOC limits for fire retardant coatings are lower than the fire retardant coating industry can achieve, at the present time. While there are a couple of old coatings that could possibly meet ARB's proposed requirements, they are coatings that were developed back in the 50's, and they have very poor quality, have little or no washability or cleansibility, and their fire retardant qualities are adversely effected (diminished) when exposed to humid conditions.

As fire retardant coatings are primarily specified and utilized because of their ability to reduce the rate fire will spread over a surface, it is imperative that the fire retardant coatings possess lasting qualities. Needless to say, the use of fire retardant coatings meeting the proposed VOC requirements, but lacking in permanency, would lead to a false sense of security and could have disastrous consequences if fire should strike. 12-1

I believe it is also worthy to point out, that while a fire retardant coatings may even be listed by the Underwriters' Laboratories, it does not mean that the coating possesses any degree of permanency. The Underwriters' Laboratories test is primarily concerned with establishing the fire hazard classifications for the coating as applied, and the useful life of these coating materials are not investigated (reference Page 57 of the 1999 Underwriters' Laboratories Building Material Directory; copy of that page herein enclosed).

It is our firm belief, that the proposed VOC limits for fire retardant coatings should be changed as follows;

Fire Retardant	7/1/2001 Proposed VOC limits	Request VOC Limits to be changed to
Pigmented coating	250 g/L	350 g/L
Clear coating	250 g/L	650 g/L

12-1 This increase in the grams/liter (VOC) will serve a two fold purpose;

1] It will allow the application of thin film, modern day, fire retardant coatings. These modern day, fire retardant coatings possèss the maximum degree of durability, cleansibility, and fire retardant permanency that is obtainable with todays technology.

2] It will also allow the use of tested and rated sealers and topcoats, that were originally fire tested with many of the fire retardant coatings, thereby insuring that the finished surface will comply with the applicable California state and local building fire code requirements, both when freshly applied and for years to come.

Another major point of contention, is the wording used in the "Definitions" section, to define fire retardant coatings. This definition as written (reference page 2, section 2.12, Fire Retardant Coatings), is incorrect and MUST be changed. The facts behind this statement are as follows:

A) The use of the wording, as it is now written in this definition, would prevent the sale and use of special purpose fire retardant coatings designed and tested for application to surfaces, other than Douglas fir lumber, i.e., cellulose board, acoustical tile, plywood, etc.. It would also restrict the use of special purpose fire retardant coatings, which are tested to
12-2 comply with other fire code standards, and are applied to such substrates as structural steel, cedar shingles, structural timbers, electrical & communication cables, etc..

B) The wording "flame spread - index of less than 25" restricts the sale and use of fire retardant coatings, to only those which have been assigned a Class "A" flame spread rating, i.e., flame spread index 0 - 25. As many California building codes also specify the use of Class "B" rated materials, i.e., flame spread index 26 - 75, it would indicate a need to include a broader definition for this category of coatings.

C) A second point concerning the statement "less than 25, as now written, would mean that rated products having flame spread indexs of 0, 5, 10, 15, and 20 would be the only products classed as fire retardant coatings, but not a product having a flame spread index of 25.

D) The statement "...tested in accordance with ASTM Designation E-84-87..." is very restrictive. The last two numbers, 87, indicate the year in which the last issuance of the standard was published. If it is left worded as is, no fire retardant coatings tested under ASTM E-84-76, E-84-81, E-84-83, E-84-92 or with other revisions or publications of future years, would be allowed to be used.

12-2

With the above thoughts in mind, we therefore request that the definition for "Fire Retardant Coatings" be changed to read as follows:

> Fire Retardant Coatings: Coatings which are fire tested and rated by an approved laboratory, and are used to bring building and construction materials into compliance with state and local fire building code requirements.

To give you a little insight as to our company's background and its activities, Flame Control Coatings is a world leader in the production of fire retardant paints, fire retardant varnishes, and fire protective (retardant) mastics. Our products are distributed by, and/or private labeled for, most of the major paint companies in the United States, such as Glidden's ICI Dulux, PPG, Sherwin-Williams, Benjamin Moore, Pratt & Lambert, and the Kelly-Moore Corp.. In addition, we also manufacture and private label our products for many smaller companies, under such well known trade names as Flamort Chemicals, Athey, Best Kote, and Wood-Tek.

12-3

We are also a supplier of fire retardant coatings to the General Service Administration. G.S.A.'s fire retardant coatings are manufactured to comply with various federal specifications, among them being Federal Specification TT-P-26C, TT-C-001883, and MIL-C-46081. Coatings meeting these federal specifications are utilized for fire protection of the barracks, aircraft hangers, office buildings, V.A. hospitals, and other federal government owned and leased properties throughout California. Coatings complying with the above specifications do not comply with the proposed 7/1/2001 California VOC requirements. However, they do comply with the current VOC limit.

We agree with the need to reduce the unnecessary release of VOC's. However, we do not believe it should take precedence in determining the type and quality of a coating that can be used, when it involves fire retardant coatings that are designed to reduce the spread of flames and save lives.

12-4 Without changes to ARB's proposed 7/1/2001 VOC limits for fire retardant coatings, quality products will no longer be available for sale and use in California. We, like most companies in the coatings industry, have been striving to develop quality, low VOC and water base coatings. However, todays low VOC and water base technology, that has been developed for the production of conventional architectural coatings, still is not suitable for the production of quality fire retardant coatings. Fire retardant coatings must have lasting durability to ensure they are serviceable, and that they retain their fire retardant qualities.

I would like to take this opportunity to thank you for allowing us to review this draft proposal and submit our comments and suggestions.

I, personally, plan on being at the ARB public hearing meeting, scheduled for November 18, 1999 and I would, therefore, request that I be informed as to the exact time and location where this public hearing will take place.

Very ~~truly~~ yours,

FLAME CONTROL COATINGS, INC.

Norman C. Oliver
President

NCO/bt

Price U.S. $16.00

Building Materials

1999

Contains
Listings and Classifications
in effect as of December 11, 1998

Please read information contained in paragraph 2 on page iv

Underwriters Laboratories Inc.®

Directory

Cementitious-Cement and Plaster-Mixtures (BLPR)—*Continued*

PROSTAR (THAILAND) CO LTD R16081
SAMUTHSAKHON INDUSTRIAL ESTATE 1/105 MOO 2
THASAI MUANG, SAMUTHSAKHON 74000 THAILAND
Cementitious mixture.

	Applied to Inorganic Reinforced Cement Board. in a Max Thk of 1/2 in.+.
Flame spreads	0
Smoke Developed	0

PROSTAR CONTRACT SERVICES PTE LTD R14613
6 SUNGEI KADUT ST 2, SINGAPORE 729228
SINGAPORE
Cementitious mixture.

	Applied to Inorganic Reinforced Cement Board. in a Max Thk of 1/2 in.+.
Flame spreads	0
Smoke Developed	0

PYROK INC R10453
1750 POWDER SPRINGS RD SW, MARIETTA GA 30064
Types HD, MD, CV27(B) cementitious mixtures.

	Applied to Inorganic Reinforced Cement Board
Flame spread	0
Smoke developed	0

Types Acoustement 20, 40 cementitious mixtures.

	Applied to Inorganic Reinforced Cement Board
Flame spread	0
Smoke developed	0

Type LD cementitious mixture.

	Applied to Inorganic Reinforced Cement Board
Flame spread	10
Smoke developed	0

RAPID FLOOR SYSTEMS R16096
920 HAMEL RD, HAMEL MN 55340
Cementitious mixture applied to inorganic reinforced cement board and identified as RF.

	Classification or Rating
Flame Spread	0
Smoke Developed	0

Cementitious mixture applied to inorganic reinforced cement board and identified as RFP.

	Classification or Rating
Flame Spread	0
Smoke Developed	0

Cementitious mixture applied to inorganic reinforced cement board and identified as RFU.

	Classification or Rating
Flame Spread	0
Smoke Developed	0

Also Classified in accordance with ASTME 136-93, "Standard Test Method For The Behavior of Materials in a Vertical Tube Furnace at 750 C".

SHIN SUNG TRADING CO LTD R14611
DONGWON BLDG 421-5 SHINDANG-DONG CHOONG-KU,
SEOUL KOREA
Cementitious mixture.

	Applied to Inorganic Reinforced Cement Board. in a Max Thk of 1/2 in.+.
Flame spreads	0
Smoke Developed	0

SOUTHWEST VERMICULITE CO R8213
5119 EDITH BLVD NE PO BOX 6287, ALBUQUERQUE
NM 87197

	Type 4	Type 5	Applied to Inorganic Reinforced Cement Board In a Max Thk of 1/2 In. Type 5GP	Type 5EF	Type 5MD
Flame spread	10	10	10	10	10
Smoke developed	0	0	0	0	0

	Type 8GP	Type 9GP	Type 8EF	Applied to Inorganic Reinforced Cement Board In a Max Thk of 1/2 In. Type 8MD	Type 9EF	Type 9MD
Flame spread	10	10	10	10	10	10
Smoke developed	0	0	0	0	0	0

Cementitious-Cement and Plaster-Mixtures (BLPR)—*Continued*

	Type FP-2	Type 7MP	Type FP-1A	Type TS-40	Type
Flame spread	5	5	5	5	5
Smoke developed	0	0	0	0	0

	Type FP-1B	Type TS-40G	Type 1BX	Type FP-1XR	Type 1XR
Flame spread	5	5	5	5	5
Smoke developed	0	0	0	0	0

SPECIALTY PRODUCTS INC R11944
1010 DEERE ST, FAIRBANKS AK 99709
Cementitious mixture applied to inorganic reinforced cement board.

	Applied to Inorganic Reinforced Cement Board
Flame spread	0
Smoke developed	0

W R GRACE & CO - CONN CONSTRUCTION PRODUCTS DIV R4339
62 WHITTEMORE AVE, CAMBRIDGE MA 02140
Cementitious mixtures applied to inorganic reinforced cement board and/or foamed plastic.
FOR SURFACE BURNING CHARACTERISTICS, SEE CLASSIFICATION MARKING OF UNDERWRITERS LABORATORIES INC. ON PRODUCT OR CARTON.

YUNG CHI PAINT & VARNISH MFG CO LTD R14635
26 YEN HAI 3RD RD, KAOHSIUNG TAIWAN
Types F-1, F-100 cementitious mixtures.

	Applied to Inorganic Reinforced Cement Board in a Maximum Thickness of 1/2 in.
Flame spread	5
Smoke developed	0

Coating Materials (BMCZ)

Coating materials intended for application to building surfaces are divided into two categories: (1) Coatings, Fire Retardant, intended for application to interior combustible surfaces (and occasionally interior noncombustible surfaces) for the purpose of reducing the surface burning characteristics, a (2) Coatings, General Purpose, intended for various purposes. The purpose the classification is to express the degree of surface burning characteristics the coating.

The flash points (closed cup) of the fire retardant and general purpose coatings (including preliminary and overcoatings) appear in the individual classifications. The publication of the flash point data is not intended to establish a flammability classification of the liquid coatings, but to indicate the flashing characteristics of the liquid coatings under a standard test procedure. Where "no flash" is indicated, the coating has no flash point in the closed cup tester.

Coatings, Fire Retardant (BMQX)

Coating materials are Classified as to their surface burning characteristics as applied to the specific interior surfaces and at the specific coverage rates indicated in the individual Classifications. The flash points (closed cup method) of the coatings are also indicated in the individual Classifications. The toxicity of the products of combustion and other properties have not been investigated.

To be eligible for Classification, the surface coating or coating system must reduce the flame spread of Douglas fir and all other tested interior combustible surfaces (having flame spreads of 100 or greater by test) to which it is applied at least 50 percent or to a flame spread Classification value of 50 or less, whichever is the lesser spread of flame. A coating or coating system may be Classified as applied to other surfaces (having flame spreads of less than 100 by test) after its eligibility as a fire retardant coating or coating system has been established as applied to Douglas fir, with the requirement that the flame spread Classification must not exceed a value of 50 to be eligible for Classification.

The surface burning characteristics are applicable only when the coating is applied at the rates of coverage and to the type or kind of surfaces indicated, when the coating is applied in accordance with the directions supplied with the container, and when the coating is maintained.

The Classifications are confined to the materials themselves and do not pertain to the structures on which the materials are installed.

Typical combustible surfaces indicated in the individual Classifications are Douglas fir, cellulose acoustical tile, cellulose board, and oriented strand boa (OSB). The Douglas fir substrates consist of nominal 1 by 4 in. finishe tongue-and-groove flooring. (The flame spread of the uncoated Douglas fir is 70-100).

The cellulose acoustical tile substrates consist of nominal 12- by 12- by 1/2 in. tongue-and-groove "Factory Finish" (starch type) perforated tiles. (The flame spread of the cellulose tile substrates is normally in excess of 150).

Coatings, Fire Retardant (BMQX)—*Continued*

The cellulose board substrates consist of nominal 10- by 48- by 1/2 in. square edge "Factory Finish" (starch type) unperforated boards. (The flame spread of the cellulose board is normally in excess of 75).

The oriented strand board substrates consist of a nominal 3/4 in. thick 24 in. wide by 96 in. long board (The flame spread of the oriented strand board is normally in excess of 150).

Unless otherwise indicated in the individual Classifications, cellulose board and cellulose tile substrates are supported for the tests attached to wood furring strips.

Typical noncombustible surfaces indicated in the individual Classifications are 1/4 in. thick inorganic reinforced cement board (flame spread 0) and gypsum wallboard (flame spread 15).

The useful life of these coating materials has not been investigated; however, it is of paramount importance that the coatings be maintained for continued effectiveness.

Fire retardant coatings may be tinted in the field provided compatible tints are used in a proportion not exceeding 2 oz of tint per gal of coating. Deeper shades may or may not be supplied by the individual manufacturers.

Authorities having jurisdiction should be consulted before application.

The basic standard used to investigate products in this category is UL 723 "Test for Surface Burning Characteristics of Building Materials".

LOOK FOR CLASSIFICATION MARKING ON PRODUCT

The Classification Marking of Underwriters Laboratories Inc. (shown below) on the product is the only method provided by Underwriters Laboratories Inc. to identify Fire Retardant Coatings which have been produced under its Classification and Follow-Up Service.

UNDERWRITERS LABORATORIES INC.
CLASSIFIED
FIRE RETARDANT COATING
SURFACE BURNING CHARACTERISTICS
+

←—The Classification Marking includes the flame spread and smoke developed values applicable to the product.

The Classification Marking of Underwriters Laboratories Inc. (shown below) on the Preliminary or Over Coating is the only method provided by Underwriters Laboratories Inc. to identify Preliminary or Over Coatings which have been produced under its Classification and Follow-Up Service.

UNDERWRITERS LABORATORIES INC.
CLASSIFIED
_____* _____ COATING
TO BE USED WITH (MANUFACTURER'S NAME AND PRODUCT DESIGNATION) FIRE RETARDANT COATING(S) IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS TO PRODUCE FINISHED CLASSIFIED SYSTEMS. FOR RESPECTIVE UL CLASSIFICATIONS, SEE THE FIRE RETARDANT COATING LABEL.
*PRELIMINARY OR OVER.

ALBI MFG, DIV OF STANCHEM INC R2810
401 BERLIN ST, EAST BERLIN CT 06023

Fire-Retardant Coating Surface	Type 107A Douglas Fir	Type 107A Douglas Fir	Type107A Douglas Fir	Type 107A Douglas Fir	Type 107A Douglas Fir
Flame spread	20	15	10	15	15
Smoke developed	0-5	5	5	5	5
Number of preliminary coats	None	None	None	None	None
Rate per coat (Sq ft per gal)	—	—	—	—	—
Number of fire-retardant coats	1	1	2	2	1
Rate per coat (Sq ft per gal)	175	150	200	200	150
Number of overcoats	None	None	None	1*	1*
Rate per coat (Sq ft per gal)	—	—	—	450	450

Flash point of liquid coating:
Fire-retardant coating: Type 107A: Closed cup, 100 F (37.8 C)
Overcoating Type 144: Closed cup: 106 F (41.2 C)
*Manufacturer's Type 144.

Fire-Retardant Coating Surface	Type 107A Douglas Fir	Type 107A Cellulose Tile
Flame spread	10	15
Smoke developed	5	5-10
Number of preliminary coats	None	None
Rate per coat (Sq ft per gal)	—	—
Number of fire-retardant coats	2	1
Rate per coat (Sq ft per gal)	175	150
Number of overcoats	None	None
Rate per coat (Sq ft per gal)	—	—

Coatings, Fire Retardant (BMQX)—*Continued*

Flash point of liquid coating:
Fire-retardant coating: Type 107A: Closed cup, 100 F (37.8 C)
*Overcoating: ALBI-COTE TC.

AMERICAN UNI-TECH INC R14668
SUITE 240 19100 VON KARMAN, IRVINE CA 92715

Fire Retardant Coating Surface	Fire Screen Douglas Fir
Flame Spread	35
Smoke Developed	60
Number of preliminary coats	None
Rate per coat (sq ft per gal)	—
Number of fire retardant coats	1
Rate per coat (sq ft per gal)	200
Number of over coats	None
Rate per coat (sq ft per gal)	—

Flash point of liquid coating:
Fire-retardant coating Closed cup no flash to boiling.

AMERICAN VAMAG CO INC R4787
1061 LINDEN AVE, RIDGEFIELD NJ 07657

Surface	Type DS-II Douglas Fir	Type DS-II Cellulose Board
Flame spread	10	10
Smoke developed	30	20
Number of preliminary coats	None	None
Rate per coat (Sq ft per gal)	—	—
Number of fire-retardant coats	2	2
Rate per coat (Sq ft per gal)	200	200
Number of overcoats	None	None
Rate per coat (Sq ft per gal)	—	—

Flash point of liquid coating:
Fire retardant coating: Closed cup, no flash

Surface	Type PR-Clear Douglas Fir
Flame spread	5
Smoke developed	0
Number of preliminary coats	None
Rate per coat (Sq ft per gal)	—
Number of fire-retardant coats	2
Rate per coat (Sq ft per gal)	200
Number of overcoats	None
Rate per coat (Sq ft per gal)	—

Flash point of liquid coating:
Fire retardant coating: Closed cup, no flash

Surface	Type PR-White Douglas Fir	Type PR-White Cellulose Tile
Flame spread	5	5
Smoke developed	0	0
Number of preliminary coats	None	None
Rate per coat (Sq ft per gal)	—	—
Number of fire-retardant coats	2	2

Wm. Zinsser & Co., Inc.
173 Belmont Drive • Somerset, NJ 08875-1285 • 732-469-8100 • FAX 732-469-4539

Celebrating 150 Years
ZINSSER 1849-1999

July 21, 1999

Jim Nyarady
Manager, Strategy Evaluation Section
Stationary Source Division
Air Resources Board
2020 L Street
P.O. Box 2815
Sacramento, CA 95812

Subject: Comments to Suggested Control Measure for Architectural Coating

Dear Mr. Nyarady:

William Zinsser & Company, Inc., a shellac and specialty primer manufacturer has a 150-year reputation of producing quality products for both professional and "do-it-yourself" customers. Zinsser is the world's largest manufacturer of shellac and as a result, we believe posses the most knowledge in this area. We are strongly opposed to the change in definition of shellac as proposed in the recent draft document, CARB Suggested Control Measure for Architectural Coatings, and think shellac should remain as a separate and distinct category.

"LAC is the resinous secretion of the lac insect, parasitic on certain trees, principally in Bihar, Madhya Pradesh and other Indian states; also in Burma and Thailand. It is cultivated in these areas because of the commercial value of the lac resin.

13a-1

SHELLAC is the refined form of lac. The word, derived from shell-lac, specifically refers to refined lac in thin flakes, the form in which it is most commonly marketed; but in general parlance the word shellac includes all forms of refined lac." *

Lac is the only known resin of animal origin (Merck Index and Kirk-Othmer Encyclopedia of Chemical Technology) and has been known in India and China for several thousand years. There are many other natural resins, including rosin (the residue left after distilling off the oils from oleoresin obtained from pine trees) and copal (a resin from fossil extrusions). However, shellac cannot be placed in the same classification with these resins because of its unique animal origin, acceptance as a safe, non-toxic protective coating for food, candy, fruit, pharmaceutical pills and children's toys, as well as quick-drying and stain sealing properties. Indeed, shellac even has its own distinct chemical abstracts (CAS) number, 9000-59-3.

13a-1 We believe that allowing other natural resins in this category would only lead to confusion in the industry and create a loophole for manufacturers to abuse this VOC category for architectural coatings. If the agency feels that other natural resins need to be included in this control measure, then a separate category should be added for this coating. Please consider these comments before finalizing your ruling.

* Excerpted from Shellac Handbook (Angelo Brothers Limited, 1965) enclosed with this letter.

Sincerely,

Michael L. Jurist
Director of Manufacturing

Enclosure

Wm. Zinsser & Co., Inc.
173 Belmont Drive • Somerset, NJ 08875-1285 • 732-469-8100 • FAX 732-469-4539

Celebrating 150 Years
ZINSSER 1849-1999

July 12, 1999

Mr. James Nyarady
Manager, Strategy Evaluation Section
Air Resources Board
2020L Street Box 2815
Sacramento, CA 95812

Dear Mr. Nyarady:

13b-1

In response to Dean Simeroth's letter of May 19,1999 and the Draft regulations that the Air Resources Board is proposing, I would like to comment on the proposed changes. I object to the proposed change in the definition of Shellac which would allow for other natural resins other than the resinous secretions of the lac beetle (Laccifer Lacca) to be placed in the category. Shellac is a unique natural resin that has been used as a protective coating for centuries, its exact start being lost in time. The term **Shellac** has always referred to a definite material (it has its own unique CAS # 9000-59-3) and the name denotes certain properties inherent to the product such as; quick drying and stain sealing properties. Allowing other natural resins in this class which do not have these characteristics can confuse and deceive the consumer into thinking they are getting a particular product and are in fact getting something quite different. It is important that the definition of "shellac" remain constant as it has throughout history.

The amount of Shellac products produced each year is limited by the fact that it is relatively expensive and the limited availability of the secretions of the lac beetle. Allowing other natural resins into this definition could greatly expand one the highest VOC categories. This can only lead to abuse. Why add a loophole to the VOC regulations?

As a suggestion, you may want to add a distinct Coating Category for "Other Naturally Occurring Resins" rather that changing the definition of a thousand years old natural resin. Why add confusion on the part of the consumer?

I strongly urge you to reconsider <u>not</u> changing the definition of the "Shellac Coatings Category." If you still feel there is a need to have a category for other natural resins, make it a separate one.

If you have any questions or wish to discuss this in further detail, please don't hesitate to call me at the above listed number.

Sincerely,

Arthur B. Paltz, Director
Zinsser Group Environmental Services

An RPM Company

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Celebrating 150 Years
ZINSSER 1849-1999

July 9, 1999

Mr. Jim Nyarady, Manager Strategy Evaluation Section
Stationary Source Div.
Air Resources Board
2020 L Street
P.O. Box 2815
Sacramento, CA 95812

Dear Nyarady:

In response to the recent letter from Mr. Peter D. Venturini, I passionately submit the following comments for consideration as CARB considers modifications to the suggested control measures for architectural coatings.

As the world's largest producer and most expert company in the **"SHELLAC"** industry, we want to implore CARB not to modify the definition of shellac in the current or future versions of air control measures as is currently being proposed.

13c-1

First, the Federal EPA has allowed the category of shellac to be reinterpreted, to become confused and to become a "loophole" for manufacturer's wishing to violate the spirit of the original CARB regulations put forth many years ago. During CARB's earliest efforts to exempt shellac-based products from stringent regulations, your group wisely chose to limit the shellac definition to the resinous secretion of the lac bug. By so limiting this category, CARB effectively limited the opportunity for this category to be a loophole through which a broader list of products and a longer list of applications would be possible. CARB should maintain the more restricted shellac definition which, in effect, solves the fundamental problem by allowing a truly effective unique natural product to be available for use in its special applications without extending the category to include other natural resins soluble in alcohol. These non-"shellac" resins are more readily available and are available at lower cost which in effect gives the marketplace additional opportunities to create allowed VOC generating products. While shellac is readily available to any manufacturer who wishes to formulate with this unique all natural resin, the more restrictive definition achieves all the benefits industry needs and achieves the restricted VOC goals as well.

Secondly, non-shellac natural resins do not perform in the same unique way as shellac and are therefore of no value as VOC allowed alternative. Only shellac seals odors. Only shellac seals in knots. Only shellac seals in tannin bleed and

other solvent soluble stains. There is no reason to expand the shellac category to include other resins.

Third, shellac is, by definition, a specific identifiable chemical commodity. By calling any natural resin "shellac", you will confuse the fundamental daily use of the word "shellac". If CARB truly wants to create a category wherein all natural resins that are soluble in alcohol are allowable, then please do not call the category "shellac". We strongly suggest you rename any such category "alcohol soluble natural resin coatings". This is more correct and will prevent substantial confusion in advertising copy, literature and other commonplace references to generally understood industry parlance. Shellac is shellac and the term need not be redefined by CARB or the USEPA.

13c-1 Shellac-based products have only limited application and limited real world need. Already available alternative products, which are much lower in VOC, are available at lower cost and are easier to use thereby making shellac a perfect category for unique status with minimal VOC impact. Shellac is ideal as an odor barrier, as a stain sealer, as a knot sealer, as a child-safe natural finish, as a migrating tannin blocker and as a fast drying bond coat. Shellac-based products are available in multiple sizes including aerosol thereby making this category an ideal vehicle for consumer and professional users to solve real world challenges with a specialty category that has, in total, the reality of generating only modest levels of VOC.

If CARB takes a strong position on this issue, I suspect it will be easier to convince the USEPA that their recent adoption of a modified definition for shellac should be reversed or revisited as well. We sincerely appreciate the leadership that CARB has shown in this area in the past and look forward to wisdom again prevailing in your upcoming revisions.

Sincerely,

Robert Senior
President

RS/gg

Zehrung Brands

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July 15, 1999

Mr. Jim Nyarady
Manager
Strategy Evaluation Section, Stationary Source Div.
PO Box 2815
Sacramento, CA 95812

Dear Mr. Nyarady:

I am writing you today in reference to CCR, Title 14, §§ 15082(a), 15103, and 15375. Specifically, I would like to address the proposed change to the SCM for Architectural Coatings, *Definitions, 2.34, Shellac.*

The old rule specified that, in order to comply with the relatively high VOC levels afforded natural shellac, coatings must be *formulated solely with the resinous secretions of the lac beetle (Laccifer lacca), thinned with alcohol and formulated to dry by evaporation . . . .*

The new proposed rule, *Draft 6/10/99*, alters the definition significantly by expanding the category to include *natural resins . . . soluble in alcohol (including, but not limited to, the resinous secretions of the lac beetle . . .) . . . .*

14-1 This change will, in my opinion, result in a number of unintended consequences, all of which will certainly increase the amount of VOC emissions, both near and long term.

Here's why: the new definition will not only allow but probably encourage manufacturers to begin marketing alcohol-based coatings they'll call "shellac," but will in-fact be formulated using natural gum copals or rosin ester resins. It won't be long before the marketplace is flooded with these shellac substitutes.

This is an easily predictable response, as this strategy will be viewed by the industry as a logical, and perfectly legal, method of circumventing the ever more restrictive VOC limits being placed on "Primers, Sealers, and Undercoaters." This new category and these newly allowed "shellac substitute" coatings will be sold and used primarily as either general purpose or quick-dry, stain-blocking, white pigmented primers, sealers, and undercoaters. And they'll be perfectly legal at 550 g/l VOC vs. 350 (current), then 200 (2002), and finally 100 (2006) g/l VOC allowed most oil or alkyd based primers in use now.

The logical question for you to ask at this point: Under the current regulations, with the shellac definition restricted to coatings formulated with pure shellac (Laccifer lacca resin) only, is shellac's share of the overall primer market increasing as a result of the more restrictive VOC controls on other primers?

14-2 Good question, and I'm glad you asked. The answer is no. And in the case of Zehrung, our shellac based products continue to decline as a % of our overall primer sales in California and elsewhere.

But I firmly believe, and think it totally predictable, that if the new shellac definition becomes law, 550 g/l VOC alcohol-based non-shellac primers will begin to displace the more commonly used solvent-based alkyd formulations.

Now the logical question for you to ask is: Why? Why, if the new shellac definition becomes law, will the non-shellac "shellacs" represent a larger % of total primer sales, and VOC emissions, than has been the case by restricting the old definition to pure shellac (Laccifer lacca) resin?

There are two reasons really, and they are directly related:

- Pure shellac formulations exhibit unique characteristics.
- Pure shellac formulations are expensive.

14-3 A few of shellac's unique characteristics include unsurpassed adhesion to difficult surfaces, non-toxic film, the best stain sealer available, very fast drying, pet and smoke odor control, etc. But crude shellac is only available from Thailand and India, requires extensive processing and special handling and storage, and is therefore very expensive.

As a result, pure shellac-based primers are specified and used only when their unique characteristics are worth spending the extra money. Consider this – a gallon of a typical, alkyd-based white primer usually costs the user $10.00 - $15.00 per gallon, depending on the brand, where purchased, etc. A gallon of white pigmented shellac will typically cost the user $20.00 - $30.00 per gallon, again depending on the brand and where it was purchased. That's a huge difference and the reason that, under the old SCM definition, shellac-based coatings' share of the overall primer market hasn't increased.

For most general purpose priming, a water-based or an inexpensive alkyd-based primer will suffice, and may even be preferable. Only rarely, and for very specific problems, is a pure shellac-based primer worth the additional expense to the end-user.

14-3

But the new "shellac" definition as proposed in the Draft SCM will significantly change the dynamic I have just outlined. That's because the other alcohol soluble resins – gum copals and rosin esters – are cheap. These formulations will be inexpensive to manufacture and market, and their new found status and ready availability when the new regs go into effect will, I believe, result in significant additional VOC emissions.

Allowing what amounts to a new category of inexpensive, alcohol-based, high VOC primers into the market by virtue of changing the old definition of shellac represents a huge and significant loophole in the ARB's attempt to decrease the VOC emissions attributable to primers, sealers, and undercoaters.

14-4

Accordingly, I believe the ARB should reconsider the new "shellac" definition contained in the 6/10/99 Draft SCM proposal. Specifically, I think the original wording defining shellac as *coatings formulated solely with the resinous secretions of the lac beetle (Laccifer lacca), thinned with alcohol . . .* should be restored.

14-5

This is obviously a selfish and somewhat self-serving request, based on the fact that Zehrung is in the specialty primer manufacturing business, and that we are one of the few companies that still bothers to make and sell pure shellac-based products. My motive in asking you to reconsider is not as it may first appear, however.

My real concern is not the potential for increased competitive activity. We, after all, can and will introduce an alcohol-based shellac substitute if that's what the market wants. You may recall that years ago Zehrung marketed just such a product, called Z-Lac, and *it was one of our best selling products in CA prior to it's being outlawed by the new VOC regs* that went into effect in the late 80's. Now we'll have to consider re-introducing it.

Anyway, my real concern is that not too long after these new regs take effect, the reporting requirements will reveal that massive (and unexpected?) quantities of 550 g/l VOC primers are being sold. There will then be a move to either restrict the allowable VOC content of alcohol-based primers, or the "shellac" category will be eliminated entirely.

Both of these scenarios are problematic. White pigmented shellac cannot be formulated below 550 g/l VOC, and pure shellac-based products really are unique. Pure shellac coatings shouldn't be outlawed in the future on the basis that the newly created category of non-shellac "shellacs" constitutes a significant source of VOC emissions, directly as a result of what I believe is the unwarranted and unwise decision to change the shellac definition in the new SCM.

14-6

Finally, and this has just occurred to me, I am curious as to whether or not counsel for the Board has explored the ramifications of mandating label wording, in this case requiring a category of products be labeled or identified as "shellac," when in fact the products don't have to actually contain any shellac? This may be the equivalent of enacting a law requiring that red wine be labeled "Cabernet" when in reality the wine can be formulated solely with Merlot grapes if the winemaker so chooses. This issue strikes me as a terribly complicating factor in-as-much as I suspect that requiring a manufacturer to label a product as "shellac" when it's really not shellac may potentially violate a host of state and federal labeling laws. I would appreciate understanding the Board's thinking regarding this specific issue.

Thank you in advance for your courtesy in exploring the important issues I have raised in this comment letter, and sharing my concerns with the Board. If I may answer any questions, please feel free to call or e-mail: 323-656-0798 or dougtobey@msn.com.

Sincerely,

Douglas Tobey

7/19/99

Cc: Bob Senior
Dick Stevens

AKZO NOBEL 6-23-99

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Reliance

coating that is formulated and recommended for application to limited to, decks, porches, and steps, for the purposes of

compound. A coating formulated and recommended for application to a concrete form to prevent the freshly poured concrete from bonding to the form. The form may consist of wood, metal, or some material other than concrete.

2.16 Graphic Arts Coating or Sign Paint: A coating formulated and recommended for hand-application by artists using brush or roller techniques to indoor and outdoor signs (excluding structural components) and murals including lettering enamels, poster colors, copy blockers, and bulletin enamels.

2.17 High-Temperature Coating: A high performance coating formulated, recommended, and used for application to substrates exposed continuously or intermittently to temperatures above 204°C (400°F).

2.18 Industrial Maintenance Coating: A high performance architectural coating, including primers, sealers, undercoaters, intermediate coats, and topcoats, formulated and recommended for application to substrates exposed to one or more of the following extreme environmental conditions listed in subsections 2.18.1 through 2.18.5 in an industrial, commercial, or institutional setting :

- 2.18.1 Immersion in water, wastewater, or chemical solutions (aqueous and non-aqueous solutions), or chronic exposure of interior surfaces to moisture condensation;
- 2.18.2 Acute or chronic exposure to corrosive, caustic or acidic agents, or to chemicals, chemical fumes, or chemical mixtures or solutions;
- 2.18.3 Repeated exposure to temperatures above 121°C (250°F);
- 2.18.4 Repeated (frequent) heavy abrasion, including mechanical wear and repeated (frequent) scrubbing with industrial solvents, cleansers, or scouring agents; or
- 2.18.5 Exterior exposure of metal structures and structural components.

2.19 Lacquer: A clear or opaque wood coating, including clear lacquer sanding sealers, formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and to provide a solid, protective film. Lacquer stains are considered stains, not lacquers.

15-1 2.20 Low Solids Coating: A coating containing 0.12 kilogram or less of solids per liter (1 pound or less of solids per gallon) of coating material and for which at least half of the volatile component is water.

2.21 Magnesite Cement Coating: A coating formulated and recommended for application to magnesite cement decking to protect the magnesite cement substrate from erosion by water.

-3- by weight or volume?

2.22 Mastic Texture Coating: A coating formulated and recommended to cover holes and minor cracks and to conceal surface irregularities, and is applied in a single coat of at least 10 mils (0.010 inch) dry film thickness.

2.23 Metallic Pigmented Coating: A coating containing at least 48 grams of elemental metallic pigment per liter of coating as applied (0.4 pounds per gallon), excluding zinc.

2.24 Multi-Color Coating: A coating that is packaged in a single container and exhibits more than one color when applied.

2.25 Nonflat Coating: A coating that is not defined under any other definition in this rule and that registers a gloss of 15 or greater on an 85-degree meter or 5 or greater on a 60-degree meter according to ASTM Designation D 523-89, Standard Test Method for Specular Gloss (incorporated by reference--see section 5.).

2.26 Pre-treatment Wash Primer: A primer that contains a minimum of 0.5 percent acid, by weight, that is formulated and recommended for application directly to bare metal surfaces to provide corrosion resistance and to promote adhesion of subsequent topcoats.

2.27 Primer: A coating formulated and recommended for application to a substrate to provide a firm bond between the substrate and subsequent coats.

2.28 Quick-Dry Enamel: A nonflat coating that has the following characteristics:

2.28.1 Is capable of being applied directly from the container under normal conditions with ambient temperatures between 16 and 27°C (60 and 80°F);

2.28.2 When tested in accordance with ASTM Designation D 1640-83 (Reapproved 1989), Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings at Room Temperature (incorporated by reference--see section 5.), sets to touch in 2 hours or less, is tack free in 4 hours or less, and dries hard in 8 hours or less by the mechanical test method; and

2.28.3 Has a dried film gloss of 70 or above on a 60 degree meter.

2.29 Residential Use: Use in areas where people reside or lodge including, but not limited to, single and multiple family dwellings, condominiums, mobile homes, apartment complexes, motels, and hotels.

2.30 Roof Coating: A coating formulated and recommended for application to exterior roofs for the primary purpose of preventing penetration of the substrate by water or reflecting heat and reflecting ultraviolet radiation. Metallic pigmented roof coatings which qualify as metallic pigmented coatings shall not be considered to be in this category, but shall be considered to be in the metallic pigmented coatings category.

2.31 Rust Preventative Coating: A coating formulated and recommended for use in preventing the corrosion of ferrous metal surfaces in residential situations.

2.32 Sanding Sealer: A clear wood coating formulated and recommended for application to bare wood to seal the wood and to provide a coat that can be sanded to create a smooth surface. A sanding sealer that also meets the definition of a lacquer is not included in this category, but is included in the lacquer category.

2.33 Sealer: A coating formulated and recommended for application to a substrate for one or more of the following purposes: to prevent subsequent coatings from being absorbed by the substrate; to prevent harm to subsequent coatings by materials in the substrate; to block stains, odors, or efflorescence; to seal fire, smoke, or water damage; or to condition chalky surfaces.

2.34 Shellac: A clear or opaque coating formulated with natural resins (except nitrocellulose resins) soluble in alcohol (including, but not limited to, the resinous secretions of the lac beetle, Laciffer lacca). Shellacs dry by evaporation without chemical reaction and provide a quick-drying, solid protective film that may be used for blocking stains.

2.35 Solicit: To require for use or to specify, by written or oral contract.

2.36 Shop Application: A coating is applied to a product or a component of a product in a factory or shop as part of a manufacturing, production, or repairing process (e.g., original equipment manufacturing coatings).

2.37 Stain: A coating formulated to change the color of a surface but not conceal the surface. This includes lacquer stains.

2.38 Swimming Pool Coating: A coating formulated and recommended to coat the interior of swimming pools and to resist swimming pool chemicals.

2.39 Tint Base: A coating to which colorant is added in a paint store or at the site of application to produce a desired color.

2.40 Traffic Marking Coating: A coating formulated and recommended for marking and striping streets, highways, or other traffic surfaces including, but not limited to, curbs, berms, driveways, parking lots, sidewalks, and airport runways.

2.41 Undercoater: A coating formulated and recommended to provide a smooth surface for subsequent coatings.

2.42 Varnish: A clear or semi-transparent coating, excluding lacquers and shellacs, formulated and recommended to provide a durable, solid, protective film. Varnishes may contain small amounts of pigment to color a surface, or to control the final sheen or gloss of the finish.

2.43 Volatile Organic Compound (VOC): Any compound of carbon, which may be emitted to the atmosphere during the application of and or subsequent drying or curing of coatings

subject to this rule, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, and excluding the following:

2.43.1 methane;
methylene chloride (dichloromethane);
1,1,1-trichloroethane (methyl chloroform);
trichlorofluoromethane (CFC-11);
dichlorodifluoromethane (CFC-12);
1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113);
1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114);
chloropentafluoroethane (CFC-115);
chlorodifluoromethane (HCFC-22);
1,1,1-trifluoro-2,2-dichloroethane (HCFC-123);
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124);
1,1-dichloro-1-fluoroethane (HCFC-141b);
1-chloro-1,1-difluoroethane (HCFC-142b);
trifluoromethane (HFC-23);
pentafluoroethane (HFC-125);
1,1,2,2-tetrafluoroethane (HFC-134);
1,1,1,2-tetrafluoroethane (HFC-134a);
1,1,1-trifluoroethane (HFC-143a);
1,1-difluoroethane (HFC-152a);
cyclic, branched, or linear completely methylated siloxanes;
the following classes of perfluorocarbons:
(A) cyclic, branched, or linear, completely fluorinated alkanes;
(B) cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
(C) cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
(D) sulfur-containing perfluorocarbons with no unsaturations and with the sulfur bonds only to carbon and fluorine; and

15-2 include methyl acetate

2.43.2 the following low-reactive organic compounds which have been exempted by the U.S. EPA:
acetone;
ethane; and
parachlorobenzotrifluoride (1-chloro-4-trifluoromethyl benzene).

2.44 VOC Content: The weight of VOC per volume of coating, calculated according to the procedures in subsection 5.1.

2.45 Waterproofing Wood Sealer: A coating formulated and recommended for application to a wood substrate for the primary purpose of preventing the penetration of water.

2.46 Waterproofing Concrete/Masonry Sealer: A clear or pigmented coating that is formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light, and staining.

TRU★SERV®

July 15, 1999

Mr. Jim Nyarady, Manager Stationary Source Division
Air Resources Board
2020 L Street
P.O. Box 2815
Sacramento, CA 95812

Dear Mr. Nyarady:

Re: Comments on the Draft Environmental Impact Report and Suggested Control Measures

TruServ Mfg. Manufactures paints and coatings for True Value, ServiStar and Coast to Coast Hardware stores. The proposed draft environmental impact report and the subsequent suggested control measures causes us great concern.

16-1 We understand the need for continued air emissions control in the state, but by doing it in this manner, you may be creating more problems than you solve. As with the South Coast rule, the decision this for rule making is being made on incomplete and inaccurate information. It is critical that more consideration be given this process before its passage.

Inaccuracies were pointed out in part in the second meeting when the preliminary draft of the VOC Emissions Survey was presented. There were obvious errors made in
16-2 reporting the VOC content of some of the coatings as discussed at the June 3 meeting, and further reviewed from the draft ingredient data supplied by your office. The values should be reviewed before taking them as fact, especially if some of the VOC limits are being drawn solely from this information.

In a review of your draft EIR, several inadequacies surface. Most of the alternatives for compliance are unusable. As shown in the July 1, 1999 meeting, almost no
16-3 manufacturers can use the averaging provision. The low vapor pressure exemption and reactivity have no benefit for the 2002 standards, and will very likely have no benefit in 2006. The seasonal approach would be a logistical nightmare for our members and us.

It is a fact that paint is used partially for decorative purposes, but more importantly, it is used to protect substrates from dirt, weathering, mildew, and general degradation. It has been said more than once by painting contractors attending these workshops that
16-4 coatings at the current VOC limits exhibit marginal performance. What will lower VOC's bring? We don't know, because we won't have adequate time to reformulate and test performance characteristics of the reduced VOC products.

TRUSERV MANUFACTURING COMPANY 201 Jandus Road Cary, Illinois 60013 Ph: 847/639-5383 Fax : 847/639-2058

16-5 In chapter 2, Section VI, Transportation/Circulation of the draft EIR, you state the draft SCM "will not result in a substantial increase in vehicle trips throughout the state....", but you fail to consider, the makeup of the traffic could very likely be affected. The NTS study showed that low VOC consumer products, such as the category of nonflat paint, are not freeze-thaw stable. It is not an issue within the state, but it is an issue for those manufacturers that have to deliver it to California. This could cause an increase in traffic during the already high ozone periods because these products could only be shipped during three seasons, to avoid potential freezing en route.

16-6 In closing, we ask that you consider four things.

1. Adding more categories to the rule, such as the nonflats to include several gloss limits, interior and exterior, and adjust those limits accordingly.
2. Push out the 2002 limit to 2004 to allow more time for reformulation and evaluation of new products.
3. Drop the 2006 limits completely, and if necessary, revisit those limits at a later date.
4. Extend the presentation of the SCM for Architectural Coatings to ARB until June 2000.

Thank you for your consideration of these comments. If you have any questions, please contact me.

Sincerely,

Marcella Nichols

Marcella Nichols, CHMM
Regulatory Compliance Mgr.

cc: B. Simmons
D. Vermilya
D. Patrizi
E. Majkrzak

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

July 7, 1999

Mr. Dean C. Simeroth, Chief
Criteria Pollutants Branch
Stationary Source Division
Air Resources Board
2020 "L" Street
P. O. Box 2815
Sacramento, California 95812

Comments on the Suggested Control Measure for Architectural Coatings

Dear Mr. Simeroth:

The Metropolitan Water District of Southern California (Metropolitan) appreciates this opportunity to provide comments to the Air Resources Board (ARB) on the draft 6/10/99 proposed changes to the Suggested Control Measure for Architectural Coatings (SCM). Metropolitan has also met with ARB representatives (Don Ames, Jim Nyarady, Mike Jaczola) on June 23, 1999 to discuss the draft document. Metropolitan distributes wholesale water obtained from the Colorado River and Northern California to 27 member agencies (and indirectly to over 300 retail water agencies) and provides more than one-half of the water used by approximately 16 million persons in the 5,200 square-mile coastal plain of Southern California. To provide this service, Metropolitan operates an extensive system of water conveyances, reservoirs, and water treatment plants. The comments herein reflect Metropolitan's views and concerns as an affected agency.

17-1 Metropolitan is supportive of the efforts to reduce volatile organic compound (VOC) emissions from the application of architectural coatings. We recognize and appreciate ARB's efforts to harmonize the draft proposed SCM's provisions with existing related federal and regional regulations. In particular, Metropolitan is interested in more closely aligning the proposed SCM with the May 14, 1999 amendments to the South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings. As an end-user of architectural/industrial maintenance (AIM) coatings on critical components of the water delivery system, Metropolitan has concerns with respect to having sufficient time to identify and test the lower VOC AIM coatings to determine their adequacy to replace our existing approved coatings. The SCAQMD Rule 1113 addresses this time concern by identifying a contingency provision for "essential public services coatings" (EPSC). For the same reasons that such a provision was incorporated into Rule 1113, as well as for consistency, Metropolitan is requesting that an EPSC provision also be placed in the SCM. Metropolitan's specific concerns and recommendations are provided below.

Available Replacement Coatings

17-2 **Issue**: The draft proposed SCM includes the following: revised definition of "Industrial Maintenance Coatings"; and reduction of VOC limits in specific AIM categories, including Industrial Maintenance Coatings (from 340 g/l to 250 g/l, effective July 1, 2002, and from 250 g/l to 100 g/l effective July

1, 2006). While supportive of the goal to reduce VOC emissions, Metropolitan has concerns regarding the timely availability of the lower VOC containing compliant coatings which meet field needs. As an essential public service, Metropolitan has the responsibility to ensure the reliability and safety of the
17-2 water delivery system, as well as to minimize the occurrence of potential service interruptions. A lack of coatings which have been demonstrated to perform comparably to existing products could conceivably result in the use of coatings which may not adequately protect and possibly result in accelerated damage to our public infrastructures (e.g., pipelines, water conveyance equipment, tanks, or bridges). Metropolitan utilizes approximately 10,600 gallons of architectural industrial maintenance coatings, statewide, per year.

Over the past thirty years, Metropolitan has established a rigorous performance testing program to evaluate all coatings and materials of construction prior to approval for use on Metropolitan's industrial structures. For a first generation coating to be accepted, the process involves two to three years of performance testing by Metropolitan's Engineering Division Materials and Metallurgy Section, followed by an additional three years of field testing in an actual field construction project. Therefore, as higher VOC containing non-compliant coatings are phased out, it can take as many as six years for any new compliant coatings to be demonstrated as suitable for a public water service. In fact, it has been our experience that 80 % of the coatings tested in our Corrosion Control Laboratory do not meet Metropolitan's performance standards and are rejected for poor performance reasons. Additionally, 75
17-3 % of the coatings tested do not meet the physical and performance characteristics stated in the manufacturer's technical product data sheets. To exemplify this, Attachment 1, the Table of Metropolitan Water District Coating Performance Testing Results, identifies five coatings that Metropolitan has tested and rejected for performance reasons. Attachment 2 is a summary of the American Society for Testing and Materials (ASTM) standardized test methods which Metropolitan currently runs on coatings and adhesives.

Specific information identifying the impacts that the proposed SCM VOC limits will have on Metropolitan's current critical coatings is provided in Attachment 3. As shown by this data, the proposed SCM VOC limits will have a severe impact on Metropolitan's approved critical coatings.

Recommendation: To provide adequate time for the identification and testing of lower VOC compliant coatings, Metropolitan recommends that similar to SCAQMD Rule 1113, a category be established for "essential public services coatings" with a continued VOC limit of 340 g/l, until July 1, 2006, when it would be subject to the same final VOC limit as the Industrial Maintenance Coating category . These coatings would be defined as, "protective (functional) coatings applied to components of power, municipal wastewater, water, bridges and other roadways". The EPSC VOC limits and effective dates
17-4 would be: 340 g/l, date of adoption; 100 g/l, July 1, 2006 (adoption subject to the results of the scheduled SCAQMD technology assessments).

Again, by establishing these modified limits, adequate time would be provided to test the new coatings. Metropolitan is committed to phasing out the higher VOC coatings and is actively testing lower VOC (e.g., 100 g/l) materials. As soon as they pass, the lower VOC coatings will be incorporated into Metropolitan's operations as replacements for the comparable higher VOC coatings. We do not envision exercising the EPSC option unless necessary (e.g., suitable lower VOC coatings

cannot be identified). Additionally, as an Essential Public Service Agency, Metropolitan is committed to participating in the technical assessments with SCAQMD, as directed by the SCAQMD Board
17-4 Resolution No. 99. We are prepared to meet with SCAQMD staff and other interested public agencies in the next few weeks to begin planning of the technical assessments. Through these technical assessments, an attempt will be made to accelerate the overall testing period, where feasible.

2) Available Repair Coatings

Issue: Currently, Metropolitan has structures that are coated with solvent borne coatings. Over time, these structures will require patch repair and maintenance using a compatible coating system. In order to maintain manufacturer warranty of the coating, the same solvent borne coating that was originally
17-5 applied, or a repair coating approved by the manufacturer would need to be utilized. Once the proposed SCM becomes effective, these coatings may not meet the required VOC limits. The alternative to utilizing the original coating would be complete removal and recoating (primer, intermediate and topcoat) of the entire structure, which will result in release of a higher VOC volume overall.

Recommendation: The proposed EPSC category and modified VOC limit will help ameliorate this
17-6 concern regarding touch-up and repairs of the existing higher VOC coatings. In addition, as discussed with SCAQMD staff, the cooperative public services technical assessment will include evaluation of the new coatings' compatibility with existing coatings.

Thank you again for the opportunity to comment on the draft proposed SCM and to meet with ARB representatives to discuss Metropolitan's concerns. Should you have any questions or wish to discuss Metropolitan's comments, please contact Ms. Carol Kaufman at (213) 217-6207.

Very truly yours,

John E. Clark
Manager, Regulatory Affairs Branch

CYK/lov-R-99-146

cc: Donald J. Ames, P.E.
Assistant Chief

James E. Nyarady, P.E.
Manager, Strategy Evaluation Section

Michael P. Jaczola
Staff Engineer

Attachment 1

Table of Metropolitan Water District Coating Performance Testing Results
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Coating Type	Manufacturer's Description of Performance and Characteristics	VOC (g/l)	Substrate & Prep	Primer	Test Protocol	Test Duration	Evaluation Results	Remarks Regarding Coating Performance
# 101 Two Component Elastomeric Polyurethane Rubber Coating System	Outstanding abrasion resistance, tensile strength and hydrolytic stability	2.4 g/l	Concrete SSPC-7	Polyamide epoxy sealer	Immersion -Untreated Water ASTM D-870 (Modified)	23 months	Failure Mode: Severe color fade; surface cracking; osmotic blistering	Unacceptable: adhesion, color retention; & resistance to permeability
					Immersion -Demin. Water ASTM D-870 (Modified)	23 months	Failure Mode: Severe color fade; surface cracking; osmotic blistering	Unacceptable: adhesion, color retention; & resistance to permeability
					Immersion -Filtered Water ASTM D-870 (Modified)	23 months	Failure Mode: Severe color fade; surface cracking; osmotic blistering	Unacceptable: adhesion, color retention; & resistance to permeability
					Atmospheric ASTM G-7	18 months	Failure Mode: Severe discoloration	Unacceptable: color retention & resistance to weathering
			Steel Panel SSPC-5	Polyurethane primer	Immersion -Untreated Water ASTM D-870 (Modified)	27 months	Failure Mode: Moderate color fade; surface cracking; osmotic blistering, disbonding	Unacceptable: adhesion, poor color retention; & resistance to permeability
					Immersion -Filtered Water ASTM D-870 (Modified)	27 months	Failure Mode: Moderate color fade; surface cracking; osmotic blistering, disbonding	Unacceptable: adhesion, poor color retention; & resistance to permeability
					Immersion -Finished Water ASTM D-870 (Modified)	22 months	Failure Mode: Moderate color fade; surface cracking; osmotic blistering, surface deterioration & disbonding	Unacceptable: adhesion, poor color retention; & resistance to permeability
					Atmospheric ASTM G-7 (Modified)	21 months	Failure Mode: Moderate discoloration; surface etching; surface cracking/checking	Unacceptable: color retention & resistance to weathering
					High Humidity ASTM D-2247 (Modified)	4 months	Failure Mode: Heavy rust formation at X, rust formation at edge radii	Unacceptable: resistance to moisture permeability
					Cathodic Disbonding ASTM G-8 (Modified)	4 months	Polarization established - coating in good condition	Coating passed 120 day exposure CDT test
#102 Two component water based epoxy coating	High performance exterior industrial maintenance enamel. Chemical, abrasion, & impact resistance	176	Steel Panel SSPC-5 (abrasive blasted)	Zinc rich water based epoxy	Atmospheric ASTM G-7 (Modified)	17 months	Failure Mode: Moderate discoloration, loss of 50% gloss	Unacceptable: gloss and color retention & resistance to weathering
					Weatherometer . ASTM D-2565 (Modified)	1600 Hours	Failure Mode: surface etching, moderate darkening, small osmotic blisters, 50 loss of gloss	Unacceptable: gloss and color retention, resistance to weathering permeability
				Catalyzed epoxy	Atmospheric ASTM G-7 (Modified)	17 months	Failure Mode: Moderate discoloration, loss of 40% gloss	Unacceptable: gloss and color retention & resistance to weathering
					High Humidity ASTM D-2247 (Modified)	4 months	Failure Mode: rust formation at X, rust formation at edge radii, small osmotic blisters	Unacceptable: adhesion and resistance to moisture permeability & color retention
					Weatherometer ASTM D-2565 (Modified)	1600 Hours	Failure Mode: surface etching, mod. darkening, small osmotic blisters, 63% loss of gloss	Unacceptable: gloss and color retention, resistance to weathering
				DTM acrylic gloss primer	Atmospheric ASTM G-7 (Modified)	17 months	Failure Mode: Moderate discoloration, loss of 30% gloss	Unacceptable: gloss and color retention & resistance to weathering

Attachment 1

Metropolitan Water District Coating Performance Testing Results
(Page 2 of 2)

Coating Type	Manufacturer's Description of Performance and Characteristics	VOC (g/l)	Substrate & Prep	Primer	Test Protocol	Duration	Evaluation Results	Remarks Regarding Coating Performance
# 103 Water reducible, 100% acrylic gloss coating (DTM).	Corrosion resistant coating, excelent moisture resistance, excellent exterior durability	208 g/l	Steel Panel SSPC-5	DTM	Atmospheric ASTM G-7	17 months	Failure Mode: moderate discoloration, acceptable gloss retention, tiny rust spots.	Unacceptable: color retention & resistance to weathering.
					Weatherometer ASTM D-2565 (Modified)	1600 Hours	Failure Mode: slight darkening, 5% loss of gloss	Acceptable: gloss and color retention, & acceptable resistance to weathering.
					High Humidity ASTM D-2247 (Modified)	4 months	Failure Mode: heavy rust formation at X, moderate rust formation all surfaces, osmotic blistering.	Unacceptable: adhesion & resistance to moisture permeability
			Steel Panel SSPC-5	Oil primer	Weatherometer ASTM D-2565 (Modified)	1600 Hours	Failure Mode: moderate darkening blisters, 5% loss of gloss	Acceptable gloss and color retention
					Atmospheric ASTM G-7 (Modified)	19 months	Failure Mode: slight discoloration; 16% loss of gloss.	Acceptable color retention & acceptable resistance to weathering
					Cathodic Disbonding ASTM G-8 (Modified)	4 months	Polarization established - coating in good condition	Coating passed 120 day exposure CDT test
#104 100% solids aromatic elastomeric urethane coating	Coating is designed for immersion in potable water, salt water, and aqueous chemical solutions	0	Concrete SSPC-7 And Steel Panel SSSPC -5	Epoxy Primer	Immersion -Untreated Water ASTM D-870 (Modified)	25 months	Failure Mode: severe darkening;	Unacceptable: color retention.
					Immersion -Filtered Water ASTM D-870 (Modified)	25 months	Failure Mode: severe darkening	Unacceptable: color retention.
					Immersion -Finished Water ASTM D-870 (Modified)	25 months	Failure Mode: severe darkening; surface deterioration; osmotic blistering	Unacceptable: adhesion, color retention; resistance to moisture permeability & chemical exposure.
					High Humidity ASTM D-2247 (Modified)	4 months	Coating in good condition	Acceptable short term resistance to moisture permeability.
			Steel Panel SSPC-5		Cathodic Disbonding ASTM G-8 (Modified)	4 months	Polarization established, however coating developed osmotic blisters and delamination from substrate.	Unacceptable: adhesion, resistance to moisture permeability, & failed CDT test (ASTM G-8)
					Cavitation Test Chamber - stability under conditions of high velocity water flow.	24 hours	Failure Mode: Coating delaminated from substrate.	Coating exhibited unacceptable stability under conditions of high water flow.
# 105 Acrylic primer coating	Premium anti-corrosion industrial maintenance primer for interior and exterior metal surfaces,.	250	Steel Panel SSPC-5	DTM	Atmospheric ASTM G-7	20 months	Failure Mode: moderate discoloration, extensive rust formation.	Unacceptable: color retention, & resistance to weathering.
					High Humidity ASTM D-2247 (Modified)	4 months	Coating formed osmotic blisters, extensive rust spots, moderate darkening.	Unacceptable: color retention, resistance to weathering, & unacceptable resistance to moisture permeability

ATTACHMENT 2

MWD TESTING USING ASTM PROCEDURES

TEST VENUE		ASTM STANDARD
• **Immersion in:**	**Finished water**	ASTM D-870 (87) Modified
	Filtered water	ASTM D-870 (87) Modified
	Raw water	ASTM D-870 (87) Modified
• **Softened Water: (Zero water)**		ASTM D-870 (87) Modified
• **Cathodic Disbonding: (Water)**		ASTM G-8 (79)
• **Cathodic Disbonding: (Soil)**		ASTM G-19 (88)
• **Abrasion Test. Taber Abraser Method:**		ASTM D-4060 (90)
• **Accelerated Weatherometer:**		ASTM D-2565 (89) Modified
• **Cavitation Test:**		None applicable
• **High Humidity:**		ASTM D-2247 (87) & ASTM B-117 (90) Modified
• **KTA Envirotest:**		ASTM D-2246 (87) Modified
• **Atmospheric Weathering:**		ASTM G-7 (89) Modified
• **Slant Shear Test:**		ASTM C-882 (91) Modified
• **Adhesion Test:**		ASTM D-4541 (85)
• **Spectroscopic Analysis of Coatings:**		ASTM E-932 (89)
• **Wet To Dry Hiding Change (Spread Cards):**		ASTM D-5007 (89) Modified
• **Physical Analyses of Coatings Including:**		
	Solids by Wt.	ASTM D-2369 (90) Modified
	Solids by Vol.	ASTM D-2697 (86) & ASTM D-2832 (91) Modified
	Viscosity	ASTM D-4212 (88)
	Wt. Per Gallon	ASTM D-1475 (90) Modified
	Specific Gravity	ASTM D-1475 (90)
• **Wet Chemical Analysis:**		Depends on material and analysis indicated

MWD TESTING USING ASTM PROCEDURES

TEST VENUE	ASTM STANDARD
IMMERSION IN:	
Finished, Filtered, Raw and Softened Water	**ASTM D-870 (87) Modified**

Purpose: This procedure tests a coating's resistance to water by installing immersion coated panels into troughs containing the various types of water processed and treated at Metropolitan's F.E. Weymouth Plant located in La Verne, California. Softened water used for testing is prepared by adding sodium chloride, reducing total hardness to 2 to 3 ppm calcium carbonate. Chemical properties of finished, filtered, and raw waters can be found on table A, listed under source waters for the F.E. Weymouth plant. This test may be modified to include immersion in chemicals.

Procedure: Three inch by seven inch coated steel panels are immersed into 72 degree +/-4 degrees Fahrenheit water for 2 years, Eighty percent of the test panel is under water while 20 percent of the panel is above water. Flow rates of the troughs range from 2 to 5 gallons per minute. Test panels are evaluated every three months to determine any changes in the coating's physical properties. A coating will be considered unsuitable for immersion service if it develops any signs of rust, blistering, or softening.

Equipment: Equipment necessary to conduct this test includes: 3 inch by 7 inch by 1/8 inch thick steel test panels, fiberglass immersion troughs measuring 7 inch by 7 inch by 15 feet long, an irrigation timer (Irritrol MC-8 Plus), Hunter HP ¾ inch diameter automatic valves, ¾ inch diameter manual PVC or brass globe valves, and a water source. (Trough dimensions and method of construction can be modified to accommodate available space.)

Note Equipment necessary to prepare and apply test coatings includes: an abrasive blast cabinet (Kelco model 100900) and HVLP spray gun (Devilbiss model JGHV 530.)

Duration of Testing: Two years

Pass/Fail Criteria: A pass will exhibit no blisters, loss of adhesion to the substrate, intercoat delamination, rust, or discoloration.

CATHODIC DISBONDING (Water) ASTM G-8 (79)

Purpose: This procedure provides a method for determining the dielectric strength of a coating and its ability to resist disbonding when exposed to electrical overvoltages as a result of cathodic protection.

Procedure: A 4 inch diameter by 2 foot long piece of pipe is externally coated and allowed to cure. A resin cap 6 inches in diameter by 2 inches thick is cast on one end of the pipe to seal the end from water intruding to the internal portion of the pipe and also to provide a base stand for the pipe. The coated pipe is inspected for holidays using a low voltage holiday detector. Coating resistance is measured with an Ohmmeter. Acceptable resistance should exceed 20,000 Ohms. If the sample passes both criteria, a ¼ inch diameter holiday is made through the coating, nine inches up from the bottom of the pipe. The sample is then immersed in a solution of artificial seawater while simultaneously exposing it to an electrical potential of 1.5 +/-0.05 volts generated by a magnesium anode. Purpose for the holiday is to provide a path for the current generated by the anode to the pipe substrate. The test sample is evaluated daily for one week, reducing evaluations to every other day for two weeks, then further reducing to once a week after the third week. The following data is recorded each time the coated pipe is evaluated: Description of the coating's physical appearance, voltage output, and milliamp demand. The test period is 120 days.

Equipment: Equipment necessary to conduct this test includes: a 4 inch diameter by 2 foot long externally coated pipe sample, electrically insulated PVC cells measuring 1 foot by 1 foot by 2 feet deep, a low voltage holiday detector, a Digital Multimeter (Tinker and Rasor M-1), a copper-copper sulfate reference cell, Sodium Chloride, Sodium Carbonate, Sodium Sulfate for preparation of artificial seawater, and 1 inch diameter by 2 feet long magnesium anodes. (Magnesium anodes will normally last a period of 240 days before requiring replacement.)

Duration of Testing: One-hundred twenty days. (Occasionally this duration will be extended based on performance of the coating.)

Pass/Fail Criteria: No blisters, delamination, or milliamp readings above 1.1ma during the 120 day test period.

Note Used saltwater solution may be considered hazardous waste.

CATHODIC DISBONDING (SOIL) ASTM G-19 (88) Modified

Purpose: This procedure provides a method for determining the dielectric strength of a coating and its ability to resist disbonding when exposed to electrical overvoltages as a result of cathodic protection when buried in soil.

Procedure: A 4 inch diameter by 4 foot long piece of pipe is externally coated and allowed to cure. The pipe is inspected for holidays with a low voltage holiday detector. Coating resistance is measured with an Ohmmeter. Resistance should be above 20,000 Ohms. If the sample passes both criteria, a ¼ inch holiday is made in the coated pipe 9 inches up from the bottom of the pipe. Purpose for the holiday is to provide a path for the current generated by the anode. The sample is then buried in a low resistance soil while simultaneously exposing it to an electrical current of 1.5 +/-0.05 volts generated by a magnesium anode. Depth of burial for the sample is 3 feet, allowing one foot of the pipe to extend above ground level. Voltage and milliamp readings are taken daily for one week, reducing readings to every other day for two weeks, then further reducing to once a week after the third week. Results are recorded regarding voltage and milliamp demand for 2 years minimum. *Note* Pipe samples cannot be easily inspected due to the depth of soil cover.

Equipment: Equipment necessary to conduct this test includes: Plastic or wooden boxes with an internal measurement of 3 feet by 3 feet by 3 feet deep, 4 inch diameter by 6 feet long steel pipe, a low voltage holiday detector (Tinker and Rasor M-1), a Digital Multimeter, copper-copper sulfate reference cell, soil with high clay content, and a 10 pound magnesium sack anode capable of producing 1.5 +/-0.05 volts.

Duration of Testing: Two years minimum.

Pass/Fail Criteria: No blisters, delamination, or milliamp readings above 1.1 ma. within the 2-year test period.

ABRASION TEST TABER ABRASER METHOD ASTM D-4060 (90)

Purpose: This procedure evaluates a coating's ability to resist abrasion utilizing a Taber Abraser (model 503 standard). This test determines a coating's resistance to abrasion produced by solid particles.

Procedure: Test coating is applied to one side of a 4 inch square by 1/8 inch thick steel panel and allowed to cure. The panel is then placed on the Taber abraser

machine. Abrasion wheels are selected based on coating hardness and the intended end use of the coating. The panel is then abraded for a predetermined number of cycles to determine the Taber Wear Index number for the test coating. Taber Wear Index number is a calculation factoring in the loss of coating in grams, the number of cycles performed, and the specific gravity of the coating. This index allows for comparison of abrasion resistance based on similar coatings and wheel hardness.

Equipment: Equipment necessary to conduct this test includes: A Taber Abraser (model 503 standard), 4 inch square by 3/32 inch thick steel panels, and an analytical balance capable of having an accuracy within 0.001 grams.

Duration of Testing: Typically 1000 cycles. This may vary depending on type of coating tested, abrading wheels used, weight of counter balances, and the intended end use of the coating.

Pass/Fail Criteria: Test specimen should possess a similar wear index to comparable products currently used by Metropolitan.

ACCELERATED WEATHEROMETER ASTM D-2565 (89) Modified

Purpose: This procedure provides a method for determining the effects of ultraviolet and wet/dry cycles on coatings and other materials. This test is used when results are needed within a short period of time.

Procedure: A steel panel 2-7/8 inches wide by 6 inches long by 3/32 inch thick receives proper surface preparation and is then coated. Once cured, the test panel is installed in the weatherometer and subjected to a combination of ultraviolet light and demineralized water. Testing takes about 5 weeks to provide exposure equal to 1 year actual atmospheric conditions for Southern California. Superior performing products exhibit little or no loss of gloss and reflectance, rust, blistering, fading, or chalking.

Equipment: Equipment necessary to conduct this test includes: An accelerated weatherometer such as the Atlas Ci-65 Xenon Arc Weatherometer used by Metropolitan, 2-7/8 inch wide by 6 inch long by 3/32 inch steel panels, and a source for demineralized and finished water. Optional equipment consists of gloss and reflectance meters.

Duration of Testing: A minimum of 5 weeks.

Pass/Fail Criteria: An acceptable coating would not experience blisters or rust. Fading, loss of gloss, or reflectance, may be allowed if it is deemed only slight in appearance.

CAVITATION TESTING: None applicable

Purpose: This procedure provides a method for evaluating a coating's ability to resist high velocity cavitation and erosion. This procedure, developed by members of the Metropolitan Corrosion Engineering branch, is designed to simulate "real world" conditions of high water velocity, turbulent flow, erosion, and corrosion. This test is very important in evaluating coatings intended for use in high velocity-cavitating conditions.

Procedure: Steel test panels measuring 2 inch wide by 7 inch long by ¼ inch thick are coated and allowed to cure. Once cured, two panels are installed in two separate chambers. Cavitation testing exposes coated panels to water streams of high velocities and pressures. These chambers direct streams of water at the upstream portion of the test coupon measuring 175 psi, dropping to 30 psi just below the test panel. The sudden change in pressure creates a turbulence on the coated panel while producing microscopic vapor bubbles on the coated surface. These bubbles collapse and create cavitation. Coated panels are exposed for 24 hours. Metal panels are exposed for 28 days. Cavitation resistance is determined by weight loss of test panel and amount of coated surface or metal removed from the test panel. Following testing, the panel will be compared to similar materials to determine pass or fail criteria. Generally, the less material removed from the panel the better the cavitation resistance.

Equipment: Equipment necessary to conduct this test includes: Steel panels 2 inch wide by 7 inch long by ¼ inch thick, cavitation chambers complete with manifold valves, hardware, and a supply of a large volume of high pressure water. (It should be noted that cavitation testing can also be done on smaller scales utilizing less volumes and pressures of water.)

Duration of Testing: Twenty-four hours for coated panels and 28 days for metal panels.

Pass/Fail Criteria: Pass and failure is subjective and is based on comparisons of similar types of materials.

HIGH HUMIDITY TEST — ASTM B-117 (90) Modified and ASTM D-2247 (87)

Purpose: This test evaluates a coating's ability to resist degradation while in humid environments. In this procedure coated test panels are exposed to 100 percent relative humidity at 100 degrees Fahrenheit. This test evaluates a coating's ability to resist degradation while in humid environments.

Procedure: Steel panels 2 inch by 7 inch by ¼ inch thick are coated and allowed to cure. These panels are installed in a high humidity/prohesion test cabinet which produces humidity by atomizing demineralized water heated to 100 degrees Fahrenheit. Most panels will have a 4 inch long "X" scribed through the coating to the steel substrate. Purpose for this "X" is to observe any undercutting and peeling along the scribed surface. This test is conducted for 120 days, and following testing the panels are examined for rust, blisters, coating delamination, and softening. A successful pass would exhibit no blemishes.

Equipment: Equipment necessary to conduct this test includes: A high humidity cabinet such as the Atotech At-15 Pro used by Metropolitan, 3 inch wide by 7 inch long by ¼ inch thick steel panels, and a source for demineralized water.

Duration of Testing: One-hundred twenty days minimum.

Pass/Fail Criteria: Coated panel shall exhibit no rust, blisters, delamination or softening of the coating.

KTA (CYCLICAL) ENVIROTEST — ASTM D-2246 (87) Modified

Purpose: In this procedure coated panels are exposed to cyclic stresses created by changes in the exposure environment. This test evaluates a material's ability to resist degradation under conditions of humidity, heat, immersion and ultraviolet light.

Procedure: Steel panels 4 inch by 6 inch by 1/8 inch thick are coated and allowed to cure. Panels are then installed in the cyclical test cabinet and exposed to cycles of wet, dry, light, dark, hot, and cold for 1,600 hours. Panels are evaluated for signs of rust, blistering, delamination, fading, and softening of the coating. A passing or successful test would be a coating exhibiting none of the defects listed above.

Equipment: Equipment necessary to conduct this test includes: A cyclical test cabinet such as the KTA Envirotest used by Metropolitan, and a source for demineralized water.

Duration of Testing: 1,600 hours of exposure.

Pass/Fail Criteria: A passing test panel will exhibit no rust, blisters, delamination, fading or cracking.

ATMOSPHERIC WEATHERING: ASTM G-7 (89) Modified

Purpose: This procedure tests a coating's resistance to cracking, peeling, and fading by exposing the coated panels to natural sunlight.

Procedure: Test panels 2 inch wide by 7 inch long by ¼ inch thick steel panels are coated and allowed to cure. Panels are then installed on racks positioned at a 45 degree angle, outdoors facing south. In addition to ultraviolet exposure, the test panels are subjected to moisture in the form of rain and airborne pollutants such as smog. Panels are evaluated for coating deterioration such as: rust, fading, chalking, and discoloration. Minor chalking, fading, and loss of gloss are considered acceptable.

Equipment: Equipment necessary to conduct this test includes: Test racks which can vary in size depending on the number of test panels. Racks are configured to allow panels to face at a 45 degree angle to the sun. Metropolitan's racks measure 4 feet high by 30 inches wide by 80 inches long.

Duration of Testing: Eighteen months minimum;

Pass/Fail Criteria: Test panels which exhibit minor fading and chalking are considered a pass. Damage more severe such as rusting or moderate discoloration would constitute a failure.

SLANT SHEAR TEST: ASTM C-882 (91) Modified

Purpose: This procedure provides a method for determining bond strength of epoxy resin-based or other adhesive materials when applied to cementitious substrates. Materials tested by this method are typically used for repair of concrete.

Procedure: Concrete cubes measuring 2 inches by 5 inches long and cast on a 45 degree slant receive prescribed surface preparation as required. Epoxy is applied to the 45 degree side of each block at a thickness recommended by the manufacturer, joined together, then cured for the length of time recommended by the manufacturer. The finished product produces a cube that will be placed in compression to create shear forces. Strengths achieved are known as shear strengths. Shear strengths can be converted to pounds per square inch (psi). Acceptable test results include samples with shear strengths greater than concrete compression strengths or when concrete fails before the epoxy joint.

Equipment: Equipment necessary to conduct this test includes: A Universal Testing Machine such as the Instron model 4206 used by Metropolitan, molds to cast concrete shear blocks, an abrasive blaster (Kelco model 100900) to prepare concrete samples and application equipment.

Duration of Testing: Approximately 15 minutes per block.

Pass/Fail Criteria: Epoxy with strengths greater than concrete compression strengths. Concrete that fails before the epoxy would constitute a pass.

ADHESION TESTING: ASTM D-4541 (85)

Purpose: This procedure provides a test method for determining the pull-off strength of coatings to various substrates as well as to other coatings.

Procedure: Precoated panels are prepared by lightly abrading the test location with 80 grit sandpaper. The aluminum dolly which will be affixed to the test surface is abraded on its surface and then adhered to the test location. Adhesives such as "Crazy Glue or Epoxy provided by Elcometer" are applied to the dolly and adhered to the coating. Excess adhesive should be removed immediately from around the dolly. Glued dollies are allowed to fully cure as required by adhesive manufacturer. The adhesion tester is then placed over the dolly and secured to the dolly. Tightening the handle on the adhesion tester applies an even pulling pressure on the dolly causing it to pull off the coated surface. A minimum of three tests shall be performed on each sample. Factors influencing adhesion strength include: Generic type of coating, substrate adhered to, age of coating, and surface preparation of the coating.

Equipment: Equipment necessary to conduct this test includes: An adhesion tester such as those manufactured by Elcometer, aluminum dollies sold by Elcometer, 80 grit sandpaper, and adhesive.

Duration of Testing: Testing takes 24 hours due to time required for adhesive to cure. Otherwise pulling of dollies takes 5 minutes per dolly.

Pass/Fail Criteria: Successful adhesion strengths depend on many factors. Visual inspection of the specimen will provide important information regarding failure type and mode, e.g., cohesive failure or adhesive failure. Typically a polyamide epoxy over an abrasive blasted surface should produce an adhesive strength of 700 to 1000 psi per dolly.

SPECTROSCOPIC ANALYSIS OF COATINGS ASTM E-932 (89)

Purpose: This procedure is a method for analyzing organic constituents of a coating by Infrared Spectrophotometry. This test is used to identify coatings by family based on organic constituents present.

Procedure: The Spectrophotometer generates and directs a laser beam of infrared light at the coating held in a specialized crystal. This crystal is designed to filter unwanted radiation while allowing desirable radiation to contact the coating. The result is a spectrum of the test material. This spectrum will indicate which family of organic products the coating belongs to and can quantify the amount of organic constituents.

Equipment: Equipment necessary to conduct this test includes: An Infrared Spectrophotometer such as the Nicolet 510 P used by Metropolitan, a computer to run the Spectrophotometer, and a plotter.

Duration of Testing: To produce a spectra takes between 15 minutes to several hours depending on type of material and if sample is liquid or solid.

Pass/Fail Criteria: This procedure is normally used to identify and classify coatings. Pass/fail criteria is based on determining by identification if a coating is or is not in the family or class that was specified for a particular project.

WET TO DRY HIDING CHANGE (SPREAD CARDS) — ASTM D-5007-(89) Modified

Purpose: This procedure is a method, which visually evaluates a coating for hiding power, cure time, and undissolved solids in a cured coating. To determine hiding properties requires applying a coating to special black/white spread cards to determine its ability to cover a light/dark substrate without "bleeding" through. Then the coating is visually examined for undissolved particulates. Dried coatings should be smooth and without noticeable particulates. When particulates are observed in the dry film this indicates a coating's pigment may have been improperly ground or the coating is "seeding out." Seeding out refers to a condition when pigments fall out of solution and solidify due to the coating being old or unstable. Spread cards may also be used to determine a coating's speed of cure. Cure time is dependent on specified coating's thickness proper mixing, solvent content, and other variables. Once the coating is applied, it is timed to determine if the cure time matches manufacturer's specifications.

Procedure: A spread card is secured to a draw down table by a vacuum that is drawn through holes in the table. A dollop of paint is placed on the spread card and is pulled across the spread card with a calibrated draw down bar (Logicator multi-notch applicator). These bars are milled and calibrated at thicknesses from one to eight mils. The coating film is allowed to dry and examined for coverage, color, and any irregularities.

Equipment: Equipment necessary to conduct this test includes: A Logicator multi-notch applicator, Logicator test charts, a vacuum plate, and a visual hiding standard. All items listed are available from the Leneta Company located in Ho-Ho Kus, New Jersey.

Duration of Testing: Testing takes approximately 15 minutes. Coating is allowed to dry overnight and examined for qualities listed above.

Pass/Fail Criteria: A passing sample shows full hide at manufacturer's specified thickness and shows no impurities in the coating film.

PHYSICAL ANALYSES OF COATINGS INCLUDING:

SOLIDS BY WEIGHT: — ASTM D-2369 (90) Modified

Purpose: This procedure describes a method for determining the percent by weight of solids of a coating. This method allows the tester to compare a manufacturer's published solids content with results derived in the lab.

Procedure: A clean, unused, evaporative dish and stirring rod are weighed and weights recorded on a lab data sheet. The weight of the sample, dish, and stirring rod are also recorded on a lab data sheet. The dish with the coating and rod are placed in an oven and heated to 110 degrees Centigrade and stirred periodically until all solvent has evaporated. Once the coating and dish have cooled, a final weight is taken. Calculations are performed to determine percent solvent driven off leaving percent solids by weight of the coating.

Equipment: Equipment necessary to conduct this test includes: A 200 ml teflon evaporating dish, an oven capable of heating samples to 110 degrees Centrigrade, 22 gauge stainless steel wire, and an analytical balance accurate to 0.001 grams.

Duration of Testing: Twenty-four hours.

Pass/Fail Criteria: Coating should meet manufacturer's specs +/-2 percentage points.

SOLIDS BY VOLUME: ASTM D-2697 (86) and ASTM D-2832 (91) Modified

Purpose: This procedure describes a method for determining volume solids of a coating. This test allows the tester the ability to compare a manufacturer's published solids content with results derived in the lab.

Procedure: Clean stainless steel discs are weighed in both air and water to determine their volume. The discs are dip coated with the test paint and allowed to dry. Coated discs again are weighed both in air and water to determine volume of coated discs. Calculations are performed subtracting the volume of the uncoated discs from the coated discs leaving the volume of the coating. This test confirms that manufacturer's data regarding solids by volume is correct.

Equipment: Equipment necessary to conduct this test includes: 1-1/2 inch diameter by 1/16 inch thick stainless steel discs, an analytical balance accurate to 0.001 grams, 1000 ml glass beaker, a thermometer, and a source for demineralized water.

Duration of Testing: Twenty-four hours to perform the entire process.

Pass/Fail Criteria: Test is not pass or fail but used as a comparative against manufacturer's data.

VISCOSITY — ASTM D-4212 (88) Modified

Purpose: This procedure describes a method to determine fluidity or viscosity of a coating or related liquid material. This test can be used to determine if a coating has been properly prepared.

Procedure: A calibrated viscometer, such as the Zahn viscosity cup used by Metropolitan, is filled to the top with the test coating. The viscometer is lifted above the coating container allowing the coating to drain out the hole in the bottom of the viscometer. A stopwatch is used to time the draining of the coating. Once there is a hesitation in draining of the coating, the test is stopped and time is recorded. Elapsed time and Zahn cup size are important in determining viscosity of the test coating. Results are compared to viscosity found in manufacturer's data sheets.

Equipment: Equipment necessary to conduct this test includes: Zahn cups number 1 through 5 and a stopwatch.

Duration of Testing: Testing requires approximately 15 minutes to perform.

Pass/Fail Criteria: Viscosity should match manufacturer's numbers listed in product data sheets.

WEIGHT PER GALLON — ASTM D-1475 (90) Modified

Purpose: This procedure describes a method to determine a coating's weight per gallon. Results of this test also provide specific gravity of the coating

Procedure: This test requires use of a calibrated pyncometer having a volume of 83.33 cc. The empty pyncometer is weighed and the numbers recorded. The coating is added to the Pyncometer filling it to the top. The lid is installed and filled pyncometer is reweighed. The weight of the empty pyncometer is subtracted from the full one and the product divided by 83.33. The result provides weight per gallon and specific gravity of the coating.

Equipment necessary to conduct this test includes: One 83.33 cc

Equipment:	calibrated pyncometer and a balance which can weigh items to 400 grams or above. Accuracy should be 0.001 grams minimum.
Duration of Testing:	Testing takes approximately 30 minutes.
Pass/Fail Criteria:	Test results should coincide with manufacturer's published data found on product data sheet.

SPECIFIC GRAVITY: ASTM D-1475 (90)

Same as procedure for determining weight per gallon.

WET CHEMICAL ANALYSIS:

Tests can vary depending on material analyzed and results desired.

Attachment 3

Reduction of Present MWD Approved Coatings Based on VOC Limits Proposed in California Air Resources Board (ARB) Suggested Control Measure(SCM) for Architectural Coatings - Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds

17-7

Coating Type A Architectural Coatings: steel tank exteriors, steel structures, bridges, platforms, pumps, transformer cabinets, slide gates.	CARB Current VOC Limits g/l	CARB Proposed VOC Limit Effective 7/1/2002 [a,b]	CARB Proposed VOC Limit Effective 7/1/2006 [a,b]	% Reduction in Coatings Available (on MWD 1999 List) @ CARB 7/1/2002 VOC Limit 250 g/l	% Reduction in Coatings Available (on MWD 1999 List) @ CARB 7/1/2006 VOC Limit 100 g/l
1. Polyurethane Enamels (26)	340	250	100	89%	100%
2. Inhibitive Epoxy Primers (13)	340	250	100	58%	100%
3. Waterborne Acrylics (9)	340	250	100	44%	80%
4. Silicon & Synthetic Alkyds (17)	340	250	100	100%	100%
5. Epoxy Mastics (10)	340	250	100	10%	100%
6. Zinc Rich Epoxy & Urethane Primers (6)	340	250	100	88%	100%
7. Iron Oxide & Special Primers (12)	340	250	100	83%	100%

Coating Type B Immersion Coatings: interior steel tanks, water treatment equipment, pumps, weirs, pipeline interiors	CARB Current Limits g/l	CARB Proposed VOC Limit 7/1/2002 Effective Date of Adoption [a,b]	CARB Proposed VOC Limit Effective 2006 [a,b]	% Reduction in Coatings Available (on MWD 1999 List) @ CARB 7/1/2002 VOC Limit 250 g/l	% Reduction in Coatings Available (on MWD 1999 List) @ CARB 7/1/2006 VOC Limit 100 g/l
1. Coal Tar Epoxies (4)	340	250	100	50%	100%
2. High (80-90%) Solids Epoxies (7)	340	250	100	0%	85%
3. Low (50-80%) Solids Epoxies (6)	340	250	100	88%	100%

[a] These limits are subject to revision based on the outcome of scheduled SCAQMD technology assessments. Compliance with these limits is contingent upon availability of VOC compliant coating technology and products performing in a satisfactory manner. VOC limits shall be amended based on the results of the technology assessment.

17-8

[b] Based on California Air Resources Board Suggested Control Measure for Architectural Coatings, second draft - 6/10/99.

Note: Numbers in parentheses reflect total number of coatings or coating systems i.e. one top coat may be included with one or more primers to comprise separate multiple coating systems.

6/24/99

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
ENGINEERING SERVICE CENTER
OFFICE OF MATERIALS AND FOUNDATIONS - MS #5
5900 FOLSOM BLVD.
SACRAMENTO, CA 95819-4612
(916) 227-7289
FAX (916) 227-7168
HQ TDD (916) 654-4014

June 22, 1999

Mr. Jim Nyarady, Manager
Strategy Evaluation Section
Air Resources Board
2020 L Street
Sacramento, CA 95812

Dear Mr. Nyarady:

This correspondence contains a summary of Caltrans comments on the draft proposed changes to the Air Resources Board's (ARB) Suggested Control Measure for Architectural Coatings (SCM), and suggestions for modifications to the SCM. Caltrans believes these modifications are necessary so that we can continue to maintain structural steel bridges throughout California and prevent infrastructure deterioration.

18-1 Caltrans is responsible for the construction and maintenance of all state and federally designated highways throughout California, including over 1000 steel bridges spanning more than 20 feet. Caltrans shares the concerns of the ARB regarding the impact volatile organic compounds (VOC) contained in industrial maintenance coatings have on air quality. Since 1978, we have been striving to utilize protective coatings with VOC contents less than 250 g/L. This effort has entailed extensive evaluations of available low-VOC coatings from industrial coating suppliers and in-house formula development utilizing recommendations from raw material suppliers when available coatings have not met our requirements. Our efforts have been quite successful. Over 90% of the industrial maintenance coatings currently used by Caltrans meet the 7/1/2002 proposed limit. The average VOC for all of our industrial maintenance coating use for 1998 was less than 200 g/L. Unfortunately, despite our best efforts, we still need to use coatings with higher VOC levels for isolated areas on most structures and for structures located adjacent to the coast.

We currently have no replacement products for these higher VOC coatings. We estimate that it will take us a minimum of five to six years to evaluate and fully implement compliant coatings for these uses assuming such coatings are available today.

18-2

- Consequently, we request that the implementation date for the 250 g/L requirement be extended to January 1, 2005. This date should be contingent upon a thorough review to ensure acceptable performance of these coatings as applied under field conditions prior to the effective date. We further request a delay in implementing a reduction to 100 g/L until at least 2008 to allow sufficient time to evaluate compliant coatings without interfering with evaluations of the 250 g/L coatings.

18-3

If the implementation dates cannot be delayed, Caltrans has an alternative suggestion. The South Coast Air Quality Management District (SCAQMD) recently adopted modifications to Rule 1113 that contain an averaging provision that would allow manufacturers of protective coatings to offset sales of higher VOC coatings with sales of lower VOC coatings under specified procedures provided the average VOC for the affected coatings complies with specified requirements. This provision is of no benefit to Caltrans because as a public agency, we are required to have a minimum of three comparable materials for a contract. Additionally, specifications are normally developed from two to three years prior to bidding a contract. We would have no assurance that a coating that met the VOC limit based on an averaging provision when a specification was written would still be exempt when a contract was awarded.

18-4

- We could comply with the 250 g/L limit today if this provision were allowed for end users. The average VOC for all industrial maintenance coatings used by Caltrans in 1998 (approximately 90,000 gallons) was close to 170g/L. We would be willing to maintain and provide records of coating use to the ARB or local air pollution control district to show that the average VOC for our total coating use meets the specified limits.

Thank you for considering our comments and recommendations. If you have any questions concerning this letter, please contact me at (916) 227-7289 or by e-mail at andy_rogerson@dot.ca.gov.

Sincerely,

ANDY ROGERSON, Chief
Chemical Testing Section

c: Paul Benson

WASTEWATER RECLAMATION
SOLID WASTE MANAGEMENT

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (310) 699-7411, FAX: (310) 695-6139

CHARLES W. CARRY
Chief Engineer and General Manager

July 22, 1999

File No: 31-380.10B

Mr. Jim Nyarady
Air Resources Board/Strategy Evaluation Section
2020 L Street
Sacramento, CA 95812

Dear Mr. Nyarady:

Suggested Control Measure for Architectural Coatings

The County Sanitation Districts of Los Angeles County (LACSD) appreciate the opportunity to comment on the Suggested Control Measure for Architectural Coatings (SCM). LACSD staff participated in the public workshops and working group meetings for the recent amendments to SCAQMD Rule 1113. LACSD offers the following comments on the June 10, 1999 draft SCM.

19-1 As part of our effort to comply with Rule 1113, LACSD will evaluate the performance of low or zero VOC coatings used in the wastewater industry. LACSD will work with the SCAQMD in testing reformulated industrial maintenance coatings suitable for wastewater environments. Coatings that perform well at other industrial facilities, including water treatment environments, will not necessarily perform well at wastewater facilities due to the unique, severely corrosive conditions that can exist. Since we operate our facilities around the clock, 365 days a year, and our limited ability to remove equipment, we must use proven coatings.

19-2 If the low or zero VOC coatings tested perform satisfactorily in the laboratory and field tests, LACSD would incorporate these coatings into our coating specifications. However, if problems are discovered during testing, LACSD has received SCAQMD's assurance that Rule 1113 will be revised appropriately. The revisions would either raise the VOC content limits for the industrial maintenance coatings used in wastewater or create specific exclusions. The testing program should provide SCAQMD with information suitable for defending any revisions against backsliding inferences.

19-3 LACSD, on behalf of the wastewater industry, seeks ARB's assurance that the SCM will also be revised appropriately based on the outcome of the SCAQMD technology assessments.

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19-4 This provision is included as footnote "c" to Table 1 in the June 10, 1999 draft and should be included in the final SCM. Furthermore, ARB should encourage all districts to revise their rule limits based on the results of the technology assessments.

LASCD looks forward to evaluating low or zero VOC coatings as part of SCAQMD technology assessments and reflecting the results in the SCM. If you have any questions, please contact Ms. Preeti Ghuman of this office at (562) 699-7411, extension 2138.

Yours very truly,

Charles W. Carry

Gregory M. Adams

Gregory M. Adams
Assistant Departmental Engineer
Office Engineering Department

GMA:PKG:tk

cc: Jack Broadbent
Naveen Berry
Brian Whitaker
Blake Anderson

James E. Nyarady
S.K

July 21, 1999

Mr. Dean C. Simeroth, Chief
Criteria Pollutants Branch
Stationary Source Division
Air Resources Board
2020 "L" Street
P. O. Box 2815
Sacramento, California 95812

Multi-Agency Comments on the Suggested Control Measure for Architectural Coatings

Dear Mr. Simeroth:

This correspondence represents the collective comments to the Air Resources Board (ARB) on the draft 6/10/99 proposed changes to the Suggested Control Measure for Architectural Coatings (SCM) of four major California public agencies – the Metropolitan Water District of Southern California (Metropolitan), the California Department of Water Resources (DWR), the California Department of Transportation (Caltrans), and the Los Angeles Department of Water and Power (LADWP). Representatives of each agency have also met with ARB representatives (Don Ames, Jim Nyarady, Mike Jaczola) on June 23, 1999 to discuss the draft document. Metropolitan, DWR, and LADWP provide water for municipal and industrial use (approximately 1.8, 3.0, and 0.6 million acre-feet of water per year, respectively) and operate extensive systems of water conveyances, reservoirs, water treatment plants and power plants. In addition to water supply, LADWP is responsible for providing electric power to the residents and businesses of Los Angeles. Caltrans is responsible for construction of all State and Federally designated highways throughout California. MWD and Caltrans currently have laboratories which conduct technical assessments of coatings utilized on their public structures, the results of which are often relied upon by other related public entities. The comments herein reflect our common views and concerns as affected agencies located in the State of California.

20-1 MWD, DWR, Caltrans and LADWP are supportive of the efforts to reduce volatile organic compound (VOC) emissions from the application of architectural coatings. We recognize and appreciate ARB's efforts to harmonize the draft proposed SCM's provisions with existing related federal and regional regulations. However, as end-users of architectural/industrial maintenance (AIM) coatings on critical components of our public service systems, MWD, DWR, Caltrans and LADWP have concerns with respect to protecting this critical equipment from corrosion and having sufficient time to identify and test the lower VOC AIM coatings to determine their adequacy to replace existing high performing coatings. As an example, the SCAQMD Rule 1113, Architectural Coatings, addresses these concerns by identifying a contingency provision for "essential public service coatings" (EPSC). We are requesting that an EPSC provision also be provided in the SCM. The specific concerns and recommendations of MWD, DWR, Caltrans and LADWP are provided below.

Available Replacement Coatings

20-2 **Issue**: The draft proposed SCM includes the following: revised definition of "Industrial Maintenance Coatings"; and reduction of VOC limits in specific AIM categories, including Industrial Maintenance coatings (from 340 g/l to 250 g/l, effective July 1, 2002, and from 250 g/l to 100 g/l effective January 1, 2006). While supportive of the goal to reduce VOC emissions, as public agencies we have concerns regarding the timely availability of compliant coatings which meet field needs. A lack of coatings which have been demonstrated to perform comparably to existing products could conceivably result in the use of coatings which may not adequately protect and possibly result in accelerated damage to our public infrastructures (e.g., pipelines, water conveyance equipment, tanks, bridges, or electrical equipment). This would seriously impact our essential services to the public of reliable water and electric power delivery and highway integrity, as well as potentially affecting our mandate to minimize the occurrence of service interruptions.

20-3 Time is required to identify, and perform laboratory and field tests of new compliant coatings. Five to six years is required for this process. For example, the coating evaluation process of a first generation coating at Caltrans entails a laboratory screening and characterization, including a health and safety review (4 months), cyclic corrosion testing in the laboratory (8 months), field application tests (2 years), and specification development and implementation (1-2 years). Additionally, it has been MWD's experience that 80 % of the coatings tested in its Corrosion Control Laboratory do not meet MWD's performance standards and are rejected for poor performance reasons. Additionally, 75 % of the coatings tested by MWD do not meet the physical and performance characteristics stated in the manufacturer's technical product data sheets. To exemplify this, Attachment 1, the Table of Metropolitan Water District Coating Performance Testing Results, identifies five coatings that MWD has tested and rejected for performance reasons.

20-4 **Recommendation**: To provide adequate time for the identification and testing of lower VOC compliant coatings, we recommend that similar to SCAQMD Rule 1113, a category be established for EPSC with a modified interim VOC limit, but subject to the same final VOC limit and effective date as the Industrial Maintenance Coating category . These coatings would be defined as, "protective (functional) coatings applied to components of power, municipal wastewater, water, bridges and other roadways". The EPSC VOC limits and phased effective dates, would be: 340 g/l, date of adoption; 100 g/l, 7/1/2006 (adoption subject to the results of the scheduled SCAQMD technology assessments). Attachment 2 provides information regarding affected coating applications which are critical to our services.

Again, by establishing this modified interim limit, adequate time would be provided to test the new coatings. Once the test results identify satisfactory lower VOC coatings, these new coatings will be incorporated into our agencies' operations as replacements for the comparable higher VOC coatings. We do not envision exercising the EPSC option unless necessary (e.g., suitable lower VOC coatings cannot be identified). Additionally, it should be noted that as Essential Public Service Agencies, MWD, DWR, Caltrans, and LADWP are committed to participating in the technical assessments with SCAQMD staff, as directed by the SCAQMD Board Resolution No. 99. We are prepared to meet with SCAQMD staff and other interested public agencies in the next few weeks to begin planning of the technical assessments.

2) Available Repair Coatings

20-5 **Issue:** Currently, Metropolitan, DWR, Caltrans and LADWP have structures that are coated with solvent borne coatings. Over time, these structures will require patch repair and maintenance using a compatible coating system. In order to maintain manufacturer warranty of the coating, the same solvent borne coating that was originally applied, or a repair coating approved by the manufacturer would need to be utilized. Once the proposed SCM becomes effective, these coatings may not meet the required VOC limits. The alternative to utilizing the original coating would be complete removal and recoating (primer, intermediate and topcoat) of the entire structure, which will result in release of a higher VOC volume overall.

20-6 **Recommendation:** The proposed EPSC category and modified interim VOC limit will help ameliorate this concern regarding touch-up and repairs of the existing higher VOC coatings. In addition, as discussed with SCAQMD staff, the cooperative public services technical assessment will include evaluation of the new coatings' compatibility with existing coatings.

Thank you again for the opportunity to comment on the draft proposed SCM and to meet with ARB representatives to discuss our collective agencies' concerns. If you have any questions regarding these comments, please contact any of the representatives identified below.

Very truly yours,

John E. Clark
Manager, Regulatory Affairs Branch
Metropolitan Water District of Southern California
(213) 217-5504

Dan Peterson

Dan Peterson, Chief
Environmental Assessment Branch
Division of Operations and Maintenance
Department of Water Resources
(916) 653-9978

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Los Angeles Department of Water and Power
(213) 367-0409

CYK/lov-R-99-160

cc: Donald J. Ames, P.E.
Assistant Chief

James E. Nyarady, P.E.
Manager
Strategy Evaluation Section

Michael P. Jaczola
Staff Engineer

Attachment 1

Table of Metropolitan Water District Coating Performance Testing Results
(Page 1 of 2)

Coating Type	Manufacturer's Description of Performance and Characteristics	VOC (g/l)	Substrate & Prep	Primer	Test Protocol	Test Duration	Evaluation Results	Remarks Regarding Coating Performance
# 101 Two Component Elastomeric Polyurethane Rubber Coating System	Outstanding abrasion resistance, tensile strength and hydrolytic stability	2.4 g/l	Concrete SSPC-7	Polyamido epoxy sealer	Immersion -Untreated Water ASTM D-870 (Modified)	23 months	Failure Mode: Severe color fade; surface cracking; osmotic blistering	Unacceptable: adhesion, color retention; & resistance to permeability
					Immersion -Demin. Water ASTM D-870 (Modified)	23 months	Failure Mode: Severe color fade; surface cracking; osmotic blistering	Unacceptable: adhesion, color retention; & resistance to permeability
					Immersion -Filtered Water ASTM D-870 (Modified)	23 months	Failure Mode: Severe color fade; surface cracking; osmotic blistering	Unacceptable: adhesion, color retention; & resistance to permeability
					Atmospheric ASTM G-7	18 months	Failure Mode: Severe discoloration	Unacceptable: color retention & resistance to weathering
			Steel Panel SSPC-5	Polyurethane primer	Immersion -Untreated Water ASTM D-870 (Modified)	27 months	Failure Mode: Moderate color fade; surface cracking; osmotic blistering, disbonding	Unacceptable: adhesion, poor color retention; & resistance to permeability
					Immersion -Filtered Water ASTM D-870 (Modified)	27 months	Failure Mode: Moderate color fade; surface cracking; osmotic blistering, disbonding	Unacceptable: adhesion, poor color retention; & resistance to permeability
					Immersion -Finished Water ASTM D-870 (Modified)	22 months	Failure Mode: Moderate color fade; surface cracking; osmotic blistering, surface deterioration & disbonding	Unacceptable: adhesion, poor color retention; & resistance to permeability
					Atmospheric ASTM G-7 (Modified)	21 months	Failure Mode: Moderate discoloration; surface etching; surface cracking/checking	Unacceptable: color retention & resistance to weathering
					High Humidity ASTM D-2247 (Modified)	4 months	Failure Mode: Heavy rust formation at X, rust formation at edge radii	Unacceptable: resistance to moisture permeability
					Cathodic Disbonding ASTM G-8 (Modified)	4 months	Polarization established - coating in good condition	Coating passed 120 day exposure CDT test
#102 Two component water based epoxy coating	High performance exterior industrial maintenance enamel. Chemical, abrasion, & impact resistance	176	Steel Panel SSPC-5 (abrasive blasted)	Zinc rich water based epoxy	Atmospheric ASTM G-7 (Modified)	17 months	Failure Mode: Moderate discoloration, loss of 50% gloss	Unacceptable: gloss and color retention & resistance to weathering
					Weatherometer ASTM D-2565 (Modified)	1600 Hours	Failure Mode: surface etching, moderate darkening, small osmotic blisters, 50 loss of gloss	Unacceptable: gloss and color retention, resistance to weathering permeability
				Catalyzed epoxy	Atmospheric ASTM G-7 (Modified)	17 months	Failure Mode: Moderate discoloration, loss of 40% gloss	Unacceptable: gloss and color retention & resistance to weathering
					High Humidity ASTM D-2247 (Modified)	4 months	Failure Mode: rust formation at X, rust formation at edge radii, small osmotic blisters	Unacceptable: adhesion and resistance to moisture permeability & color retention
					Weatherometer ASTM D-2565 (Modified)	1600 Hours	Failure Mode: surface etching, mod. darkening, small osmotic blisters, 63% loss of gloss	Unacceptable: gloss and color retention, resistance to weathering
				DTM acrylic gloss primer	Atmospheric ASTM G-7 (Modified)	17 months	Failure Mode: Moderate discoloration, loss of 30% gloss	Unacceptable: gloss and color retention & resistance to weathering

Attachment 1

Metropolitan Water District Coating Performance Testing Results
(Page 2 of 2)

Coating Type	Manufacturer's Description of Performance and Characteristics	VOC (g/l)	Substrate & Prep	Primer	Test Protocol	Duration	Evaluation Results	Remarks Regarding Coating Performance
# 103 Water reducible, 100% acrylic gloss coating (DTM).	Corrosion resistant coating, excellent moisture resistance, excellent exterior durability	208 g/l	Steel Panel SSPC-5	DTM	Atmospheric ASTM G-7	17 months	Failure Mode: moderate discoloration, acceptable gloss retention, tiny rust spots.	Unacceptable: color retention & resistance to weathering.
					Weatherometer ASTM D-2565 (Modified)	1600 Hours	Failure Mode: slight darkening, 5% loss of gloss	Acceptable: gloss and color retention, & acceptable resistance to weathering.
					High Humidity ASTM D-2247 (Modified)	4 months	Failure Mode: heavy rust formation at X, moderate rust formation all surfaces, osmotic blistering.	Unacceptable: adhesion & resistance to moisture permeability
			Steel Panel SSPC-5	Oil primer	Weatherometer ASTM D-2565 (Modified)	1600 Hours	Failure Mode: moderate darkening blisters, 5% loss of gloss	Acceptable gloss and color retention
					Atmospheric ASTM G-7 (Modified)	19 months	Failure Mode: slight discoloration; 16% loss of gloss.	Acceptable color retention & acceptable resistance to weathering
					Cathodic Disbonding ASTM G-8 (Modified)	4 months	Polarization established - coating in good condition	Coating passed 120 day exposure CDT test
#104 100% solids aromatic elastomeric urethane coating	Coating is designed for immersion in potable water, salt water, and aqueous chemical solutions	0	Concrete SSPC-7 And Steel Panel SSSPC -5	Epoxy Primer	Immersion -Untreated Water ASTM D-870 (Modified)	25 months	Failure Mode: severe darkening;	Unacceptable: color retention.
					Immersion -Filtered Water ASTM D-870 (Modified)	25 months	Failure Mode: severe darkening	Unacceptable: color retention.
					Immersion -Finished Water ASTM D-870 (Modified)	25 months	Failure Mode: severe darkening; surface deterioration; osmotic blistering	Unacceptable: adhesion, color retention; resistance to moisture permeability & chemical exposure.
					High Humidity ASTM D-2247 (Modified)	4 months	Coating in good condition	Acceptable short term resistance to moisture permeability.
			Steel Panel SSPC-5		Cathodic Disbonding ASTM G-8 (Modified)	4 months	Polarization established, however coating developed osmotic blisters and delamination from substrate.	Unacceptable: adhesion, resistance to moisture permeability, & failed CDT test (ASTM G-8)
					Cavitation Test Chamber - stability under conditions of high velocity water flow.	24 hours	Failure Mode: Coating delaminated from substrate.	Coating exhibited unacceptable stability under conditions of high water flow.
# 105 Acrylic primer coating	Premium anti-corrosion industrial maintenance primer for interior and exterior metal surfaces,.	250	Steel Panel SSPC-5	DTM	Atmospheric ASTM G-7	20 months	Failure Mode: moderate discoloration, extensive rust formation.	Unacceptable: color retention, & resistance to weathering.
					High Humidity ASTM D-2247 (Modified)	4 months	Coating formed osmotic blisters, extensive rust spots, moderate darkening.	Unacceptable: color retention, resistance to weathering, & unacceptable resistance to moisture permeability

Attachment 2

MWD, DWR, Caltrans, LADWP Critical Application Usage Information

	Critical Application	VOC (avg) g/l	Estimated Quantity Used (gal/Year)
20-7	1. Areas on structural steel bridges where severe corrosion is occurring at back-to-back plates or connections.	250-300 (Caltrans)	3000 (Caltrans)*
20-8	2. Structural steel bridges that are within one to fifteen miles from the California coastline, estuaries or bays (structures in environments with coastal fog influence more than six months per year).	300-340 (Caltrans)	7500 (Caltrans)*
20-9	3. Exterior of structures that contain, store and convey potable water or source waters as required and defined by the United States Environmental Protection Agency (U.S. EPA) and California Department of Health Services (DHS) Standards, such as pumps, pump housings, electrical control and generation equipment, tanks, containment facilities, bridge structures, pipelines, control gates, or pressure control structures.	290-340 (MWD) 356 (DWR)	4000 (MWD)* 580 (DWR)*
20-10	4. Structures that come into direct contact with static, low flow, and high velocity (cavitation) potable water or source waters as required and defined by U.S. EPA and DHS Standards, such as tank interiors, pipelines, pumps, power generation equipment, canals, channels, or water treatment structures.	200-390 (MWD) 292 (DWR) 391-410 (LADWP)*	3766 (MWD)* 1275 (DWR)* 1,200 (LADWP)**
20-11	5. Structures that come into direct contact with chemicals designed to treat potable water or source waters as required and defined by U.S. EPA and DHS Standards, such as tank interiors, pipelines, pumps, or chemical injection structures.	200-280 (MWD) 285 (DWR)	2880 (MWD)* 125 (DWR)*
20-12	6. Electrical power conveyance system of pole top/vault /generating station transformers, voltage regulators, circuit breakers, bus, and other related electrical equipment.	420 (LADWP)* 330 (DWR)	1,380-13,000 (LADWP)** 200 (DWR)*
20-13	7. Generating stations' equipment (excluding electrical) including motors, pumps, piping, structural steel, tanks, and other related equipment.	220-420 (LADWP)*	2,020 (LADWP)**

* Reflects usage within the State of California

** Reflects usage within the South Coast Air Quality Management District Basin

STATE OF CALIFORNIA – THE RESOURCES AGENCY GRAY DAVIS, *Governor*

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

July 13, 1999

JN

Dean C. Simeroth, Chief
Criteria Pollutants Branch
Stationary Source Board
Air Resources Board
2020 L Street
Post Office Box 2815
Sacramento, California 95812

Dear Mr. Simeroth:

Suggested Control Measures for Architectural Coatings

The California Department of Water Resources operates and maintains the State Water Project which consists of 662 miles of water conveyance systems, 21 reservoirs, 9 powerplants, and 17 large pumping plants located throughout California. These facilities deliver about 3.0 million acre-feet of water a year for municipal, industrial and agricultural use (1 acre-foot = 325,900 gallons) and could deliver up to 4.2 million acre-feet per year.

DWR recognizes and supports the California Air Resources Boards effort to develop a "Suggested Control Measures" provision to comply with the existing federal and regional regulations for reducing volatile organic compound emissions from architectural/industrial maintenance coatings. However, as an end-user of AIM Coatings on critical components of DWR's delivery systems, there is a major concern with the availability of satisfactory compliant AIM coatings. Loss of use of current coatings would result in accelerated damage to pipelines and machinery used to convey water or generate power and jeopardizing reliable water and power delivery throughout California.

21-1 Therefore, DWR suggests that the proposed SCM follow the South Coast Air Quality Management District's amendment to Rule 1113, Architectural Coatings and provide a provision for "essential public services coatings." This provision would allow time to identify, perform laboratory and field tests of new compliant coatings.

Thank you for your consideration and if you have any questions, please call John Frantz, Chief of Corrosion Engineering, at (916) 653-1328 or me at (916) 653-9978.

Sincerely,

Daniel F Peterson

Daniel F. Peterson, Chief
Environmental Assessment Branch
Division of Operations and Maintenance

SOUTHERN CALIFORNIA

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Ventura County: Judy Mikels, Ventura County • Donna De Paola, San Buenaventura • Andrew Fox, Thousand Oaks • Toni Young, Port Hueneme

Riverside County Transportation Commission: Robin Lowe, Hemet

Ventura County Transportation Commission: Bill Davis, Simi Valley

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June 25,1999

Mr. Jim Nyarady
Manager, Strategy Evaluation Section
Stationary Source Division
Air Resources Board
2020 L Street, P. O. Box 2815
Sacramento, CA 95812

RE: SCAG Clearinghouse #I9900309 Notice of Preparation of a Draft Program EIR for Suggested Control Measure for Architectural Coatings

Dear Mr. Nyarady:

22-1 We have reviewed the above referenced document and determined that it is not regionally significant per Areawide Clearinghouse criteria. Therefore, the project does not warrant clearinghouse comments at this time. Should there be a change in the scope of the project, we would appreciate the opportunity to review and comment at that time.

A description of the project will be published in the **July 1, 1999** Intergovernmental Review Report for public review and comment.

The project title and SCAG Clearinghouse number should be used in all correspondence with SCAG concerning this project. Correspondence should be sent to the attention of the Clearinghouse Coordinator. If you have any questions, please contact me at (213) 236-1917.

Sincerely,

J. DAVID STEIN
Manager, Performance Assessment and Implementation

JDS:lj