

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Subsequent Environmental Assessment for:

Proposed Amended Rule 1171 – Solvent Cleaning Operations

SCAQMD No. 050209MK

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PREFACE

The Draft Subsequent Environmental Assessment (SEA) for the proposed amendments to Rule 1171 – Solvent Cleaning Operations was circulated for a 45-day public review and comment period from February 9, 2005 to March 25, 2005. No public comment letters were received and minor modifications were made to the Draft EA so it is now a Final EA. Deletions and additions to the text of the EA are denoted using ~~striethrough~~ and underlined, respectively. Changes to the project description are minor and do not change the conclusions made in the Draft SEA or worsen the environmental impact analyzed in the Draft SEA. Pursuant to CEQA Guidelines §15073.5(c)(2), recirculation is not necessary since the information provided does not result in new avoidable significant effects.

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CHAPTER 1

EXECUTIVE SUMMARY

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INTRODUCTION

The South Coast Air Quality Management District (SCAQMD) is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. Specifically, the SCAQMD is responsible for monitoring air quality and planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the district. Such programs include air quality rules and regulations that regulate stationary source emissions, including area and point sources and certain mobile source emissions. The SCAQMD is also responsible for establishing permitting requirements for stationary sources and ensuring that new, modified, or relocated stationary sources do not create net emissions increases and, therefore, are consistent with the region's air quality goals. The SCAQMD enforces air quality rules and regulations through a variety of means, including inspections, educational or training programs, or fines, when necessary.

There are no state or federal ambient air quality standards for volatile organic compounds (VOCs) because they are not classified as criteria pollutants. VOCs are regulated, however, because a reduction in VOC emissions reduces certain chemical reactions that contribute to the formation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM10 (particulate matter less than or equal to 10 microns) and lower visibility levels.

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

SCAQMD Rule 1171 – Solvent Cleaning Operations, is part of SCAQMD's overall effort to control VOC emissions in its area of jurisdiction. The rule controls VOC emissions by establishing VOC content limits for production, repair, maintenance, and equipment cleaning activities, as well as cleaning operations during servicing of parts, products, tools, machinery, equipment, or general work areas. Also regulated are storage, usage, and disposal practices for solvent laden materials. Industries subject to the provisions of Rule 1171 include any facility that must operate and maintain machinery or must remove contaminants as part of its production process.

Rule 1171 requires that a technology assessment be completed for specific cleaning applications with low-VOC content targets for 2005 in order to evaluate the progress in technology development, and determine whether such VOC limits established during the 1999 rule amendment are achievable. Technology assessments have been completed for

most of the cleaning categories identified in the rule including the cleaning of electrical apparatus/electronic components, coating/adhesive application equipment, and specialty flexographic printing ink application equipment.

Proposed amended Rule (PAR) 1171 – Solvent Cleaning Operations, will implement the recommendations in the technology assessments for those cleaning applications where studies have been completed. Because the technology assessment for the cleaning of screen printing, lithographic/letterpress, and ultraviolet or electron beam (UV/EB) ink application equipment is still on-going and not expected to be completed until the end of November 2005, SCAQMD staff is proposing a one-year delay in the implementation of low-VOC limits originally scheduled for July 1, 2005 for these cleaning applications. An interim VOC limit is being proposed for these cleaning applications to take advantage of existing products in the market with lower VOC content than the current rule limit.

Based on the findings from the technology assessment, SCAQMD staff is proposing to implement the existing 1999 amendments' requirements to lower VOC content limits for four solvent cleaning categories which will achieve VOC emission reductions of 5.27 ~~12.86~~ tons per day in July 2005. In addition, the 2003 amendments lowered the VOC content limit for architectural coating equipment generating an additional 7.59 tons per day of emission reductions. These amendments result in achieving a total of 12.86 tons per day VOC emission reductions by July 2005. Nevertheless, this emission reduction falls short of the previously projected reduction of 15.05 tons per day from the 1999 amendments which incorporated these lower VOC content limits into the rule. (Six tons per day was achieved in 2001 and nine tons per day were scheduled to be reached in 2005. In 2002, 1.94 tons per day of the nine tons per day emission reductions from the 1999 amendments were achieved on an expedited implementation schedule. A portion of the remaining reductions, 5.27 tons per day, will be achieved in July 2005 with the balance of 2.52 tons per day being achieved at a later date).

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By delaying the final compliance date for implementing the lower VOC content limits for the screen printing, lithographic/letterpress, and UV/EB ink application equipment, anticipated VOC emission reductions of 2.52 tons per day will be delayed for one year until July 1, 2006, when the final lower limits become effective. Other amendments include: eliminating the exemption for cleaning of solar cells, laser hardware, scientific instruments, and high precision optics; establishing a limited exemption for cleaning of adhesive application equipment used in thin metal laminating operations, cleaning of electronic/electrical cables, touch-up cleaning of certain printed circuit boards, cleaning of specified equipment (e.g., metering rollers, dampening rollers, and printing plates), and clean-up of application equipment used for applying solvent-borne fluoropolymer coatings; extending the exemption for both the cleaning of stereolithography equipment and models, and UV lamps used for curing UV inks or coatings; modifying the rule to include the most current test methods for determining the efficiency of an emission control system; modifying rule applicability to include toxic air contaminants; and eliminating the general prohibition exemption for methylene chloride and perchloroethylene.

The delay of VOC emission reductions will exceed the SCAQMD's daily significance operational threshold and, thus, adverse air quality impacts have been determined to be significant. No other environmental topic area is considered to have an adverse impact as a result of the proposed project.

LEGISLATIVE AUTHORITY

The California Legislature created the SCAQMD in 1977 (Lewis-Presley Air Quality Management Act, Health and Safety Code §§40400 et seq.), as the agency responsible for developing and enforcing air pollution control rules and regulations within the SCAQMD's area of jurisdiction. By statute, the SCAQMD is required to adopt an Air Quality Management Plan (AQMP) demonstrating compliance with all state and national ambient air quality standards for the SCAQMD's area of jurisdiction [Health and Safety Code §40460(a)]. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP [Cal. Health and Safety Code, §40440(a)]. The 2003 AQMP concluded that major reductions in emissions of VOC and NO_x are necessary to attain the air quality standards for ozone and PM₁₀. Rule 1171 was originally prepared pursuant to these mandates.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

PAR 1171 is a "project" as defined by the California Environmental Quality Act (CEQA) (Cal. Public Resources Code §§21000 et seq.). The SCAQMD is the lead agency for this project and is preparing the appropriate environmental analysis pursuant to its certified regulatory program (SCAQMD Rule 110). California Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report once the Secretary of the Resources Agency has certified the regulatory program. The Secretary of the Resources Agency certified the SCAQMD's regulatory program on March 1, 1989.

CEQA requires that the potential environmental impacts of proposed projects be evaluated and that feasible methods to substantially reduce or avoid any significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA (California Public Resources Code §§21000 et seq.), the SCAQMD has prepared this ~~Draft~~ Final ~~Draft~~ Subsequent Environmental Assessment (SEA) to address the potential adverse environmental impacts associated with implementing PAR 1171. This ~~Draft~~ Final ~~Draft~~ SEA is intended to: (a) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental effects of the proposed project; and (b) be used as a tool by decision makers to facilitate decision making on the proposed project.

~~No comments were received during the public comment period. All comments received during the public comment period on the analysis presented in the Draft SEA will be responded to and included in the Final SEA.~~ Prior to making a decision on the proposed amended rule, the SCAQMD Governing Board must review and certify the SEA as providing adequate information on the potential adverse environmental impacts of the proposed amended rule.

The preparation of a ~~Draft~~ SEA is the appropriate CEQA document because the proposed project is a modification to previously approved project, the 1999 amendments to the Rule 1171, for which a September 1999 Final EA was prepared and certified by the Governing Board on October 8, 1999. Further, in accordance with CEQA Guidelines §15162 a Draft SEA was prepared because the modifications to the previously approved project consist of substantial changes which will require major revisions to the previously certified 1999 Final EA due to a substantial increase in the severity of previously identified significant effects.

A Notice of Preparation and an Initial Study (NOP/IS), including an environmental checklist, were prepared for the 1999 amendments to Rule 1171, which lowered the VOC content limits for the affected solvent cleaning categories. The proposed amendments modify Rule 1171 as amended in 1999 by extending the final compliance date for specified categories of solvents. No new requirements are proposed that would trigger the need to solicit guidance from responsible and/or trustee agencies. Thus, a Notice of Preparation (NOP) of an SEA for the proposed project was deemed not required and was not prepared for this project. SCAQMD's review of the proposed project shows that the project would have a significant adverse effect on the environment. Therefore, pursuant to CEQA Guidelines §15126.4, feasible mitigation measures which could minimize significant adverse impacts are required if available. In addition, a range of reasonable alternatives to the proposed project is required in accordance with CEQA Guidelines §15126.6. The analysis in Chapter 4 concludes that adverse air quality impacts are significant. Discussions of the remaining environmental topics support the finding of no significant adverse impacts to these environmental topic areas. Because no feasible mitigation measures were identified to reduce air quality impacts to less than significant, a Statement of Findings and a Statement of Overriding Considerations will be prepared in accordance with CEQA Guidelines §§15091 and 15093.

CEQA DOCUMENTATION FOR RULE 1171

In addition to ~~this the Draft~~ Draft SEA and this Final SEA, a number of CEQA documents have been prepared for Rule 1171 when it was originally adopted and for subsequent rule amendments. Copies of these documents are available by calling the SCAQMD's Public Information Center at (909) 396-2039. The following subsections briefly summarize the previously prepared CEQA documents for Rule 1171.

Final Environmental Assessment for PAR 1171, November 2003: The proposed amendments lowered the VOC limit for clean-up solvents used in this industry to the same level expected in 2005 from other industries' coating and adhesive application equipment clean-up. The proposed amendments also clarified rule intent and removed obsolete rule provisions. The analysis of the proposed project showed that the project would not have a significant adverse effect on the environment.

Addendum to the October 1999 Final Environmental Assessment for PAR 1171, July 2002: The Addendum for PAR 1171 was prepared in response to modifications to the previously approved project. The currently proposed project consisted of advancing the final compliance date from July 1, 2005 to January 1, 2003, which lowered the VOC content limit from 50 grams per liter to 25 grams per liter, for cleaning materials used in certain solvent cleaning activities. Other amendments included compliance with the state airborne toxic control measure, removing obsolete rule provisions and adding clarifying language to enhance rule effectiveness. Accelerating the final compliance date to comply with the lower VOC content limit for solvents used for specified cleaning activities did not result in new or more severe significant adverse effects requiring substantial revisions in the previous EA. An addendum was the appropriate CEQA document for the proposed project because the proposed project constituted a minor change to the previously adopted rule amendments and the changes did not trigger any conditions identified in CEQA Guidelines §15162. The addendum was not circulated for public review because, pursuant to CEQA Guidelines §15164(c), an addendum need not be circulated for public review.

Final Subsequent Environmental Assessment for PAR 1171, October 1999: The 1999 amendments created new subcategories for solvent cleaning activities including the two-step roller wash process and reduced the VOC content limits for these new categories. The vapor pressure requirement was deleted, the technology assessment was delayed and exemptions were expanded to include solvents used for architectural coatings, paper-based gaskets and clutch assemblies, photcurable resins, UV lamps, radiation effect coatings and satellite coatings. The environmental topics analyzed in the EA included air quality, water resources, hazards/risk of upset, public services (fire departments), and solid/hazardous waste. The analysis concluded that the amendments would not result in any significant adverse environmental impacts.

Final Subsequent Environmental Assessment for PAR 1171, August 1996: The 1996 amendments reduced the allowable VOC content level of cleaning solvents and composite partial pressure for the general repair and maintenance category. The environmental topics analyzed in the Subsequent EA were air quality, water resources, risk of upset, public services (fire departments), and energy resources. The analysis concluded that the amendments may result in significant air quality and water resource impacts.

The potential air quality impacts were associated with the electrical heating of certain wash solutions and possibly the rinse water. Drying is also sometimes carried out with electrically heated forced air (low-end applications, such as automotive parts cleaning, typically do not include rinsing and drying). An estimate of the emissions associated with the production of the electricity for use with aqueous cleaning operations was derived based on conservative assumptions. The emissions from electricity production were estimated to be approximately 290 pounds per day (lbs/day), which exceeds the 55 lbs/day NO_x significant threshold and, therefore, was considered significant.

The 1996 EA concluded that the illegal disposal of hazardous wastewater (i.e., spent aqueous cleaning baths) had the potential to exceed regulatory effluent limits set by the state and implemented by publicly owned treatment works (POTWs). It was concluded that these amendments may result in significant adverse water quality impacts even though: 1) proper treatment or disposal would preclude this effect, 2) some solvent cleaning operators may currently be illegally disposing of spent cleaning materials, and 3) the magnitude of the impact on sanitation district's, if any, is unknown. Mitigation for potential water quality impacts from aqueous cleaning materials was set forth as part of the adoption of the 1996 amendments to Rule 1171¹.

Final Supplemental Environmental Assessment for PAR 1171, April 1995: The 1995 amendments corrected deficiencies identified by the United States Environmental Protection Agency (U.S. EPA) and addressed concerns identified by SCAQMD staff and various affected industries. Highlights of the 1995 amendments include: addition of medical device and special flexographic printing categories; clarification of the polyester resin application equipment cleaning provision; removal of the size limitation of hand-held spray bottles; removal of draft rate for remote reservoir cleaners; addition of several exemptions; and the addition of new and modified test methods.

The amendments had no effect on the actual emissions resulting from solvent cleaning operations. Revised emission calculations performed during the 1995 amendment process indicated that baseline emissions and predicted emission reductions were slightly underestimated during the initial rulemaking. The net effect of the revised calculations demonstrated that Rule 1171 obtained 0.2 ton per day greater VOC emission reductions than originally anticipated.

Since the amendments to Rule 1171 did not increase emissions and had no adverse impact in any other environmental area, their implementation did not result in any significant adverse environmental impacts.

¹ Subsequent to the 1996 analysis for amendments to Rule 1171, similar water quality impacts were identified for proposed amendments to SCAQMD Rule 1122 – Solvent Degreasers. Based upon discussions with local POTWs, the EA for those amendments incorporated and expanded upon the mitigation measures included in the 1996 Rule 1171 EA.

Final Environmental Assessment, August 1991, included as part of the document entitled: Final Staff Report for Proposed Rule 1171 - Solvent Cleaning Operations (Rule Development Assessment; Environmental Assessment; Socio-Economic Assessment): The 1991 EA was prepared for the original adoption of Rule 1171 and identified and analyzed the proposed rule's potential environmental impacts in the following categories: air quality, global warming and stratospheric ozone depletion, water resources, noise, risk of upset, public services, energy, solid waste, and public health. None of the potential impacts analyzed were determined to be significant. The 1991 EA also analyzed the relationship between short-term uses and long-term productivity, irreversible environmental changes, growth inducing impacts, cumulative impacts, and the relative merits of potential project alternatives.

INTENDED USES OF THIS DOCUMENT

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

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

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

To the extent that local public agencies, such as cities, county planning commissions, etc., are responsible for making land use and planning decisions related to projects that must comply with the proposed amendments to Rule 1171, they could possibly rely on this SEA during their decision-making process. Similarly, other single purpose public agencies approving projects at facilities complying with the proposed amendments to Rule 1171 may rely on this SEA.

AREAS OF CONTROVERSY

In accordance to CEQA Guidelines §15123(b)(2), the areas of controversy known to the lead agency including issues raised by agencies and the public shall be identified in the EA.

Table 1-1 highlights the areas of controversy raised by the public during the rule development process either in public meetings or in written comments.

TABLE 1-1
Areas of Controversy

	Area of Controversy	Topics Raised by Public	SCAQMD Evaluation
1.	Compliance with final VOC content limit requirement	Cleaning solvent users and manufacturers raised concerns about the ability to comply with the final VOC content limits.	SCAQMD is proposing an extension of the final compliance date for one year while the studies of certain cleaning solvent formulations are being conducted. Staff will evaluate the results and provide recommendations to amend the requirements if warranted.
2.	Use of methylene chloride and perchloroethylene	Users concerned about proposed prohibition of these compounds and their ability to find compliant substitute.	Methylene chloride and perchloroethylene are deemed toxic air contaminants and the proposed rule will prohibit their use as of the date of adoption which will benefit public health as well as worker safety. Possible delay in prohibition requirement to allow transition testing and substitute satisfaction will be considered under Alternative C.
3.	Remove exemption for cleaning of solar cells, laser hardware, scientific instruments and high precision optics	An aerospace facility is concerned with ability to comply with the VOC content limit for non-aerospace components (e.g. optics). <i>Note: cleaning of aerospace products is subject to SCAQMD Rule 1124.</i>	Staff identified seven out of the thirteen known affected optical cleaning facilities able to comply with the final VOC content limit requirements. In addition, staff has determined a majority of optical products meet the cleanliness requirements of the aerospace facility in question and the facility already has control equipment to assist in lowering the emissions from its existing cleaning operation. Staff will discuss the issue in further detail with the aerospace facility to ensure compliance can be reached.
4.	Reactivity of exempt solvents	An architectural coating formulator representative raised concerns regarding the increased usage of exempt solvents, such as acetone, and inconclusive reactivity results.	EPA has determined that acetone has negligible reactivity. Acetone has been classified by CARB and EPA as an exempt solvent, meaning it is not considered a VOC. EPA states that acetone can be used as a substitute for ozone depleting substances (ODS) without adversely affecting efforts to control ground level ozone concentrations; and as a substitute for hazardous air pollutants (HAPs). EPA's exemption is based upon a comparison to ethane, which is considered non-reactive. The proposal does not dictate the use of pure acetone, but rather a lower VOC content limit which can be satisfied with other formulations including acetone blends and other VOC exempt solvents.

EXECUTIVE SUMMARY

CEQA Guidelines §15023 requires a CEQA document to include a brief summary of the proposed actions and their consequences. The organization of this ~~Draft~~Draft SEA is as follows: Chapter 1 –Executive Summary; Chapter 2 – Project Description; Chapter 3 – Existing Setting; Chapter 4 – Environmental Impacts and Mitigation Measures; Chapter 5 – Project Alternatives; and Chapter 6 – Other CEQA Topics. The following subsections briefly summarize the contents of each chapter.

Summary of Chapter 1 –Executive Summary

This chapter contains a discussion of the legislative authority of the SCAQMD to adopt rules and regulations to implement the current AQMP, identifies general CEQA requirements, the intended uses of this CEQA document, areas of controversy, and summarizes the remaining five chapters that comprise this Draft SEA.

Summary of Chapter 2 – Project Description

In addition to including a description of the project location, Chapter 2 also includes a rule development background and project description of PAR 1171. Briefly, the proposed amendments to Rule 1171 would:

- delay by one year the compliance date for low-VOC solvents for cleaning screen printing, lithographic/letterpress, and ultraviolet/electron beam ink application equipment; and establish an interim VOC limit of 500 grams per liter of material for such cleaning applications;
- establish a limited exemption from the final VOC limit for solvents used in the cleaning of adhesive application equipment used in thin metal laminating operations; the cleaning of electronic/electrical cables; touch-up cleaning of certain printed circuit boards, the cleaning of metering rollers, dampening rollers and printing plates; and clean-up of application equipment used for applying solvent-borne fluoropolymer coatings;
- ~~eliminate the exemption for solvents used to clean solar cells, laser hardware, scientific instruments, and high precision optics;~~
- extend the exemption for the cleaning of stereolithography equipment and models and UV/EB lamps used for curing UV/EB inks or coatings;
- modify rule language to include the most current test methods for determining the efficiency of an emission control system;
- clarify rule application to include toxic air contaminants;
- eliminate the general prohibition exemption for methylene chloride and perchloroethylene.
- remove obsolete rule provisions; and
- add clarifying language to the rule.

For a complete description of the proposed amendments the reader is referred to Appendix A.

Summary of Chapter 3 - Existing Setting

Pursuant to the CEQA Guidelines §15125, Chapter 3 – Existing Setting, includes descriptions of those environmental areas that could be adversely affected by PAR 1171. The following subsection briefly highlights the existing setting for air quality, which is the only environmental area that could be adversely affected by implementing PAR 1171.

Air Quality

Over the last two decades, there has been significant improvement in air quality within the area of the SCAQMD's jurisdiction. Nevertheless, several air quality standards are still exceeded frequently and by a wide margin. Of the National Ambient Air Quality Standards (NAAQS) established for six criteria pollutants (ozone, lead, sulfur dioxide, nitrogen dioxide, carbon monoxide, and PM10), the area within the SCAQMD's jurisdiction is only in attainment with the sulfur dioxide, nitrogen dioxide, and lead standards. Chapter 3 provides a brief description of the existing air quality setting for each criteria pollutant, as well as the human health effects resulting from each criteria pollutant.

Baseline Emission Inventory

The 2004 baseline VOC emission inventory used for this rule amendment is provided along with the Rule 1171 inventory for years 2002 and 2003 since the the last rule amendment. Finally, the annual growth rate calculation is provided to show how the 2004 baseline VOC emission inventory was developed.

Summary of Chapter 4 – Environmental Impacts and Mitigation Measures

CEQA Guidelines §15126.2(a) requires a CEQA document to “identify and focus on the significant environmental effects of the proposed project... Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects.”

The following subsection briefly summarizes the analysis of potential adverse environmental impacts from the adoption and implementation of PAR 1171.

Air Quality

The proposed rule will delay compliance for three solvent clean categories, establish a limited exemption from rule requirements for certain applications, and extend existing exemptions from the rule requirements for other cleaning applications. The analysis concludes that the delay in VOC emission reductions, along with the new and extended exemptions, will result in significant adverse air quality impacts.

Mitigation

Table 1-2 summarizes the impacts and mitigation measures associated with the environmental impact areas that the SCAQMD analyzed for PAR 1171.

TABLE 1-2
Environmental Impacts from PAR 1171

Environmental Impact Area	Significance Determination	Mitigation Measures
Air Quality – Criteria Pollutants (VOCs)	Significant due to delay in VOC emission reductions, new and extended exemptions	No feasible mitigation measures identified.
Non-Criteria Pollutants (TACs)	Not Significant - reduced with prohibition of TACs	None required.

Environmental Impacts Found Not To Be Significant

Although the proposed project delays the final compliance date for specified solvent products, the final VOC content limit will not change. As a result, implementing the proposed project will not change the analysis and conclusions made in the Final EA prepared for the 1999 amendments to Rule 1171 when the final VOC content limits were originally introduced. Proposed interim VOC content limits can be complied with using currently available products and will, therefore, not require a change in the cleaning process or equipment at affected facilities. As such, no direct or indirect adverse impacts will result for the remaining 16 environmental topic areas. Chapter 4 includes discussions that confirm there will be no significant adverse impacts to the following environmental resources in the SCAQMD's jurisdiction as a result of implementing PAR 1171:

- Aesthetics
- Agricultural Resources
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services

- Recreation
- Solid/Hazardous Waste
- Transportation/Circulation

Summary of Chapter 5 – Project Alternatives

Chapter 5 provides a discussion of alternatives that could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen significant adverse effects of the proposed project. The alternatives analyzed provide a means for evaluating the comparative merits of each alternative. The alternatives are viable options to the proposed project and all, or parts, of the alternatives can be chosen by the decision-making body (e.g., SCAQMD Governing Board) to become the proposed project. For this reason, the public is encouraged to review the environmental analysis since the potential environmental impacts from implementing all, or parts, of the alternatives may be generated if chosen to become the proposed project. Table 1-3 lists the description of the alternatives considered by the SCAQMD compared to PAR 1171. Table 1-4 lists the potentially significant environmental impacts resulting from implementing the alternatives as compared to the proposed project.

TABLE 1-3
Comparison of PAR 1171 to the Alternatives

Proposed Project Requirement	Alternative A (No Project)	Alternative B (Additional Delay in Interim and Final Compliance Deadlines)	Alternative C (Eliminate Interim VOC Content Limits)
REQUIREMENTS [subdivision (c)]			
Delay final compliance date for cleaning solvents used in lithographic, screen printing and UV/EB applications to 7/1/06.	Maintain final compliance date of 7/1/05 to lower VOC content for all solvent cleaning categories.	Delay further the final compliance date of cleaning solvents used in lithographic, screen printing and UV/EB applications to 7/1/07.	Delay final compliance date of cleaning solvents used in lithographic, screen printing and UV/EB applications to 7/1/06.
Require interim VOC content limit of cleaning solvents used in lithographic, screen printing and UV/EB applications as of 7/1/05.	No interim VOC content limit.	Delay further the interim compliance date of cleaning solvents used in lithographic, screen printing and UV/EB applications to 7/1/06.	No interim VOC content limit.

TABLE 1-3 (CONCLUDED)
Comparison of PAR 1171 to the Alternatives

Proposed Project Requirement	Alternative A (No Project)	Alternative B (Additional Delay in Interim and Final Compliance Deadlines)	Alternative C (Eliminate Interim VOC Content Limits)
GENERAL PROHIBITIONS [subdivision (e)]			
Prohibit use of methylene chloride and perchloroethylene as of 7/1/05.	Maintain allowance to use perchloroethylene and methylene chloride.	Maintain allowance to use perchloroethylene and methylene chloride.	Delay prohibition of methylene chloride and perchloroethylene to 7/1/06.
EXEMPTIONS [subdivision (h)]			
Maintain Remove exemption for cleaning of solar cells, laser hardware, scientific instruments and high precision optics as of 7/1/05.	Maintain exemption for cleaning of solar cells, laser hardware, scientific instruments and high precision optics.	Maintain exemption for cleaning of solar cells, laser hardware, scientific instruments and high precision optics.	Delay removal of exemption for cleaning of solar cells, laser hardware, scientific instruments and high precision optics until 7/1/06.
No minimal-usage exemption for electrical apparatus & electronic components used for repair and maintenance in certain applications.	No minimal-usage exemption for electrical apparatus & electronic components used for repair and maintenance in certain applications.	Allow minimal-usage exemption (limit at 900 g/l) for electrical apparatus & electronic components used for repair and maintenance in certain applications.	No minimal-usage exemption for electrical apparatus & electronic components used for repair and maintenance in certain applications.

TABLE 1-4
Comparison of Adverse Environmental Impacts
of PAR 1171 to the Alternatives

Environmental Topic	Proposed Project	Alternative A (No Project)	Alternative B (Additional Delay in Interim and Final Compliance Deadlines)	Alternative C (Eliminate Interim VOC Content Limits)
Air Quality – Criteria Pollutants (VOCs)	Significant (delay in VOC emission reductions, new and extended exemptions)	Not Significant (immediate VOC emission reductions)	Significant (further delay of VOC emission reductions)	Significant (loss of interim VOC emission reductions)
Non-Criteria Pollutants (TACs)	Not Significant (reduces exposure to TACs)	Not Significant (but does not provide health benefit of reducing TACs)	Not Significant (but does not provide health benefit of reducing TACs)	Not Significant (reduces exposure to TACs)

Summary of Chapter 6 – Other CEQA Topics

The CEQA Guidelines require a CEQA document to address the potential for irreversible environmental changes (§15126.2 (c)), growth-inducing impacts (§15126.2 (d)), and inconsistencies with regional plans (§15125 (d)). Analysis of the proposed project confirms that it would not result in irreversible environmental changes or the irretrievable commitment of resources, foster economic or population growth or the construction of additional housing (see Chapter 4). Since the proposed project ultimately achieves originally anticipated VOC emission reductions it is not considered to be inconsistent with the 2003 AQMP. As explained in Chapter 4, the proposed project is also not inconsistent with the Southern California Association of Governments' (SCAG) Regional Comprehensive Plan and Guide (RCPG).

CHAPTER 2

PROJECT DESCRIPTION

Project Location

Background

Project Objectives

Project Description

PROJECT LOCATION

PAR 1171 would apply to the SCAQMD's entire jurisdiction. The SCAQMD has jurisdiction over an area of 10,473 square miles (referred to hereafter as the district), consisting of the four-county South Coast Air Basin (Basin) and the Riverside County portions of the Salton Sea Air Basin (SSAB) and the Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of the SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The 6,745 square-mile Basin includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB and MDAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of both Riverside County and the SSAB and is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (Figure 2-1).

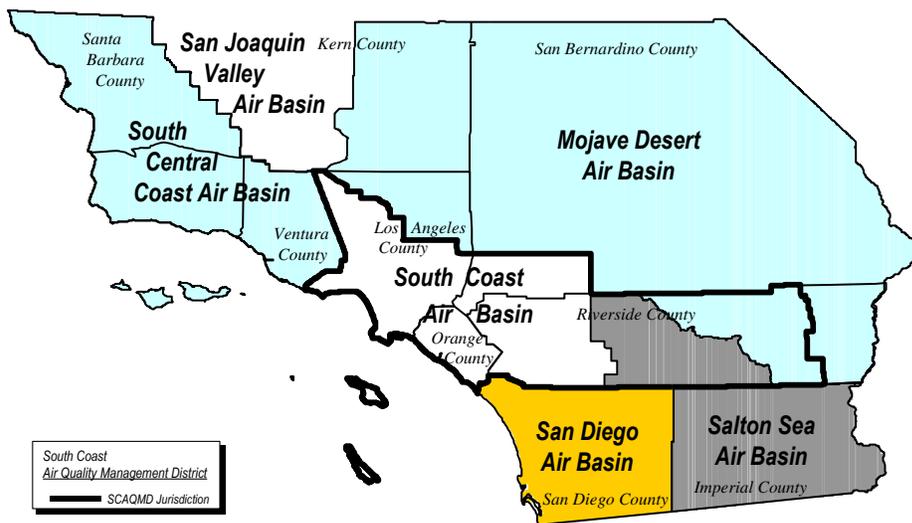


FIGURE 2-1

South Coast Air Quality Management District

BACKGROUND

Rule Development

Rule 1171 – Solvent Cleaning Operations, a key component of SCAQMD ozone reduction strategy, was adopted on August 2, 1991 to reduce VOC emissions from the use of solvents and solvent wastes generated during the production, repair, maintenance, or servicing of products, tools, machinery, and general work areas. Subsequent rule amendments expanded the scope of the rule to cover all solvent cleaning activities at all facilities.

The October 1999 amendment established a two-tiered approach in lowering the VOC content limits for all solvent cleaning activities. Tier I was implemented on December 1, 2001, and reduced VOC emissions by six tons per day from solvent cleaning activities. The second tier has a compliance date of July 1, 2005, with an estimated emission reduction of nine tons per day. These emission reductions were expected to be achieved through greater use of aqueous cleaning technologies and VOC-exempt solvents, or through the development of new low-VOC cleaning materials. In addition, the 1999 amendment required that a technology assessment be conducted for specific cleaning categories in order to determine the feasibility of the Tier II VOC limits for these categories. The rule also required a study of the effect of vapor pressure on the total mass emissions of VOCs from the use of cleaning solvents.

In August 2002, Rule 1171 was further amended to accelerate the reduction of 1.94 tons per day of the VOC emissions from general solvent cleaning activities by two and one-half years by requiring compliance with the VOC content limits in 2003 instead of 2005. At that time, many available low-VOC cleaning materials were already meeting the Tier II VOC limit of 25 grams per liter for general cleaning applications. As a result, the compliance date for the 25 grams per liter VOC limit for general cleaning applications was advanced to January 1, 2003.

The last amendment to Rule 1171 (November 2003) achieved an expected VOC emission reduction of about seven and one-half tons per day by eliminating the exemption for the cleaning of architectural coating application equipment starting July 1, 2005. This amendment implemented the clean-up solvent portion of two control measures (CM#2003CTS-07 and CTS-10 (P1)) in the 2003 AQMP.

As mentioned earlier, the 1999 rule amendment called for the completion of technology assessments for several cleaning categories in order to determine the progress in technology development, relative to the 2005 VOC limits, and assess whether future amendments are necessary. The technology assessments for most of the cleaning applications have now been completed. Cleaning applications for which the technology assessments have been completed include the cleaning of electrical apparatus/electronic components, coating/adhesive application equipment and the cleaning of certain ink application equipment. The technology assessment for ink application equipment used for lithography/letterpress and screen printing is still on-going. Preliminary results are

promising and indicate that the 2005 limits are achievable, but extended field testing is needed to determine if there are compatibility problems associated with the use of alternative cleaners over time. The studies are expected to be completed by November 2005. The proposed amendments to Rule 1171 reflect the findings and recommendations presented in the technology assessments for certain cleaning applications and recognize that the technology assessment for some cleaning applications have not been completed.

Technology Assessments

In order to support the 2005 VOC limits and emission reduction goals in Rule 1171, the SCAQMD funded several research projects aimed at identifying low-VOC cleaning technologies that could be used as alternative to high-VOC solvent cleaners used on specific cleaning activities. The SCAQMD contracted with the Institute for Research and Technical Assistance (IRTA) to assess the existing technology and develop and test low or non-VOC cleaning technologies that comply with the future VOC limits for specific cleaning activities in Rule 1171. The focus of the study was to evaluate the technical feasibility and cost of the low-VOC alternatives. IRTA's two-year research project focused on the following cleaning application areas:

- cleaning of electrical apparatus components and electronic components;
- coating and adhesive application equipment cleaning; and
- cleaning of ink application equipment (except lithographic/letterpress printing)

The project has been completed and a final report dated August 2003, and titled "Assessment, Development and Demonstration of Low-VOC Cleaning Systems for South Coast Air Quality Management District Rule 1171" has been prepared. The results of the study indicate that new and existing low-VOC cleaning technologies meeting the 2005 VOC limits in Rule 1171 can be used for most of the cleaning applications identified in the study. These low-VOC cleaners include water-based cleaners, VOC-exempt compounds such as acetone and volatile methyl siloxane (VMS), blends of VOC-exempt compounds, and soy cleaners. The effectiveness of the alternative cleaners varies according to the type of cleaning application. The following paragraphs summarize the results. Details of case studies involving the use of alternative cleaning technologies are included in the final report for the technology assessment.

Electrical apparatus components and electronic components

In the area of electrical apparatus/electronic components cleaning, IRTA worked with a number of companies with operations that involve flux removal. Such operations include printed circuit board rework, hybrid circuit and transformer manufacturing. Testing of alternative low-VOC cleaners at several companies participating in the study indicated that plain de-ionized (DI) water, water-based saponifiers, acetone, blends of acetone and isopropyl alcohol (IPA) and DI water/acetone/IPA blends are good solvent substitute cleaners for flux removal, depending on the characteristics of the operation. Specifically, DI

water was effective in removing water-soluble flux while a blend of acetone and IPA successfully cleaned rosin-based flux.

Companies involved in the manufacture/rebuilding of electric motors and repair and maintenance of field electrical equipment were also included in the study. Water-based cleaners and soy/water blends have been found to be effective alternatives for non-energized equipment. One of the companies involved in the study has been using water-based cleaners for cleaning non-energized equipment for many years. An aerosol formulation containing HCFC-141b, a VOC-exempt compound, is currently being used for cleaning energized electrical equipment. Production of this chemical has been banned since 2003 and availability of this product may become scarce in the near future. Facilities may use up to 160 fluid ounces per day of non-compliant aerosol cleaners to serve this purpose. In addition, compounds may be de-listed by EPA and SCAQMD in the future and, therefore, would be available for compliant use as cleaning solvents.

For the cleaning of solar cells, laser hardware, scientific instruments and high-precision optics, the results of the study indicated that acetone and acetone/IPA blends are effective alternative cleaners for these applications. Furthermore, additional data available to staff indicate that acetone is currently being used by several optics manufacturers for wipe-cleaning of high-precision optics.

While the technology assessment for cleaning of electrical/electronics apparatus components has been successful in finding alternatives for most of the applications tested, the study also found that solvent formulations with 100 grams per liter of VOC or less (2005 VOC target) were not effective in removing flux and silicone grease from electrical cables. Water-based cleaners could not be used on the cables because of wicking effect which may cause failure. Instead, a blend of 50 percent IPA/50 percent acetone (395 g/l VOC) was successfully tested as an alternative cleaner.

Coating and adhesive application equipment cleaning

For cleaning coating and adhesive application equipment, the study focused on finding alternative cleaners for removing contaminants such as epoxy primers, polyurethane topcoats and solvent-borne coatings for aerospace, metal, wood and auto body coating applications. Testing was also conducted for removing adhesives. The results of the study indicate that alternative cleaners meeting the 2005 VOC limits for these applications were identified and successfully tested for these cleaning applications. For the most part, acetone-based cleaners were effective in cleaning coating and adhesives application equipment. In certain instances, a blend of acetone and methyl acetate (VOC-exempt) was used for removing high-solids coatings.

However, the study also indicated that none of the alternatives tested by IRTA was able to remove the tetrahydrofuran (THF)-based solvent-borne adhesive residue from the application equipment. This type of adhesive is used in thin metal laminating operation. THF-based solvent is currently used to clean the adhesive application equipment. The VOC content of the THF solvent is about 900 grams per liter.

For the cleaning of ink application equipment used in specialty flexographic printing, water-based cleaners meeting the target VOC limit have been successfully tested as alternatives to high-VOC cleaning solvents. One company identified in the study has been using water-based cleaners for several years.

Cleaning of ink application equipment

In regard to the cleaning of ink application equipment for screen printing, alternative solvents such as acetone, blends of acetone and glycol ether, soy and water-based cleaners have been identified and successfully tested for removing various types of inks on different substrates. However, further testing is needed to validate the results specifically for textile screen printing. Additional testing on screen printing applications is on-going.

Based on the findings in the technology assessment completed for various applications, SCAQMD staff is confident that the 2005 limits for most of the cleaning applications can be implemented as scheduled. These applications include the cleaning of electrical apparatus/electronic components, coatings/adhesives application equipment, and ink application equipment for specialty flexographic printing.

Solvent Cleaning Applications to Comply with Interim Limits

For cleaning applications involving lithographic/letterpress, UV/EB ink application and screen printing ink application equipment cleaning equipment, the SCAQMD has an existing contract with three contractors to develop and test alternative low-VOC clean-up materials cleaners. Initial results of the testing indicate that low-VOC cleaning technologies can be used to substitute for high-VOC cleaning solvents for these wipe cleaning applications. However, long-range testing of the proposed alternative cleaners, including automatic blanket wash systems, is needed in order to determine if any equipment compatibility problems exist with the use of the proposed alternatives over an extended period of time. This study is expected to be completed by the end of November 2005. In the meantime, the PAR 1171 will require compliance with an interim VOC content limit of 500 grams per liter for solvent cleaning the lithographic/letterpress, UV/EB ink application equipment, and screen printing ink application equipment cleaning equipment.

Rule 1171 requires the completion of another technology assessment to study the effect of vapor pressure on the total mass emission of VOCs from the use of cleaning solvents. An in-house study has been completed to evaluate this relationship. The study concluded that vapor pressure has no effect on VOC mass emissions, and that lower vapor pressure limits will not result in further reduction of VOC emissions. A report on the vapor pressure study, titled "Technology Assessment to Determine the Relationship of Solvent Vapor Pressure and VOC Mass Emissions," dated April 10, 2002, has been completed and is available upon request.

Lithographic/letterpress, UV/EB ink application

Alternative formulations of solvents cleaners used in lithographic/letterpress and UV/EB ink applications that comply with the interim limit are currently available and some products are widely used. These solvent cleaners are known to be formulated with such chemicals as propylene glycol monomethyl ethers, di-propylene glycol monomethyl ethers (DPM), methyl esters (soy-based), acetone, 3-ethoxypropanoic acid which is an ethyl ester.

Screen Printing Applications

Representatives of the printing industry indicate that cleaning materials with VOC contents lower than the current limits allowed in Rule 1171 are currently available and can be used in the interim until the technology assessment for ink application equipment is completed. These solvent cleaners are known to be formulated with such chemicals as propylene glycol ethers, petroleum hydrocarbons, esters and acetone.

PROJECT OBJECTIVES

The objectives of PAR 1171 are to:

1. Implement the recommendations in the technology assessments to allow a limited exemption for solvents used in the cleaning of adhesive application equipment for thin metal laminating operations and the cleaning of electronic or electrical cables, as well as allow an extension of the existing exemption for solvents used in the cleaning of photocurable resins from stereolithography equipment and the cleaning of UV/EB lamps. In addition, the technology assessment indicated that effective alternative cleaners exist for cleaning solar cells, laser hardware, scientific instruments and high precision optics, however ~~and, therefore~~, the existing exemption for those applications is proposed to be maintained ~~removed~~.
2. Delay the final compliance date for cleaning solvents used in lithographic, screen printing and UV/EB applications solvent cleaning applications to allow more time to complete the technology assessment on the effectiveness of alternative compliant formulations.
3. Prohibit the use of methylene chloride and perchloroethylene in cleaning solvent formulations.
4. Remove outdated requirements and clarify rule language where appropriate.

PROJECT DESCRIPTION

The proposed amendments to Rule 1171 include the following components, listed in the order they appear in the rule:

(a) Purpose and Applicability

Clarify the control of toxic air contaminants to rule applicability [subdivision (a)].
~~No changes are proposed to this subdivision at this time.~~

(b) Definitions

- Modify definition to clarify that dampening rollers and printing plates are not considered as removable press components [paragraph (b)(42)]. ~~No changes are proposed to this subdivision at this time.~~
- Definition of “VOC Composite Partial Pressure” has been deleted since it is no longer used as a method of VOC calculation or compliance [paragraph (b)(57)].

(c) Requirements

- Extend current July 1, 2005 compliance date for one-year to implement low-VOC solvents (100 grams per liter or less of VOC) for solvents used in cleaning lithographic/letterpress, screen printing, and UV/EB ink application equipment [paragraph (c)(1)] (Table 2-1).
- Require interim VOC limit of 500 grams of VOC per liter for solvents used in cleaning lithographic/letterpress, screen printing, and UV/EB ink application equipment. The effective date for the interim limit is July 1, 2005 to a sunset date of July 1, 2006 [paragraph (c)(1)] (Table 2-1).

TABLE 2-1

Proposed VOC Content Limits for Rule 1171

Solvent Cleaning Activity	Current VOC Limit (grams/liter)	July 1, 2005 VOC Limit (grams/liter)	July 1, 2006 VOC Limits (grams/liter)
(A) Product Cleaning & Surface Preparation			
(i) General	25	No new limit	No new limit
(ii) Electrical/Electronic Apparatus & Components	500	100	No new limit
(iii) Medical Devices & Pharmaceuticals	800	No new limit	No new limit
(B) Repair & Maintenance			
(i) General	25	No new limit	No new limit
(ii) Electrical/Electronic Apparatus & Components	900	100 No new limit	No new limit
(iii) Medical Devices & Pharmaceuticals			

TABLE 2-1 (CONCLUDED)
Proposed VOC Content Limits for Rule 1171

Solvent Cleaning Activity	Current VOC Limit (grams/liter)	July 1, 2005 VOC Limit (grams/liter)	July 1, 2006 VOC Limits (grams/liter)
(A) Tools, Machinery & Equipment	800	No new limit	No new limit
(B) General Work Surfaces	600	No new limit	No new limit
(C) Coating/Adhesive Application Equipment	550	25	No new limit
(D) Ink Application Equipment	[REDACTED]		
(i) General	25	No new limit	No new limit
(ii) Flexographic Printing	25	No new limit	No new limit
(iii) Gravure Printing	[REDACTED]		
(A) Publication	750	100	No new limit
(B) Packaging	25	No new limit	No new limit
(iv) Litho/Letterpress	[REDACTED]		
(A) Roller Wash–Step 1	600	500	100
(B) Roller Wash-Step 2/Blanket Wash & On-Press Components	800	500	100
(C) Removable Press Components	25	No new limit	No new limit
(v) Screen Printing	750	500	100
(vi) Ultraviolet/Electron Beam Ink	800	500	100
(vii) Specialty Flexographic Printing	600	100	No new limit
(E) Polyester Resin Application Equipment	25	No new limit	No new limit

(d) Technology Assessment

- Language will be modified to reflect the latest technology assessment including affected solvent cleaning categories, expected completion date, and content of the study [subdivision (d)]. ~~No changes are proposed to this subdivision at this time.~~

(e) General Prohibitions

- Prohibit the use of methylene chloride and perchloroethylene (these are currently listed as Group II exempt compounds listed in Rule 102) in solvent cleaning activities [paragraph (e)(3)].

(f) Test Methods

- Delete the “Determination of VOC Composite Partial Pressure” section since VOC composite partial pressure is no longer calculated or used for compliance [paragraph (f)(2)].
- Update the “Determination of Efficiency of Emission Control System” section to reflect the most current test methods, and corresponding publication dates, for determining the efficiency of VOC emission control systems, consistent with those used in other VOC rules [paragraph (f)(34)].

(g) Rule 442 Applicability

No changes are proposed to this subdivision.

(h) Exemptions

- ~~Eliminate the rule exemption for cleaning of solar cells, laser hardware, scientific instruments, and high precision optics [subparagraph (h)(3)(A)]~~
- Extend the exemption for solvents used in the cleaning of photocurable resins from stereolithography equipment to December 31, 2008 [subparagraph (h)(3)(G)].
- Extend the exemption for solvents used in the cleaning of UV lamps to June 30, 2006 and add the cleaning of electron beam and reflectors to the exemption [subparagraph (h)(3)(H)].
- Establish a limited exemption from the rule VOC requirement for cleaning adhesive application equipment used for thin metal laminating operation. The VOC content of solvents used for this cleaning application is limited to 950 grams per liter [subparagraph (h)(3)(I)].
- Establish a limited exemption from the rule VOC requirement for the cleaning of electrical/electronic cables, provided the VOC content of the cleaning solvent is no more than 400 grams per liter [subparagraph (h)(3)(J)].
- Establish a limited exemption from the rule VOC requirement for touch up cleaning performed on printed circuit boards where surface mounted devices have already been attached provided the VOC content of the solvent used is no more than 800 grams per liter [subparagraph (h)(3)(K)].
- Establish a limited exemption from the rule VOC requirement for the cleaning of application equipment used to apply solventborne fluoropolymer coatings until December 31, 2008, provided the VOC content of the cleaning solvent is no more than 900 grams per liter [subparagraph (h)(5)(D)].

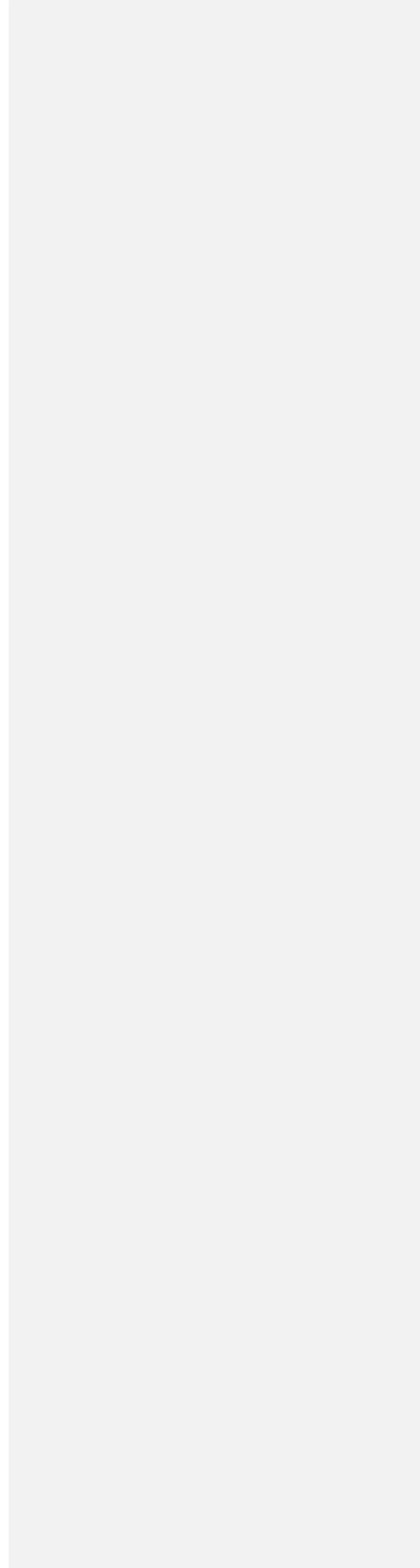
- Establish a limited exemption from the solvent requirements in paragraph (c)(1) for clean-up solvents used in metering rollers, dampening rollers and printing plates provided the VOC content of the solvent does not exceed 800 grams per liter. The proposed exemption has a sunset date of June 30, 2006 [paragraph (h)(8)].

For a complete description of PAR 1171, the reader is referred to Appendix A of this Final ~~Draft~~ SEA.

CHAPTER 3

EXISTING SETTING

Existing Setting
Air Quality
Baseline Emission Inventory



EXISTING SETTING

In order to determine the significance of the impacts associated with a proposed project, it is necessary to evaluate the project's impacts against the backdrop of the environment as it exists at the time the notice of preparation is published. The CEQA Guidelines defines "environment" as "the physical conditions that exist within the area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance" (CEQA Guidelines §15360; see also Public Resources Code §21060.5). Furthermore, a CEQA document must include a description of the physical environment in the vicinity of the project, as it exists at the time the notice of preparation is published, from both a local and regional perspective (CEQA Guidelines §15125). Therefore, the "environment" or "existing setting" against which a project's impacts are compared consists of the immediate, contemporaneous physical conditions at and around the project site (Remy, et al; 1996).

AIR QUALITY

It is the responsibility of the SCAQMD to ensure that state and federal ambient air quality standards are achieved and maintained in its geographical jurisdiction. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter less than 10 microns (PM₁₀), particulate matter less than 2.5 microns (PM_{2.5}), and lead. These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are more stringent than the federal standards and in the case of PM₁₀ and SO₂, far more stringent. California has also established standards for sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. The state and national ambient air quality standards for each of these pollutants and their effects on health are summarized in Table 3-1.

The SCAQMD monitors levels of various criteria pollutants at 32 monitoring stations. The 2003 air quality data, the last year of data available, from SCAQMD's monitoring stations are presented in Table 3-2.

TABLE 3-1
State and Federal Ambient Air Quality Standards

AIR POLLUTANT	STATE STANDARD	FEDERAL PRIMARY STANDARD	MOST RELEVANT EFFECTS
	CONCENTRATION, AVERAGING TIME		
Carbon Monoxide (CO)	20 ppm, 1-hour average > 9.0 ppm, 8-hour average >	35 ppm, 1-hour average > 9.5 ppm, 8-hour average >=	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and, (d) Possible increased risk to fetuses.
Ozone (O ₃)	0.09 ppm, 1-hour average >	0.12 ppm, 1-hour average > 0.08 ppm, 8-hour average >	(a) Short-term exposures: 1) Pulmonary function decrements and localized lung edema in humans and animals; and, 2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; and, (d) Property damage.
Nitrogen Dioxide (NO ₂)	0.25 ppm, 1-hour average >	0.0534 ppm, AAM >	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and, (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO ₂)	0.25 ppm, 1-hour average > 0.04 ppm, 24-hour average >	0.03 ppm, AAM > 0.14 ppm, 24-hour average > 0.50 ppm, 3-hour average >	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM10)	20 µg/m ³ , AAM > 50 µg/m ³ , 24-hour average >	50 µg/m ³ , AAM > 150 µg/m ³ , 24-hour average >	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; and, (b) Excess seasonal declines in pulmonary function, especially in children.
Suspended Particulate Matter (PM2.5)	12 µg/m ³ , AAM >	15 µg/m ³ , AAM > 65 µg/m ³ , 24-hour average >	(a) Increased hospital admissions and emergency room visits for heart and lung disease; (b) Increased respiratory symptoms and disease; and, (c) Decreased lung functions and premature death.

KEY:

ppm = parts per million parts of air, by volume	AAM = Annual Arithmetic Mean
µg/m ³ = micrograms per cubic meter	AGM = Annual Geometric Mean

TABLE 3-1 (CONCLUDED)
State and Federal Ambient Air Quality Standards

AIR POLLUTANT	STATE STANDARD	FEDERAL PRIMARY STANDARD	MOST RELEVANT EFFECTS
	CONCENTRATION, AVERAGING TIME		
Lead	1.5 µg/m ³ , 30-day average >=	1.5 µg/m ³ , calendar quarterly average >	(a) Increased body burden; and, (b) Impairment of blood formation and nerve conduction.
Sulfates (SO _x)	25 µg/m ³ , 24-hour average >=		(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and, (f) Property damage.
Visibility-Reducing Particles	In sufficient amount to give an extinction coefficient >0.23 inverse kilometers (visual range to less than 10 miles) with relative humidity less than 70 percent, 8-hour average (10am – 6pm PST)		Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent.
Hydrogen Sulfide	0.03 ppm, 1-hour average >=		Odor annoyance.
Vinyl Chloride	0.010 ppm, 24-hour average >=		Known carcinogen.

KEY:

ppm = parts per million parts of air, by volume	AAM = Annual Arithmetic Mean
µg/m ³ = micrograms per cubic meter	AGM = Annual Geometric Mean

TABLE 3-2
2003 Air Quality Data – South Coast Air Quality Management District

CARBON MONOXIDE (CO)						
					No. Days Standard Exceeded ^a	
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. (ppm, 1-hour)	Max. Conc. (ppm, 8-hour)	Federal ≥ 9.5 ppm, 8-hour	State > 9.0 ppm, 8-hour
LOS ANGELES COUNTY (Co)						
1	Central Los Angeles	365	6	4.6	0	0
2	Northwest Coast Los Angeles Co	365	5	2.7	0	0
3	Southwest Coast Los Angeles Co	361	7	5.0	0	0
4	South Coast Los Angeles Co	363	6	4.7	0	0
6	West San Fernando Valley	365	6	4.1	0	0
7	East San Fernando Valley	349	5*	4.7*	0*	0*
8	West San Fernando Valley	365	5	3.8	0	0
9	East San Gabriel Valley 1	365	5	2.6	0	0
9	East San Gabriel Valley 2	357	3	2.1	0	0
10	Pomona/Walnut Valley	365	6	4.4	0	0
11	South San Gabriel Valley	365	5	4.0	0	0
12	South Central Los Angeles Co	362	12	7.3	0	0
13	Santa Clarita Valley	363	3	1.7	0	0
ORANGE COUNTY						
16	North Orange County	365	8	4.1	0	0
17	Central Orange County	365	6	3.9	0	0
18	North Coastal Orange County	365	7	5.8	0	0
19	Saddleback Valley	362	3	1.8	0	0
RIVERSIDE COUNTY						
22	Norco/Corona	--	--	--	--	--
23	Metropolitan Riverside County 1	365	5	3.7	0	0
23	Metropolitan Riverside County 2	360	5	3.4	0	0
24	Perris Valley	--	--	--	--	--
25	Lake Elsinore	345	4*	1.3*	0*	0*
29	Banning Airport	--	--	--	--	--
30	Coachella Valley 1**	339	3*	1.3*	0*	0*
30	Coachella Valley 2**	--	--	--	--	--
SAN BERNARDINO COUNTY						
32	NW San Bernardino Valley	363	4	2.9	0	0
33	SW San Bernardino Valley	--	--	--	--	--
34	Central San Bernardino Valley 1	--	--	--	--	--
34	Central San Bernardino Valley 2	365	5	4.6	0	0
35	East San Bernardino Valley	--	--	--	--	--
37	Central San Bernardino Mountains	--	--	--	--	--
38	East San Bernardino Mountains	--	--	--	--	--
DISTRICT MAXIMUM			12	7.3	0	0
SOUTH COAST AIR BASIN			12	7.3	0	0

KEY:

ppm = parts per million parts of air, by volume	* Less than 12 full months of data. May not be representative.
-- = Pollutant not monitored	** Salton Sea Air Basin

^a The federal 1-hour standard (1-hour average CO > 35 ppm) and state 1-hour standard (1-hour average CO > 20 ppm) were not exceeded.

TABLE 3-2 (CONTINUED)
 2003 Air Quality Data – South Coast Air Quality Management District

OZONE (O ₃)									
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. (ppm, 1-hour)	Max. Conc. (ppm, 8-hour)	Fourth Highest Conc. (ppm, 8-hour)	Health Advisory ≥ 0.15 ppm, 1-hour	No. Days Standard Exceeded		
							Federal		State
							> 0.12 ppm, 1-hour	> 0.08 ppm, 8-hour	> 0.09 ppm, 1-hour
LOS ANGELES (LA) COUNTY (Co)									
1	Central LA	365	0.152	0.088	0.083	1	1	2	11
2	NW Coast LA Co	365	0.134	0.105	0.083	0	1	1	11
3	SW Coast LA Co	365	0.110	0.078	0.073	0	0	0	2
4	South Coast LA Co	365	0.099	0.071	0.063	0	0	0	1
6	W San Fernando Valley	365	0.179	0.129	0.119	1	14	49	68
7	E San Fernando Valley	341	0.134*	0.108*	0.097*	0*	4*	20*	37*
8	W San Fernando Valley	365	0.152	0.108	0.103	1	7	28	44
9	E San Gabriel Valley 1	365	0.150	0.124	0.107	1	11	21	40
9	E San Gabriel Valley 2	365	0.162	0.134	0.123	7	22	41	61
10	Pomona/Walnut Valley	365	0.161	0.123	0.109	3	13	24	39
11	S San Gabriel Valley	364	0.128	0.097	0.084	0	1	2	18
12	South Central LA Co	361	0.081	0.063	0.059	0	0	0	0
13	Santa Clarita Valley	363	0.194	0.152	0.137	15	35	69	89
ORANGE (OR) COUNTY (Co)									
16	North OR Co	365	0.165	0.087	0.082	1	1	2	7
17	Central OR Co	365	0.136	0.087	0.082	0	2	1	11
18	North Coastal OR Co	364	0.107	0.088	0.080	0	0	1	4
19	Saddleback Valley	362	0.153	0.105	0.097	1	4	8	16
RIVERSIDE (RV) COUNTY (Co)									
22	Norco/Corona	--	--	--	--	--	--	--	--
23	Metropolitan RV Co 1	365	0.169	0.140	0.123	4	18	62	56
23	Metropolitan RV Co 2	--	--	--	--	--	--	--	--
24	Perris Valley	357	0.155	0.121	0.119	1	7	47	59
25	Lake Elsinore	345	0.154*	0.137*	0.113*	2*	7*	35*	52
29	Banning Airport	365	0.166	0.146	0.127	3	27	63	64
30	Coachella Valley 1**	359	0.141	0.111	0.108	0	4	44	49
30	Coachella Valley 2**	365	0.123	0.105	0.102	0	0	19	24
SAN BERNARDINO (SB) COUNTY									
32	Northwest SB Valley	365	0.155	0.134	0.116	2	15	35	48
33	Southwest SB Valley	--	--	--	--	--	--	--	--
34	Central SB Valley 1	351	0.176	0.148	0.134	7	26	48	65
34	Central SB Valley 2	358	0.160	0.137	0.123	4	19	45	59
35	East SB Valley	365	0.174	0.153	0.138	12	38	72	91
37	Central SB Mountains	341	0.163*	0.142*	0.130*	6*	34*	74*	84*
38	East SB Mountains	--	--	--	--	--	--	--	--
DISTRICT MAXIMUM			0.194	0.153	0.138	15	38	74	91
SOUTH COAST AIR BASIN			0.194	0.153	0.138	36	68	119	133
KEY:									
ppm = parts per million parts of air, by volume				* Less than 12 full months of data. May not be representative.					
-- = Pollutant not monitored				** Salton Sea Air Basin					

TABLE 3-2 (CONTINUED)
2003 Air Quality Data – South Coast Air Quality Management District

NITROGEN DIOXIDE (NO ₂)				
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. (ppm, 1-hour ^b)	Annual Average ^b AAM Conc. (ppm)
LOS ANGELES COUNTY				
1	Central Los Angeles	361	0.16	0.0338
2	Northwest Coast Los Angeles County	352	0.12	0.0231
3	Southwest Coast Los Angeles County	363	0.12	0.0238
4	South Coast Los Angeles County	341	0.14*	0.0288*
6	West San Fernando Valley	364	0.13*	0.0260*
7	East San Fernando Valley	344	0.14*	0.0356*
8	West San Fernando Valley	356	0.14	0.0322
9	East San Gabriel Valley 1	347	0.12*	0.0296*
9	East San Gabriel Valley 2	361	0.12	0.0271
10	Pomona/Walnut Valley	365	0.12	0.0352
11	South San Gabriel Valley	360	0.14	0.0353
12	South Central Los Angeles County	356	0.13	0.0312
13	Santa Clarita Valley	363	0.12	0.0221
ORANGE COUNTY				
16	North Orange County	361	0.16	0.0284
17	Central Orange County	362	0.13	0.0240
18	North Coastal Orange County	362	0.11	0.0199
19	Saddleback Valley	--	--	--
RIVERSIDE COUNTY				
22	Norco/Corona	--	--	--
23	Metropolitan Riverside County 1	360	0.09	0.0217
23	Metropolitan Riverside County 2	--	--	--
24	Perris Valley	--	--	--
25	Lake Elsinore	328	0.08*	0.0182*
29	Banning Airport	346	0.09*	0.0193*
30	Coachella Valley 1**	347	0.06*	0.0173*
30	Coachella Valley 2**	--	--	--
SAN BERNARDINO COUNTY				
32	Northwest San Bernardino Valley	363	0.11	0.0349
33	Southwest San Bernardino Valley	--	--	--
34	Central San Bernardino Valley 1	355	0.12	0.0307
34	Central San Bernardino Valley 2	362	0.10	0.0270
35	East San Bernardino Valley	--	--	--
37	Central San Bernardino Mountains	--	--	--
38	East San Bernardino Mountains	--	--	--
DISTRICT MAXIMUM			0.16	0.0356
SOUTH COAST AIR BASIN			0.16	0.0356

KEY:

ppm = parts per million parts of air, by volume	* Less than 12 full months of data. May not be representative.
AAM = Annual Arithmetic Mean	** Salton Sea Air Basin
-- = Pollutant not monitored	

^b The state standard (1-hour average NO₂ > 0.25 ppm) and the federal standard (AAM NO₂ > 0.0534 ppm) were not exceeded.

TABLE 3-2 (CONTINUED)
 2003 Air Quality Data – South Coast Air Quality Management District

SULFUR DIOXIDE (SO ₂)				
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Maximum Concentration ^c	
			(ppm, 1-hour)	(ppm, 24-hour)
LOS ANGELES COUNTY				
1	Central Los Angeles	349	0.05*	0.006*
2	Northwest Coast Los Angeles County	--	--	--
3	Southwest Coast Los Angeles County	365	0.03	0.006
4	South Coast Los Angeles County	361	0.03	0.008
6	West San Fernando Valley	--	--	--
7	East San Fernando Valley	338	0.01*	0.005*
8	West San Fernando Valley	--	--	--
9	East San Gabriel Valley 1	--	--	--
9	East San Gabriel Valley 2	--	--	--
10	Pomona/Walnut Valley	--	--	--
11	South San Gabriel Valley	--	--	--
12	South Central Los Angeles County	--	--	--
13	Santa Clarita Valley	--	--	--
ORANGE COUNTY				
16	North Orange County	--	--	--
17	Central Orange County	--	--	--
18	North Coastal Orange County	354	0.02	0.012
19	Saddleback Valley	--	--	--
RIVERSIDE COUNTY				
22	Norco/Corona	--	--	--
23	Metropolitan Riverside County 1	363	0.02	0.012
23	Metropolitan Riverside County 2	--	--	--
24	Perris Valley	--	--	--
25	Lake Elsinore	--	--	--
29	Banning Airport	--	--	--
30	Coachella Valley 1**	--	--	--
30	Coachella Valley 2**	--	--	--
SAN BERNARDINO COUNTY				
32	Northwest San Bernardino Valley	--	--	--
33	Southwest San Bernardino Valley	--	--	--
34	Central San Bernardino Valley 1	361	0.01	0.004
34	Central San Bernardino Valley 2	--	--	--
35	East San Bernardino Valley	--	--	--
37	Central San Bernardino Mountains	--	--	--
38	East San Bernardino Mountains	--	--	--
DISTRICT MAXIMUM			0.05	0.012
SOUTH COAST AIR BASIN			0.05	0.012
KEY:				
ppm = parts per million parts of air, by volume		* Less than 12 full months of data. May not be representative.		
AAM = Annual Arithmetic Mean		** Salton Sea Air Basin		
-- = Pollutant not monitored				

^c The state standards (1-hour average SO₂ > 0.25 ppm and 24-hour average SO₂ > 0.04 ppm) and the federal standards (AAM SO₂ > 0.03 ppm, 24-hour average SO₂ > 0.14 ppm, and 3-hour average SO₂ > 0.50 ppm) were not exceeded.

TABLE 3-2 (CONTINUED)
2003 Air Quality Data – South Coast Air Quality Management District

SUSPENDED PARTICULATE MATTER PM10 ^d						
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. ($\mu\text{g}/\text{m}^3$, 24-hour)	No. (%) Samples Exceeding Standard		Annual Average ^e AAM Conc. ($\mu\text{g}/\text{m}^3$)
				Federal > 150 $\mu\text{g}/\text{m}^3$, 24-hour	State > 50 $\mu\text{g}/\text{m}^3$, 24-hour	
LOS ANGELES COUNTY (Co)						
1	Central Los Angeles	61	81	0	6(9.8)	34.6
2	NW Coast Los Angeles County	--	--	--	--	--
3	SW Coast Los Angeles County	61	58	0	3(4.9)	29.7
4	South Coast Los Angeles County	61	63	0	4(6.6)	32.8
6	West San Fernando Valley	--	--	--	--	--
7	East San Fernando Valley	50	81*	0*	7(14.0)*	38.1*
8	West San Fernando Valley	--	--	--	--	--
9	East San Gabriel Valley 1	60	119	0	21(35.0)	44.4
9	East San Gabriel Valley 2	--	--	--	--	--
10	Pomona/Walnut Valley	--	--	--	--	--
11	South San Gabriel Valley	--	--	--	--	--
12	South Central Los Angeles County	--	--	--	--	--
13	Santa Clarita Valley	61	72	0	10(16.4)	31.8
ORANGE COUNTY						
16	North Orange County	--	--	--	--	--
17	Central Orange County	61	96	0	6(9.8)	32.7
18	North Coastal Orange County	--	--	--	--	--
19	Saddleback Valley	57	64	0	2(3.5)	26.7
RIVERSIDE COUNTY						
22	Norco/Corona	58	116	0	15(25.9)	40.5
23	Metropolitan Riverside County 1	109	164	2(1.8)	62(56.9)	56.9
23	Metropolitan Riverside County 2	--	--	--	--	--
24	Perris Valley	58	142	0	19(32.8)	43.9
25	Lake Elsinore	--	--	--	--	--
29	Banning Airport	60	79	0	9(15.0)	29.0
30	Coachella Valley 1**	60	108	0	4(6.7)	27.1
30	Coachella Valley 2**	112	124 ⁺	0 ⁺	47(42.0) ⁺	50.2 ⁺
SAN BERNARDINO COUNTY						
32	NW San Bernardino Valley	--	--	--	--	--
33	SW San Bernardino Valley	62	149	0	18(29.0)	42.9
34	Central San Bernardino Valley 1	50	101*	0*	27(54.0)*	47.2*
34	Central San Bernardino Valley 2	59	98	0	23(39.0)	44.9
35	East San Bernardino Valley	58	92	0	15(25.9)	37.0
37	Central San Bernardino Mountains	50	47*	0*	0*	25.6*
38	East San Bernardino Mountains	--	--	--	--	--
DISTRICT MAXIMUM			164	2	62	56.9
SOUTH COAST AIR BASIN			164	2	69	56.9

KEY:

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter	-- = Pollutant not monitored
AAM = Annual Arithmetic Mean	** Salton Sea Air Basin

^d PM10 samples were collected every six days at all sites except for Station Numbers 4144 and 4157 where samples were collected every three days.

^e The federal standard is AAM PM10 > 50 $\mu\text{g}/\text{m}^3$ and the state standard is AAM PM10 > 20 $\mu\text{g}/\text{m}^3$ (replaced the annual geometric mean AGM PM10 > 30 $\mu\text{g}/\text{m}^3$ effective July 5, 2003).

⁺ The data for five samples collected on high-wind days (178 $\mu\text{g}/\text{m}^3$ on 01/06/03, 132 $\mu\text{g}/\text{m}^3$ on 02/02/03, 227 $\mu\text{g}/\text{m}^3$ on 05/15/03, 148 $\mu\text{g}/\text{m}^3$ on 06/20/03, and 309 $\mu\text{g}/\text{m}^3$ on 06/23/03) were excluded in accordance with EPA's Natural Events Policy.

TABLE 3-2 (CONTINUED)
2003 Air Quality Data – South Coast Air Quality Management District

SUSPENDED PARTICULATE MATTER PM _{2.5} ^f					
				No. (%) Samples Exceeding Standard	Annual Averages ^g
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. (µg/m ³ , 24-hour)	Federal > 65 µg/m ³ , 24-hour	AAM Conc. (µg/m ³)
LOS ANGELES COUNTY					
1	Central Los Angeles	330	83.7	5(1.5)	21.3
2	Northwest Coast Los Angeles County	--	--	--	--
3	Southwest Coast Los Angeles County	--	--	--	--
4	South Coast Los Angeles County	324	115.2	3(0.9)	18.0
6	West San Fernando Valley	115	47.5	0	16.4
7	East San Fernando Valley	92	120.6	1(1.1)	20.9
8	West San Fernando Valley	110	89.0	1(0.9)	18.6
9	East San Gabriel Valley 1	314	121.2	3(1.0)	19.2
9	East San Gabriel Valley 2	--	--	--	--
10	Pomona/Walnut Valley	--	--	--	--
11	South San Gabriel Valley	111	90.3	1(0.9)	20.6
12	South Central Los Angeles County	117	54.8	0	20.2
13	Santa Clarita Valley	--	--	--	--
ORANGE COUNTY					
16	North Orange County	--	--	--	--
17	Central Orange County	340	115.5	3(0.9)	17.3
18	North Coastal Orange County	--	--	--	--
19	Saddleback Valley	109	50.6	0	13.1
RIVERSIDE COUNTY					
22	Norco/Corona	--	--	--	--
23	Metropolitan Riverside County 1	350	104.3	8(2.3)	24.9
23	Metropolitan Riverside County 2	116	73.3	1(0.9)	22.6
24	Perris Valley	--	--	--	--
25	Lake Elsinore	--	--	--	--
29	Banning Airport	--	--	--	--
30	Coachella Valley 1**	112	21.2	0	9.0
30	Coachella Valley 2**	118	26.8	0	11.4
SAN BERNARDINO COUNTY					
32	Northwest San Bernardino Valley	--	--	--	--
33	Southwest San Bernardino Valley	118	88.9	3(2.5)	23.8
34	Central San Bernardino Valley1	111	98.1	1(0.9)	21.8
34	Central San Bernardino Valley2	119	73.9	1(0.8)	22.2
35	East San Bernardino Valley	--	--	--	--
37	Central San Bernardino Mountains	--	--	--	--
38	East San Bernardino Mountains	55	35.0	0	10.5
DISTRICT MAXIMUM			121.2	8	24.9
SOUTH COAST AIR BASIN			121.2	14	24.9
KEY:					
µg/m ³ = micrograms per cubic meter			-- = Pollutant not monitored		
AAM = Annual Arithmetic Mean			** Salton Sea Air Basin		

f PM_{2.5} samples were collected every three days at all sites except for Station Numbers 060, 072, 087, 3176, and 4144 where samples were taken every day, and Station Number 5818 where samples were taken every six days.

g The federal standard is AAM PM_{2.5} > 15 µg/m³ and the state standard is AAM PM_{2.5} > 12 µg/m³ (new standard, established July 5, 2003).

TABLE 3-2 (CONTINUED)
2003 Air Quality Data – South Coast Air Quality Management District

TOTAL SUSPENDED PARTICULATES TSP^h				
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. ($\mu\text{g}/\text{m}^3$, 24-hour)	Annual Average AAM Conc. ($\mu\text{g}/\text{m}^3$)
LOS ANGELES COUNTY (Co)				
1	Central Los Angeles	61	157	73.5
2	Northwest Coast Los Angeles Co	59	114	49.4
3	Southwest Coast Los Angeles Co	61	122	56.7
4	South Coast Los Angeles Co	64	159	63.9
6	West San Fernando Valley	--	--	--
7	East San Fernando Valley	--	--	--
8	West San Fernando Valley	59	111	54.3
9	East San Gabriel Valley 1	55	176	83.9
9	East San Gabriel Valley 2	--	--	--
10	Pomona/Walnut Valley	--	--	--
11	South San Gabriel Valley	60	160	75.4
12	South Central Los Angeles Co	60	449	105.2
13	Santa Clarita Valley	--	--	--
ORANGE COUNTY				
16	North Orange County	--	--	--
17	Central Orange County	--	--	--
18	North Coastal Orange County	--	--	--
19	Saddleback Valley	--	--	--
RIVERSIDE COUNTY				
22	Norco/Corona	--	--	--
23	Metropolitan Riverside County 1	58	283	105.6
23	Metropolitan Riverside County 2	60	225	85.0
24	Perris Valley	--	--	--
25	Lake Elsinore	--	--	--
29	Banning Airport	--	--	--
30	Coachella Valley 1**	--	--	--
30	Coachella Valley 2**	--	--	--
SAN BERNARDINO COUNTY				
32	NW San Bernardino Valley	60	269	69.6
33	SW San Bernardino Valley	--	--	--
34	Central San Bernardino Valley 1	59	335	119.8
34	Central San Bernardino Valley 2	60	242	97.8
35	East San Bernardino Valley	--	--	--
37	Central San Bernardino Mountains	--	--	--
38	East San Bernardino Mountains	--	--	--
DISTRICT MAXIMUM			449	119.8
SOUTH COAST AIR BASIN			449	119.8

KEY:

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter	-- = Pollutant not monitored
AAM = Annual Arithmetic Mean	** Salton Sea Air Basin

^h Total suspended particulates, lead, and sulfates were determined from samples collected every six days by the high volume sampler method, on glass fiber filter media.

TABLE 3-2 (CONCLUDED)

2003 Air Quality Data – South Coast Air Quality Management District

Source Receptor Area No.	Location of Air Monitoring Station	LEAD ⁱ		SULFATES (SOx) ⁱ	
		Max. Monthly Average Conc. ^j ($\mu\text{g}/\text{m}^3$)	Max. Quarterly Average Conc. ^j ($\mu\text{g}/\text{m}^3$)	Max. Conc. ($\mu\text{g}/\text{m}^3$, 24-hour)	No. (%) Samples Exceeding State Standard $\geq 25 \mu\text{g}/\text{m}^3$, 24-hour
LOS ANGELES COUNTY (Co)					
1	Central Los Angeles	0.15	0.15	14.6	0
2	Northwest Coast Los Angeles Co	--	--	14.3	0
3	Southwest Coast Los Angeles Co	0.17	0.10	16.4	0
4	South Coast Los Angeles Co	--	0.05	17.8	0
6	West San Fernando Valley	--	--	--	--
7	East San Fernando Valley	--	--	--	--
8	West San Fernando Valley	--	--	12.7	0
9	East San Gabriel Valley 1	--	--	11.7	0
9	East San Gabriel Valley 2	--	--	--	--
10	Pomona/Walnut Valley	--	--	--	--
11	South San Gabriel Valley	0.05	0.04	14.4	0
12	South Central Los Angeles Co	0.04	0.04	14.9	0
13	Santa Clarita Valley	--	--	--	--
ORANGE COUNTY					
16	North Orange County	--	--	--	--
17	Central Orange County	--	--	--	--
18	North Coastal Orange County	--	--	--	--
19	Saddleback Valley	--	--	--	--
RIVERSIDE COUNTY					
22	Norco/Corona	--	--	--	--
23	Metropolitan Riverside County 1	0.02	0.02	10.1	0
23	Metropolitan Riverside County 2	0.02	0.01	10.0	0
24	Perris Valley	--	--	--	--
25	Lake Elsinore	--	--	--	--
29	Banning Airport	--	--	--	--
30	Coachella Valley 1**	--	--	--	--
30	Coachella Valley 2**	--	--	--	--
SAN BERNARDINO COUNTY					
32	NW San Bernardino Valley	0.02	0.02	11.8	0
33	SW San Bernardino Valley	--	--	--	--
34	Central San Bernardino Valley 1	--	--	11.9	0
34	Central San Bernardino Valley 2	0.14	0.08	12.1	0
35	East San Bernardino Valley	--	--	--	--
37	Central San Bernardino Mountains	--	--	--	--
38	East San Bernardino Mountains	--	--	--	--
DISTRICT MAXIMUM		0.17	0.15	17.8	0
SOUTH COAST AIR BASIN		0.17	0.15	17.8	0

KEY:

 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

** Salton Sea Air Basin

-- = Pollutant not monitored

i Total suspended particulates, lead, and sulfate were determined from samples collected every six days by the high volume sampler method, on glass fiber filter media.

j The federal standard (quarterly average lead $> 1.5 \mu\text{g}/\text{m}^3$) and the state standard (monthly average lead $\geq 1.5 \mu\text{g}/\text{m}^3$) were not exceeded. In 2003, special monitoring immediately downwind of stationary sources of lead was carried out at four locations. The maximum monthly average lead concentration measured $0.35 \mu\text{g}/\text{m}^3$ and the maximum quarterly average lead concentration measured $0.29 \mu\text{g}/\text{m}^3$, both recorded in Central Los Angeles.

Ozone

Unlike primary criteria pollutants that are emitted directly from an emissions source, ozone is a secondary pollutant. It is formed in the atmosphere through a photochemical reaction of VOC, NO_x, oxygen, and other hydrocarbon materials with sunlight. As a precursor to ozone, VOC contributes to regional air quality impacts.

Ozone is a deep lung irritant, causing the passages to become inflamed and swollen. Exposure to ozone produces alterations in respiration, the most characteristic of which is shallow, rapid breathing and a decrease in pulmonary performance. Ozone reduces the respiratory system's ability to fight infection and to remove foreign particles. People who suffer from respiratory diseases such as asthma, emphysema, and chronic bronchitis are more sensitive to ozone's effects. In severe cases, ozone is capable of causing death from pulmonary edema. Early studies suggested that long-term exposure to ozone results in adverse effects on morphology and function of the lung and acceleration of lung-tumor formation and aging. Ozone exposure also increases the sensitivity of the lung to bronchoconstrictive agents such as histamine, acetylcholine, and allergens.

Recent studies have shown that asthmatic children in southern California are particularly susceptible to the adverse effects of air pollution. In an ongoing long-term study of nearly 3,700 children in 12 communities across southern California, asthmatics had more frequent bouts of bronchitis and chronic phlegm than non-asthmatics. Other studies have linked air pollution with an increase in asthmatics' acute symptoms and emergency room visits and a decrease in their lung function. Asthma is a serious public health concern across the country since reported cases have risen dramatically during the last decade. Asthma is the number one cause of school absences, the leading cause of children's visits to emergency rooms and the cause of more than 5,000 deaths a year. Low-income and uninsured residents are particularly at risk because they do not have access to preventive and ongoing medical care that can control asthma and instead receive treatment only during acute asthma attacks in emergency rooms.

The national ozone ambient air quality standard is exceeded far more frequently in the SCAQMD's jurisdiction than almost every other area in the United States². In the past few years, ozone air quality has been the cleanest on record in terms of maximum concentration and number of days exceeding the standards and episode levels. Ozone levels were monitored at 28 locations in 2003. Maximum one-hour average and eight-hour average ozone concentrations in 2003 (0.194 ppm and 0.153 ppm) were 162 percent and 191 percent of the federal one-hour and eight-hour standards, respectively. Ozone concentrations exceeded the one-hour state standard at all, but four of the monitored locations in 2003.

² It should be noted that in 1999 and 2000 Houston, Texas exceeded the federal ozone standards on more occasions than the district and reported the highest ozone concentrations in the nation.

In 1997, the USEPA promulgated a new national ambient air quality standard for ozone. Soon thereafter, a court decision ordered that the USEPA could not enforce the new standard until adequate justification for the new standard was provided. The USEPA appealed the decision to the Supreme Court. On February 27, 2001, the Supreme Court upheld USEPA's authority and methods to establish clean air standards. The Supreme Court, however, ordered USEPA to revise its implementation plan for the new ozone standard. Meanwhile, the California Air Resources Board (CARB) and local air districts continue to collect technical information in order to prepare for an eventual State Implementation Plan (SIP) to reduce unhealthful levels of ozone in areas violating the new federal standard. California has previously developed a SIP for the current ozone standard, which has been approved by USEPA for the South Coast Air Basin.

Carbon Monoxide

CO is a colorless, odorless gas formed by the incomplete combustion of fuels. CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs in the body. The ambient air quality standard for carbon monoxide is intended to protect persons whose medical condition already compromises their circulatory systems' ability to deliver oxygen. These medical conditions include certain heart ailments, chronic lung diseases, and anemia. Persons with these conditions have reduced exercise capacity even when exposed to relatively low levels of CO. Fetuses are at risk because their blood has an even greater affinity to bind with CO. Smokers are also at risk from ambient CO levels because smoking increases the background level of CO in their blood.

CO was monitored at 23 locations in the district in 2003 and no locations exceeded the federal and state eight-hour CO standards. The highest eight-hour average CO concentration of the year (7.3 ppm) was 77 percent of the federal standard and it was measured at Source/Receptor Area No. 12, South Central Los Angeles County (Station No. 084).

Nitrogen Dioxide

NO₂ is a brownish gas that is formed in the atmosphere through a rapid reaction of the colorless gas nitric oxide (NO) with atmospheric oxygen. NO and NO₂ are collectively referred to as NO_x. NO₂ can cause health effects in sensitive population groups such as children and people with chronic lung diseases. It can cause respiratory irritation and constriction of the airways, making breathing more difficult. Asthmatics are especially sensitive to these effects. People with asthma and chronic bronchitis may also experience headaches, wheezing and chest tightness at high ambient levels of NO₂. NO₂ is suspected to reduce resistance to infection, especially in young children.

By 1991, exceedances of the federal standard were limited to one location in Los Angeles County. The Basin was the only area in the United States classified as nonattainment for the federal NO₂ standard under the 1990 Clean Air Act Amendments. No location in the area of SCAQMD's jurisdiction has exceeded the federal standard since 1992 and the South Coast

Air Basin was designated attainment for the national standard in 1998. In 2003, 23 stations monitored NO₂ levels in the district and the maximum annual arithmetic mean (AAM) was measured at 0.0356 ppm which represents 67 percent of the federal standard (the federal standard is an AAM of NO₂ greater than 0.0534 ppm). The more stringent one-hour state standard (0.25 ppm) was not exceeded in year 2003. Despite declining NO_x emissions over the last decade, further NO_x emissions reductions are necessary to ensure no further exceedances of the NO₂ standard and because NO_x emissions are PM₁₀ and ozone precursors.

Particulate Matter (PM₁₀)

PM₁₀ is defined as suspended particulate matter measuring 10 microns or less in diameter and includes a complex mixture of man-made and natural substances including sulfates, nitrates, metals, elemental carbon, sea salt, soil, organics and other materials. PM₁₀ may have adverse health impacts because these microscopic particles are able to penetrate deeply into the respiratory system. In some cases, the particulates themselves may cause actual damage to the alveoli of the lungs or they may contain adsorbed substances that are injurious. Children can experience a decline in lung function and an increase in respiratory symptoms from PM₁₀ exposure. People with influenza, chronic respiratory disease and cardiovascular disease can be at risk of aggravated illness from exposure to fine particles. Increases in death rates have been statistically linked to corresponding increases in PM₁₀ levels.

In 2003, PM₁₀ was monitored at 19 locations in the district. There were two exceedances of the federal 24-hour standard (150 µg/m³), while the state 24-hour standard (50 µg/m³) was exceeded at all 19 monitored locations. The federal standard (AAM greater than 50 µg/m³) was exceeded in two locations.

Particulate Matter (PM_{2.5})

In 1997, the USEPA promulgated a new national ambient air quality standard for PM_{2.5}, particulate matter 2.5 microns or less in diameter. The PM_{2.5} standard is a subset of PM₁₀ such that it complements existing national and state ambient air quality standards that target the full range of inhalable PM₁₀. In addition to the health effects for PM₁₀, additional effects from exposure to PM_{2.5} may result in increased hospital admissions and emergency room visits for heart and lung disease, increased respiratory symptoms and disease, decreased lung functions, and premature death.

The SCAQMD began regular monitoring of PM_{2.5} in 1999. In 2003, concentrations of PM_{2.5} were monitored at 18 locations throughout the district. The federal 24-hour standard (65 µg/m³) was exceeded at 12 locations. The federal standard (AAM greater than 15 µg/m³) was exceeded in 14 locations, and the state standard (AAM greater than 12 µg/m³) was exceeded in 15 locations.

Sulfur Dioxide

SO₂ is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms and difficulty in breathing for children. In 2003, seven locations monitored SO₂ levels and neither the state nor the federal standards were exceeded. Though SO₂ concentrations have been reduced to levels well below state and federal standards, further reductions in emissions of SO₂ are needed because it is a precursor for sulfates, PM₁₀, and PM_{2.5}.

Sulfates

Sulfates or SO_x are a group of chemical compounds containing the sulfate group, which is a sulfur atom with four oxygen atoms attached. Though not exceeded in 1993, 1996, 1997, and 1998, the 24-hour state sulfate standard (25 µg/m³) was exceeded at three locations in 1994 and one location in 1995, 1999, 2000 and 2001. There are no federal air quality standards for sulfate.

Lead

Lead concentrations once exceeded the state and national ambient air quality standards by a wide margin, but have not exceeded state or federal standards at any regular monitoring station since 1982. Though special monitoring sites immediately downwind of lead sources recorded very localized violations of the state standard in 1994, no violations were recorded at these stations since that time.

Visibility

Since deterioration of visibility is one of the most obvious manifestations of air pollution and plays a major role in the public's perception of air quality, the state of California has adopted a standard for visibility or visual range. Until 1989, the standard was based on visibility estimates made by human observers. The standard was changed to require measurement of visual range using instruments that measure light scattering and absorption by suspended particles.

Volatile Organic Compounds

It should be noted that there are no state or national ambient air quality standards for VOCs because they are not classified as criteria pollutants. VOCs are regulated, however, because limiting VOC emissions reduces the rate of photochemical reactions that contribute to the formation of ozone. They are also transformed into organic aerosols in the atmosphere, contributing to higher PM₁₀ and lower visibility levels.

Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOCs because of interference with oxygen uptake. In general, ambient VOC concentrations in the atmosphere are suspected to cause

coughing, sneezing, headaches, weakness, laryngitis, and bronchitis, even at low concentrations. Some hydrocarbon components classified as VOC emissions are thought or known to be hazardous. Benzene, for example, one hydrocarbon component of VOC emissions, is known to be a human carcinogen.

Non-Criteria Pollutant Emissions

Although the SCAQMD's primary mandate is attaining the State and National Ambient Air Quality Standards for criteria pollutants within the district, SCAQMD also has a general responsibility pursuant to the Health and Safety Code §41700 to control emissions of air contaminants and prevent endangerment to public health. As a result, over the last few years the SCAQMD has regulated pollutants other than criteria pollutants such as TACs, greenhouse gases and stratospheric ozone depleting compounds. The SCAQMD has developed a number of rules to control non-criteria pollutants from both new and existing sources. These rules originated through state directives, CAA requirements, or the SCAQMD rulemaking process.

In addition to promulgating non-criteria pollutant rules, the SCAQMD has been evaluating AQMP control measures as well as existing rules to determine whether or not they would affect, either positively or negatively, emissions of non-criteria pollutants. For example, rules in which VOC components of coating materials are replaced by a non-photochemically reactive chlorinated substance would reduce the impacts resulting from ozone formation, but could increase emissions of toxic compounds or other substances that may have adverse impacts on human health.

The following sections summarize the existing setting for the two major categories of non-criteria pollutants: compounds that contribute to ozone depletion and global warming, and TACs.

Ozone Depletion and Global Warming

The SCAQMD adopted a "Policy on Global Warming and Stratospheric Ozone Depletion" on April 6, 1990. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the AQMP.

In March of 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

- phase out the use and corresponding emissions of chlorofluorocarbons (CFCs), methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995;
- phase out the large quantity use and corresponding emissions of hydrochlorofluorocarbons (HCFCs) by the year 2000;
- develop recycling regulations for HCFCs;

- develop an emissions inventory and control strategy for methyl bromide; and
- support the adoption of a California greenhouse gas emission reduction goal.

In support of these polices, the SCAQMD Governing Board has adopted several rules to reduce ozone depleting compounds. Several other rules concurrently reduce global warming gases and criteria pollutants.

On March 17, 2000, the SCAQMD Governing Board approved “An Air Toxics Control Plan for the Next Ten Years.” The Air Toxics Control Plan identifies potential strategies to reduce toxic levels in the Basin over the ten years following adoption. To the extent the strategies are implemented by the relative agencies, the plan will improve public health by reducing health risks associated with both mobile and stationary sources. Exposure to toxic air contaminants (TACs) can increase the risk of contracting cancer or result in other deleterious health effects which target such systems as cardiovascular, reproductive, hematological, or nervous. The health effects may be through short-term, high-level or “acute” exposure or long-term, low-level or “chronic” exposure.

Toxic Air Contaminants

Historically, the SCAQMD has regulated criteria air pollutants using either a technology-based or an emissions limit approach. The technology-based approach defines specific control technologies that may be installed to reduce pollutant emissions. The emission limit approach establishes an emission limit, and allows industry to use any emission control equipment, as long as the emission requirements are met. The regulation of TACs requires a similar regulatory approach as explained in the following subsections.

It is assumed that products compliant with the proposed amendments to Rule 1171 would be formulated by using exempt compounds to extend or replace many organic solvents that contain toxic compounds included in currently used cleaning products. Commonly used compounds that would likely be, or have already been replaced include, for example, toluene, xylene, mineral spirits (stoddard solvent), ethanol, and methyl ethyl ketone (MEK).

A compilation of toxicological information of representative conventional solvents and their possible replacements is given below. This information was extracted from the following sources: Agency for Toxic Substances and Disease Registry ToxFAQs; New Jersey's Department of Health, Right to Know Program's Hazardous Substance Fact Sheets; EPA's Integrated Risk Information System; EPA's Chemicals In the Environment: OPPT Chemical Fact Sheets; National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards; NIOSH Documentation for Immediately Dangerous to Life or Health Concentrations; OSHA Health Guidelines; and Department of Health and Human Services National Toxicology Program Chemical Repository.

Conventional Solvents

Toluene

The largest use for toluene is in the production of benzene. Toluene is also used as an octane booster or enhancer in gasoline, as a raw material for toluene diisocyanate, as a solvent, and in solvent extraction processes. As a solvent, it may be used in aerosol spray paints, wall paints, lacquers, inks, adhesives, natural gums, and resins, as well as in a number of consumer products, such as spot removers, paint strippers, cosmetics, perfumes, and antifreezes.

Breathing large amounts of toluene for short periods of time adversely affects the human nervous system, the kidneys, the liver, and the heart. Effects range from unsteadiness and tingling in fingers and toes to unconsciousness and death. Direct, prolonged contact with toluene liquid or vapor irritates the skin and the eyes. Human health effects associated with breathing or otherwise consuming smaller amounts of toluene over long periods of time are not known. Repeatedly breathing large amounts of toluene, such as when "sniffing" glue or paint, can cause permanent brain damage. As a result, humans can develop problems with speech, hearing, and vision. Humans can also experience loss of muscle control, loss of memory, and decreased mental ability. Exposure to toluene can also adversely affect the kidneys. Laboratory animal studies and, in some cases, human exposure studies show that repeat exposure to large amounts of toluene during pregnancy can adversely affect the developing fetus. Other studies show that repeat exposure to large amounts of toluene adversely affects the nervous system, the kidneys, and the liver of animals.

The Clean Air Act Amendments of 1990 list toluene as a hazardous air pollutant. Toluene is also listed in Table I of SCAQMD Rule 1401 – New Source Review of Toxic Air Contaminants.

Xylene

Xylene occurs naturally in petroleum and coal tar and is formed during forest fires. Chemical industries produce xylene from petroleum. It is one of the top 30 chemicals produced in the United States in terms of volume.

Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a cleaning agent, paint thinner, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.

Xylene adversely affects the brain. High levels of exposure for short periods (14 days or less) or long periods (more than one year) can cause headaches, lack of muscle coordination, dizziness, confusion, and changes in one's sense of balance. Exposure of persons to high levels of xylene for short periods can also cause irritation of the skin, eyes, nose, and throat; difficulty in breathing; problems with the lungs; delayed reaction time; memory difficulties;

stomach discomfort; and possibly changes in the liver and kidneys. It can cause unconsciousness and even death at very high levels.

Studies of unborn animals indicate that high concentrations of xylene may cause increased numbers of deaths, and delayed growth and development. In many instances, these same concentrations also cause damage to the mothers. It is unknown if xylene harms the unborn child if the mother is exposed to low levels of xylene during pregnancy.

The International Agency for Research on Cancer (IARC) has determined that xylene is not classifiable as to its carcinogenicity in humans. Human and animal studies have not shown xylene to be carcinogenic, but these studies are not conclusive and do not provide enough information to conclude that xylene does not cause cancer.

The Clean Air Act Amendments of 1990 list xylene as a hazardous air pollutant. Because xylene can cause adverse health affects other than cancer, it is listed in Table I of Rule 1401.

Methyl Ethyl Ketone

The primary use of methyl ethyl ketone, accounting for approximately 63 percent of all use, is as a solvent in protective coatings. It is also used as a solvent in printing inks, paint removers, and other cleaning products; in the production of magnetic tapes; and in dewaxing lubricating oil. Methyl ethyl ketone is used as a chemical intermediate in several reactions, including condensation; halogenation; ammonolysis; and oxidation. Small amounts of methyl ethyl ketone are also used as a sterilizer for surgical instruments, hypodermic needles, syringes, and dental instruments; as an extraction solvent for hardwood pulping and vegetable oil; and as a solvent in pharmaceutical and cosmetic production.

Breathing MEK for short periods of time, such as when painting in a poorly vented area, can adversely affect the nervous system. Effects range from headaches, dizziness, nausea, and numbness in fingers and toes to unconsciousness. MEK vapor irritates the eyes, the nose, and the throat. Direct, prolonged contact with liquid methyl ethyl ketone irritates the skin and damages the eyes. Human health effects associated with breathing or otherwise consuming smaller amounts of methyl ethyl ketone over long periods of time are not known. Workers have developed dermatitis, upset stomachs, loss of appetite, headaches, dizziness, and weakness as a result of repeated exposure to MEK. Laboratory studies show that exposure to large amounts of MEK in air causes animals to give birth to smaller offspring. Studies also show that repeat exposure to large amounts of MEK in air causes adverse liver and kidney effects in animals. The 1990 Clean Air Act Amendments list methyl ethyl ketone as a hazardous air pollutant.

Ethanol (Ethyl Alcohol)

Ethanol (ethyl alcohol) is used as a solvent and in making many commercial products. Ethanol vapors are an irritant of the eyes and respiratory system at 5,300 - 10,600 ppm. Vapor concentrations above 20,000 ppm are considered intolerable. The no-effect level for irritation is considered to be 1,000 ppm. Inhalation of large concentrations of ethanol causes narcosis, ataxia and incoordination. Death occurs at high doses from central nervous system depression. Inhalation of 10,000 – 30,000 over eight hours or more has caused death to rats. Chronic adverse effects on the liver have been observed in both animals and humans. Alcohol hepatitis and cirrhosis are characteristic of alcohol abuse. Ethanol has not been demonstrated to be carcinogenic; however, may be a promoter or co-carcinogen in animals concurrently exposed to other carcinogens. Retardations of growth and development, physical malformations, and behavioral and cognitive problems have been established from ethanol consumption during pregnancy, but have not been reported after workplace exposures by any route.

Methylene Chloride (Dichloromethane)

Methylene chloride (dichloromethane) has been used as a solvent, blowing and cleaning agent in polyurethane foam, plastic, and paint stripping operations. Methylene chloride has been phased out of most consumer products. Methylene chloride vapor is an irritant to the eyes, respiratory system and skin. It is a central nervous system depressant. Exposure may cause decreased visual and auditory function, headache, nausea and vomiting. High exposures may cause pulmonary edema, cardiac arrhythmia, and loss of consciousness. Chronic exposure may cause bone marrow, liver and kidney toxicity. EPA has classified methylene chloride in Group B2: Probable human carcinogen. AB 1807 and Proposition 65 list methylene chloride as a carcinogen and a toxic air contaminant.

Control of TACs Under the TAC Identification and Control Program

California's TAC identification and control program, adopted in 1983 as Assembly Bill (AB) 1807, is a two-step program in which substances are identified as TACs, and airborne toxic control measures (ATCMs) are adopted to control emissions from specific sources. ARB has adopted a regulation designating all 188 federal HAPs as TACs.

ATCMs are developed by ARB and implemented by the SCAQMD and other air districts through the adoption of regulations of equal or greater stringency. Generally, the ATCMs reduce emissions to achieve exposure levels below a determined health threshold. If no such threshold levels are determined, emissions are reduced to the lowest level achievable through the best available control technology unless it is determined that an alternative level of emission reduction is adequate to protect public health.

Under California state law, a federal NESHAP automatically becomes a state ATCM, unless CARB has already adopted an ATCM for the source category. Once a NESHAP becomes an ATCM, CARB and the air pollution control or air quality management district have certain responsibilities related to adoption or implementation and enforcement of the NESHAP/ATCM.

Control of TACs Under the Air Toxics "Hot Spots" Act

The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588) establishes a state-wide program to inventory and assess the risks from facilities that emit TACs and to notify the public about significant health risks associated with the emissions. Facilities are phased into the AB 2588 program based on their emissions of criteria pollutants or their occurrence on lists of toxic emitters compiled by the SCAQMD. Phase I consists of facilities that emit over 25 tons per year (tpy) of any criteria pollutant and facilities present on the SCAQMD's toxics list. Phase I facilities entered the program by reporting their air TAC emissions for calendar year 1989. Phase II consists of facilities that emit between 10 and 25 tpy of any criteria pollutant, and submitted air toxic inventory reports for calendar year 1990 emissions. Phase III consists of certain designated types of facilities which emit less than 10 tpy of any criteria pollutant, and submitted inventory reports for calendar year 1991 emissions. Inventory reports are required to be updated every four years under the state law.

In October 1992, the SCAQMD Governing Board adopted public notification procedures for Phase I and II facilities. These procedures specify that AB 2588 facilities must provide public notice when exceeding the following risk levels:

- Maximum Individual Cancer Risk: > 10 in 1 million (10×10^{-6})
- Total Hazard Index: > 1.0 for TACs except lead, or > 0.5 for lead

Public notice is to be provided by letters mailed to all addresses and all parents of children attending school in the impacted area. In addition, facilities must hold a public meeting and provide copies of the facility risk assessment in all school libraries and a public library in the impacted area.

The SCAQMD continues to complete its review of the health risk assessments submitted to date and may require revision and resubmission as appropriate before final approval. Notification will be required from facilities with a significant risk under the AB 2588 program based on their initial approved health risk assessments and will continue on an ongoing basis as additional and subsequent health risk assessments are reviewed and approved.

Control of TACs With Risk Reduction Audits and Plans

Senate Bill (SB) 1731, enacted in 1992 and codified at Health and Safety Code Sections 44390 et seq., amended AB 2588 to include a requirement for facilities with significant risks to prepare and implement a risk reduction plan which will reduce the risk below a defined significant risk level within specified time limits. SCAQMD Rule 1402 - Control of Toxic Air Contaminants From Existing Sources, was adopted on April 8, 1994, to implement the requirements of SB 1731.

In addition to the TAC rules adopted by SCAQMD under authority of AB 1807 and SB 1731, the SCAQMD has adopted source-specific TAC rules, based on the specific level of TAC emitted and the needs of the area. These rules are similar to the state's ATCMs because they are source-specific and only address emissions and risk from specific compounds and operations.

SCAQMD Rule 1401

New and modified sources of toxic air contaminants in the SCAQMD are subject to Rule 1401 - New Source Review of Toxic Air Contaminants and Rule 212 - Standards for Approving Permits. Rule 212 requires notification of the SCAQMD's intent to grant a permit to construct a significant project, defined as a new or modified permit unit located within 1000 feet of a school (a state law requirement under AB 3205), a new or modified permit unit posing an maximum individual cancer risk of one in one million (1×10^{-6}) or greater, or a new or modified facility with criteria pollutant emissions exceeding specified daily maximums. Distribution of notice is required to all addresses within a 1/4-mile radius, or other area deemed appropriate by the SCAQMD. Rule 1401 currently controls emissions of carcinogenic and non-carcinogenic (health effects other than cancer) air contaminants from new, modified and relocated sources by specifying limits on cancer risk and hazard index (explained further below), respectively.

Cancer Health Risks from Toxic Air Contaminants

One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. The carcinogenic potential of TACs is a particular public health concern because it is currently believed by many scientists that there is no "safe" level of exposure to carcinogens. Any exposure to a carcinogen poses some risk of causing cancer. It is currently estimated that about one in four deaths in the United States is attributable to cancer. About two percent of cancer deaths in the United States may be attributable to environmental pollution (Doll and Peto 1981). The proportion of cancer deaths attributable to air pollution has not been estimated using epidemiological methods.

Noncancer Health Risks from Toxic Air Contaminants

Unlike carcinogens, for most noncarcinogens it is believed that there is a threshold level of exposure to the compound below which it will not pose a health risk. The Cal-EPA Office of Environmental Health Hazard Assessment develops Reference Exposure Levels (RELs) for TACs which are health-conservative estimates of the levels of exposure at or below which health effects are not expected. The noncancer health risk due to exposure to a TAC is assessed by comparing the estimated level of exposure to the REL. The comparison is expressed as the ratio of the estimated exposure level to the REL, called the hazard index (HI).

BASELINE EMISSION INVENTORY

Emission Inventory

To assess the emissions impacts of PAR 1171, staff used the emissions data presented in the staff report for the 2002 amendment to Rule 1171. At that time, the 2002 VOC emissions were used as baseline inventory and the 2003 VOC emissions inventory was derived for each cleaning category by applying the emission reductions expected from the January 1, 2003 VOC limits established during the amendment.

In establishing the 2004 baseline VOC emissions inventory for this rule amendment, staff adjusted for growth (2002-2003) the 2003 VOC emissions using the assumed AQMP average annual growth rate of 1.1 percent for solvent cleaning activity. The same growth rate was applied in determining the 2004 baseline inventories for all cleaning categories. A sample calculation is shown below for Coating and Adhesive Application Equipment category (excluding architectural coating application equipment):

2002 VOC Emissions = 3.03 tons/day
Average Annual Growth Rate = 1.1%
Adjusted 2003 VOC Emissions = (3.03 tons/day) x (1.011) = 3.06 tons/day
2004 VOC Baseline Emissions = (3.06 tons/day) x (1.011) = 3.10 tons/day

A summary of the current and past VOC emissions from each cleaning category are shown in Table 3-3. Emission reductions can be calculated from the declining emissions inventory in Table 3-3 which is a result of the August 2002 amendments to Rule 1171 as well as the annual growth rate for the affected cleaning solvent categories. Because the annual growth rate is included in Table 3-3, the net reduction in VOC emission from year 2002 to 2003 is 1.71 tons per day (22.35 tons per day – 20.64 tons per day) instead of 1.94 tons per day anticipated from the August 2002 amendments.

TABLE 3-3

Rule 1171 VOC Emissions Inventory (tons per day) for Years 2002 through 2004

Solvent Cleaning Activity	2002 Emissions Inventory (tons/day)	2003 Emissions Inventory (tons/day)	2004 Emissions Inventory (tons/day)
(A) Product Cleaning & Surface Preparation			
(i) General	2.69	1.36	1.37
(ii) Electrical/Electronic Apparatus & Components	0.50	0.51	0.51
(iii) Medical Devices & Pharmaceuticals	0.72	0.73	0.74
(B) Repair & Maintenance			
(i) General	0.42	0.21	0.21
(ii) Electrical/Electronic Apparatus & Components	0.10	0.10	0.10
(iii) Medical Devices & Pharmaceuticals			
(A) Tools, Machinery & Equipment	0.39	0.39	0.40
(B) General Work Surfaces	0.30	0.30	0.31
(C) Coating/Adhesive Application Equipment			
(i) Excluding Architectural Coating Equipment	3.03	3.06	3.10
(ii) Architectural Coating Equipment	8.59	8.68	8.78
(D) Ink Application Equipment			
(i) General	0.09	0.05	0.05
(ii) Flexo or Gravure	0.50	0.25	0.26
(iii) Litho/Letterpress			
(A) Roller Wash–Step 1	0.26	0.26	0.27
(B) Roller Wash–Step 2/Blanket Wash & On-Press Components	3.30	3.34	3.37
(C) Removable Press Components	0.05	0.03	0.03
(D) Ink Application Equipment			
(iv) Screen Printing	1.04	1.05	1.06
(v) UV Ink	0.16	0.16	0.16
(vi) Specialty Flexo	0.11	0.11	0.11
(E) Polyester Resin Application Equipment	0.10	0.05	0.05
TOTAL	22.35	20.64	20.88

CHAPTER 4

ENVIRONMENTAL IMPACTS AND MITIGATION

Introduction

Potential Environmental Impacts and Mitigation Measures

Environmental Impacts Found Not To Be Significant

Consistency

INTRODUCTION

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

The CEQA Guidelines state that the degree of specificity required in a CEQA document depends on the type of project being proposed (CEQA Guidelines §15146). The detail of the environmental analysis for certain types of projects cannot be as great as for others. For example, the environmental document for projects, such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan, should focus on the secondary effects that can be expected to follow from the adoption or amendment, but the analysis need not be as detailed as the analysis of the specific construction projects that might follow. As a result, this ~~Draft~~Draft SEA analyzes impacts on a regional level and impacts on the level of individual industries or individual facilities where feasible.

The categories of environmental impacts recommended for evaluation in a CEQA document are established by CEQA (Public Resources Code, §21000 et seq.) and the CEQA Guidelines as promulgated by the State of California Secretary of Resources. Under the CEQA Guidelines, there are 17 environmental categories in which potential adverse impacts from a project are evaluated. Projects are evaluated against the environmental categories in an environmental checklist and those environmental categories that may be adversely affected by the project are further analyzed in the appropriate CEQA document.

POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A Notice of Preparation and an Initial Study (NOP/IS), including an environmental checklist, were prepared for the 1999 amendments to Rule 1171 when the VOC content limit for the affected solvent cleaning categories were originally adopted to be lowered. The proposed amendments represent a modification of the Rule 1171 amendments adopted in 1999 that delay the final compliance date for specified cleaning solvents and no new requirements are proposed. that would trigger the need to solicit guidance from responsible and/or trustee parties. SCAQMD's review of the proposed project shows that the project would have a significant adverse effect on the environment. The following sections include the analyses of the potential adverse environmental impacts of implementing the proposed amendments.

Only one environmental impact area, air quality, was identified as a potentially significant adverse effect of implementing the proposed project. The environmental impact analysis incorporates a “worst-case” approach. This entails the premise that whenever the analysis requires that assumptions be made, those assumptions that result in the greatest adverse impacts are typically chosen. This method ensures that all potential effects of the proposed project are documented for the decision-makers and the public.

Accordingly, the following analyses use a conservative or “worst-case” approach for analyzing the potentially significant adverse environmental impacts associated with the implementation of the proposed project.

Air Quality

Significance Criteria

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

TABLE 4-1
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	Construction	Operational
NO _x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
SO _x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs) and Odor Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Hazard Index ≥ 1.0 (project increment) Hazard Index ≥ 3.0 (facility-wide)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality for Criteria Pollutants ^(a)		
NO ₂ 1-hour average annual average	In attainment; significant if project causes or contributes to an exceedance of any standard: 0.25 ppm (state) 0.053 ppm (federal)	

TABLE 4-1 (CONCLUDED)
SCAQMD Air Quality Significance Thresholds

Ambient Air Quality for Criteria Pollutants ^(a)	
PM10 24-hour average annual geometric average annual arithmetic mean	10.4 µg/m ³ (recommended for construction) ^(b) 2.5 µg/m ³ (operation) 1.0 µg/m ³ 20 µg/m ³
Sulfate 24-hour average	1 µg/m ³
CO 1-hour average 8-hour average	In attainment; significant if project causes or contributes to an exceedance of any standard: 20 ppm (state) 9.0 ppm (state/federal)
^(a) Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated. ^(b) Ambient air quality threshold based on SCAQMD Rule 403. ppm = parts per million; µg/m ³ = microgram per cubic meter; lbs/day = pounds per day; ≥ greater than or equal to	

Construction Emissions

PROJECT-SPECIFIC IMPACT: The Final EA prepared for the 1999 amendments to Rule 1171 did not require construction because the affected operators were simply using different cleaning solvents. Since the final VOC content limit does not change in this PAR 1171, implementing the proposed project will also not trigger any construction activity. Cleaning solvents that already comply with the proposed interim VOC content limit are currently available and are expected to be used until the final VOC content limit becomes effective in 2006. As a result, it is not anticipated that PAR 1171 will require process or equipment alteration at affected facilities. Therefore, no add-on control equipment or additional employees will be required from the implementation of the proposed amendments. Thus, no construction emissions or adverse air quality impacts from construction are expected as a result of implementing the proposed project.

Operational Emissions

PROJECT-SPECIFIC IMPACT: Three potential air quality issues arise relative to the implementing PAR 1171. Due to the proposed amendments, the following has potential to occur: 1) a delay of originally anticipated VOC emission reductions due to an extension in complying with the final VOC content limit for certain solvent cleaning categories and an extension of the sunset date for two existing exemptions; 2) permanent forgone emission reductions from establishing five ~~three~~ new limited exemptions for certain applications that would not have otherwise occurred under the current Rule 1171 requirements; or 3) the creation of adverse localized effects such as increased exposure to toxics. ~~There will be a~~

~~new air quality benefit from the proposed project as the current exemption from the rule requirements for the cleaning of solar cells, laser hardware, scientific instruments and high precision optics will be lifted as of the date of adoption.~~

Delay in VOC Emission Reductions and Forgone Emission Reductions

Emission reductions from PAR 1171 and the delay of emission reductions result from the proposed amendments to the requirements for certain solvent cleaning applications. Emission reductions are achieved on July 1, 2005, from solvent cleaning activities implementing final VOC content limits (e.g., electrical apparatus components/electronic components, coatings/adhesives application equipment, specialty flexographic printing). Also on July 1, 2005, certain solvent cleaning applications (e.g., lithographic/letterpress ink application equipment, screen printing ink application equipment, UV/EB ink application equipment) will be required to comply with an interim VOC content limit which will result in emission reductions compared to the existing emissions from these categories. PAR 1171 would allow these latter solvent cleaning categories an additional year to comply with the final VOC content limits providing all originally anticipated emission reductions by July 1, 2006. Table 4-2 outlines the emission reductions achieved from implementing PAR 1171 on July 1, 2005 and on July 1, 2006.

To calculate interim and final emission reductions shown in Table 4-2, the following equations were used:

<p style="text-align: center;">INTERIM EMISSION REDUCTION EQUATION</p> <p>Interim 2005 Emission Reduction (<i>tons per day</i>) = 2004 VOC emissions x [1 – (interim limit / current limit)]</p> <p>Example of Interim Emission Reduction (<i>using lithographic roller wash, step 1</i>): 0.27 tons/day x [1 – (500 g/l / 600 g/l)] = 0.05 tons/day</p> <p style="text-align: center;">FINAL EMISSION REDUCTION EQUATION</p> <p>Final 2006 Emission Reduction (<i>tons per day</i>) = (2004 VOC emissions – interim emission reduction) x [1 – (final limit / interim limit)]</p> <p>Example of Final Emission Reduction (<i>using lithographic roller wash, step 1</i>): (0.27 tons/day - 0.05 tons/day) x [1 – (100 g/l / 500 g/l)] = 0.18 tons/day</p>
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As depicted in both Tables 4-2 and 4-3, extending the final compliance date for certain solvent cleaning applications will cause a delay in emission reductions of 2.52 tons per day, or 5,040 pounds of VOC per day. In addition, the proposed project will establish ~~five~~ three new limited exemptions and extend two existing exemptions, listed in Table 4-3 which will further add to a delay in emission reductions projected in the 1999 amendments to Rule 1171 as well as generate new foregone emission reductions.

TABLE 4-2

Rule 1171 VOC Emissions Reductions (tons per day) from Affected Solvent Cleaning Categories

Solvent Cleaning Category	2004 VOC Emission (tons per day)	Current VOC Content Limit (grams per liter)	2005 VOC Content Limit (grams per liter)	2005 Emission Reduction (tons per day)	2006 VOC Content Limit (grams per liter)	Delayed 2006 Emission Reductions (tons per day)
WILL DELAY FINAL COMPLIANCE DATE AND COMPLY WITH INTERIM LIMIT						
Litho/Letterpress: Roller Wash–Step 1	0.27	600	500	0.05	100	0.18
Litho/Letterpress: Roller Wash-Step 2/Blanket Wash & On-Press Components	3.37	800	500	1.26	100	1.69
Screen Printing Ink App.	1.06	750	500	0.35	100	0.57
UV/EB Ink Application	0.16	800	500	0.06	100	0.08
WILL MAINTAIN FINAL COMPLIANCE DATE						
Product Cleaning & Surface Preparation: Electrical/ Electronic Apparatus & Components	0.51	500	100	0.41	n/a	n/a
Repair & Maintenance: Electrical/ Electronic Apparatus & Components	0.10	900	100	0.09	n/a	n/a
Coating/Adhesive Application Equipment (excluding Architectural Coating Equipment)	3.10	550	25	2.96	n/a	n/a
Architectural Coating Equipment	8.78	550	25	7.59	n/a	n/a
Specialty Flexography Printing	0.11	600	100	0.09	n/a	n/a
Emission Reductions (tons per day)				12.86		2.52

As shown in Table 4-3, these emissions total approximately 2.52 ~~three~~ tons per day of delayed VOC emission reductions from extending the final compliance date and exemption dates, and 0.0215 tons per day (or 43 ~~42~~ pounds per day) of permanently foregone VOC emission reductions.

A VOC emission reduction delay of approximately 2.52 ~~three~~ tons per day (5,040 ~~6,050~~ pounds per day) exceeds the SCAQMD's CEQA significance operational threshold for VOCs of 55 pounds per day, thus, the proposed project will have a significant adverse air quality impact on the environment. Table 4-3 outlines the specific foregone and delayed emission reductions and expected final compliance dates. ~~Not listed in Table 4-3 is the air quality benefit from removing the exemption for the cleaning of solar cells, laser hardware, scientific instruments and high precision optics. It is expected that the overall VOC emissions reduced from eliminating the exemption is approximately two pounds per day.~~

TABLE 4-3

Delay of Emission Reductions and Expected Final Compliance Dates from PAR 1171

Solvent Cleaning Category	July 1, 2006 Emission Reductions (tons per day)	June 30, 2006 Emission Reductions (tons per day)	December 31, 2008 Emission Reductions (tons per day)	Forgone Emission Reductions (tons per day)
EXTENDED FINAL COMPLIANCE DATE				
Litho/Letterpress: Roller Wash-Step 1	0.18	--	--	--
Litho/Letterpress: Roller Wash-Step 2/Blanket Wash & On-Press Components	1.69	--	--	--
Screen Printing Ink App.	0.57	--	--	--
UV/EB Ink Application	0.08	--	--	--
LIMITED EXEMPTIONS (WITH SUNSET DATES)				
UV Lamps	--	0.005 ^a	--	--
Metering rollers, dampening rollers, printing plates (at 800 grams per liter)	--	0.5 ^b	--	--
Photocurable resins from stereolithography equipment and models	--	--	0.00025	--
Solvent-borne fluoropolymer coating (at 900 grams per liter)	--	--	<u>0.0024</u>	--
PERMANENT LIMITED EXEMPTIONS				
Adhesive application equipment used for thin metal laminating operations (at 950 grams per liter)	--	--	--	0.0015
Electronic or electrical cable (at 400 grams per liter)	--	--	--	0.0195

TABLE 4-3 (CONCLUDED)

Delay of Emission Reductions and Expected Final Compliance Dates from PAR 1171

Solvent Cleaning Category	July 1, 2006 Emission Reductions (tons per day)	June 30, 2006 Emission Reductions (tons per day)	December 31, 2008 Emission Reductions (tons per day)	Forgone Emission Reductions (tons per day)
PERMANENT LIMITED EXEMPTIONS				
<u>Printed circuit board rework or touch-up cleaning (at 800 grams per liter)</u>	--	--	--	<u>0.0005</u>
TOTAL FOREGONE AND DELAYED VOC EMISSION REDUCTIONS (tons per day)	2.52	0.505^c	<u>0.00265</u> <u>0.00025</u>	<u>0.0215</u>

a – reduction is a subset of UV/EB ink application

b – reduction is a subset of Litho/Letterpress: Roller Wash-Step 2

c – reduction is a subset of 2.52 tons per day

Potential Toxic Impacts – From Maintaining Compliance Dates

The Final EA prepared for the 1999 amendments evaluated exposure to TACs resulting from reformulating conventional cleaning solvents with replacement cleaning solvents to comply with the final VOC content limits currently in Rule 1171. That analysis concluded that replacement cleaning solvents are generally less toxic than conventional cleaning solvents. As a result, human health impacts from reformulating cleaning solvents with replacement solvent would not be significant. Since the main effect of PAR 1171 is to delay the final compliance date for specified cleaning solvents and no additional requirements regarding the VOC content limits of these cleaning solvents are being proposed, the conclusion from the Final EA for the 1999 amendments to Rule 1171 that human health impact from formulating cleaning solvents with replacements solvents will not create significant adverse impacts continues to apply.

The final EA for PAR 1171 in 1999 concluded there is no substantive evidence that shows the use of those solvents identified as possible replacements would result in significant adverse toxic air contaminant impacts. The replacement solvents are for the most part common chemicals used in a wide variety of industrial and even consumer applications. Their widespread use is assumed to be indicative of the ability to use these compounds in a safe manner. Current cleaning formulations contain materials that are as toxic, or more toxic, than formulations expected to be used to comply with the proposed amendments. Thus, the possible increased use of toxics in reformulated cleaners will generally be balanced by a concurrent decrease in the use of toxic materials in currently used cleaners, and toxic air contaminant impacts would not be expected to change significantly from existing conditions. According to the latest studies conducted for the technological assessment, the new compliant cleaners are being formulated with water-based solutions, soy-based (composed of methyl esters), acetone, methyl acetate, and isopropyl alcohol (IPA) blends with acetone and

water.

Potential Toxic Impacts – From Requiring Interim Compliance Dates

Proposed interim VOC content limits can be complied with existing products and will, therefore, not require a change in the process or equipment at the affected facilities. Generally, the interim formulations will use similar alternative solvents as currently being tested to comply with the final compliance VOC content limits. Since the new interim limits do not require as low a VOC content limit, the formulations do not require as much of an alternative solvent to comply with the rule. As noted in Chapter 2, the solvent cleaners that will comply with the interim VOC content limits are being formulated with such chemicals as propylene glycol monomethyl ethers, di-propylene glycol monomethyl ethers (DPM), methyl esters (soy-based), acetone, 3-ethoxypropanoic acid which is an ethyl ester, and possibly IPA blends. According to the State of California, Department of Health Services, Hazard Evaluation System & Information Services (HESIS), esters used in soy cleaners, based on available data and their structure, were likely to have low toxicity. With regards to the remaining solvent alternatives, the following toxicity information is known.

Propylene Glycol Monomethyl Ethers

Propylene glycol monomethyl ether (PGME) is a colorless liquid which has critical liver effects in rats and the hazard index target is the alimentary system (liver). Propylene glycol is used as a solvent for cellulose, acrylics, dyes inks and stains. Thus, the primary use of PGME is in lacquers and paints. Toxicity of propylene glycol ether is lower than ethylene glycol ether, and thus, it can be regarded as relatively innocuous or low toxic. It can be used as or for chemical intermediate, brake liquid, detergent, frost resistant solvent as well as solvent for high grade paint. Use of PGME is anticipated to increase due to its low systemic toxicity.

No reports or studies of human toxicity following chronic exposure to PGME were located in the literature. Slight eye irritation was reported by two of six human volunteers exposed to 100 ppm PGME for 2 hours. These subjects were exposed for a total of three and a half hours during which no decrement in visual acuity, coordinatoion, neurological responses or reaction time measured.

Ethylene glycol momomethyl ethers (EGME), a structurally related compound to PGME, exerts considerable toxicity on the blood, thymus, testes, and developing fetus. The toxicity of EGME has been linked to its primary metabolite, methoxyacetic acid. Recent comparative toxicity and metabolism studies, however, indicate that the relatively low systemic toxicity exerted by PGME is due to its different metabolites.

Acetone

Acetone is a manufactured chemical that is also found naturally in the environment. It occurs naturally in plants, trees, volcanic gases, forest fires, and as a product of the breakdown of body fat. It is present in vehicle exhaust, tobacco smoke, and landfill sites. Acetone is used to make plastic, fibers, drugs, and other chemicals. It is also used to dissolve other substances. Industrial processes contribute more acetone to the environment than natural processes.

Acetone is absorbed into the bloodstream and carried to all the organs in the body. If it is a small amount, the liver breaks it down to chemicals that are not harmful and uses these chemicals to make energy for normal body functions. Breathing moderate-to-high levels of acetone for short periods of time, however, can cause nose, throat, lung, and eye irritation; headaches; light-headedness; confusion; increased pulse rate; effects on blood; nausea; vomiting; unconsciousness and possibly coma; and shortening of the menstrual cycle in women. Swallowing very high levels of acetone can result in unconsciousness and damage to the skin in the mouth. Skin contact can result in irritation and damage to your skin.

Health effects from long-term exposures are known mostly from animal studies. Kidney, liver, and nerve damage, increased birth defects, and lowered ability to reproduce (males only) occurred in animals exposed long-term. It is not known if these same effects would occur in people. California does not list acetone as a reproductive toxicant under Proposition 65.

The Department of Health and Human Services, the International Agency for Research on Cancer, and the EPA have not classified acetone for carcinogenicity. Acetone does not cause skin cancer in animals when applied to the skin. It is unknown, however, if breathing or swallowing acetone for long periods will cause cancer. Studies of workers exposed to it found no significant risk of death from cancer.

Acetone has not been identified by CARB as a toxic air contaminant (TAC) under AB 1807, but is listed in Category 3 (substances which are being evaluated for entry into Category 2) on the TAC Identification List. Acetone is also included in the list of “Substances for which emissions must be quantified” under AB 2588 Air Toxics “Hot Spots” Program. The 1990 Clean Air Act Amendments do not list acetone as a hazardous air pollutant.

Isopropyl Alcohol

Isopropyl alcohol is used as a solvent and in making many commercial products. Isopropyl alcohol is an irritant of the eyes and mucous membranes. By analogy with effects seen in animals, it may cause central nervous system depression in humans at very high concentrations. Exposure to 400 ppm isopropyl alcohol for three to five minutes resulted in mild irritation of the eyes, nose, and throat; at 800 ppm, these symptoms were intensified.

An oral dose of 25 milliliters (ml) in 100 ml of water produced hypotension, facial flushing, bradycardia, and dizziness. A postmortem examination in a case of massive ingestion revealed extensive hemorrhagic tracheobronchitis, bronchopneumonia, and hemorrhagic pulmonary edema. Prolonged skin contact with isopropyl alcohol caused eczema and sensitivity. Delayed dermal absorption is attributed to a number of pediatric poisonings that have occurred following repeated or prolonged sponge bathing with isopropyl alcohol to reduce fever. In several cases symptoms included respiratory distress, stupor, and coma. Epidemiological studies suggested an association between isopropyl alcohol and paranasal sinus cancer; however, subsequent analysis suggests that the "strong-acid" process used to manufacture isopropyl alcohol may be responsible for these cancers. The International Agency for Research on Cancer has concluded that the evidence for the carcinogenicity of this process is adequate but that the evidence for isopropyl alcohol itself is inadequate.

Based on the comparisons of toxicity and regulatory exposure limits, it is concluded that the increased use of toxics in reformulated cleaners will generally be balanced by a concurrent decrease in the use of toxic materials in currently used cleaners. Toxic air contaminant impacts would not be expected to change significantly from existing conditions and, therefore, is considered not significant.

PROJECT SPECIFIC MITIGATION MEASURES: No feasible mitigation measures were identified.

REMAINING IMPACTS: The permanent foregone VOC emission reductions are 0.021 tons per day which is small compared to the approximately 2.52 ~~three~~ tons per day which will be achieved at the final compliance date. Since PAR 1171 will provide an overall long-term air quality benefit when the VOC reductions are realized, no significant adverse impacts remain.

CUMULATIVE IMPACTS: In general, the preceding analysis concluded that air quality impacts from construction activities and toxic air contaminants would not be significant from the implementation of the proposed project. By temporarily delaying compliance with the VOC content requirements, the delay of VOC emission reductions exceed the SCAQMD's CEQA significance operational threshold. However, the delay of VOC emission reductions from the PAR 1171 will not result in a significant adverse cumulative impact because the foregone VOC emission reductions will be less than significant and very small compared to the emission reductions achieved after July 1, 2006, which will meet the expected goals in the 1999 amendments and achieve an overall air quality benefit.

Cumulative air quality impacts from the proposed amendments, previous amendments and all other AQMP control measures considered together are not expected to be significant because implementation of all AQMP control measures is expected to result in net emission reductions and overall air quality improvement. This determination is consistent with the conclusion in the 2003 AQMP EIR that cumulative air quality impacts from all AQMP control measures are not expected to be significant (SCAQMD, 2003). Indeed, air quality

modeling performed for the 2003 AQMP indicated that the Basin would achieve all federal ambient air quality standards by the year 2010 (SCAQMD, 2003). Future VOC control measures will assist in achieving the goal of federal ozone attainment by 2010.

Based on regional modeling analyses performed for the 2003 AQMP, implementing control measures contained in the 2003 AQMP, in addition to the air quality benefits of the existing rules, is anticipated to bring the district into attainment with all national and most state ambient air quality standards by the year 2010. Therefore, there will be no significant cumulative adverse air quality impacts from implementing PAR 1171.

CUMULATIVE IMPACT MITIGATION: No cumulative impact mitigation measures are required

ENVIRONMENTAL IMPACTS FOUND NOT TO BE SIGNIFICANT

An EA with no significant adverse impacts was originally prepared for the 1999 amendments to Rule 1171, describing anticipated environmental impacts resulting from implementing the 1999 amendments to Rule 1171. It was concluded in the Final EA that the environmental areas identified in the following subsections would not be significantly adversely affected by PAR 1171. The currently proposed amendments are not expected to generate significant adverse environmental impacts in the following environmental areas for the same reasons given in the Final EA for the 1999 amendments to Rule 1171. A brief discussion of why PAR 1171 will not significantly adversely affect each of these environmental areas is provided in the following sections.

Aesthetics

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that because the 1999 amendments did not require construction activities at any affected facilities. As a result, significant adverse aesthetics impacts were not expected to occur. Similarly, PAR 1171 is not expected to require construction to install control equipment because the primary means of compliance is through product reformulation. Similarly, PAR 1171 does not require the construction of any new buildings or other structures. As a result, PAR 1171 will have not adversely affect or obstruct scenic resources or degrade the existing visual character of a site, including but not limited to, trees, rock outcroppings, or historic buildings. Also, additional light or glare would not be created which would adversely affect day or nighttime views in the area since no light generating equipment would be required to comply with proposed rule.

Agricultural Resources

In the September 1999 Final EA for the 1999 amendments to Rule 1171, agricultural resources was a subset of land use and planning. The conclusion in that document regarding effects on agricultural resources was that significant adverse impacts would not occur

because the 1999 amendments were not expected to affect land uses, including agricultural uses, in any way. Implementing PAR 1171 will not result in any new construction of buildings or other structures. Solvents cleaning activity primarily is used at sites where construction has already occurred, sites such as the construction of residential, commercial, or industrial land use projects. As a result, implementing PAR 1171 will not require converting any classification of farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract. Based upon this consideration, significant adverse agricultural resource impacts are not anticipated as a result of implementing PAR 1171.

Biological Resources

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse biological resource impacts would not occur because the proposed project did not foster growth or development that could affect biological resources directly or indirectly. PAR 1171 is not expected to require construction activities to install control equipment because the primary means of compliance is through product reformulation. Similarly, PAR 1171 does not require the construction of any new buildings or other structures. As a result, implementing PAR 1171 is not expected to adversely affect in any way habitats that support riparian habitat, are federally protected wetlands, or are migratory corridors. Similarly, since implementing PAR 1171 will not require construction of any structures, special status plants, animals, or natural communities are not expected to be adversely affected. It is not envisioned that PAR 1171 will conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans because it does not require construction of any structures or new development in undeveloped areas. Additionally, PAR 1171 will not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan for the same reason.

Cultural Resources

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse cultural resource impacts would not occur because the proposed project would not require construction or grading activities that could affect cultural resources. There are existing laws in place that are designed to protect and mitigate potential impacts to cultural resources. Disturbance of cultural resources are likely to occur during construction and site preparation of a project. Since construction-related activities associated with the implementation of PAR 1171 are not expected, no impacts to historical or cultural resources are anticipated to occur as a result of implementing the proposed project. PAR 1171 is not expected to require physical changes to the environment, which may cause a substantial adverse change to a historical, archaeological resource, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside a formal cemetery. Based upon these considerations,

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significant adverse cultural resources impacts are not expected from the implementation of PAR 1171.

Energy

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse energy impacts would not occur because using low VOC cleaning solvents does not require energy intensive equipment. The use of reformulated cleaning solvents is expected to create little or no demand for energy at affected facilities because cleaning equipment requires little or no energy to occur. As a result, PAR 1171 would not conflict with energy conservation plans, use non-renewable resources in a wasteful manner, or result in the need for new or substantially altered power or natural gas systems. Since PAR 1171 would not require installation of control equipment or construction of any structures, it will not conflict with adopted energy conservation plans. Additionally, solvent cleaning operations are expected to comply with any relevant existing energy conservation plans and standards to minimize operating costs. In light of the discussion above, PAR 1171 would not create any significant adverse effects on peak and base period demands for electricity, natural gas, or other forms of energy, or adversely affect energy producers or energy distribution infrastructure.

Geology and Soils

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse geology and soils impacts would not occur because the proposed project only affects cleaning operations at affected facilities and does not require construction or grading. There are no provisions in the proposed amended rule, such as construction of new structures, that would call for the disruption or overcovering of soil, changes in topography or surface relief features, the erosion of beach sand, or a change in existing siltation rates. In addition, the proposed amended rule will not expose persons or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. Since PAR 1171 does not require construction of any structures, no soil disruption from excavation, grading, or filling activities; changes in topography or surface relief features; erosion of beach sand; or changes in existing siltation rates are anticipated from the implementation of PAR 1171. Further, PAR 1171 is not expected to require installing control equipment or construction of any structures. Furthermore, subsidence is not anticipated to be a problem since no excavation, grading, or filling activities will be required to comply with the proposed project. Further, the proposed project does not involve drilling or removal of underground products (e.g., water, crude oil, et cetera) that could produce subsidence effects. Additionally, the affected sites would be located at existing residential, commercial, or industrial sites and, therefore, are not envisioned to be prone to new landslides effects or have unique geologic features since the affected sites are expected to be located in areas where such features have already been altered or removed. In addition, since the proposed project will affect existing facilities, it is expected that persons or property will not be exposed to new impacts from expansive soils or soils incapable of supporting water

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disposal. Further, the proposed project does not involve installation of septic tanks or other alternative waste water disposal systems. The main effect of the proposed project will be a change in the formulations of materials already in use at the affected facilities.

Hazards and Hazardous Materials

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse hazards impacts would not occur because replacement cleaning solvents tend to be less hazardous than conventional (high VOC) cleaning solvents. PAR 1171 has no provisions that dictate the use of any specific material. Persons who use solvent cleaners have the flexibility of choosing the cleaning solvent best suited for their operation. It is likely that users would choose a cleaning solvent that does not pose a substantial safety hazard because of health and liability concerns. PAR 1171 establishes an interim VOC content limit higher than the final VOC content limit previously analyzed for the 1999 amendments but generally lower than the VOC content found in conventional cleaning solvents. The potential hazard impacts from reformulating to comply with the interim limits would be equivalent to or less than previously analyzed since less of the potentially hazardous solvents are needed to reformulate. That analysis, summarized in the following paragraphs, concluded the hazards impact to be not significant.

The analysis for the 1999 amendment to Rule 1171 which required the final lower VOC content limit concluded that no other replacement solvent formulations were identified that have a lower flash point or higher flammability rating than acetone, assumed to be the primary substitute solvent. The analysis determined that as a result of being delisted as a VOC by the USEPA, CARB, and many air districts, acetone usage has been steadily increasing irrespective of the currently proposed amendments. In any event, it is likely that for some solvent cleaning categories acetone usage could increase. An increase in acetone usage may increase the number of trucks or rail cars that transport acetone within the state. However, the safety characteristics of individual trucks or rail cars that transport acetone will not be affected by the proposed amendments. The consequences (exposure effects) of an accidental release of acetone are directly proportional to the size of the individual transport trucks or rail cars and the release rate. Although the probability of an accidental release of acetone could increase, the severity of an incident involving acetone transport will not change as a result of the proposed project. This holds true for the transport of other replacement solvents.

Any increase in accidental releases of compliant acetone-based cleaning materials during transport would be expected to result in a concurrent reduction in the number of accidental releases of conventional cleaning materials. Many conventional cleaning solvents are as flammable as acetone, so there would generally be little or no net change in the hazard consequences from the reformulation of cleaning materials to comply with the proposed amendments.

Similarly, the storage or use of acetone at sites subject to Rule 1171 would not be expected to result in significant adverse hazard impacts. The flammability classifications by the NFPA are the same for acetone, methyl acetate, toluene, xylene, MEK, and ethanol. Recognizing that acetone has the lowest flash point, it still has a high lower explosive limit. Acetone vapors will not cause an explosion unless the vapor concentration exceeds 26,000 ppm. In contrast, toluene vapors can cause an explosion at 12,000 ppm; the concentration of mineral spirits or xylene vapors that could cause an explosion is even lower at 10,000 ppm.

The Uniform Fire Code and Uniform Building Code set standards intended to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulations. Local fire agencies require permits for the use or storage of hazardous materials and permit modifications for proposed increases in their use. Permit conditions depend on the type and quantity of the hazardous materials at the facility. Permit conditions may include, but are not limited to, specifications for sprinkler systems, electrical systems, ventilation, and containment. The fire departments make annual business inspections to ensure compliance with permit conditions and other appropriate regulations.

Further, all hazardous materials are expected to be used in compliance with established OSHA or Cal/OSHA regulations and procedures, including providing adequate ventilation, using recommended personal protective equipment and clothing, posting appropriate signs and warnings, and providing adequate worker health and safety training. When taken together, the above regulations provide comprehensive measures to reduce hazards of explosive or otherwise hazardous materials. Compliance with these and other federal, state and local regulations and proper operation and maintenance of equipment should ensure the potential for explosions or accidental releases of hazardous materials is not significant.

It is anticipated that the current regulatory requirements regarding flammable and otherwise hazardous materials will not need to be amended as a result of the proposed project since, in part, acetone is already widely used. Based on the preceding information, it is also expected that implementing PAR 1171 is not expected to increase or create any new hazardous emissions which would adversely affect existing/proposed schools.

Government Code §65962.5 typically refers to a list of facilities that may be subject to Resource Conservation and Recovery Act (RCRA) permits. Although some sites regulated by PAR 1171 may be on such a list, most affected sites are not expected to be on this list, and would not typically generate large quantities of hazardous waste. For any facilities affected by the proposed amended rule that are on the Government Code §65962.5 list, it is anticipated that they would continue to manage any and all hazardous materials and hazardous waste, in accordance with federal, state and local regulations.

The purpose of PAR 1171 is to achieve VOC emission reductions which will ultimately improve air quality and reduce adverse human health impact related to poor air quality.

Since solvent cleaning operations would be occurring at existing residential, industrial, or commercial facilities, implementation of PAR 1171 is not expected to increase or create any new hazardous emissions which could adversely affect public/private airports located in close proximity to the affected sites. PAR 1171 has no provisions that dictate the use of any specific solvent cleaning formulation. For some applications, persons who apply solvent cleaners may have the flexibility of choosing the compliant solvent best suited for their operations. If available, it is likely that contractors would choose a compliant formulation that does not pose a substantial safety hazard. As previously noted, it is expected that replacement cleanup solvents will generally be less toxic than currently used conventional solvents.

In addition, Health and Safety Code §25506 specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

1. Identification of individuals who are responsible for various actions, including reporting, assisting emergency response personnel and establishing an emergency response team;
2. Procedures to notify the administering agency, the appropriate local emergency rescue personnel, and the California Office of Emergency Services;
3. Procedures to mitigate a release or threatened release to minimize any potential harm or damage to persons, property or the environment;
4. Procedures to notify the necessary persons who can respond to an emergency within the facility;
5. Details of evacuation plans and procedures;
6. Descriptions of the emergency equipment available in the facility;
7. Identification of local emergency medical assistance; and
8. Training (initial and refresher) programs for employees in:
 - a. The safe handling of hazardous materials used by the business;
 - b. Methods of working with the local public emergency response agencies;
 - c. The use of emergency response resources under control of the handler; and
- d. Other procedures and resources that will increase public safety and prevent or mitigate a release of hazardous materials.

In general, every county or city and all facilities using a minimum amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include

immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area. Based on the preceding information, it is not anticipated that PAR 1171 would impair implementation of or physically interfere with an adopted or modified emergency response plan or emergency evacuation plan.

Since the use of cleaning solvents would generally be expected to occur at existing industrial or commercial solvent cleaning operations in urban areas where wildlands are typically not prevalent, risk of loss or injury associated with wildland fires is not expected as a result of implementing PAR 1171

Hydrology and Water Quality

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse hydrology and water quality impacts would not occur because use of compliant cleaning solvents was not expected to change solvent disposal practices. Research performed for the September 1999 Final EA indicated that solvent distributors typically pick up and recycle waste solvent products. Equipment used in connection with water-based coatings is already typically cleaned with normal tap water. As a result, in situations or operations where water-borne coatings are already used, increased demand for water and increased generation of wastewater are not anticipated. Besides water-based solutions, soy solutions, acetone, acetone blends and methyl acetate appear to be the most likely replacements for relatively high VOC conventional cleaning solvents. In general, it appears that cleanup solvents will be formulated with less toxic solvents than is currently the case (see the “Hazards and Hazardous Materials” discussion). As a result, substantial changes in wastewater volume and composition are not expected from facilities complying with the requirements in PAR 1171. Further, PAR 1171 is not expected to cause affected facilities to violate any water quality standard or wastewater discharge requirements since wastewater volumes associated with PAR 1171 have been previously analyzed and will remain unchanged. PAR 1171 is not expected to have significant adverse water demand and water quality impacts for the following reasons:

- The proposed project does not increase demand for water by more than 5,000,000 gallons per day.
- The proposed project does not require construction of new water conveyance infrastructure.
- The proposed project does not create a substantial increase in mass inflow of effluents to public wastewater treatment facilities.
- The proposed project does not result in a substantial degradation of surface water or groundwater quality.
- The proposed project does not result in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The proposed project does not result in alterations to the course or flow of floodwaters.

The proposed amendments to PAR 1171 would not change the existing water demand, affect groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. In addition, implementation of PAR 1171 will not increase demand for water from existing entitlements and resources, and will not require new or expanded entitlements. Therefore, no new water demand impacts are expected as the result of implementing the proposed amendments. ↗ Implementation of PAR 1171 will occur at existing facilities or sites where solvent cleaners are typically used such as industrial or commercial cleaning operations that are already paved and the drainage infrastructures are already in place. Since the proposed project does not involve construction, no new increases to storm water runoff, drainage patterns, groundwater characteristics, or flow are expected. ↗ PAR 1171 is not expected to generate construction of any new structures in 100-year flood areas as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood delineation map. As a result, PAR 1171 is not expected to expose ~~people~~persons or structures to significant new flooding risks. Finally, PAR 1171 will not affect in any way any potential flood hazards inundation by seiche, tsunami, or mud flow that may already exist relative to existing facilities.

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PAR 1171 will not increase storm water discharge, since no construction activities are required or expected at affected facilities to comply with future VOC content requirements for solvent cleaners. Therefore, no new storm water discharge treatment facilities or modifications to existing facilities will be required as a result of implementing PAR 1171. Accordingly, PAR 1171 is not expected to generate significant adverse impacts relative to construction of new storm water drainage facilities.

Land Use and Planning

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse land use and planning impacts would not occur because the proposed project primarily affected existing facilities so no change in land use designations were necessary. Since PAR 1171 would affect cleanup operations at existing facilities and does not involve construction of any structures, it will not result in physically dividing an established community. There are no provisions in PAR 1171 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by regulating VOC emissions from solvent cleaners. Since PAR 1171 would affect cleanup operations at existing facilities and does not involve construction of any structures, it would not affect in any way habitat conservation or natural community conservation plans, agricultural resources or operations, and would not create divisions in any existing communities. Therefore, present or planned land uses in the region will not be significantly adversely affected as a result of implementing the proposed amended rule.

Mineral Resources

Similar to the conclusions in the September 1999 Final EA for the 1999 amendments to Rule 1171, there are no provisions in PAR 1171 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Some examples of mineral resources are gravel, asphalt, bauxite, and gypsum, which are commonly used for construction activities or industrial processes. Therefore, no new demand on mineral resources is expected to occur and significant adverse mineral resources impacts from implementing PAR 1171 are not anticipated.

Noise

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse noise impacts would not occur because using compliant cleaning solvents does not require noise intensive equipment. Modifications or changes associated with the implementation of PAR 1171 will take place at sites that are located in existing industrial or commercial settings. The proposed project is not expected to expose persons to the generation of excessive noise levels above current facility levels because it primarily involves using formulations of cleaning solvents that meet the interim limits, while allowing an additional year before the final compliance limit becomes effective. Use of these cleaning solvents is typically not a noise intensive activity. It is expected that any contractor affected by PAR 1171 will comply with all existing noise control laws or ordinances. Further, Occupational Safety and Health Administration (OSHA) and California-OSHA have established noise standards to protect worker health. PAR 1171 is not anticipated to expose [peoplepersons](#) to or generate excessive groundborne vibration or groundborne noise levels since no construction activities are expected to occur at the existing facilities and switching to reformulated products does not involve, in any way, installation of control equipment that generates vibrations. No increase in periodic or temporary ambient noise levels in the vicinity of affected facilities above levels existing prior to PAR 1171 is anticipated because the proposed project would not require construction-related activities nor would it change the existing cleanup activities currently performed by [peoplepersons who apply](#) cleaning solvents ~~coating contractors~~.

Solvents users located near public/private airports are not expected to generate new noise impacts since cleaning is typically not a noise intensive activity. Thus, PAR 1171 is not expected to expose [peoplepersons](#) residing or working in the vicinity of public or private airports to excessive noise levels.

Population and Housing

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that the proposed project would not create significant adverse population and housing impacts

because the proposed project would not require additional workers. As a result, the project would not induce population growth or create a demand for additional housing. The proposed project is not anticipated to generate any significant effects, either direct or indirect, on the district's population or population distribution as no additional workers are anticipated to be required to comply with the proposed amendments. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing PAR 1171. As such, PAR 1171 will not result in changes in population densities or induce significant growth in population. As such, PAR 1171 is not expected to substantially alter cleanup practices at sites solvent cleaning takes place. Consequently, PAR 1171 is not expected to result in the creation of any industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of ~~people~~persons or housing elsewhere in the district.

Public Services

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that the proposed project would not create significant adverse public service impacts as increased demands for public service providers would not be required. Potential adverse impacts to fire departments could occur in two ways: 1) if there is an increase in accidental release of hazardous materials used in cleaning solvents, fire departments would have to respond more frequently to accidental release incidences and 2) if there is an increase in the amount of hazardous materials stored at affected facilities, fire departments may have to conduct additional inspections. As a "worst-case," this analysis assumes that most cleanup solvents would be reformulated with acetone to meet the interim and final VOC content limits since acetone has been delisted as a VOC and has the lowest flash point and highest flammability rating of the possible replacement materials. PAR 1171 does not require the use of acetone. ~~People~~persons who apply cleaning solvents ~~Contractors~~ would determine which compliant material to use based on a number of factors including, but not limited to, safety considerations.

While acknowledging the inherent safety issues associated with acetone, the capacity for its safe use is apparent based upon its widespread use. Chemistry classes at all levels from grade school to universities, as well as industrial laboratories, use acetone for wiping down counter tops and cleaning glassware. Additional uses for acetone include solvent for paint, varnish, lacquers, inks, adhesives, floor coatings, and cosmetic products including nail polish and nail polish remover.

Based upon the above considerations, overall risk associated with the use of cleaning solvents is not expected to appreciably change as a result of the proposed amendments. The proposed amendments to Rule 1171 will not generate significant adverse impacts to local fire departments requiring new or additional fire fighting resources. Any increase in the storage or accidental releases of compliant cleaning materials would be expected to result in a concurrent reduction in the storage and number of accidental releases of existing cleaning

materials. As a result, need for inspections and the net number of accidental releases would be expected to remain approximately constant.

Local police departments are often the first responders to emergency situations such as fires to cordon off the area and provide crowd control. Since reformulating cleaning solvents of the interim level is not expected to increase flammability, implementing PAR 1171 is not expected to increase the fire hazards associated with cleanup solvents. As a result, no significant adverse impacts to local police departments are expected because no increases in fire emergencies are anticipated.

The local labor pool (e.g., workforce) of solvent cleaners is expected to remain the same since PAR 1171 would not trigger substantial changes to current cleaning practices. Therefore, with no increase in local population anticipated, construction of new or additional demands on existing schools and parks are not anticipated. Therefore, no significant adverse impacts are expected to local schools or parks.

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The proposed project will result in the use of new formulations of cleaning solvents to meet interim VOC content limits. No new permits should be required to operate these new cleaning solvents, so there should be no other need for government services. The proposal would not result in the need for new or physically altered government facilities, such as police or fire departments, in order to maintain acceptable service ratios, response times, or other performance objectives. There will be no increase in population and, therefore, no need for physically altered government facilities.

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Recreation

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that the proposed project would not create significant adverse recreation impacts because it would not induce population growth, so increased use of recreational resources was not anticipated. As discussed under "Land Use and Planning" above, there are no provisions in PAR 1171 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments. No land use or planning requirements will be altered by the changes proposed in PAR 1171. The proposed project does not affect population growth in the district so it would not increase the demand for or use of existing neighborhood and regional parks or other recreational facilities or require the construction of new or expansion of existing recreational facilities that might have an adverse physical effect on the environment.

Solid/Hazardous Waste

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse solid/hazardous impacts would not occur because use of liquid cleaning solvents does not generate solid waste to any appreciable extent. In handwipe operations, solvent-laden rags are the predominant waste product (liquid cleanup solvent wastes are

addressed in the “Hydrology and Water Quality” section). These wastes are a byproduct of the need to clean equipment, not from air quality regulations (i.e., Rule 1171). Rule 1171 is not the cause of waste generation, but simply requires the cleaning materials used for certain operations to meet a specified VOC content. Existing Rule 1171 already recommends that solvent-laden rags be kept in non-leaking containers. Thus, PAR 1171 may result in the alteration of the composition of a waste stream, but would not be expected to result in an increased generation of cleaning-related waste.

It is important to note that PAR 1171 does not change the current requirements specific to cleanup solvent storage and disposal. Since cleaning solvents complying with interim VOC content limits are expected to be formulated with solvents that are equally or less toxic than currently used solvents (see “Hazards and Hazardous Materials” section), implementing PAR 1171 is not expected to generate significant new adverse hazardous waste impacts.

Therefore, there are no significant adverse solid and hazardous waste impacts associated with the proposed amendments to Rule 1171. As a result, no net increase in the amount or character of solid or hazardous waste streams is expected to occur. PAR 1171 is not expected to increase the volume of solid or hazardous wastes from affected ~~architectural coating people~~ persons who apply cleaning ~~contractors~~ solvents, require additional waste disposal capacity, or generate waste that does not meet applicable local, state, or federal regulations.

Transportation/Traffic

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that the proposed project would not create significant adverse transportation/traffic impacts because use of compliant cleaning solvents has no effect on vehicle trips to affected facilities. Further, the 1999 amendments did not result in a need for additional workers, so there would not be an increase in daily worker commute trips. Interim cleaning solvent formulations are not expected to deviate from the volumes of materials currently used or expected to be used when the final compliance date becomes effective. Thus, the current level of transportation demands related to transporting new formulations of materials is expected to remain the same. The proposed amendments would have no effect on existing cleaning operations that would change or cause additional worker trips or increase transportation demands or services. Therefore, since no additional operational-related trips are anticipated, implementing PAR 1171 is not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities or sites.

PAR 1171 will affect cleaning solvent operations at existing industrial and commercial facilities. The height and appearance of the existing structures are not expected to be affected by complying with PAR 1171 and, therefore, implementation of PAR 1171 is not expected to adversely affect air traffic patterns. Further, PAR 1171 will not affect in any way air

traffic in the region because, to the extent that cleaning solvents are shipped by air, no increase in the amount of solvent usage is anticipated.

Compliance with the interim VOC content requirements for certain cleaning solvents does not require construction of structures or roadways. Further, implementing PAR 1171 will not involve modifications to existing roadways. Consequently, implementing the proposed project will not create roadway hazards or incompatible roadway uses.

Compliance with the interim VOC content requirements for certain cleaning solvents is not expected affect or require changes to emergency access at or in the vicinity of the affected facilities since the proposed project will not require construction or physical modifications of any kind. Therefore, the proposed project is not expected to adversely affect emergency access.

Since PAR 1171 will not involve construction of any structures or substantially alter operational practices, no new employees would be required to comply with the proposed project. As a result, no changes to the parking capacity at or in the vicinity of the affected facilities are expected. Therefore, the proposed project is not expected to adversely impact on- or off-site parking capacity. PAR 1171 has no relationship at all with alternative transportation, such as bus turnouts, bicycle racks, etc. Consequently, implementing PAR 1171 will not create any conflicts with these modes of transportation.

CONSISTENCY

The Southern California Association of Governments (SCAG) and the SCAQMD have developed, with input from representatives of local government, the industry community, public health agencies, the USEPA - Region IX and the California ARB, guidance on how to assess consistency within the existing general development planning process in the Basin. Pursuant to the development and adoption of its Regional Comprehensive Plan Guide (RCPG), SCAG has developed an Intergovernmental Review Procedures Handbook (June 1, 1995). The SCAQMD also adopted criteria for assessing consistency with regional plans and the AQMP in its CEQA Air Quality Handbook. The following sections address consistency between PAR 1171 and relevant regional plans pursuant to the SCAG Handbook and SCAQMD Handbook.

Consistency with the Air Quality Management Plan

Rule 1171 is consistent with the AQMP since it is specifically identified as a control measure that is necessary to attain and maintain the state and national ambient air quality standards. While PAR 1171 will delay compliance with lower VOC content limits, which will postpone VOC emission reductions anticipated in the AQMP, the delay is only temporary until July 1, 2006, when most of the rule's overall air quality benefit will be achieved. Because the final

compliance date is before the AQMP's 2010 attainment goals, PAR 1171 is consistent with the AQMP.

Consistency with Regional Comprehensive Plan and Guide (RCPG) Policies

The RCPG provides the primary reference for SCAG's project review activity. The RCPG serves as a regional framework for decision making for the growth and change that is anticipated during the next 20 years and beyond. The Growth Management Chapter (GMC) of the RCPG contains population, housing, and jobs forecasts, which are adopted by SCAG's Regional Council and that reflect local plans and policies, shall be used by SCAG in all phases of implementation and review. The subsections summarize the main policies and goals contained in the GMC and whether or not PAR 1171 is consistent with these policies and goals.

Improve the Regional Standard of Living

The Growth Management goals are to develop urban forms that enable individuals to spend less income on housing cost, that minimize public and private development costs, and that enable firms to be more competitive, which would strengthen the regional strategic goal to stimulate the regional economy. Proposed amended Rule 1171 in relation to the GMC would not interfere with the achievement of these goals, nor would it interfere with any powers exercised by local land use agencies to achieve these goals. PAR 1171 will not interfere with efforts to minimize red tape and expedite the permitting process to maintain economic vitality and competitiveness.

Provide Social, Political and Cultural Equity

The Growth Management goals are to develop urban forms that avoid economic and social polarization; promote the regional strategic goals of minimizing social and geographic disparities; and reach equity among all segments of society. Consistent with the Growth Management goals, local jurisdictions, employers and service agencies should provide adequate training and retraining of workers, and prepare the labor force to meet the challenges of the regional economy. Growth Management goals also include encouraging employment development in job-poor localities through support of labor force retraining programs and other economic development measures. Local jurisdictions and other service providers are responsible to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection. Implementing PAR 1171 is not expected to interfere with the goals of providing social, political and cultural equity.

Improve the Regional Quality of Life

The Growth Management goals also include attaining mobility and clean air goals and developing urban forms that enhance quality of life, accommodate a diversity of life styles, preserve open space and natural resources, are aesthetically pleasing, preserve the character

of communities, and enhance the regional strategic goal of maintaining the regional quality of life. The RCPG encourages planned development in locations least likely to cause environmental impacts, as well as supports the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals. While encouraging the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites, the plan discourages development in areas with steep slopes, high fire, flood and seismic hazards, unless complying with special design requirements. Finally, the plan encourages mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage, and develop emergency response and recovery plans. Proposed amended Rule 1171 in relation to the GMC is not expected to interfere with attaining these goals and, in fact, promotes improving air quality in the region once most of the anticipated VOC emission reductions occur July 1, 2006.

Consistency with Regional Mobility Plan (RMP) and Congestion Management Plan (CMP)

Proposed amended Rule 1171 is consistent with the RMP and CMP since no significant adverse impact to transportation/circulation will result from the delay of VOC emission reductions within the district. While traffic and congestion is generated from the transport offsite of wastes for disposal or recycling, this is an existing impact. In addition, the reformulation of the coatings will not require a substantial increase number of employees, so an increase in worker commute trips is not expected. Furthermore, because affected facilities will not increase their handling capacities as a result of complying with PAR 1171, there will not be an increase in material transport trips associated with the implementation of PAR 1171. Therefore, material transport trips are not expected to significantly adversely affect circulation patterns.

CHAPTER 5

PROJECT ALTERNATIVES

Introduction

Alternatives Rejected as Infeasible

Description of Alternatives

Comparison of the Alternatives

Conclusion

INTRODUCTION

This Draft SEA provides a discussion of alternatives to the proposed project as required by state CEQA Guidelines. Alternatives include measures for attaining the objectives of the proposed project and provide a means for evaluating the comparative merits of each alternative. A “No Project” alternative must also be evaluated. The range of alternatives must be sufficient to permit a reasoned choice, but need not include every conceivable project alternative. CEQA Guidelines §15126.6(a) specifically notes that the range of alternatives required in a CEQA document is governed by a ‘rule of reason’ and only necessitates that the CEQA document set forth those alternatives necessary to permit a reasoned choice. The key issue is whether the selection and discussion of alternatives fosters informed decision-making and meaningful public participation. A CEQA document need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative. SCAQMD Rule 110 does not impose any greater requirements for a discussion of project alternatives in an environmental assessment than is required for an EIR under CEQA.

The following alternatives are viable options to the proposed project and all, or parts, of these alternatives can be chosen by the decision-making body (e.g., SCAQMD Governing Board) to become the proposed project. For this reason, the public is encouraged to review the following environmental analysis since the potential adverse environmental impacts from implementing all, or parts, of the following alternatives may be generated if chosen to become the proposed project.

ALTERNATIVES REJECTED AS INFEASIBLE

A CEQA document should identify any alternatives that were considered by the lead agency, but were rejected as infeasible during the scoping process and explain the reasons underlying the lead agency’s determination (CEQA Guidelines §15126(c)). These concepts and the rationale for rejecting them as infeasible are discussed in the following subsections.

Accelerated Compliance of Final VOC Content Limit

This proposed alternative would accelerate the compliance date for requiring the final VOC content limit of cleaning solvents used in lithographic/letterpress, screen printing and UV/EB applications to six months until January 1, 2006. However, since the technology assessment evaluating these affected cleaning solvents is not expected to be completed until November 2005, there is not adequate time to evaluate the results of the study, provide recommendations, and expect the affected industry to comply in such short notice. Once the determination has been made regarding the availability of effective

compliant solvent alternatives, individual affected facilities will need to test products, train workers, and transition into using the new cleaning solvent. This alternative has been rejected as infeasible due to these time restraints. If the decision-making body wanted to choose a more stringent option to the proposed project, the No-Project would satisfy that requirement.

Vapor Pressure Rule Compliance

This alternative would alter rule compliance currently based on VOC emission limits to requiring the lowering of the vapor pressure of the solvent as an effective emission reduction tool when coupled with a solvent recovery system. This alternative was rejected as infeasible since no conclusive evidence has been presented to demonstrate that low vapor pressure material reduces VOC emissions. Lowering the VOC content is more effective method to reduce emissions, ensures that the emission reduction is valid, and that the emission reduction is more accurately quantified and enforced. In addition, rule compliance by measuring the vapor pressure of material is more challenging for both the user and the regulatory enforcement group making the emission reductions uncertain.

DESCRIPTION OF ALTERNATIVES

The rationale for selecting and modifying specific components of the proposed amendments to generate feasible alternatives for analysis is based on CEQA's requirement to present "realistic" alternatives; that is, alternatives that can actually be implemented. The following alternatives were developed by identifying and modifying major components of PAR 1171. Specifically, the primary components of the proposed alternatives that have been modified are the interim compliance dates, the final compliance dates, and the range of exemptions. In general, the range of alternatives to PAR 1171 is relatively limited because the technology and data regarding alternative approaches is limited. Further, the final VOC content limit requirements are driven by the VOC emission reductions identified in the 2003 AQMP, which are necessary if the district is to attain and maintain the state and national ambient air quality standards for ozone.

Table 5-1 identifies the major components of PAR 1171 and each of the project alternatives: Alternative A (No Project); Alternative B (Additional Delay in Interim and Final Compliance Deadlines); and Alternative C (Eliminate Interim VOC Content Limits). All other components of PAR 1171 not identified in the following subsections or in Table 5-1 would also be included in the proposed project alternatives.

Alternative A - No Project

This alternative assumes that the proposed amendments to Rule 1171 will not be adopted. Existing Rule 1171 would remain in effect with no modifications. While the goals of the 2003 AQMP are met sooner, compliance uncertainty with certain cleaning solvent applications could lead to violations and, ultimately, delayed compliance with the VOC content limits if compliant products are not available. In addition, specified exempt solvents known to be toxic air contaminants would not be prohibited from use.

TABLE 5-1
Comparison of PAR 1171 to the Alternatives

Proposed Project Requirement	Alternative A (No Project)	Alternative B (Additional Delay in Interim and Final Compliance Deadlines)	Alternative C (Eliminate Interim VOC Content Limits)
REQUIREMENTS [subdivision (c)]			
Delay final compliance date for cleaning solvents used in lithographic, screen printing and UV/EB applications to 7/1/06.	Maintain final compliance date of 7/1/05 to lower VOC content for all solvent cleaning categories.	Delay further the final compliance date of cleaning solvents used in lithographic, screen printing and UV/EB applications to 7/1/07.	Delay final compliance date for cleaning solvents used in lithographic, screen printing and UV/EB applications to 7/1/06.
Require interim VOC content limit of cleaning solvents used in lithographic, screen printing and UV/EB applications as of 7/1/05.	No interim VOC content limit.	Extend the interim compliance date of cleaning solvents used in lithographic, screen printing and UV/EB applications to 7/1/06.	No interim VOC content limit required.
GENERAL PROHIBITIONS [subdivision (e)]			
Prohibit use of methylene chloride and perchloroethylene as of 7/1/05.	Maintain allowance to use perchloroethylene and methylene chloride.	Maintain allowance to use perchloroethylene and methylene chloride.	Delay prohibition of methylene chloride and perchloroethylene to 7/1/06.
EXEMPTIONS [subdivision (h)]			
Maintain Remove exemption for cleaning of solar cells, laser hardware, scientific instruments and high precision optics as of 7/1/05.	Maintain exemption for cleaning of solar cells, laser hardware, scientific instruments and high precision optics.	Maintain exemption for cleaning of solar cells, laser hardware, scientific instruments and high precision optics.	Delay removal of exemption for cleaning of solar cells, laser hardware, scientific instruments and high precision optics until 7/1/06.
No minimal-usage exemption for electrical apparatus & electronic components used for repair and maintenance in certain applications.	No minimal-usage exemption for electrical apparatus & electronic components used for repair and maintenance in certain applications.	Allow minimal-usage exemption (limit at 900 g/l) for electrical apparatus & electronic components used for repair and maintenance in certain applications.	No minimal-usage exemption for electrical apparatus & electronic components used for repair and maintenance in certain applications.

Alternative B – Additional Delay in Interim and Final Compliance Deadlines

Alternative B would extend both the interim and final compliance deadlines for final VOC content limits to July 1, 2006 and July 1, 2007 respectively. Table 5-2 lists the compliance limits and deadlines for the alternatives and the proposed project. Alternative B would maintain the allowance to use methylene chloride and perchloroethylene, as well maintain the exemption for cleaning of solar cells, laser hardware, scientific instruments and high precision optics. Finally, Alternative B would provide a minimal-usage exemption (limit at 900 g/l) for electrical apparatus and electronic components used for repair and maintenance in certain applications.

TABLE 5-2

VOC Content Limits and Compliance Deadlines of PAR 1171 and Project Alternatives

Affected Coating Category	Alternative A (No Project)	Proposed Amended Rule 1171		Alternative B (Additional Delay in Interim and Final Compliance Deadlines)		Alternative C (Eliminate Interim VOC Content Limits)	
	Current Limit (grams/liter)	Proposed Limit (g/l)	Compliance Dates	Proposed Limit (g/l)	Compliance Dates	Proposed Limit (g/l)	Compliance Dates
Lithographic or Letter Press Printing – Roller Wash, Step 1	600	500	7/01/05	500	7/01/06	100	7/01/06
		100	7/01/06	100	7/01/07		
Lithographic or Letter Press Printing – Roller Wash, Step 2, Blanket Wash & On-Press Components	800	500	7/01/05	500	7/01/06	100	7/01/06
		100	7/01/06	100	7/01/07		
Screen Printing Applications	750	500	7/01/05	500	7/01/06	100	7/01/06
		100	7/01/06	100	7/01/07		
Ultraviolet Ink/Electron Beam Ink Application Equipment	800	500	7/01/05	500	7/01/06	100	7/01/06
		100	7/01/06	100	7/01/07		
Perc and Methylene Chloride Usage	Allowed	Prohibited	7/01/05	Allowed	---	Prohibited	7/01/06

TABLE 5-2 (CONCLUDED)

VOC Content Limits and Compliance Deadlines of PAR 1171 and Project Alternatives

Affected Coating Category	Alternative A (No Project)	Proposed Amended Rule 1171		Alternative B (Additional Delay in Interim and Final Compliance Deadlines)		Alternative C (Eliminate Interim VOC Content Limits)	
	Current Limit (grams/liter)	Proposed Limit (g/l)	Compliance Dates	Proposed Limit (g/l)	Compliance Dates	Proposed Limit (g/l)	Compliance Dates
Exemption for cleaning of solar cells, laser hardware, scientific instruments and high precision optics	Allowed	Prohibited Allowed	7/01/05	Allowed	---	Prohibited	7/01/06
Electrical apparatus & electronic components used for repair and maintenance	Provides no minimal usage exemption	Provides no minimal usage exemption	---	Allows limit at 900 grams per liter for minimal usage of certain applications	7/01/05	Provides no minimal usage exemption	---

Alternative C – Eliminate Interim VOC Content Limits

Alternative C would eliminate the interim VOC content limit for cleaning solvents used in lithographic, screen printing and UV/EB applications, but maintain the final VOC content limit. Like the proposed project, Alternative C would also extend the final compliance date to July 1, 2006. Alternative C would delay the prohibition of methylene chloride and perchloroethylene for one year until July 1, 2006. Alternative C would also delay the removal of the exemption for cleaning of solar cells, laser hardware, scientific instruments and high precision optics for one year.

COMPARISON OF THE ALTERNATIVES

This Draft SEA identified in Chapter 4 those environmental topics where PAR 1171 could cause significant adverse environmental impacts. The analysis revealed only air quality will be significantly adversely affected as a result of implementing PAR 1171.

The following subsections briefly describe potential adverse air quality impacts that may be generated by each project alternative. Each environmental topic summary contains a brief description of the environmental impacts for each project alternative compared to impacts resulting from implementing the proposed amendments. Potential impacts for

the environmental topics are quantified, and a comparison of the impacts for each of the environmental topics is summarized in Table 5-3 and the alternatives are ranked according to severity of potential adverse environmental impacts in Table 5-4.

Air Quality

Alternative A - No Project

This alternative assumes that the proposed amendments to Rule 1171 will not be adopted and the existing Rule 1171 would remain in effect with no modifications. Compliance with all existing requirements on July 1, 2005 would result in approximately 15.38 tons per day of VOC emissions reductions from solvent cleaning operations which would be expected to occur, which would assist in attaining the goals of the 2003 AQMP to meet federal and state ozone standards. However, lithographic, screen printing and UV/EB operations would either be unable to operate or would operate in violation of Rule 1171 if compliant cleaning solvents are unavailable. Because of the allowance to continue the use of methylene chloride and perchloroethylene, cancer and non-cancer risks in the vicinity of the solvent cleaning operations would not be eliminated.

Alternative B – Additional Delay in Interim and Final Compliance Deadlines

Alternative B would extend both the interim and final VOC content limits for one year which will cause an additional delay in VOC emission reductions compared to PAR 1171. VOC emission reductions would not occur by maintaining a permanent exemption for the cleaning of solar cells, laser hardware, scientific instruments and high precision optics. Allowing a minimal-usage exemption for electrical apparatus and electronic components used for repair and maintenance could result in a slight increase in VOC emission that would not be allowed under PAR 1171. In addition, allowing the continued use of methylene chloride and perchloroethylene, cancer and non-cancer risks in the vicinity of the affected solvent cleaning operations would not be eliminated. This alternative would ultimately achieve similar VOC emission reductions as PAR 1171. However, the final VOC emission reductions would be delayed by two years instead of one year as proposed in PAR 1171. Thus, Alternative B has the highest delay of VOC emission reductions: 4.24 tons per day (derived from the delayed interim reductions of 1.72 tons per day + the delayed final reductions of 2.52 tons per day) between July 1, 2005 and June 30, 2006, and 2.52 tons per day between July 1, 2006 and July 1, 2007, before the emission reductions are achieved. This delay could potential harm the ability to meet the missing some of the VOC emission reductions targets as set forth in the 2003 AQMP.

Similar to the proposed project, the toxic impact is not expected be significant. Replacement cleaning solvents are generally less toxic than conventional cleaning solvents. As a result, human health impacts from reformulating cleaning solvents with replacement solvent would not be significant. Since the main effect of Alternative B is to

further delay the final compliance date for specified cleaning solvents and no additional requirements regarding the VOC content limits of these cleaning solvents are being proposed, the conclusion that the human health impact from formulating cleaning solvents with replacements solvents will not create significant adverse impacts continues to apply.

Alternative C – Eliminate Interim VOC Content Limits

Alternative C is similar to the proposed project except by eliminating the interim VOC content limit, delayed emission reductions substantially increases to 4.24 tons per day. In addition, there is a delay in anticipated emission reduction for one year before exemption of solvent cleaning of solar cells, laser hardware, scientific instruments and high precision optics applications is removed and these operators are required to comply with the rule requirements. Also, continuing use methylene chloride and perchloroethylene would delay eliminating potential cancer and non-cancer risks in the vicinity of the affected solvent cleaning operations for one year.

Emission Reductions from PAR 1171 and Alternatives

Table 5-3 highlights the estimated emission reductions from PAR 1171 and each project alternative.

TABLE 5-3
Comparison of Adverse Environmental Impacts
of PAR 1171 to the Alternatives

Environmental Topic	Proposed Project	Alternative A (No Project)	Alternative B (Additional Delay in Interim and Final Compliance Deadlines)	Alternative C (Eliminate Interim VOC Content Limits)
Air Quality – Criteria Pollutants (VOCs)	Significant (2.52 tons per day delay in VOC emission reductions for one year)	Not Significant (15.38 tons per day of VOC emission reductions by 7/1/05)	Significant (4.24 tons per day delay in VOC emission reductions for one year and 2.52 tons per day delay in VOC emission reductions for one year)	Significant (4.24 tons per day delay in VOC emission reductions for one year)
Non-Criteria Pollutants (TACs)	Not Significant (reduces exposure to TACs)	Not Significant (but does not provide health benefit of reducing TACs)	Not Significant (but does not provide health benefit of reducing TACs)	Not Significant (reduces exposure to TACs)

TABLE 5-4
Ranking of Alternatives

	AIR QUALITY IMPACTS	
	Criteria Pollutant (VOC)	Non-Criteria Pollutant (TACs)
Proposed Project (PAR 1171)	X (2)	✓(1)
Alternative A (No Project)	✓(1)	✓(4)
Alternative B (Additional Delay in Interim/Final Deadlines)	X (4)	✓(3)
Alternative C (No Interim Limit)	X (3)	✓(1)

Notes: The ranking scale is such that 1 represents the least impacts and subsequent higher number represents increasingly higher worse impacts.

The same two numbers in brackets for a specific Impact Section means that these proposals would have the same impacts if implemented.

An X denotes either a project-specific significant adverse impact significant adverse impact.

A ✓ denotes no significant adverse impact significant adverse impact.

CONCLUSION

Pursuant to CEQA Guidelines §15126.6 (d), a matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. Tables 5-1 and 5-2 describe the alternatives considered by the SCAQMD and how they compare to PAR 1171. Table 5-3 shows how the alternatives compare to the proposed project relative to generating significant adverse air quality impacts. Table 5-4 presented a matrix that lists the significant adverse impacts associated with the proposed project and the project alternatives for the only affected environmental topic analyzed. The table also ranks each impact section as to whether the proposed project or a project alternative would result in greater or lesser impacts relative to one another.

Lowest Toxic Alternative

In accordance with SCAQMD’s policy document Environmental Justice Program Enhancements for FY 2002-03, Enhancement II-1 recommends that all SCAQMD CEQA assessments include a feasible project alternative with the lowest air toxics emissions. In other words, for any major equipment or process type under the scope of the proposed project that creates a significant environmental impact, at least one alternative, where feasible, shall be considered from a “least harmful” perspective with regard to hazardous air emissions. With respect to the proposed project, a lowest air toxics alternative would be to use less TACs during solvent formulation to comply with the rule. The No Project and Alternative B allow the continual use of TACs, methylene chloride and perchloroethylene, while Alternative C prohibits their use one year after the date of adoption. Thus, the proposed project which will prohibit the use of methylene chloride and perchloroethylene as of the date of adoption is considered the Lowest Toxic Alternative.

Environmentally Superior Alternative

Pursuant to CEQA Guidelines §15126.6 (e)(2), if the environmentally superior alternative is the "no project" alternative, the CEQA document shall also identify an environmentally superior alternative among the other alternatives. While the No Project alternative (Alternative A) is expected to achieve air quality benefits (e.g., VOC reductions) sooner than PAR 1171, Alternative A would likely result in similar impacts to PAR 1171 if affected facilities continue to operate using non-compliant cleaning solvents by filing for variances and not reducing the VOC emissions as set forth in the 2003 AQMP. Therefore, since PAR 1171 only delays anticipated VOC reductions for one year and it eliminates the use of methylene chloride and perchloroethylene it is the environmentally superior alternative. It will also allow the necessary time for testing to identify compliant cleaning products.

CHAPTER 6

OTHER CEQA TOPICS

Relationship between Short-Term Uses and Long-Term Productivity
Significant Irreversible Environmental Changes
Potential Growth-Inducing Impacts

RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

Implementing the proposed amendments is not expected to gain advantage for local short-term uses at the expense of long-term environmental productivity. The intent of proposed amended Rule 1171 is to provide additional time to study low VOC reformulations for certain solvent cleaning applications in the short term, while improving air quality in the long term, thus protecting public health by providing a regulatory framework to limit VOC emissions from cleaning solvents. Because the requirements will be more effective if the studies conclude that effective compliant formulations exist for those solvent cleaning applications, the proposed project provides the delay in compliance pursuant to PAR 1171. Thus, the proposed amendments are a temporary relief for a small portion of the affected community.

Though there will be short-term air quality impacts associated with the implementation of the proposed amendments, the long-term financial, material, and human resources in the district will be enhanced. By allowing the temporary delay in VOC emission reductions, the cleaning solvent formulator can now focus the costs and workforce in developing a new coating technology meeting the final VOC compliance limit at a possible quicker schedule than required by the rule.

In addition to addressing the effects on long-term productivity, CEQA indicates that this discussion should identify the reason(s) for implementing a project now, instead of reserving the option for future action. Because the studies evaluating compliant formulations for certain solvent cleaning applications will not be complete before the current compliance date, PAR 1171 is being revised now to allow extra time for the technology assessment to be finished and staff can review the results and recommendations. If PAR 1171 is not amended, the affected cleaning solvent operators could be immediately out of compliance if unable to locate a compliant solvent that works successfully on cleaning their substrate. In addition, because the compliance deadline is within five months, the affected cleaning solvent operators will not have enough time to test new products and train their employees on the usage of the new cleaning solvents.

SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines §15126.2(c) requires an environmental analysis to consider “any significant irreversible environmental changes which would be involved if the proposed action should be implemented.” The analysis in this Draft SEA identified air quality as the only environmental area with significant impacts as a result of the proposed project.

The delay in emission reductions is temporary and, after July 1, 2006, an overall air quality benefit will be achieved. In addition, those affected users will be required to

comply with an interim limit which will immediately reduce VOC emissions. The analysis of toxics impacts indicated that, generally, solvents used in low-VOC coatings are typically less toxic than solvents used in conventional coatings. Because solvent cleaners are applied on an as-needed basis, continuous exposures would not occur. As a result, no significant carcinogenic or noncarcinogenic human health impacts are anticipated.

As can be seen by the information presented in this SEA, the proposed project would not result in irreversible environmental changes or the irretrievable commitment of resources.

POTENTIAL GROWTH-INDUCING IMPACTS

CEQA Guidelines §15126.2(d) requires an environmental analysis to consider the “growth-inducing impact of the proposed action.” Implementing PAR 1171 will not, by itself, have any direct or indirect growth-inducing impacts on businesses in the SCAQMD’s jurisdiction because it is not expected to foster economic or population growth or the construction of additional housing and primarily affects existing cleaning solvent formulation companies.

APPENDIX A

PROPOSED AMENDED RULE 1171

In order to save space and avoid repetition, please refer to the latest version of the proposed amended Rule 1171 located elsewhere in the final rule package. The “PAR 1171PW” version of the proposed amended rule was circulated with the Draft SEA that was released on February 9, 2005 for a 45-day public review and comment period ending March 25, 2005.

Original hard copies of the Draft SEA, which include the “PAR 1171PW” version of the proposed amended rule, can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by calling (909) 396-2039.