BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

Final Environmental Impact Report for the Bay Area Air Quality Management District's

Air Toxics NSR Rule

June 8, 2005

Prepared By:

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PREFACE

This document constitutes the Final Environmental Impact Report (EIR) for the Bay Area's Air Quality Management District's Air Toxic New Source Review Rules. The Draft EIR was circulated for a 30-day public review and comment period on April 18, 2005. The comment period ended on May 23, 2005. One comment letter was received during the public comment period. The comment letter and responses are included in Appendix B of this document. Only minor modifications were made to the Draft EIR to convert it to a Final EIR. None of the modifications alter any conclusions reached in the Draft EIR, nor provide new information of substantial importance relative to the draft document that would require recirculation of the Draft EIR pursuant to CEQA Guidelines §15088.5. Therefore, this document is now a Final EIR. Additions to the text of the EIR are denoted using italics. Text that has been eliminated is shown using ~~strike outs~~.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

DRAFT ENVIRONMENT IMPACTS REPORT

AIR TOXICS NSR RULES

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Appendix A: Notice of Preparation
Appendix B: Comments and Responses to Comments Received on the Draft EIR

CHAPTER 1

INTRODUCTION

Introduction
- California Environmental Quality Act
- Notice of Preparation
- Type of EIR
- Intended Uses of this Document
- Areas of Controversy
- Project Objectives
- Document Format

Executive Summary of ~~Draft~~ *Final* EIR
- Executive Summary – Chapter 2: Project Description
- Executive Summary – Chapter 3: Environmental Settings, Impacts and Mitigation Measures
- Executive Summary – Chapter 4: Alternatives
- Executive Summary – Chapter 5: Other CEQA Topics
- Executive Summary – Chapters 6 and 7: References and Acronyms and Glossary

1.1 INTRODUCTION

The Bay Area Air Quality Management District (BAAQMD or District) was established in 1955 by the California Legislature to control air pollution in the counties around San Francisco Bay and to attain federal air quality standards by the dates specified in federal law. There have been significant improvements in air quality in the Bay Area over the last several decades. The BAAQMD is also required to meet state standards by the earliest date achievable.

For the last eighteen years, the District has had a program to evaluate and reduce the public's exposure to toxic air contaminants (TACs). TACs are air pollutants, which may cause adverse health effects such as cancer, birth defects, respiratory ailments, or other serious illness. The District's overall air toxics program includes three individual regulatory programs directed at controlling TAC emissions from stationary sources. Two of these programs apply to sources at existing facilities, and the third is the Air Toxics New Source Review (NSR) Program, which focuses on proposed projects involving new and modified sources.

This EIR addresses the proposed changes to the Bay Area Air Quality Management District ("the District" or BAAQMD) Air Toxics NSR Program. The proposed changes in the program will result in the adoption of a new District rule, and amendments to several existing District rules and Manual of Procedures (MOP).

1.1.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., requires that the potential environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid identified significant adverse environmental impacts of these projects be identified.

To fulfill the purpose and intent of CEQA, the BAAQMD has prepared this Program Environmental Impact Report (EIR) to address the potential environmental impacts associated with the proposed Air Toxics New Source Review (NSR) Program. The Proposed Project will be implemented by adopting a new District Rule, Regulation 2, Rule 5: New Source Review of Toxic Air contaminants, and a new part to its Manual of Procedures (MOP). Amendments to several other District rules are also proposed in order to maintain consistency with Regulation 2, Rule 5. Prior to making a decision on the Air Toxics NSR Program, the BAAQMD Governing Board must review and certify the EIR as providing adequate information on the potential adverse environmental impacts of implementing the proposed plan.

1.1.2 NOTICE OF PREPARATION

A Notice of Preparation for the adoption of District Regulation 2, Rule 5 (included as Appendix A of this EIR) was distributed to responsible agencies and interested parties for

a 30-day review on January 26, 2005. A notice of the availability of this document was distributed to other agencies and organizations and was placed on the BAAQMD's web site, and was also published in newspapers throughout the area of the BAAQMD's jurisdiction. No comment letters on the NOP were received.

1.1.3 TYPE OF EIR

CEQA includes provisions for program EIRs in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, including adoptions of broad policy programs, from those prepared for specific types of projects (e.g., land use projects) (CEQA Guidelines §15168). The EIR for the Air Toxics NSR Program is a program EIR because it examines the environmental effects of proposed project which will ultimately be issued as rules or regulations and promulgated as part of a continuing ongoing regulatory program.

A program EIR allows consideration of broad policy alternatives and program-wide mitigation measures at a time when an agency has greater flexibility to deal with basic problems of cumulative impacts. A program EIR also plays an important role in establishing a structure within which CEQA reviews of future related actions can be effectively conducted. This concept of covering broad policies in a program EIR and incorporating the information contained therein by reference into subsequent EIRs for specific projects is known as "tiering" (CEQA Guidelines §15152). A program EIR will provide the basis for future environmental analyses and will allow project-specific EIRs to focus solely on the new effects or detailed environmental issues not previously considered. If an agency finds that no new effects could occur, or no new mitigation measures would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required (CEQA Guidelines §15168(c)[5]).

The degree of specificity required in an EIR corresponds to the degree of specificity involved in the underlying activity described in the EIR (CEQA Guidelines §15146). Because the level of information regarding potential impacts from the proposed project recommended in the Air Toxics NSR Program is relatively general at this time, the environmental impact forecasts are also general or qualitative in nature. In certain instances, such as future ambient air quality concentrations, impacts are quantified to the degree feasible.

1.1.4 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 EIR is intended to: (a) provide the BAAQMD Governing Board and the public with information on the

environmental effects of the proposed project; and, (b) be used as a tool by the BAAQMD Governing Board to facilitate decision making on the proposed project.

Additionally, CEQA Guidelines §15124(d)(1) require 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 EIR 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 implement a District Rule in the Air Toxic NSR Program they can rely on this, pursuant to CEQA Guidelines §15152, during their decision-making process. Similarly, other single purpose public agencies developing projects consistent with Regulation 2, Rule 5, can tier off this EIR, pursuant to CEQA Guidelines §15152.

1.1.5 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 EIR. *Only one set of comments was received on the Draft EIR. Those comments came from the Environmental Law and Justice Clinic (ELJC) at the Golden Gate University School of Law. In the comments ELJC advocates the incorporation of cumulative health risk analysis and the precautionary principle into the proposed project.*

The existing District Air Toxics NSR Program uses a risk-based approach where the maximum incremental health risks from new and modified sources in a project are estimated by an HRSA and compared to project risk limits. Projects that meet these project risk limits are not expected to cause, or contribute significantly to, adverse health effects. The project risk limits that are used are consistent with risk management guidelines issued by both CARB and EPA. This approach is often called "incremental risk analysis."

ELJC advocates that the toxics NSR rule incorporate "cumulative risk analysis." Cumulative risk analysis attempts to assess health risks from exposure to air contaminants emitted from a proposed new source taken together with emissions from existing local sources. These cumulative risks would then be compared to cumulative risk limits.

The District believes that cumulative risk analysis cannot be incorporated into the District's toxics NSR program at present for three primary reasons: (1) insufficient data

is available to estimate exposures and health risks from existing sources, (2) cumulative risk limits have not been established in law, regulation, or guidance by any agency, and (3) the software tools necessary to perform this kind of analysis on a programmatic basis do not exist.

ELJC also advocates incorporating the precautionary principle into the toxics NSR program. The "precautionary principle" has received considerable attention in a number of international discussions on human health and the environment. Although some statements of the principle are more detailed than others, each has at its core the idea that action should be taken to prevent or minimize harm to human health and the environment even if scientific evidence is inconclusive.

The District believes that the precautionary principle is extremely vague and therefore difficult to craft into workable policies or regulations. The precautionary principle does not specify what should trigger action (e.g., how a potential health threat is to be established, and how a determination about whether existing scientific information is inadequate or inconclusive is to be made), nor does it specify what action should be taken after it is triggered. However, the District also believes that some ideas regarding how the precautionary principle is to be applied are already incorporated into the toxics NSR program through the use of methods to estimate health risk that are intended to err on the side of health protection, through the use of conservative incremental risk limits that trigger analysis of alternatives, and through the adoption of rules to replace less public and open policy and procedure documents.

~~No areas of controversy have been raised by the public during the NOP public comment period. At this time, there are no known areas of controversy regarding the adoption of the Air Toxics NSR Program.~~

1.1.6 PROJECT OBJECTIVES

CEQA Guidelines §15124(b) requires an EIR to include a statement of objectives, which describes the underlying purpose of the proposed project. The purpose of the statement of objectives is to aid the lead agency in identifying alternatives and the decision-makers in preparing a statement of findings and a statement of overriding considerations, if necessary. The objectives of the proposed Air Toxics NSR Program are summarized in the following bullet points.

- update and enhance program requirements primarily to increase conformity with updated State guidelines,
- improve the legal defensibility of the District's permitting decisions, and
- increase the clarity and public visibility of program requirements.

1.1.7 DOCUMENT FORMAT

State CEQA Guidelines outline the information required in an EIR, but allow the format of the document to vary [CEQA Guidelines §15120(a)]. The information in the EIR complies with CEQA Guidelines §15122 through §15131 and consists of the following:

Chapter 1: Introduction

Chapter 2: Project Description

Chapter 3: Environmental Setting, Impacts and Mitigation Measures

Chapter 4: Alternatives

Chapter 5: Other CEQA Topics

Chapter 6: References

Chapter 7: Acronyms

Appendix A: Notice of Preparation/Initial Study

Appendix B: Comments Received on the Notice of Preparation (NOP)/Initial Study and Responses to Comments

1.2 EXECUTIVE SUMMARY OF ~~*DRAFT*~~ *FINAL* EIR

1.2.1 EXECUTIVE SUMMARY – CHAPTER 2: PROJECT DESCRIPTION

The goal of the District Air Toxics NSR Program is to prevent significant increases in health risks resulting from new and modified sources of TACs based on pre-construction permit review. The program is also intended to reduce existing health risks by requiring updated control requirements when older, more highly polluting, sources are modified or replaced. The Air Toxics NSR Program was established in 1987 at the direction of the District's Board of Directors, and has been implemented based on policies and procedures adopted by the District's Air Pollution Control Officer (APCO).

The Air Toxics NSR Program is a health risk-based program, meaning the program requirements are based on the results of health risk assessments (HRA). An HRA is a scientific analysis of the measure of health risk to individuals in the affected population that may be exposed to emissions of one or more toxic substances. The Air Toxics NSR Program uses an HRA methodology specifically developed for air pollution control programs in California. This methodology is documented in State HRA guideline documents. Under the Air Toxics NSR Program, District staff completes a site-specific Health Risk Screening Analysis (HRSA) as part of the permit evaluation process for any

proposed project with TAC emissions, which exceed specified toxic thresholds. (Note that an HRA completed for the Air Toxics NSR Program is generally referred to as a "Health Risk Screening Analysis", or HRSA).

Depending on the results of an HRSA, new and modified sources may be required to control emissions of TACs using the Best Available Control Technology for Toxics (TBACT). The residual emissions remaining after the use of TBACT are also evaluated to make sure that the health risks for any exposed individual in the surrounding community will not be significantly increased by the proposed project. The program also allows the APCO to consider the degree of uncertainty in the HRSA, along with a number of other factors, in making a risk management decision to issue or deny a permit.

The District is now proposing to codify the policies and procedures that make up the Air Toxics NSR Program by adopting a new District rule: Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants, and a new part to its Manual of Procedures (MOP). Amendments to several other District rules are also proposed in order to maintain consistency with Regulation 2, Rule 5.

The most significant changes in the Air Toxics NSR Program included in the proposed rulemaking are: (1) add the consideration of acute health risks in HRSAs, (2) lower the TBACT threshold for chronic non-cancer health risks, (3) use updated toxicity values and exposure assessment procedures, (4) eliminate discretionary risk management authority and (5) remove existing exemptions from project risk limits for dry cleaners. Due to increases in the quantity and complexity of HRSAs that will result from these changes, the District is also proposing to increase permit fees for affected facilities in order to fund the additional anticipated staff resources.

The District has three regulatory programs which are used to reduce the health risks associated with exposure to TACs emitted from stationary sources: (1) a Source Category-based Control Program, (2) the Air Toxic "Hot Spots" Program (ATHS), and (3) the Air Toxics NSR Program.

1.2.2 EXECUTIVE SUMMARY – CHAPTER 3: ENVIRONMENTAL SETTINGS, IMPACTS AND MITIGATION MEASURES

CEQA Guidelines §15125(a) requires that an EIR include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the NOP is published. This environmental setting will normally constitute the baseline of physical conditions by which a lead agency determines whether an impact is significant.

Chapter 3 describes the existing environmental setting, analyzes the potential environmental impacts, and recommends mitigation measures, when significant environmental impacts have been identified. In addition, cumulative impacts and mitigations are also addressed. Each of the resources identified in the CEQA checklist (CCR Title 14, Chapter 3, §15000 et seq., Appendix G) are analyzed in Chapter 3.

The proposed project could result in the additional control of TACs. The Air Toxic NSR Rules provide incentives to reduce the potential health risk due to the operation of stationary sources. Specifically, the Air Toxic NSR Program is expected to provide incentives to use alternatives to the use of perc in dry cleaning facilities. There are a number of non-perc solvents available for dry cleaning. Additional control equipment also may be required to reduce exposure to TACs, e.g., oxidation catalyst to reduce emissions of acrolein. Table 1-1 summarizes the proposed project impacts and mitigation measures.

1.2.3 EXECUTIVE SUMMARY – CHAPTER 4: ALTERNATIVES

This EIR provides a discussion of alternatives to the proposed project as required by CEQA. According to the CEQA guidelines, alternatives should include realistic measures to attain the basic objectives of the proposed project and provide means for evaluating the comparative merits of each alternative (CEQA, Guidelines, § 15126.6(a)). In addition, though the range of alternatives must be sufficient to permit a reasoned choice, they need not include every conceivable project alternative (CEQA Guidelines §15126.6(a)).

CEQA requires a No Project Alternative to be evaluated. A No Project Alternative consists of what would occur if the project were not approved. The No Project Alternative would continue the current policies for regulating TACs from new, modified, or relocated equipment as part of the permit review process. The APCO would continue to have the discretion to issue or deny a permit for a proposed project that exceeds specified health risk thresholds, depending on a number of factors. These factors include the degree of uncertainty in the risk analysis, possible net air quality benefits of updated replacement equipment, the lifetime of the project, incorporation of all feasible risk reduction measures, the costs of mitigation, and any benefit of the project to the local community and society.

Under Alternative 2, the discretionary risk management actions of the APCO for proposed projects that exceed project risk limits would be clarified and expanded. The existing RMP indicates that the APCO is responsible for risk management at the District and may consider a number of factors in determining whether to issue or deny a permit for a proposed project together with the results of a risk screening analysis. Under this alternative, the District would retain this provision, which has been eliminated under the proposed project.

TABLE 1-1

Summary of Environmental Impacts, Mitigation Measures and Residual Impacts

Impact	Mitigation Measures	Residual Impact
Aesthetics		
The proposed rules are not expected to adversely affect scenic vistas, or to create additional demand for new lighting or exposed combustion, adversely affecting day or nighttime views. Stationary source control equipment which may be required typically affects industrial, institutional, or commercial facilities located in appropriately zoned areas.	None	Less than significant
Agricultural Resources		
The proposed rules are not expected to generate any new construction of buildings or other structures requiring conversion of farmland to non-agricultural use or conflict with zoning for agricultural uses.	None	Less than significant
Air Quality		
The BAAQMD considers construction emission impacts to be less than significant.	None Required	Less than significant
Emission reductions from the control of emissions at certain stationary sources could result in secondary emissions. These impacts are considered to be less than significant.	None Required	Less than significant
Assuming a "worst-case" analysis, where all existing perc dry cleaning machines in the District would switch to solvent cleaning with the highest VOC content, the potential VOC emissions would exceed the BAAQMD's regional mass daily significance threshold.	Current and future ozone control measures, and strict local regulation and restrictions will assist in reducing the potential increase in VOC emissions.	Potentially significant
The secondary impacts from increased electricity demand are expected to be less than significant.	None Required	Less than significant
The proposed project is expected to provide an air quality benefit by resulting in reduced TAC emissions, including perc, and reduced exposure to TACs within the District.	None Required	Beneficial impact
Biological Resources		
No direct or indirect impacts from implementing the proposed rules were identified which could adversely affect plant and/or animal species in the District.	None	Less than significant
Cultural Resources		
Because controlling toxic emissions from new or modified stationary sources does not typically require extensive cut-and-fill activities, or excavation, it is unlikely that changes in the District's Air Toxics NSR Program will adversely affect historical or archaeological resources, destroy unique paleontological resources or unique geologic features; or disturb human remains interred outside formal cemeteries.	None	Less than significant

TABLE 1-1 (cont.)

Impact	Mitigation Measures	Residual Impact
Geology and Soils		
The proposed rules will not directly expose people or structures to earthquake faults, seismic shaking, seismic-related ground failure including liquefaction, landslides, mudslides or substantial soil erosion.	None	Less than significant
Hazards and Hazardous Materials		
Providing incentives to use alternatives to perc could result in the increased use of flammable materials. The replacement solvents will be used in equipment that has been designed to comply with stringent flammability standards. Wet cleaning is a water-based system, is not flammable and is not considered further in this analysis. Likewise, carbon dioxide (CO_2) is not flammable. The proposed rules would not affect equipment, fire suppressant or prevention system specifications. Equipment would continue to comply with NFPA requirements. In conclusion, compliance with NFPA standards, and compliance with fire prevention, combined with improved equipment design and safety mechanisms, will reduce the potential fire hazards associated with flammable solvents to a less than significant impact. Hazards associated with transportation of hazardous materials are considered to be less than significant.	None	Less than significant
Hydrology and Water Quality		
Reducing the use of perc would remove it as a source of water contamination, providing some water quality benefits through eliminating or reducing the amount of perc used at dry cleaning facilities. The proposed project would not alter the location of facilities and would not exacerbate any potential hazards to storm-water or flood zones.	None	Less than significant
Land Use and Planning		
The proposed rules do not require construction of structures for new land uses in any areas of the District, therefore, are not expected to create divisions in any existing communities or conflict with any applicable habitat conservation or natural community conservation plan.	None	Less than significant
Mineral Resources		
The proposed rules are not expected to deplete non-renewable mineral resources, such as aggregate materials, metal ores, etc., at an accelerated rate or in a wasteful manner.	None	Less than significant
Noise		
It is not expected that modifications to install air pollution control equipment would substantially increase ambient operational noise levels, or expose people to excessive noise levels. The noise produced by the alternative non-perc technologies or new air pollution control equipment will not increase ambient noise levels. Affected facilities would be expected to comply with existing noise ordinances.	None	Less than significant
Population and Housing		
The existing labor pool within the Bay Area would accommodate the labor requirements for any modifications at affected facilities, therefore the proposed rules are not expected to result in changes in population densities or induce significant growth in population.	None	Less than significant

TABLE 1-1 (concluded)

Impact	Mitigation Measures	Residual Impact
Public Services		
There is no potential for significant adverse public service impacts as a result of adopting the proposed rules. There would be no need for new or physically altered government facilities in order to maintain acceptable service ratios, response times or other performance objectives. No additional need for fire or police services would be expected.	None	Less than significant
Recreation		
There are no provisions in the proposed rule which would affect land use plans, policies, ordinances, or regulations, increasing the need for more recreational facilities.	None	Less than significant
Transportation and Traffic		
If two additional employees are required for each dry cleaning facility, and all dry cleaning facilities install wet cleaning equipment, 1,350 new employees would be needed. Therefore, 1,350 new additional commute trips would be generated and spread throughout the district. This is not a substantial increase nor would it adversely affect the LOS at any one intersection. No other significant traffic or parking impacts were identified.	None	Less than significant
Utilities and Service Systems		
Adoption of the new rules would not require the construction of new wastewater treatment or storm water drainage facilities, or expansion of existing facilities. If all existing dry cleaning facilities currently using perc switched to wet cleaning, the expected annual water use would increase. The resulting per day increase would be 388,540 gallons per day. There are sufficient water supplies available to serve the project from existing entitlements and resources. The proposed rules may require replacement of dry cleaning equipment. It is expected that the dry cleaning equipment will be replaced at the end of its useful life. Therefore, the landfills or scrap metal collectors would be receiving this equipment whether the new requirements are imposed or not.	None	Less than significant

Under Alternative 3, it is assumed that the health risk thresholds would be reduced. The maximum cancer risk threshold would be limited to 1 per million and the hazard index would be limited to 0.2 for all cases. There would be no additional allowance for projects to go to 10 per million with TBACT. It is assumed that additional air pollution control equipment would be required under this alternative than the proposed project, in order to comply with the 1 per million threshold.

The No Project Alternative would not ultimately achieve the long-term benefits of reduced TAC emissions and reduced exposure to TACs that the proposed rule would achieve. The No Project Alternative (Alternative 1) and Alternative 2 would reduce the potentially significant impacts of increased VOC emissions associated with the proposed project to less than significant but would provide less benefit associated with TAC emission reductions than the proposed rule would provide.

1.2.4 EXECUTIVE SUMMARY – CHAPTER 5: OTHER CEQA TOPICS

1.2.4.1 Relationship Between Short-term Uses and Long-Term Productivity

Implementing the Air Toxic NSR rules would not narrow the range of beneficial uses of the environment. Of the potential environmental impacts discussed in Chapter 3, those related to air quality are considered potentially significant due to the potential increase in VOC emissions associated with hydrocarbon dry cleaning machines versus perc dry cleaning machines. Implementation of ozone control measures in the 2000 CAP are expected to reduce the cumulative VOC emissions to less than significant.

1.2.4.2 Significant Irreversible Environmental Changes

Implementation of the Air Toxic NSR rules is not expected to result in significant irreversible adverse environmental changes. The proposed project could result in significant air quality impacts since the conversion of perc dry cleaning machines to other solvents could result in emissions that exceed the BAAQMD significance thresholds. However, cumulative air quality impacts are expected to be less than significant as other ozone control measures will result in overall emission reductions of NOx and VOCs.

The Air Toxic NSR rules are expected to result in long-term benefits associated with improved air quality even though the population of the Bay Area is expected to increase. The project would result in reduced emissions of TACs, thereby improving air quality and related public health.

1.2.4.3 Growth-Inducing Impacts

Growth-inducing impacts can generally be characterized in three ways: (1) a project includes sufficient urban infrastructure to result in development pressure being placed on less developed adjacent areas; (2) a large project affects the surrounding community by producing a “multiplier effect,” which results in additional community growth; and (3) a new type of development is allowed in an area, which subsequently establishes a precedent for additional development of a similar character. None of the above scenarios characterize the project evaluated in the EIR.

1.2.5 EXECUTIVE SUMMARY – CHAPTERS 6 AND 7: REFERENCES AND ACRONYMS AND GLOSSARY

Information on references cited (including organizations and persons consulted) and the acronyms and glossary are presented in Chapters 6 and 7, respectively.

CHAPTER 2

PROJECT DESCRIPTION

Introduction
Project Location
Current Risk Management Policy
Project Objectives
Proposed Project
- Program Updates and Enhancements
- Acute Health Risks
- TBACT Threshold for Non-Cancer Risks
- Toxicity Values and Exposure Assumptions
- Project Risk Limits for Dry Cleaners
- Other Program Changes

Proposed Rule and Rule Amendments
- Proposed Regulation 2, Rule 5
- Proposed Amendments to Regulation 2, Rule 1
- Proposed Amendments to Regulation 2, Rule 2
- Proposed Amendments to Regulation 2, Rule 9
- Proposed Amendments to Regulation 3
- Proposed Amendments to Regulation 8, Rule 34
- Proposed Amendments to Regulation 8, Rule 40
- Proposed Amendments to Regulation 8, Rule 47
- Proposed Amendments to Regulation 11, Rule 16
- Proposed MOP Section

2.0 PROJECT DESCRIPTION

2.1 INTRODUCTION

For the last eighteen years, the District has had a program to evaluate and reduce the public's exposure to toxic air contaminants (TACs). TACs are air pollutants which may cause adverse health effects such as cancer, birth defects, respiratory ailments, or other serious illness. The District's overall air toxics program includes three individual regulatory programs directed at controlling TAC emissions from stationary sources. Two of these programs apply to sources at existing facilities, and the third is the Air Toxics New Source Review (NSR) Program, which focuses on proposed projects involving new and modified sources.

This EIR addresses the proposed changes to the Bay Area Air Quality Management District ("the District" or BAAQMD) Air Toxics NSR Program. The proposed changes in the program will result in the adoption of a new District rule, and amendments to several existing District rules and Manual of Procedures (MOP).

The District originally proposed a new Air Toxics Rule in 2003. The District has made numerous revisions to the 2003 proposal based on public comments, and due to amendments to State guidelines and District regulations that have been adopted since 2003. The District has also identified several additional District rules that require amendments to ensure consistency with the current proposal. A list of the regulatory proposals follows.

<u>The proposed project includes the following</u>:

- REGULATION 2: PERMITS, RULE 5: NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS

- BAAWMD MANUAL OF PROCEDURES, VOLUME II, PART 4: NEW AND MODIFIED SOURCES OF TOXIC AIR CONTAMINANTS

<u>The proposed project also includes amendments to the following rules and regulations</u>:

- BAAQMD REGULATION 2: PERMITS, RULE 1: GENERAL REQUIREMENTS

- BAAQMD REGULATION 2: PERMITS, RULE 2: NEW SOURCE REVIEW

- BAAQMD REGULATION 2: PERMITS, RULE 9: INTERCHANGEABLE EMISSION REDUCTION CREDITS

- BAAQMD REGULATION 3: FEES

- BAAQMD REGULATION 8: ORGANIC COMPOUNDS, RULE 34: SOLID WASTE DISPOSAL SITES

- BAAQMD REGULATION 8: ORGANIC COMPOUNDS, RULE 40: AERATION OF CONTAMINATED SOIL AND REMOVAL OF UNDERGROUND STORAGE TANKS

- BAAQMD REGULATION 8: ORGANIC COMPOUNDS, RULE 47: AIR STRIPPING AND SOIL VAPOR EXTRACTION OPERATIONS

- BAAQMD REGULATION 11: HAZARDOUS POLLUTANTS, RULE 16: PERCHLOROETHYLENE AND SYNTHETIC SOLVENT DRY CLEANING OPERATIONS

The goal of the District's Air Toxics NSR Program is to prevent significant increases in health risks resulting from new and modified sources of TACs based on pre-construction permit review. The program is also intended to reduce existing health risks by requiring updated control requirements when older, more highly polluting, sources are modified or replaced. The Air Toxics NSR Program was established in 1987 at the direction of the District's Board of Directors, and has been implemented based on policies and procedures adopted by the District's Air Pollution Control Officer (APCO).

The Air Toxics NSR Program is a health risk-based program, meaning that the program requirements are based on the results of health risk assessments (HRA). An HRA is a scientific analysis of the measure of health risk for individuals in the affected population that may be exposed to emissions of one or more toxic substances. The Air Toxics NSR Program uses an HRA methodology that was specifically developed for air pollution control programs in California. This methodology is documented in State HRA guideline documents, which have been updated several times since their original publication in 1987. Under the Air Toxics NSR Program, District staff completes a site-specific Health Risk Screening Analysis (HRSA) as part of the permit evaluation process for any proposed project with TAC emissions that exceed specified toxic thresholds. (Note that an HRA completed for the Air Toxics NSR Program is generally referred to as a "Health Risk Screening Analysis", or HRSA).

Depending on the results of an HRSA, new and modified sources may be required to control emissions of TACs using the Best Available Control Technology for Toxics (TBACT). The residual emissions remaining after the use of TBACT are also evaluated to make sure that the health risks for any exposed individual in the surrounding community will not be significantly increased by the proposed project. The program also allows the APCO to consider the degree of uncertainty in the HRSA, along with a number of other factors, in making a risk management decision to issue or deny a permit.

The District is now proposing to codify the policies and procedures that make up the Air Toxics NSR Program by adopting a new District rule: Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants, and a new part to its MOP. Amendments to several other District rules are also proposed in order to maintain consistency with Regulation 2, Rule 5.

The most significant proposed program changes (from the existing Risk Management Policy) are:

- Currently, Health Risk Screening Analyses (HRSAs) are completed to evaluate and limit chronic (i.e., long-term) health risks resulting from TAC emissions. The proposed rule will add the consideration of acute (i.e., short-term) health risk (project acute hazard index limit of 1.0).

- Currently, Best Available Control Technology for Toxics (TBACT) is required for a project that results in a cancer risk of greater than 1.0 in one million. The proposed rule will change the TBACT threshold from a project basis to a source basis and will add a TBACT threshold for chronic non-cancer health risks. Under the proposed rule, any new or modified source is required to have TBACT if the source risk has a cancer risk greater than 1.0 in one million or a chronic hazard index greater than 0.20. These changes focus the imposition of control equipment to those sources that significantly contribute to risk (including non-carcinogenic effects) while avoiding imposition of TBACT on sources that have little effect on risk.

- The proposed rule will remove existing exemptions from project health risk limits for dry cleaners due to advances in less-toxic technologies; this change will provide additional regulatory incentive to use alternatives to perchloroethylene.

- The proposed rule and HRSA Guidelines will include updated lists of toxic air contaminants, toxicity values, and exposure assessment procedures that are consistent with the Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines. The rule and HRSA guidelines will be periodically updated to incorporate future changes to the OEHHA guidelines.

- The proposed amendments to Regulation 3 will increase permit application fees for affected permit applicants in order to fund the additional staff resources that will be required to handle the expected increases in the quantity and complexity of HRSAs.

The above proposals include numerous revisions from the 2003 proposal. The major differences from the 2003 proposal are highlighted below.

- In 2003, the District proposed to clarify and expand discretionary risk management authority found in the existing Risk Management Policy and to

provide new opportunity for public participation in these discretionary decisions. Projects that complied with the specific findings requirements would have been allowed to meet facility risk limits of 100 in one million for cancer risk and 10.0 for acute and chronic hazard indices instead of the project risk limits of 10.0 in one million for cancer risk and 1.0 for hazard indices. The District has deleted the specific findings exemption, the risk reduction measures requirement, the facility risk limits, and all related definitions, administrative requirements, and procedural provisions from the proposed Regulation 2, Rule 5. Discretionary risk management actions will not be allowed, and all projects will be required to comply with project risk limits of 10.0 in one million for cancer risk and 1.0 for acute hazard index and 1.0 for chronic hazard index.

- The District has augmented Table 2-5-1 by adding the RELs and Cancer Potency Factors that were used to calculate the Acute and Chronic Trigger Levels. Since 2003, OEHHA has updated health effects values for several compounds. These revised health effects values and the resulting revised trigger levels (as of January 1, 2005) have been incorporated into Table 2-5-1. In addition, the trigger level calculation procedures have been amended due to OEHHA's recent adoption of modified exposure assumptions into the State risk assessment procedures, CARB's Interim Residential Breathing Rate, and numerous enhancements of the Hotspots Analysis Reporting Program (HARP) that have occurred since 2003. These trigger level calculation modifications resulted in revised trigger levels for many compounds.

- The District also amended Section 2-5-402 Health Risk Screening Analysis Guidelines by describing how and when Table 2-5-1 and the District's HRSA guidelines will be modified in the future. The District will periodically review, through a rule development process, the feasibility of implementation, enforcement, and compliance with project risk limits, for any new or revised health effects values adopted by OEHHA or any other exposure factors (e.g., breathing rate factors, exposure durations) that affect the emission trigger levels, prior to use of OEHHA's amended health effects values and exposure factors for Regulation 2, Rule 5.

- The District clarified in Section 2-5-301 that the TBACT threshold for chronic hazard index is 0.20 rather than 0.2. In practice, this change reduces the TBACT threshold from a possible high of 0.25 (which rounds down to 0.2 for one significant figure) to 0.205 (which rounds down to 0.20 for two significant figures).

- The District made numerous improvements to the emission calculations procedures in Sections 2-5-601 and 2-5-602 to ensure clarity and consistency.

- Emissions due to emergency use of emergency standby engines are exempt from the current risk management policy and were proposed for exemption from

Regulation 2, Rule 5 in 2003 pursuant to Section 2-5-111. The District is proposing to expand this exemption to include emissions arising from emission testing of these engines that is required by the APCO. This proposed emissions testing exemption for diesel engines is consistent with the Airborne Toxic Control Measure for stationary diesel engines that was recently adopted by California Air Resources Board (CARB). Most new engines are certified by the manufacturer to meet emission standards, therefore testing is very infrequently required by the APCO and these emissions are not expected to be significant.

- The District added definitions for acute hazard quotient and chronic hazard quotient and has clarified the related definitions for hazard index.

- The District revised the definition of cancer risk by removing the quantitative discussion of exposure duration for residential and worker receptors. The appropriate exposure durations will be identified in the District's HRSA guidelines rather than this definition.

- For the definition of "project", the District clarified the circumstances under which a previously permitted source will be considered part of the current project.

The District clarified the definitions of "Health Risk Screening Analysis", "modified source of toxic air contaminants", "receptor location", "reference exposure level", and "worker receptor" and made numerous other editorial revisions to the proposed rule.

The District's efforts to reduce public exposure to TACs includes the promotion of measures directed at reducing emissions from motor vehicles, which are the largest source of TACs. The District has initiated the Community Air Risk Evaluation (CARE) Program to investigate the cumulative impact of stationary, area, and mobile sources in a selected neighborhood; the CARE Program will result in targeted risk reduction measures for the most significant sources, including voluntary risk reduction projects funded by grants (e.g., Carl Moyer and Transportation Fund for Clean Air).

The District's regulatory programs, however, focus on the stationary sources over which the District has direct regulatory authority. TACs are released from a variety of stationary sources, ranging from small facilities like dry cleaners and gasoline stations, to large facilities such as chemical factories and refineries.

2.2 PROJECT LOCATION

The BAAQMD has jurisdiction of an area encompassing 5,600 square miles. The District includes all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties, and portions of southwestern Solano and southern Sonoma counties. The San Francisco Bay Area is characterized by a large, shallow basin surrounded by coastal mountain ranges tapering into sheltered inland valleys. The combined climatic and topographic factors result in increased potential for the

accumulation of air pollutants in the inland valleys and reduced potential for buildup of air pollutants along the coast. The Basin is bounded by the Pacific Ocean to the west and includes complex terrain consisting of coastal mountain ranges, inland valleys and bays (see Figure 2-1).

2.3 CURRENT RISK MANAGEMENT POLICY

Risk-based approaches are widely used in regulatory programs in the United States by federal agencies such as the Environmental Protection Agency (U.S. EPA), Department of Energy (DOE), and the Nuclear Regulatory Commission (NRC). In California these methods are used by State agencies including the California Air Resources Board (CARB), Department of Pesticide Regulation (DPR), Department of Toxics Substances Control (DTSC), and the Water Resources Control Board (WRCB). A risk-based approach is appropriate for the Air Toxics NSR Program because it provides site-specific information regarding potential health effects of proposed new and modified sources that can be used in an objective manner to evaluate compliance with California Health & Safety Code (CH&SC) Section 41700.

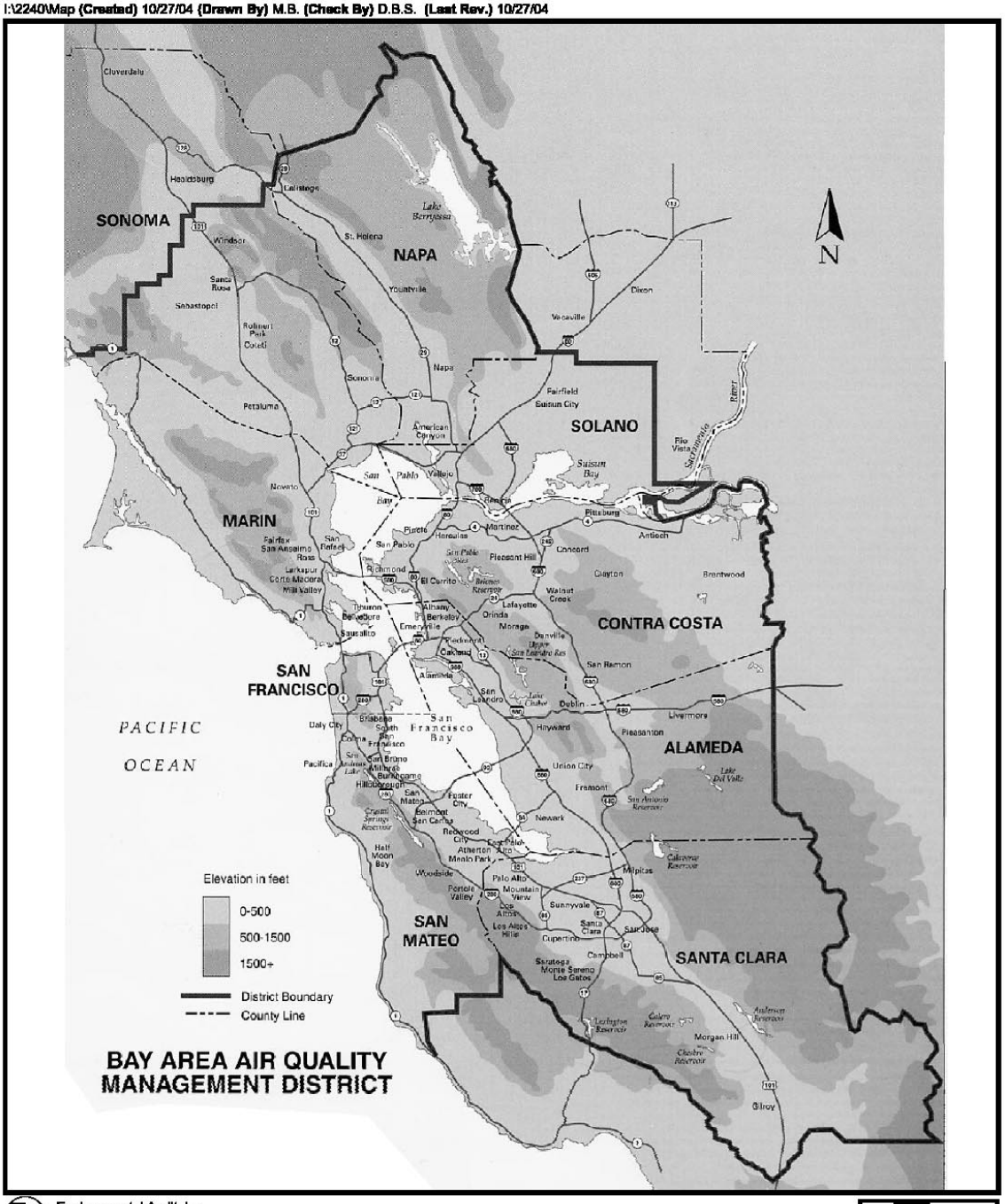
The District Air Toxics NSR Program uses an HRA methodology that was specifically developed for air pollution control programs in California. This methodology is documented in State HRA guideline documents, which have been updated several times since their original publication in 1987. The models and assumptions used in these guidelines are designed to err on the side of health protection in order to avoid underestimation of risk to the public.

The standard risk assessment approach currently involves four steps: (1) Hazard Identification, (2) Exposure Assessment, (3) Dose-Response Assessment, and (4) Risk Characterization. Hazard Identification involves identifying the specific toxic substances that need to be evaluated and whether each of these is a potential human carcinogen, and/or is associated with other types of adverse health effects.

Exposure Assessment involves estimating the extent of public exposure to each substance for which potential cancer risk or non-cancer health effects will be evaluated. Dose-Response Assessment is the process of quantifying the relationship between level of exposure to a toxic substance and incidence of an adverse health effect in an exposed population. Risk characterization is the final step of risk assessment. In this step, risks are calculated by combining modeled exposure estimates determined through exposure assessment with Cancer Potency Factors (CPFs) and/or Reference Exposure Levels (RELs) developed through dose-response assessment.

The Risk Evaluation Process (REP) describes the procedures that are followed by District staff when reviewing permit applications for new and modified sources in order to determine the health risks associated with emissions of TACs.

I:\2240\Map (Created) 10/27/04 (Drawn By) M.B. (Check By) D.B.S. (Last Rev.) 10/27/04



Environmental Audit, Inc.

NOT TO SCALE

LOCATION OF BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Figure 2-1

The Risk Management Policy (RMP) specifies that the APCO is responsible for risk management at the District. The APCO has discretion and may consider a number of factors in determining whether to issue or deny a permit for a proposed project together with the results of an HRSA. These factors include the degree of uncertainty in the risk analysis, possible net air quality benefits of updated replacement equipment, the lifetime of the project, incorporation of all feasible risk reduction measures, the costs of mitigation, and any benefit of the project to the local community and society. The APCO has established specific criteria in the RMP under which permits for new and modified sources can be issued without further risk management considerations (see Table 2-1).

TABLE 2-1

Summary of Existing District RMP Criteria for Issuance of Permits without Further Risk Management Considerations

Project Acceptability Criteria	Cancer Risk Threshold	Chronic Hazard Index Threshold
Project is acceptable as proposed[1]	≤ 1.0 in a million	≤ 1.0
Project is acceptable if all sources in the project have TBACT	≤ 10 in a million	≤ 1.0
For dry cleaners, project is acceptable if all sources in the project have TBACT and all reasonable risk reduction measures have been taken.	≤ 100 in a million	≤ 1.0

[1] Health risks for emergency stand by diesel engines do not include emissions that occur during emergency use.

The District's REP and RMP have been updated several times since their original adoption, primarily in response to revisions in statewide health risk assessment and risk management guidelines. These guideline revisions included HRA guidelines adopted for use in the Air Toxic Hot Spots (ATHS) Program, and risk management guidelines for new and modified sources adopted by CARB. The District established a specific RMP for dry cleaners that allowed permits to be issued for health risks within the action range identified in the CARB risk management guidelines, provided that TBACT and all reasonable risk reduction measures were employed. The District also established a specific risk management policy for diesel-fueled engines so that limitations would not need to be placed on standby engines during emergency use. The current versions of the District's REP and RMP were adopted on February 3, 2000, with the exception of the RMP for diesel-fueled engines which was adopted on January 11, 2002. These documents describe the existing District Air Toxics NSR Program and serve as the baseline for evaluating the changes that would result from the proposed rulemaking described in this report.

Under the REP, the District reviews all permit applications for new and modified sources for TAC emissions. Annual TAC emissions are estimated by District engineers based on

source-specific emissions data or material balance, vendor guarantees, and/or representative general emission factors, taken together with the maximum requested source activity levels (e.g., maximum annual fuel or material throughput).

An HRSA is prepared by District staff for proposed projects with TAC emissions that would exceed any listed annual TAC thresholds. To conserve limited resources, an iterative approach is often used in completing these HRSAs. The iterative approach involves initially completing a simplified health-conservative HRSA in order to determine whether a more complex, refined, HRSA is needed. These refinements are often applied sequentially using site-specific information until the requirements of the RMP are met.

If, after exhausting all reasonably available levels of refinement, the results of an HRSA indicate that the project will not meet the requirements of the RMP as proposed, District staff will identify options under which compliance can be achieved. The permit applicant may then consider these options, and is given the opportunity to amend their application, or submit a new permit application, with changes in the project necessary to reduce health risks to levels specified in the RMP.

In relatively rare instances, the District APCO will deny a permit for a proposed project because it has not met the health risk requirements of the RMP. In the vast majority of cases, however, viable permitting options can be identified where the use of emissions control technology and/or other risk reduction measures will be successful in reducing the health risks to acceptable levels.

Prior to 2000, the District completed HRSAs for an average of about 175 permit applications per year. This number increased to 255 in 2000, 440 in 2001, 602 in 2002, 432 in 2003, and 403 in 2004. The large increase in the number of HRSAs completed over the last few years is due primarily to the elimination of permit exemptions for certain sources, particularly engines that are used to supply backup power in the event of an emergency.

A wide variety of different types of sources have TAC emissions and may be subject to HRSA requirements. Diesel engines are currently the most common type of source evaluated in the Air Toxics NSR Program, accounting for about 75 percent of the HRSAs completed in 2004. Other source categories for which significant numbers of HRSAs are completed are, in order of decreasing numbers, gasoline dispensing facilities (GDFs), various gas-fired combustion sources, soil-vapor extraction systems, and dry cleaners. Other common, but less numerous, sources evaluated include landfills, surface coating operations, organic liquid storage tanks (i.e., non-GDFs), coffee roasters, crematories, and furniture strippers.

2.4 PROJECT OBJECTIVES

The objectives of this proposed rulemaking are:

1. To update and enhance the existing District Air Toxics NSR Program. Most of the changes that are proposed are intended to increase conformity with updated State health risk assessment and risk management guidelines.

2. To improve the legal defensibility of the District's permitting decisions concerning new and modified sources of TACs. The proposed program would be implemented through rule requirements and procedures adopted by the District's Board of Directors, rather than policies and procedures adopted by the District's APCO.

3. To increase the clarity and public visibility of program requirements. Publication in the District's rulebook and MOP will clarify program requirements, and a series of planned community-based workshops was conducted in order to increase public awareness of the program.

2.5 PROPOSED PROJECT

The District is proposing to codify the REP and RMP by adopting a new District rule, and a new part to it's Manual of Procedures, as follows: Regulation 2: Permits, Rule 5: New and Modified Sources of Toxic Air Contaminants, and Manual of Procedures Volume II: Engineering Permitting Procedures, Part 4: New and Modified Sources of Toxic Air Contaminants. The District is also proposing amendments to Regulation 2: Permits, Rule 1: General Requirements, Rule 2: New Source Review, and Rule 9: Interchangeable Emission Reduction Credits; Regulation 3: Fees; and Regulation 8: Organic Compounds, Rule 34, Solid Waste Disposal Sites, Rule 40: Aeration of Contaminated Soil and Removal of Underground Storage Tanks, Rule 47: Air Stripping and Soil Vapor Extraction Operations, and Regulation 11: Hazardous Pollutants, Rule 16: perchloroethylene and Synthetic Solvent Dry Cleaning Operations that are needed to maintain consistency with the new Regulation 2, Rule 5.

2.5.1 PROGRAM UPDATES AND ENHANCEMENTS

The adoption of the proposed Regulation 2, Rule 5, and the companion Manual of Procedures, Volume II: Part 4, will codify the existing District REP and RMP. It will also update and enhance program requirements and increase conformity with State risk assessment and risk management guidelines. These guidelines include:

- Revised health risk assessment guidelines have been established by OEHHA. The SB 1731 amendments to the ATHS Program required OEHHA to revise the risk assessment guidelines used in the ATHS program after a peer review process, and in consideration of input from the State's Scientific Review Panel (SRP). After a multi-year effort, OEHHA adopted the OEHHA Air Toxic Hot Spots Program Guidance

Manual for Preparation of Health Risk Assessment (August, 2003) for use in the ATHS Program in October of 2003. (The new OEHHA HRA guidelines will be referred to in the remainder of this report as the "2003 HRA Guidelines"; the existing HRA guidelines will be referred to as the "1993 HRA Guidelines").

- CARB released the Hotspots Analysis and Reporting Program (HARP) in 2003. The HARP software is intended to facilitate the preparation of HRAs following the new HRA guidelines.

- The District has been informed that OEHHA is evaluating further refinements to the exposure assessment methods that are given in the 2003 HRA Guidelines, and that these refinements may result in significant changes to exposure estimates for the breathing (i.e., inhalation) pathway. In light of this, CARB also released an Interim Policy for Inhalation-Based Residential Cancer Risk" that is to be used to augment the 2003 HRA Guidelines where a single cancer risk value (rather than a range of risk) is needed or prudent for characterizing risk or where a single risk value is used for risk management decision-making for residential receptors. The District will use CARB's interim policy and the recommended 80th percentile breathing rate value (302 liters/kilogram-day) for implementing Regulation 2, Rule 5 until OEHHA completes their refined review of exposure assessment methods. The 80th percentile value will be referred to as the "Interim Residential Breathing Rate".

- Risk management guidelines have been issued by CARB. In 1993, CARB issued Risk Management Guidelines for New and Modified Sources of Toxic Air Pollutants (CARB, 1993). These guidelines were intended to assist air districts in making permitting decisions for new and modified sources of TACs. In 2000, CARB also issued Risk Management Guidance for the Permitting of New Stationary Diesel Fueled-Engines (CARB, 2000). The suggested risk levels for permitting decisions in the CARB guidelines are summarized in Table 2-2.

TABLE 2-2

Summary of CARB Risk Management Guideline Criteria For Issuance of Permits

Project Acceptability Criteria	Cancer Risk Threshold	Hazard Index Threshold
Project is acceptable as proposed[1]	≤ 1.0 in a million	≤ 0.2
Project is acceptable if all sources in the project have TBACT[1]	≤ 10 in a million	≤ 1
For dry cleaners, project is acceptable if all sources in the project have TBACT and all reasonable risk reduction measures have been taken.	≤ 100 in a million	≤ 10
For diesel engines, project is acceptable if specific technology requirements are met. In addition, for non-emergency engines used more than 400 hr/yr, project is acceptable if a Specific Findings Report is prepared and the APCO finds that a permit should be issued.	No specific upper bound risk limit established	No specific upper bound risk limit established

[1] Districts may exempt certain categories of small businesses (e.g., dry cleaners, wood furniture refinishers, gasoline service stations), which have implemented all technically feasible and cost effective control measures.

2.5.2 ACUTE HEALTH RISKS

The existing District REP and RMP focus on adverse health effects that may result from long-term (i.e., chronic) exposures to TACs. There are no specific requirements for consideration of health effects that may result from acute exposures. Acute health effects have not previously been considered because: (1) health effect values for acute exposures for the general public have been of limited number and uneven quality, and have focused on industrial accidents instead of routine or predictable short-term emissions, and (2) use of the available health effects values have generally indicated (e.g., for a wide variety of sources evaluated under the requirements of the ATHS Program) that these acute exposures are rarely of concern for routine or predictable emissions.

In the 2003 HRA Guidelines, OEHHA has established uniform, science-based, guidelines for the derivation of acute health effect values that are applicable to general public exposures to routinely emitted TACs. The 2003 HRA Guidelines establish 51 acute RELs, almost all of which were developed *de novo* for these guidelines. The District is proposing to expand the scope of the Air Toxics NSR Program by using these new OEHHA acute RELs to evaluate short-term health effects.

The District program will focus on acute exposures to TACs that result from emissions that are routine or predictable in nature rather than those that are the result of accidents. Accidental releases of toxic compounds are separately regulated under the California Accidental Release Prevention (CalARP) Program. The CalARP Program is administered by the California Office of Emergency Services (OES) and is implemented

by local administering agencies in each city or county. The purpose of the CalARP program is to reduce the frequency of accidental releases of hazardous substances and reduce the consequences in the event a release occurs.

An acute REL is an air concentration that is not likely to cause adverse effects in a human population exposed to that concentration for a short period of time. Almost all of the acute RELs are based on one-hour exposures, except for a few that are based on exposures of several hours (i.e., 4-, 6-, and 7-hour). The acute RELs are based on the most sensitive, relevant, adverse health effect reported in the medical and toxicological literature. All but a few of the acute RELs are protective of mild health effects, which are considered minor and reversible (e.g., mild irritation of the eyes, nose or throat). The RELs are designed to protect the most sensitive individuals in the population by the inclusion of margins of safety. Inclusion of margins of safety means that exceeding a specific REL does not automatically indicate an adverse health impact. Rather, it is an indication of the erosion of the margin of safety for exposure to that particular compound. As is the case for estimating chronic non-cancer health effects, a hazard index approach is used to estimate potential acute health effects. For a given TAC, the acute hazard quotient is the ratio of the estimated short-term exposure to the applicable acute REL. To assess the cumulative impact resulting from exposure to more than one compound, the effects are assumed to be additive for a given toxicological endpoint. Thus, where multiple TACs are being considered, the total acute hazard index is the sum of the individual acute hazard quotients for all TACs identified as affecting the same target organ or organ system.

The District is proposing to include all compounds with OEHHA acute RELs in the Air Toxics NSR Program with the exception of carbon monoxide, nitrogen dioxide, and sulfur dioxide. Each of these is a criteria air pollutant with existing requirements for air quality impact analysis in District Regulation 2, Rule 2.

Toxic trigger levels expressed as one-hour emission rates are being added to determine the need for evaluating acute health impacts. The trigger levels were determined for each TAC based on the applicable acute REL, a conservative estimate of the one-hour average air concentration that would result from a unit emission rate (i.e., Chi/Q), and a hazard index of 1.0.

The same air dispersion models that are currently used for estimating chronic health effects (e.g., SCREEN, ISCST) will generally be used for estimating acute health effects. The emission rates used in the modeling will be the maximum emissions that would be expected to occur over the averaging period of the acute REL (i.e., a one-hour period in most cases). The hazard index will be calculated based on the highest model-predicted short-term average (e.g., one-hour) ambient air concentration at a receptor location where public exposure could occur. Non-inhalation pathways are not considered in the calculation of an acute hazard index.

The receptor locations used in evaluating acute health effects will, in some cases, be different from those used in evaluating chronic health effects. The evaluation of chronic

health effects focus on locations where individuals live or work (excluding on-site workers, which are regulated by occupational health and safety standards rather than air district requirements). The evaluation of acute health effects, however, may consider a location where a member of the public could reasonably be expected to be located for a short period of time. The proposed rule defines receptor location (Section 2-5-218) in a manner that is sufficiently broad in determining the MEI for acute health effects. A location where an individual may live (residential receptor) or work (worker receptor) or otherwise reasonable be expected to be exposed to toxic air contaminants for the particular chronic or acute exposures being evaluated in an HRSA.

The acute RELs vary widely in their relative toxicity, with values that span a full five orders of magnitude. The TAC that is expected to most frequently require emissions controls and/or other risk reduction measures in order to comply with the proposed acute project risk requirement is acrolein. Acrolein is an organic compound that is emitted from a variety of sources, including those that burn fossil fuels, and it has the lowest acute REL of any that have been adopted by OEHHA. Acrolein emissions can be effectively controlled, however (e.g., oxidation catalysts are extremely effective in removing acrolein emissions from engine exhaust).

2.5.3 TBACT THRESHOLD FOR NON-CANCER RISKS

TBACT is often necessary under the existing District RMP in order to maintain a project risk that is less than or equal to a chronic hazard index of 1.0. The District is proposing to require TBACT for sources with a chronic non-cancer hazard index greater than 0.2 (Regulation 2, Rule 5, Section 2-5-301). This will conform to the recommended non-cancer TBACT requirement in the CARB risk management guidelines.

The annual toxic trigger levels used to determine the need for a HRSA have been revised accordingly. The trigger levels were determined for each TAC based on the applicable chronic REL, a conservative estimate of the annual average air concentration that would result from a unit emission rate, and a target hazard index of 0.2.

2.5.4 TOXICITY VALUES AND EXPOSURE ASSUMPTIONS

Toxicity values and exposure assessment procedures are the two central components of health risk assessment. Toxicity values are the result of dose-response evaluation, which provide quantitative relationships between the amount of exposure to a substance and the extent of toxic injury or disease. Exposure assessment procedures are used to estimate the magnitude and duration of public exposure to substances being evaluated.

The 2003 HRA Guidelines continue to use a point estimate approach for establishing dose-response relationships. That is, single toxicity values (e.g., a CPF, a chronic REL, and/or an acute REL) are assigned to each substance as appropriate. The District is proposing to update the list of compounds included in the Air Toxics NSR Program to include those TACs with health effect values published in the 2003 HRA Guidelines (including new or updated health effects values as of January 1, 2005). These values

represent the best information currently available concerning the toxicity of chemical compounds based on general population exposures and incorporating an adequate margin of safety. Table 2-3 contains a list of the compounds that would be either added to or removed from the list of compounds currently included in the REP.

In developing the 2003 HRA Guidelines, OEHHA completed a re-evaluation of the existing algorithms used for making exposure estimates. The re-evaluation showed that the algorithms used in the 1993 HRA Guidelines were largely appropriate for use in the point estimate approach, so these algorithms were retained with only minor modifications. A number of the default values used as exposure parameters were updated, however, based on literature reviews.

The District is proposing to continue to use the point estimate approach to estimate health risks, but with the updated high-end default exposure parameters identified in the 2003 HRA Guidelines (OEHHA, 2000) with the exception of the Interim Residential Breathing Rate recommended by CARB. Also, consistent with the 2003 HRA Guidelines, an HRA may be refined using appropriate site-specific exposure parameters (i.e., a Tier 2 analysis) provided that reasonable justification can be provided for non-default values used. A Tier 3 stochastic analysis may also be used (e.g., using the HARP model) but, under the 2003 HRA Guidelines, this would only provide refined results for residential cancer risk estimates associated with non-inhalation pathways. If stochastic analysis is used, the cancer risk results used for determining compliance with Regulation 2, Rule 5, must be based on the risk to the 95th percentile of the population (see District HRSA Guidelines).

TABLE 2-3

Summary of Differences in the Proposed HRA Guideline and the Existing District REP

Compounds Added	Compounds Removed
Acrylic acid	Butyl Alcohol, tert-
Antimony compounds	Chlorotoluenes
Arsine	Diethylaminoethanol
Chlorine dioxide	Dimethyl phthalate
Chloroacetophenone, 2-	Dioctyl phthalate
Chloroprene	Ethyl acetate
Chromium trioxide (as chromic acid mist)	Ethyl alcohol (ethanol)
Cyanide and compounds (inorganic)	Gasoline vapors
Diethanolamine	Methylpyrrolidone, N-
Dimethyl formamide, N,N-	Silica, respirable, crystalline
Epoxybutane, 1,2-	Tetrahydrofuran
Ethylbenzene	Trichlorobenzene, 1,2 4-
Ethylene glycol	Vapam (sodium methyldithiocarbamate)
Fluorides and compounds	
Hydrogen selenide	
Methyl tertiary-butyl ether (MTBE)	
Mineral fibers (<1% free silica)	
Ozone	
Propylene (propene)	
Propylene glycol monomethyl ether	
Sulfates	
Sulfuric acid and oleum	
Triethylamine	
Vanadium compounds	
Vinyl acetate	
Vinyl bromide	

When combined, use of the default values for breathing rate, exposure frequency, and exposure duration given in the 2003 HRA Guidelines result in residential inhalation exposure estimates that are 31.8 percent higher then those produced using the 1993 HRA Guidelines. Point estimate exposures using the Interim Residential Breathing Rate for the inhalation pathway are likely to be very similar to those provided with the 1993 HRA Guidelines.

Additionally, use of the default values for breathing rate, exposure frequency, and exposure duration given in the 2003 HRA Guidelines result in worker inhalation exposure estimates that are 38.7 percent higher then those produced using the 1993 HRA

Guidelines. The District intends on conforming to these worker exposure assumptions in HRSAs completed for the Air Toxics NSR Program, unless other State recommended assumptions are established prior to adoption of the 2003 HRA Guidelines. The worker exposure assumptions do not affect the trigger levels in Table 2-5-1 because these are based on residential exposure assumptions.

For certain TACs, potential exposures from non-inhalation pathways may need to be estimated. In the 2003 HRA Guidelines, a number of the parameters used to calculate non-inhalation exposures have been updated relative to the 1993 HRA Guidelines. Tables 2-4, 2-5, and 2-6 contain a comparison of these exposure parameters.

2.5.5 PROJECT RISK LIMITS FOR DRY CLEANERS

Perchloroethylene, also known as tetrachloroethylene or perc, is the most common chemical solvent used by dry cleaners to remove stains and soil from clothing and other fabrics. In 1991, OEHHA completed a toxicity review of perc and adopted a revised cancer potency factor that was 10 times higher than the potency value used in the HRA Guidelines in effect at that time. Following this action, the District determined that the use of this revised toxicity value would result in maximum estimated lifetime cancer risks for many new and modified perc dry cleaners that would exceed project risk levels established in the District RMP (i.e., 10 in a million). The District then completed an evaluation of risk reduction measures available to dry cleaners including the use of alternative non-perc dry cleaning technology, and emission control technologies and work practice standards for perc machines.

The results of this evaluation indicated that non-perc alternative dry cleaning technologies were either: (1) not adequately advanced for the District to specify instead of perc, or (2) slated to be phased-out as stratospheric ozone depleting compounds [e.g., Chlorofluorocarbons (CFCs)]. Furthermore, the District's evaluation indicated that, although a number of reasonable risk reduction measures were available to reduce the risk from perc dry cleaners, in many cases they would not be able to reduce the risk below the 10 in a million criterion using the revised cancer potency factor. In consideration of these factors, the District established a specific RMP for perc dry cleaners that would allow permits to be issued for maximum cancer risks up to 100 in a million if TBACT and all reasonable risk reduction measures (e.g., vapor barrier rooms with enhanced ventilation) were used.

TABLE 2-4

Comparison of High-End Default Exposure Parameters (Residential)

Exposure Parameter	Units	1993 HRA Guidelines	2003 HRA Guidelines
Breathing Rate	l/kg bw-day	286	393*
Incidental Soil Ingestion Rate	mg/kg/bw-day	1.57	1.7
Water Intake Rate	ml/kg bw-day	28.6	54
Dermal Surface Area Exposed	cm^2	4,656	5,500
Dermal Absorption	None	Chemical-specific and Scenario-dependent	
Dermal Exposure Frequency	days/year	365	350
Breast Milk Consumption Rate	g/kg-day	138	138
Food Consumption:			
Exposed Produce	g/kg bw-day	3.57 for vine crops	12.1
Leafy Produce	g/kg bw-day	0.14	10.6
Protected Produce	g/kg bw-day	NA	4.88
Root Produce	g/kg bw-day	0.7	10.5
Beef	g/kg bw-day	1.4 for meat	6.97
Chicken	g/kg bw-day		5.02
Pork	g/kg bw-day		4.59
Eggs	g/kg bw-day		5.39
Diary	g/kg bw-day	4.3 for milk	17.4
Fish	g/kg bw-day	0.34	1.35
Fish Bioconcentration Factor	None	Chemical-specific	
Exposure Frequency (cancer risk)	days/year	365	350
Exposure Duration (cancer risk)	Years	70	70
Body Weight	Kg	70	63

Notes:

* Interim Residential Breathing Rate is 302 L/Kg-day

NA = Not Available

1993 HRA Guidelines are: CAPCOA ATHS Program Revised 1992 Risk Assessment Guidelines, California Air Pollution Control Officer's Association, October 1993.

2003 HRA Guidelines are: (1) ATHS Program Risk Assessment Guidelines: Part IV; Technical Support Document for Exposure Assessment and Stochastic Analysis, Office of Environmental Health Hazard Assessment, September 2000, and (2) ATHS Program Risk Assessment Guidelines: The ATHS Program Guidance Manual for Preparation of Health Risk Assessments, Office of Environmental Health Hazard Assessment, August 2003.

Per the 2003 HRA Guidelines, for multipathway evaluation, minimum exposure pathways evaluated for residents include inhalation, soil ingestion, and dermal exposure. If dioxins, furans, or PCBs are emitted, then breast-milk consumption is also mandatory. Other exposure pathways are evaluated on a site-specific basis.

TABLE 2-5

Comparison of Environmental Fate Evaluation

Media	1993 HRA Guidelines	2003 HRA Guidelines
Air	GLC = ER * X/Q	Same as 1993 HRA Guidelines
Soil	Function of: - deposition - accumulation period - chemical-specific half-life in soil - mixing depth - soil bulk density	Same algorithm as 1993 HRA Guidelines, however some chemical-specific half-life values in soil have been revised
Water	Function of: - direct deposition - material carried in by surface runoff is NOT considered	Same as 1993 HRA Guidelines
Vegetation*	Function of: - direct deposition of substance onto vegetation - root translocation or uptake from soil	Same algorithm as 1993 HRA Guidelines, however, for concentrations due to root translocation or uptake, some "root uptake" factors for inorganics (for root, leafy, and vine vegetation) have been revised
	"k", weathering constant, used to estimate concentration due to direct deposition = 0.693/14 day [20 (1/day)]	"k" – 10 (1/day)
Animal Products*	Function of: - identified complete exposure pathways for animal (e.g., inhalation, soil ingestion, of contaminated feed and pasture, and ingestion of contaminated water)	Same algorithm as 1993 HRA Guidelines, however, some specific input parameter values have been revised (CAPCOA, Table 2 vs. OEHHA, Table 5.2). Also feed to meat, milk and eggs transfer coefficients [Tco (d/kg)] for some chemicals have been revised (CAPCOA Table 1 vs. OEHHA, Table 5.3)
Fish Products*	Function of: - concentration in water - bioconcentration factor (bioaccumulation is NOT considered)	Same as 1993 HRA Guidelines

* Estimates of contaminants in vegetation and animals require the use of results from the air, water, and soil environmental fate evaluation

TABLE 2-6

Comparison of Default Values Used in Animal Product Uptake Modeling

Exposure Parameter	Units	1993 HRA Guidelines	2003 HRA Guidelines	
For Cattle:		Cattle/Lactating	Beef Cattle	Lactating Dairy Cattle
Body Weight	kg	500	500	500
Inhalation Rate	m^3/day	80	100	100`
Water Ingestion	L/day	100	40	80
Feed Ingestion	kg/day	8/16	8	16
Soil Fraction of Feed	Unitless	0.01	0.01	0.01
Soil Fraction of Pasture	Unitless	0.05	0.05	0.05
For Pigs:				
Body Weight	kg	60	60	
Inhalation Rate	m^3/day	7	7	
Water Ingestion	L/day	8	8	
Feed Ingestion	kg/day	2	2	
Soil Fraction of Feed	Unitless	0.01	N/A	
Soil Fraction of Pasture	Unitless	0.03	0.04	
For Poultry:				
Body Weight	kg	2	2	
Inhalation Rate	m^3/day	1	0.4	
Water Ingestion	L/day	0.6	0.2	
Feed Ingestion	kg/day	0.3	0.1	
Soil Fraction of Feed	Unitless	0.01	N/A	
Soil Fraction of Pasture	Unitless	0.03	0.02	

N/A = Not Applicable

The District is now proposing to amend the criteria for permit approval for new and modified dry cleaners to conform to those provided for other types of sources (i.e., project risk limited to 10 in a million). This proposal is based largely on an updated evaluation of non-perc alternative dry cleaning technologies, which have improved significantly in recent years. New solvents and equipment have been developed as alternatives to perc including high flashpoint petroleum (HFP) solvents (e.g., Exxon DF2000™), D5 siloxane (e.g., Green Earth ™ solvent), glycol ether (e.g., Rynex ™), aqueous (i.e., wet cleaning) processes and equipment, carbon dioxide technology, and other non-halogenated solvents used with closed-loop dry cleaning machines. Some of these technologies are currently in use within the District.

The District is not proposing to ban the use of perc in new or existing dry cleaning machines. There are many perc dry cleaners in the Bay Area that have maximum cancer

risks that do not exceed 10 in a million. These facilities typically have relatively low perc emissions, use state-of-the-art risk reduction measures (e.g., vapor barrier rooms), and/or are not in close proximity to residential and off-site worker receptor areas. The majority of new dry cleaning machines currently purchased, however, are based on non-perc technologies; the District's proposal will likely accelerate this trend to some degree.

2.5.6 OTHER PROGRAM CHANGES

2.5.6.1 Basis for TBACT Applicability

The existing RMP specifies that the requirement for TBACT be based on the maximum health risks determined for all new and modified sources that are included in a project. This provision sometimes results in instances where TBACT is required for some minor new and modified sources in a project that do not cause, or contribute significantly to, adverse health risks.

The District is proposing to address this issue by changing the basis under which TBACT is required from project risk to source risk (i.e., the maximum risk for an individual source, or permit unit). The existing TBACT threshold for cancer risk (i.e., 1 in a million), and the proposed TBACT threshold for chronic non-cancer risk (i.e., Hazard Index (HI) of 0.2), are considered to be appropriate source-level applicability criteria. Under this proposal, TBACT would therefore be required for a source if it results in a maximum cancer risk that exceeds 1.0 in a million and/or a maximum chronic HI that exceeds 0.2. In order to safeguard against instances where multiple minor sources in a project might cumulatively result in a significant contribution to risk, the District is proposing to retain the project risk limits of the existing RMP.

2.5.6.2 Definition of Project

The existing REP requires that health risks be determined for all new and modified sources that make up a construction "project" plus any "related projects". A "project" includes all new and modified sources contained within a single permit application. A "related project" includes all new or modified sources at a facility that have been permitted within the two-year period immediately preceding the date a complete application is received, unless the permit applicant can demonstrate that the sources involved are not directly related to one another. Related projects also include consecutive modifications to a source that occur over a period of time. The related project provision is included in order to discourage circumvention, which might be achieved by breaking a construction project into smaller pieces and submitting more than one permit application over a period of time.

2.5.6.3 Permit Fees

The District Air Toxics NSR Program is funded by collecting permit fees from facilities that are subject to program requirements. The current fee structure, delineated in District Regulation 3: Fees, specifies that a Toxic Surcharge Fee (TSF) be collected for any new

and modified sources that emit one or more TAC at a rate which exceeds an established toxic trigger level. The amount of the TSF varies depending on the type of source involved.

For many permit applications, the Toxic Surcharge Fee is currently the minimum specified fee of $182 (this fee may be reduced by 50 percent if the facility qualifies for a small business discount). This minimum fee is far below the District's cost of time and materials needed to conduct an HRSA. The proposed revisions to the fee structure will bring the minimum Toxic Surcharge Fee more in line with the District costs incurred for completing the HRSA.

The proposed amendments will increase the Toxic Surcharge Fee for permit applications that require an HRSA by $259 ($129 for facilities that qualifies for a small business discount). In addition, this fee will now be called a "Risk Screening Fee" so that it will not be confused with the Toxic Surcharge assessed for permit renewals.

The minimum Risk Screening Fee for most permit applications will now be $441 (i.e., $182 plus $259), and half of this amount (i.e., $220) if the facility qualifies for a small business discount. Note that these figures are subject to change based on other amendments to Regulation 3 that may occur before this proposal is finalized. Specifically, the District has proposed to amend Regulation 3 to provide for a general Cost of Living Adjustment (COLA) to permit fees and adjust other fees as appropriate. This COLA would result in a slight increase in the Risk Screening Fee. with this report.

2.5.6.4 Administrative Requirements

Section 2-5-401: Health Risk Screening Analysis Requirement specifies that an HRSA shall be prepared for any project subject to the rule. This would include any project with TAC emissions that exceed one or more of the listed toxic trigger levels. The applicant may submit an HRSA for the District's review, or have the District complete an HRSA for the project. The District will notify the applicant where the results of an HRSA indicate that the project, as proposed, would not meet the requirements of the rule. The applicant is then given the opportunity to perform a more refined HRSA, or to modify the project as necessary to comply with the requirements of the rule.

Sections 2-5-402: Health Risk Screening Analysis Guidelines, and 2-5-403: BACT/TBACT Workbook, specify that the District will publish and periodically update HRSA Guidelines and a BACT/TBACT Workbook, respectively. Both are intended to be "living documents" that will be updated as appropriate by the District without a formal rulemaking process. The initial District HRSA Guidelines will adopt, by reference, the 2003 HRA Guidelines, with some specific exceptions (e.g., Interim Residential Breathing Rate). Any subsequent revisions to the HRA Guidelines used in the ATHS Program will be periodically incorporated into the District HRSA Guidelines.

2.6 PROPOSED RULE AND RULE AMENDMENTS

2.6.1 PROPOSED REGULATION 2, RULE 5

The District is proposing to adopt a new rule, Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants. The rule is organized into six sections as follows: General (section numbers in the 100's), Definitions (200's), Standards (300's), Administrative Requirements (400's), Monitoring and Records (500's), and Manual of Procedures (600's).

2.6.2 PROPOSED AMENDMENTS TO REGULATION 2, RULE 1

The District is proposing amendments to Regulation 2: Permits, Rule 1: General Requirements, to delete obsolete terminology and to ensure consistency between the applicability of permit requirements and the project approval criteria for new and modified sources of toxic air contaminants provided in the new Regulation 2, Rule 5.

2.6.3 PROPOSED AMENDMENTS TO REGULATION 2, RULE 2

The District is revising Regulation 2: Permits, Rule 2: New Source Review, Section 2-2-244 Best Available Control Technology for Toxics (TBACT) to add clarity and to be consistent with 2-5-205.

2.6.4 PROPOSED AMENDMENTS TO REGULATION 2, RULE 9

Regulation 2: Permits, Rule 9: Interchangeable Emission Reduction Credits Section 2-9-301 and 2-9-304 is proposed to be updated to refer to "Regulation 2, Rule 5 New Source Review of Toxic Air Contaminants" instead of " the District's Toxic Risk Management Policy for new sources".

2.6.5 PROPOSED AMENDMENTS TO REGULATION 3

The District is proposing amendments to Regulation 3: Fees, to improve clarity and to increase revenue in order to fund increases in District staff resources that will be needed to implement the proposed enhancements in the Air Toxics NSR Program. The specific amounts of fees are noted in Section 2.5.6.3 above.

2.6.6 PROPOSED AMENDMENTS TO REGULATION 8, RULE 34

Regulation 8: Organic Compounds, Rule 34: Solid Waste Disposal Sites Section 122 limited exemption criteria was revised from "pass a risk screening analysis, as defined in Section 2-1-225, performed according to the current Air Toxic Risk Screening Procedure." to "conducting a health risk screening analysis performed according to the District's Health Risk Screening Analysis Guidelines, that the landfill, without a gas collection system, would not require TBACT pursuant to Regulation 2-5-301"

2.6.7 PROPOSED AMENDMENTS TO REGULATION 8, RULE 40

Regulation 8: Organic Compounds, Rule 40: Aeration of Contaminated Soil and Removal of Underground Storage Tanks, contains an exemption (i.e., Section 8-40-118: Exemption, Aeration Projects of Limited Impact) that is based in part on project emissions being less than the toxic trigger levels listed in Table 2-1-316. The District is proposing to update this reference to the new Table 2-5-1.

2.6.8 PROPOSED AMENDMENTS TO REGULATION 8, RULE 47

Regulation 8: Organic Compounds, Rule 47: Air Stripping and Soil Vapor Extraction Operations Sections 401 and 402 will be updated from using "risk screening" to "health risk screening analysis" to be consistent with this term in Regulation 2, Rule 5.

2.6.9 PROPOSED AMENDMENTS TO REGULATION 11, RULE 16

Regulation 11, Hazardous Pollutants, Rule 16: Perchloroethylene and Synthetic Solvent Dry Cleaning Operations will be modified to be consistent with Regulation 2, Rule 5, particularly referring to the Health Risk Screening Analysis Guidelines instead of risk estimation procedures associated with the Risk Management Policy for Dry Cleaners.

2.6.10 PROPOSED MOP SECTION

The District is proposing to add a new part to the engineering permitting procedures contained in its MOP to address the Air Toxics NSR Program. This part of the MOP will contain five sections that will include: (1) Introduction; (2) Review Procedures for Sources with TAC Emissions; (3) Permit Applications; (4) Regulation 2, Rule 5: New Source Review of TACs; and (5) Glossary.

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CHAPTER 3

ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Introduction
Aesthetics
Agricultural Resources
Air Quality
Biological Resources
Cultural Resources
Geology and Soils
Hazards and Hazardous Materials
Hydrology and Water Quality
Land Use and Planning
Mineral Resources
Noise
Population and Housing
Public Services
Recreation
Transportation and Traffic
Utilities and Service Systems

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

3.1 INTRODUCTION

CEQA Guidelines §15125(a) requires that an EIR include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to gain an understanding of the significant effects of the proposed project and its alternatives.

The CEQA Guidelines also require EIRs 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. 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).

This chapter describes the existing environmental setting, analyzes the potential environmental impacts, and recommends mitigation measures, when significant environmental impacts have been identified. Each of the resources identified in the CEQA checklist (CCR Title 14, Chapter 3, §15000 et seq., Appendix G) have been analyzed in this chapter.

Included for each impact category is a discussion of the environmental setting, significance criteria, project-specific impacts, project-specific mitigation (if necessary and available), impacts remaining after mitigation (if any), cumulative impacts and cumulative impact mitigation (if necessary and available).

A Notice of Preparation (NOP) was prepared for the Air Toxic NSR Rules on January 26, 2005 (see Appendix A). The NOP did not include a CEQA environmental checklist. Therefore, this EIR includes a discussion of all environmental resources identified in the CEQA checklist.

The District's REP and RMP were last amended on February 3, 2000, with the exception of the RMP for diesel-fueled engines, which was amended on January 11, 2002. These documents describe the existing District Air Toxics NSR Program and serve as the baseline for evaluating the changes that would result from the proposed rulemaking.

The proposed project could result in the additional control of TACs. The Air Toxic NSR Rules provide incentives to reduce the potential health risk due to the operation of stationary sources. Specifically, the Air Toxic NSR Rules are expected to provide incentives to use alternatives to the use of perc in dry cleaning facilities. There are a number of non-perc alternatives available for dry cleaning. Additional control equipment also may be required to reduce exposure to TACs, e.g., oxidation catalyst to reduce emissions of acrolein. New chemicals are proposed to be added to the Air Toxic NSR rules. The impacts of regulating new TACs are typically secondary or cross media impacts generated by air pollution control equipment.

3.2 AESTHETICS

3.2.1 ENVIRONMENTAL SETTING

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties, and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses.

The views of the San Francisco Bay Area are varied, unique, and recognized by many in the region and beyond. The basin formed by the coastal range, East Bay Hills, and the Bay itself, are prominent physical features of the region. To the west, the Pacific Ocean and the Coastal Range stretching from Mt. Tamalpais in the north to the Santa Cruz Mountains in the south, dominate the visual setting. To the east the Diablo Range dramatically punctuated by Mount Diablo provides a much different character. In the north, the vineyards of Napa and Sonoma counties are unique and draw visitors from around the world. Many man-made features in the Bay Area, e.g., the Golden Gate and Bay Bridges and the San Francisco skyline in particular, also provide aesthetic resources.

The variety of natural features, their topographic variation and the different types of development within them provide the Bay Area with significant visual resources. The Bay Area sits along the Pacific coast with several branches of the Coast Range dividing it into valleys, plains, and water bodies. The largest of these valleys contains San Francisco Bay while at the eastern edge of the region is the Central Valley, an extremely flat plain lying between the Coast Range and the Sierra Nevada Mountains. The hills of the Coast Range provide expansive views of the valleys and plains, revealing a variety of development types, including urban areas along the Bay plains and inland valleys, agricultural lands, and protected open space, and natural areas.

3.2.2 SIGNIFICANCE CRITERIA

The proposed project impacts on aesthetics will be considered significant if:

> The project will block views from or damage views of a scenic highway or corridor.

The project will adversely affect the visual continuity of the surrounding area.

The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

3.2.3 ENVIRONMENTAL IMPACTS

The proposed Air Toxic NSR Rules are not expected to adversely affect scenic vistas in the District. There should be no damage to scenic resources, including but not limited to trees, rock outcroppings, or historic buildings within a scenic highway; or substantially degrade the visual character of a site or its surroundings. Stationary source control equipment which may be required typically affects industrial, institutional, or commercial facilities located in appropriately zoned areas which are not usually located in areas with scenic resources. Further, modifications typically occur inside the buildings at the affected facilities, or because of the nature of the business (e.g., commercial or industrial) can easily blend with the facilities having little or no noticeable effect on adjacent areas.

The proposed Air Toxic NSR Rules are not expected to create additional demand for new lighting or exposed combustion that could create glare which could adversely affect day or nighttime views in any areas. Facilities proposing to install new sources or modify existing sources of TACs may be required to install new or additional air pollution control equipment or modify existing equipment or processes to reduce emission. Facilities affected by control equipment for stationary sources typically make modifications in the interior of an affected facility (e.g. dry cleaners), so any new light sources would typically be inside a building or not noticeable because of the presence of existing light sources. Further, affected commercial or industrial facilities would be located in appropriately zoned areas that are not usually located next to residential areas, so new light sources, if any, would not be noticeable to residents.

Based upon the above considerations, no potentially significant adverse aesthetics impacts could occur due to implementation of the proposed rule.

3.2.4 MITIGATION MEASURES

The aesthetic impacts associated with the Air Toxic NSR Rules are less than significant so no mitigation measures are required.

3.2.5 CUMULATIVE IMPACTS

Implementation of the air quality rules and regulations are not expected to generate significant cumulative aesthetic impacts. Air quality rules and regulations generally apply to stationary sources located in industrial and commercial areas that are not generally located in highly visible or scenic areas. Further, modifications typically occur inside the buildings at the affected facilities, or because of the nature of the business (e.g., commercial or industrial) can easily blend with the facilities having little or no noticeable effect on adjacent areas. It should be noted that implementation of various air quality

plans, rules and regulations may have a beneficial effect on scenic resources by improving visibility as well as improving air quality.

3.2.6 CUMULATIVE MITIGATION MEASURES

The cumulative aesthetic impacts associated with the Air Toxic NSR Rules are less than significant so no mitigation measures are required.

3.3 AGRICULTURAL RESOURCES

3.3.1 ENVIRONMENTAL SETTING

Land uses in the District vary between commercial, industrial, residential, agricultural and open spaces. Agricultural land uses are located in the less urbanized portions of the Bay Area, including the vineyards in Napa and Sonoma counties and include agricultural lands under Williamson Act contracts. Nevertheless, many vineyards have permitted sources and will likely be subject to Toxic NSR for future installations.

The facilities affected by the proposed Air Toxic NSR Rules are expected to be located in the commercial and industrial areas within the Bay Area. Agricultural resources are generally not located in the vicinities of or within the affected commercial and industrial areas, with the general exception of landfills, many which are surrounded by agricultural tracts.

3.3.2 SIGNIFICANCE CRITERIA

Proposed project impacts on agricultural resources will be considered significant if any of the following conditions are met:

> The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
>
> The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
>
> The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural uses.

3.3.3 ENVIRONMENTAL IMPACTS

The proposed Air Toxic NSR Rules typically affect commercial or industrial facilities, so they are not expected to generate any new construction of buildings or other structures that would require conversion of farmland to non-agricultural use, or conflict with zoning for agricultural uses, or a Williamson Act contract. There are no provisions in the proposed Air Toxic NSR Rules which would affect or conflict with existing land use plans, policies, or regulations or require conversion of farmland to non-agricultural uses. Land use, including agriculture-related uses, and other planning considerations are determined by local governments and no land use or planning requirements will be altered by the proposed project. The proposed rules are not expected to have significant adverse direct or indirect effects on agricultural resources. Based upon the above considerations, significant adverse impacts to agricultural resources are not expected.

3.3.4 MITIGATION MEASURES

No significant impacts to agricultural resources were expected so no mitigation measures are required.

3.3.5 CUMULATIVE IMPACTS

Implementation of various air quality plans, rules and regulations typically affect commercial or industrial facilities, so they are not expected to generate any new construction of buildings or other structures that would require conversion of farmland to non-agricultural use, or conflict with zoning for agricultural uses, or a Williamson Act contract. Land use, including agriculture-related uses, and other planning considerations are determined by local governments. Based upon the above considerations, significant adverse cumulative impacts to agricultural resources are not expected.

3.3.6 CUMULATIVE MITIGATION MEASURES

No significant adverse cumulative impacts to agricultural resources were expected so no cumulative mitigation measures are required.

3.4 AIR QUALITY

3.4.1 ENVIRONMENTAL SETTING

3.4.1.1 Criteria Air Pollutants

<u>Ambient Air Quality Standards</u>

It is the responsibility of the BAAQMD 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 (NO_2), particulate matter less than 10 microns in diameter (PM10), sulfur dioxide (SO_2) 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 SO_2, far more stringent. California has also established standards for sulfate, visibility, hydrogen sulfide, and vinyl chloride.

The state and National Ambient Air Quality Standards (NAAQS) for each of these pollutants and their effects on health are summarized in Table 3.4-1. CO, NO_2, PM10, and SO_2 are directly emitted from stationary and mobile sources. Ozone is not emitted directly from pollution sources. Instead ozone is formed in the atmosphere through complex chemical reactions between hydrocarbons or reactive organic hydrocarbons (ROG, also commonly referred to as volatile organic compounds or VOCs).

U.S. EPA requires CARB and BAAQMD to measure the ambient levels of air pollution to determine compliance with the NAAQS. To comply with this mandate, The BAAQMD monitors levels of various criteria pollutants at 26 monitoring stations. The 2003 air quality data from the BAAQMD monitoring stations are presented in Table 3.4-2.

Air quality conditions in the San Francisco Bay Area have improved since the District was created in 1955. Ambient concentrations of air pollutants and the number of days on which the region exceeds air quality standards have fallen dramatically (see Table 3.4-3). The District is in attainment of the state and federal ambient air quality standards for CO, nitrogen oxides (NOx), and sulfur oxides (SOx). The District is unclassified for the federal 24-hour PM10 standard. Unclassified means that the monitoring data are incomplete and do not support a designation of attainment or non-attainment.

The 2003 air quality data from the BAAQMD monitoring stations are presented in Table 3.4-2. All monitoring stations were below the state and federal ambient air quality standards for CO, NO_2, and SO_2. The federal 1-hour ozone standard was exceeded on one day in 2003 at the Livermore monitoring station. The other monitoring stations were in compliance with the federal 1-hour ozone standard. The Bay Area is designated as a non-attainment area for the California 1-hour ozone standard, and is seeking redesignation to attainment for the national one-hour standard. The federal 8-hour standard was exceeded on seven days in the District in 2003, most frequently in the Eastern District (Bethel Island, Concord, Fairfield, Livermore, and Pittsburg) and the Santa Clara Valley (Gilroy, Los Gatos and San Martin). The state 1-hour standard was exceeded on 19 days in 2003 in the District, most frequently in the Eastern District and Santa Clara Valley (see Table 3.4-2).

All monitoring stations were in compliance with the federal PM10 standards. The California PM10 standards were exceeded on six days in 2003 throughout the various monitoring stations in the District. The District did not exceed the federal PM2.5 standards in 2003 (see Table 3.4-2).

TABLE 3.4-1
Federal and State Ambient Air Quality Standards

	STATE STANDARD	FEDERAL PRIMARY STANDARD	MOST RELEVANT EFFECTS
AIR POLLUTANT	CONCENTRATION/ AVERAGING TIME	CONCENTRATION/ AVERAGING TIME	
Ozone	0.09 ppm, 1-hr avg. >	0.12 ppm, 1-hr avg.> 0.08 ppm, 8-hr avg>	(a) Short-term exposures: (1) Pulmonary function decrements and localized lung edema; (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; (d) Property damage
Carbon Monoxide	9.0 ppm, 8-hr avg. > 20 ppm, 1-hr avg. >	9 ppm, 8-hr avg.> 35 ppm, 1-hr avg.>	(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; (d) Possible increased risk to fetuses
Nitrogen Dioxide	0.25 ppm, 1-hr avg. >	0.053 ppm, ann. avg.>	(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; (c) Contribution to atmospheric discoloration
Sulfur Dioxide	0.04 ppm, 24-hr avg.> 0.25 ppm, 1-hr avg. >	0.03 ppm, ann. avg.> 0.14 ppm, 24-hr avg.>	(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, ann. geometric mean > 50 µg/m^3, 24-hr average>	50 µg/m^3, annual arithmetic mean > 150 µg/m^3, 24-hr avg.>	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Excess seasonal declines in pulmonary function, especially in children
Suspended Particulate Matter (PM2.5)	12 µg/m^3, annual arithmetic mean	15 µg/m^3, annual arithmetic mean> 65 µg/m^3, 24-hour average>	Decreased lung function from exposures and exacerbation of symptoms in sensitive patients with respiratory disease; elderly; children.
Sulfates	25 µg/m^3, 24-hr avg. >=		(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage
Lead	1.5 µg/m^3, 30-day avg. >=	1.5 µg/m^3, calendar quarter>	(a) Increased body burden; (b) Impairment of blood formation and nerve conduction
Hydrogen Sulfide	0.03 ppm (42 µg/m^3), 1-hr avg		
Vinyl Chloride	0.010 ppm (26 µg/m^3), 24-hr avg.		
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 70percent, 8-hour average (10am – 6pm PST)		Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent

TABLE 3.4-2
Bay Area Air Pollution Summary 2003

MONITORING STATIONS	Ozone							CARBON MONOXIDE			NITROGEN DIOXIDE			SULFUR DIOXIDE			PM10				PM2.5				
	Max 1-Hr	Nat Days	Cal Days	3-Yr Avg	Max 8-Hr	Nat Days	3-Yr Avg	Max 1-Hr	Max 8-Hr	Nat/ Cal Days	Max 1-Hr	Ann Avg	Nat/ Cal Days	Max 24-Hr	Ann Avg	Nat/ Cal Days	Ann Avg	Max 24-Hr	Nat Day	Cal Days	Max 24-Hr	Nat Days	3-Yr Avg	Ann Avg	3-Yr Avg
NORTH COUNTIES	(pphm)							(ppm)			(pphm)			(ppb)			(µg/m^3)				(µg/m^3)			(µg/m^3)	
Napa	11	0	2	0.0	8	0	6.5	4.7	2.5	0	7	1.2	0	--	--	--	21.3	41	0	0	--	--	--	--	--
San Rafael	9	0	0	0.0	7	0	4.9	3.8	2.0	0	7	1.6	0	--	--	--	17.6	41	0	0	--	--	--	--	--
Santa Rosa	10	0	1	0.0	8	0	5.4	3.1	1.8	0	6	1.2	0	--	--	--	16.9	36	0	0	39	0	37.9	8.8	10.0
Vallejo	10	0	2	0.0	7	0	6.5	4.0	2.9	0	7	1.2	0	5	1.2	0	17.3	39	0	0	31	0	35.0	9.4	11.8
COAST & CENTRAL BAY																									
Oakland	8	0	0	0.0	5	0	4.0	3.9	2.8	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Richmond	--	--	--	--	--	--	--	--	--	--	--	--	--	5	0.9	0	--	--	--	--	--	--	--	--	--
San Francisco	9	0	0	0.0	6	0	4.8	3.6	2.8	0	7	1.8	0	7	2.2	0	22.7	52	0	1	42	0	47.3	10.1	11.6
San Pablo	9	0	0	0.0	7	0	5.3	3.1	1.8	0	7	1.3	0	5	1.5	0	20.6	49	0	0	--	--	--	--	--
EASTERN DISTRICT																									
Bethel Island	9	0	0	0.3	8	0	7.9	1.6	0.9	0	5	0.9	0	6	2.2	0	19.4	51	0	1	--	--	--	--	--
Concord	10	0	5	0.3	9	1	8.2	3.2	2.0	0	6	1.3	0	3	0.6	0	16.4	34	0	0	50	0	41.0	9.7	11.2
Crockett	--	--	--	--	--	--	--	--	--	--	--	--	--	6	1.2	0	--	--	--	--	--	--	--	--	--
Fairfield	9	0	0	0.0	8	0	7.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Livermore	13	1	10	1.0	9	3	8.4	3.7	1.9	0	7	1.6	0	--	--	--	18.9	33	0	0	42	0	43.0	9.0	11.6
Martinez	--	--	--	--	--	--	--	--	--	--	--	--	--	7	1.6	0	--	--	--	--	--	--	--	--	--
Pittsburg	9	0	0	0.0	8	0	7.5	3.4	1.7	0	6	1.2	0	8	2.1	0	21.1	59	0	1	--	--	--	--	--
SOUTH CENTRAL BAY																									
Fremont	12	0	4	0.0	9	1	6.5	3.2	1.9	0	8	1.7	0	--	--	--	18.2	37	0	0	34	0	37.4	8.7	11.1
Hayward	12	0	3	0.0	9	1	6.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Redwood City	11	0	1	0.0	8	0	5.8	5.4	2.6	0	8	1.5	0	--	--	--	19.8	38	0	0	34	0	37.7	9.0	10.6
San Leandro	10	0	2	0.0	7	0	5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SANTA CLARA VALLEY																									
Gilroy	11	0	6	0.0	9	2	8.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Los Gatos	12	0	7	0.0	10	2	7.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Jose Central	12	0	4	*	8	0	*	5.5	4.0	0	9	2.1	0	--	--	--	23.6	60	0	3	56	0	*	11.7	*
San Jose East	10	0	2	0.0	7	0	5.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Jose, Tully Road	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24.8	58	0	2	52	0	40.2	10.1	11.1
San Martin	11	0	9	0.0	9	4	8.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sunnyvale	11	0	4	0.0	9	2	6.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Bay Area Days over Standard		**1**	**19**			**7**				**0**			**0**			**0**			**0**	**6**		**0**			

(ppm) = parts per million, (pphm) = parts per hundred million, (ppb) = parts per billion

TABLE 3.4-3
Ten-Year Bay Area Air Quality Summary
Days over standards

YEAR	OZONE			CARBON MONOXIDE				NO_X	SULFUR DIOXIDE		PM10		PM2.5
	1-Hr		8-Hr	1-Hr		8-Hr		1-Hr	24-Hr		24-Hr*		24-Hr**
	Nat	Cal	Nat	Nat	Cal	Nat	Cal	Cal	Nat	Cal	Nat	Cal	Nat
1993	3	19	-	0	0	0	0	0	0	0	0	10	-
1994	2	13	-	0	0	0	0	0	0	0	0	9	-
1995	11	28	-	0	0	0	0	0	0	0	0	7	-
1996	8	34	-	0	0	0	0	0	0	0	0	3	-
1997	0	8	-	0	0	0	0	0	0	0	0	4	-
1998	8	29	16	0	0	0	0	0	0	0	0	5	-
1999	3	2	9	0	0	0	0	0	0	0	0	12	-
2000	3	12	4	0	0	0	0	0	0	0	0	7	1
2001	1	15	7	0	0	0	0	0	0	0	0	10	5
2002	2	16	7	0	0	0	0	0	0	0	0	6	5
2003	1	19	7	0	0	0	0	0	0	0	0	6	0

* PM10 is sampled every sixth day – actual days over standard can be estimated to be six times the numbers listed.
** 2000 is the first full year for which the Air District measured PM2.5 levels.

3.4.1.2 Health Effects

Ozone

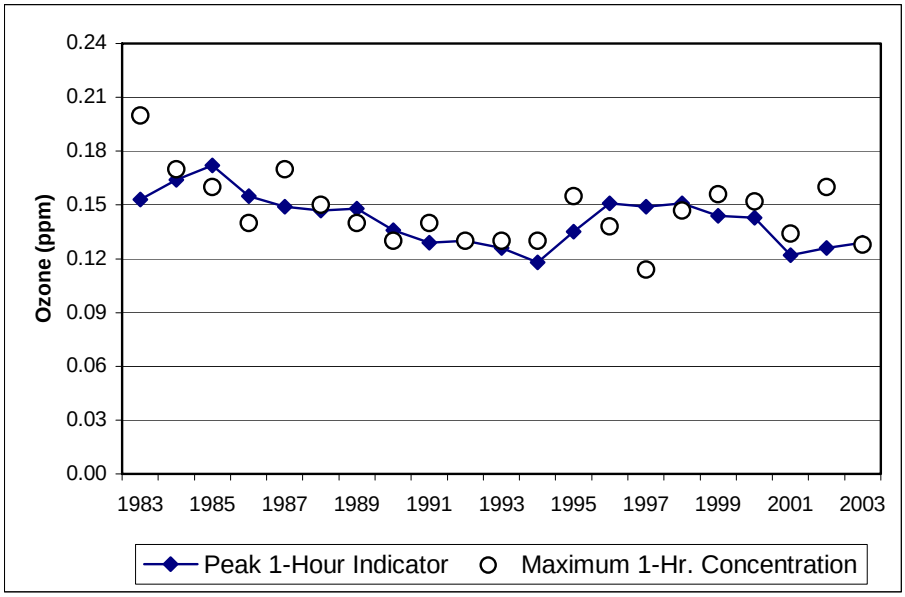
Ozone (O_3), a colorless gas with a sharp odor, is a highly reactive form of oxygen. High ozone concentrations exist naturally in the stratosphere. Some mixing of stratospheric ozone downward through the troposphere to the earth's surface does occur; however, the extent of ozone transport is limited. At the earth's surface in sites remote from urban areas ozone concentrations are normally very low (0.03-0.05 ppm).

While ozone is beneficial in the stratosphere because it filters out skin-cancer-causing ultraviolet radiation, it is a highly reactive oxidant. It is this reactivity which accounts for its damaging effects on materials, plants, and human health at the earth's surface.

The propensity of ozone for reacting with organic materials causes it to be damaging to living cells, and ambient ozone concentrations in the Bay Area are occasionally sufficient to cause health effects. Ozone enters the human body primarily through the respiratory tract and causes respiratory irritation and discomfort, makes breathing more difficult during exercise, and reduces the respiratory system's ability to remove inhaled particles and fight infection. People with respiratory diseases, children, the elderly, and people who exercise heavily are more susceptible to the effects of ozone.

Plants are sensitive to ozone at concentrations well below the health-based standards and ozone is responsible for significant crop damage. Ozone is also responsible for damage to forests and other ecosystems.

The BAAQMD began ozone monitoring in a few places in 1959. A large monitoring ozone network was established in 1965. The monitors indicated that the federal one-hour ozone standards were exceeded at a number of locations in the Bay Area. Ozone concentrations have been decreasing over the past four decades leading to fewer days per year when the national and state one-hour standards have been exceeded in the Bay Area. The number of days exceeding the national one-hour ozone standard decreased from the 1960's until about 1990. From 1990 to 1992, no District monitor registered more than two exceedances of the national ozone standard. [Note: the national standard allows up to three expected exceedances at any one site over a three-year period (i.e., less than or equal to an average of one exceedance per year)]. In 1994, the BAAQMD requested that the Bay Area be redesignated to attainment status for the one-hour ozone standard. However, in 1995 there was an increase in the number of days that the one-hour federal ozone standard was exceeded to about 10 days per year. Since 1996, the number of days per year that exceed the federal ozone standard has generally been decreasing (see Table 3.4-3). Therefore, the BAAQMD has requested and U.S. EPA has proposed a finding of attainment of the national one-hour ozone standard for the Bay Area. The proposed finding is based on monitoring from the years 2001, 2002, and 2003.



Source: 2004 California Almanac of Emissions and Air Quality, CARB, 2004.

FIGURE 3.4-1
San Francisco Bay Area Ozone Trend

Volatile Organic Compounds (VOCs)

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 VOC emissions 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.

Carbon Monoxide (CO)

CO is a colorless, odorless, relatively inert gas. It is a trace constituent in the unpolluted troposphere, and is produced by both natural processes and human activities. In remote areas far from human habitation, carbon monoxide occurs in the atmosphere at an average background concentration of 0.04 ppm, primarily as a result of natural processes

such as forest fires and the oxidation of methane. Global atmospheric mixing of CO from urban and industrial sources creates higher background concentrations (up to 0.20 ppm) near urban areas. The major source of CO in urban areas is incomplete combustion of carbon-containing fuels, mainly gasoline. In 1997, 97 percent of the CO emitted into the Basin's atmosphere was from mobile sources. Consequently, CO concentrations are generally highest in the vicinity of major concentrations of vehicular traffic.

CO is a primary pollutant, meaning that it is directly emitted into the air, not formed in the atmosphere by chemical reaction of precursors, as is the case with ozone and other secondary pollutants. Ambient concentrations of CO in the Basin exhibit large spatial and temporal variations, due to variations in the rate at which CO is emitted, and in the meteorological conditions that govern transport and dilution. Unlike ozone, CO tends to reach high concentrations in the fall and winter months. The highest concentrations frequently occur on weekdays at times consistent with rush hour traffic and late night during the coolest, most stable atmospheric portion of the day.

When CO is inhaled in sufficient concentration, it can displace oxygen and bind with the hemoglobin in the blood, reducing the capacity of the blood to carry oxygen. Individuals most at risk from the effects of CO include heart patients, fetuses (unborn babies), smokers, and people who exercise heavily. Normal healthy individuals are affected at higher concentrations, which may cause impairment of manual dexterity, vision, learning ability, and performance of work. The results of studies concerning the combined effects of CO and other pollutants in animals have shown a synergistic effect after exposure to CO and ozone.

Particulate Matter (PM10)

Of greatest concern to public health are the particles small enough to be inhaled into the deepest parts of the lung. Respirable particles (particulate matter less than about 10 micrometers in diameter) can accumulate in the respiratory system and aggravate health problems such as asthma, bronchitis and other lung diseases. Children, the elderly, exercising adults, and those suffering from asthma are especially vulnerable to adverse health effects of PM10.

PM10 particles are both directly emitted or formed from diverse emission sources. Major sources of directly emitted (primary) PM10 include re-suspended road dust or soil entrained into the atmosphere by wind or activities such as construction and agriculture. Other components of PM10 form in the atmosphere (secondary PM10) from precursor emissions of the gaseous pollutants.

Nitrogen Dioxide (NO_2)

NO_2 is a reddish-brown gas with a bleach-like odor. Nitric oxide (NO) is a colorless gas, formed from the nitrogen (N_2) and oxygen (O_2) in air under conditions of high temperature and pressure which are generally present during combustion of fuels; NO reacts rapidly with the oxygen in air to form NO_2. NO_2 is responsible for the brownish

tinge of polluted air. The two gases, NO and NO_2, are referred to collectively as NOx. In the presence of sunlight, NO_2 reacts to form nitric oxide and an oxygen atom. The oxygen atom can react further to form ozone, via a complex series of chemical reactions involving hydrocarbons. Nitrogen dioxide may also react to form nitric acid (HNO_3) which reacts further to form nitrates, which are a component of PM10.

NO_2 is a respiratory irritant and reduces resistance to respiratory infection. Children and people with respiratory disease are most susceptible to its effects.

Sulfur Dioxide (SO_2)

SO_2 is a colorless gas with a sharp odor. It reacts in the air to form sulfuric acid (H_2SO_4), which contributes to acid precipitation, and sulfates, which are a component of PM10 and PM2.5. Most of the SO_2 emitted into the atmosphere is produced by the burning of sulfur-containing fuels.

At sufficiently high concentrations, SO_2 affects breathing and the lungs' defenses, and can aggravate respiratory and cardiovascular diseases. Asthmatics and people with chronic lung disease or cardiovascular disease are most sensitive to its effects. SO_2 also causes plant damage, damage to materials, and acidification of lakes and streams.

3.4.1.3 Current Emissions Sources

The two broad categories of emission sources include stationary and mobile sources.

Stationary Sources

Stationary sources can be further divided between point and area sources.

Point Sources

Point sources are those that are identified on an individual facility or source basis, such as refineries and manufacturing plants. BAAQMD maintains a computer data bank with detailed information on operations and emissions characteristics for nearly 4,000 facilities, with roughly 20,000 different sources, throughout the Bay Area. Parameters that affect the quantities of emissions are updated regularly.

Area Sources

Area sources are stationary sources that are individually very small, but that collectively make a large contribution to the inventory. Many area sources do not require permits from the BAAQMD, such as residential heating, and the wide range of consumer products such as paints, solvents, and cleaners. Some facilities considered to be area sources do require permits from the BAAQMD, such as gas stations and dry cleaners. Emissions estimates for area sources may be based on the BAAQMD data bank, calculated by CARB using statewide data, or calculated based on surrogate variables.

Mobile Sources

Mobile sources include on-road motor vehicles such as automobiles, trucks, and buses, as well as off-road sources such as construction equipment, boats, trains, and aircraft. Estimates of on-road motor vehicle emissions include consideration of the fleet mix (vehicle type, model year, and accumulated mileage), miles traveled, ambient temperatures, vehicle speeds, and vehicle emission factors, as developed from comprehensive CARB testing programs. The BAAQMD also receives vehicle registration data from the Department of Motor Vehicles. Some of these variables change from year to year, and the projections are based upon expected changes. Emissions from off-road mobile sources are calculated using various emission factors and methodologies provided by CARB and U.S. EPA.

3.4.1.4 Non-Criteria Pollutants

Although the primary mandate of the BAAQMD is attaining and maintaining the national and state Ambient Air Quality Standards for criteria pollutants within the BAAQMD jurisdiction, the BAAQMD also has a general responsibility to control, and where possible, reduce public exposure to airborne toxic compounds. The state and federal governments have set health-based ambient air quality standards for criteria pollutants. The air toxics program was established as a separate and complementary program designed to evaluate and reduce adverse health effects resulting from exposure to TACs.

The major elements of the District's air toxics program are outlined below.

- Preconstruction review of new and modified sources for potential health impacts, and the requirement for new/modified sources with non-trivial TAC emissions to use the Best Available Control Technology.

- The Air Toxics Hot Spots Program, designed to identify industrial and commercial facilities that may result in locally elevated ambient concentrations of TACs, to report significant emissions to the affected public, and to reduce unacceptable health risks.

- Control measures designed to reduce emissions from source categories of TACs, including rules originating from the state Toxic Air Contaminant Act and the federal Clean Air Act.

- The toxic air contaminant emissions inventory, a database that contains information concerning routine and predictable emissions of TACs from permitted stationary sources.

- Ambient monitoring of TAC concentrations at a number of sites throughout the Bay Area.

Historically, the BAAQMD 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 different regulatory approach as explained in the following subsections.

Air Toxics New Source Review Program

Under the Air Toxics NSR Program, proposed projects involving new or modified sources of toxic air contaminants are reviewed for potential health impacts in accordance with the District's Risk Evaluation Procedure (REP) and Risk Management Policy (RMP) that were established by the District's Board of Directors in 1987. The REP describes the procedures that the District uses to determine and evaluate TAC emission increases. Projects resulting in TAC emission increases that are greater than the de minimus trigger levels identified in the REP are required to undergo a health risk screening analysis. The RMP identifies approval criteria for projects that are required to undergo a health risk screening analysis including thresholds requiring best available control technology, thresholds requiring addition risk reduction measures, and thresholds at which the permit for a project is normally denied.

New and modified stationary source permit applications have been reviewed for air toxic health impacts since 1987. A large increase in risk screening analyses has occurred in recent years due primarily to the removal of permit exemptions in District regulations for standby engines. Prior to 2000, the District completed risk screens for an average of about 175 permit applications per year. This number increased to 255 in 2000, 440 in 2001, 602 in 2002, 432 in 2003, and 403 in 2004.

Air Toxics Hot Spots Program

The Air Toxics Hot Spot Information and Assessment Act of 1987 (AB 2588) (California Health and Safety Code §39656) 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 those emissions. The first step in the AB2588 process is the preparation of an air toxics emissions inventory for facilities with operating permits. In the second step, the District prioritizes facilities for additional scrutiny, based on the quantity and toxicity of pollutants emitted. Each facility is categorized as high, medium or low. The high priority facilities are required to prepare a comprehensive health risk assessment (HRA).

Finally, the Air Toxics Hot Spots program requires that exposed persons be notified regarding the results of HRAs, if the calculated risks warrant such notification. Of the 123 HRAs submitted to the BAAQMD, 30 were Level 1 or greater (maximum cancer risks greater than or equal to 10 in one million), and required public notification. In 1992, the number of Level 1 or greater facilities was reduced to 16. All Level 2 and 3 risks (100 in one million or greater) were reduced to Level 1 or lower by 1993.

Continued efforts to reduce emissions and to refine estimates of risk reduced the number of facilities requiring public notification to nine in 1993, five in 1994, two in 1995 and one in 1999.

Control Measures for Categories of Sources

TACs are regulated in the District through federal, state, and local programs. At the federal level, TACs are regulated primarily under the authority of the CAA. Prior to the amendment of the CAA in 1990, source-specific National Emission Standards for Hazardous Air Pollutants (NESHAPs) were promulgated under Section 112 of the CAA for certain sources of radionuclides and six Hazardous Air Pollutants (HAPs), including asbestos, benzene, beryllium, arsenic, mercury, and vinyl chloride.

Title III of the 1990 CAA amendments requires U.S. EPA to promulgate NESHAPs on a specified schedule for certain categories of sources identified by U.S. EPA as emitting one or more of the 189 listed HAPs. Emission standards for major sources must require the maximum achievable control technology (MACT). MACT is defined as the maximum degree of emission reduction achievable considering cost and non-air quality health and environmental impacts and energy requirements. The District must implement and enforce all MACT standards or rules that are at least as stringent. The U.S. EPA has already adopted a significant number of new MACT standards, with the last group expected to be adopted by early 2004.

Many of the sources of TACs that have been identified under the CAA are also subject to the California TAC regulatory programs. California's TAC identification and control program, adopted in 1983 as Assembly Bill 1807 (AB 1807) (California Health and Safety Code §39662), 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. Since adoption of the program, CARB has identified 18 TACs in addition to the 189 federal HAPs as TACs that CARB has adopted.

ATCMs are developed by CARB and implemented by the BAAQMD 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 use of best available control technology unless it is determined that an alternative level of emission reduction is adequate to protect public health. In addition to developing ATCMs, California Health and Safety Code §39658(b) requires CARB to adopt an ATCM for hazardous air pollutants adopted by U.S. EPA pursuant to Section 112 of the federal CAA.

Air Toxics Emission Inventory

The BAAQMD maintains a database that contains information concerning emissions of TACs from permitted stationary sources in the Bay Area. This inventory, and a similar inventory for mobile and area sources compiled by CARB, is used to plan strategies to

reduce public exposure to TACs. The detailed emissions inventory is reported in the BAAQMD, Toxic Air Contaminant Control Program, 2002 Annual Report (BAAQMD, 2004). The 2002 emissions inventory shows decreasing emissions of many TACs in the Bay Area. The most dramatic emission reductions in recent years have been for certain chlorinated compounds that are used as solvents including 1,1,1-trichloroethane, methylene chloride, and perchloroethylene.

Ambient Monitoring Network

Table 3.4-4 contains a summary of average ambient concentrations of TACs measured at monitoring stations in the Bay Area by the District in 2002. The air monitoring network operated by the District includes gaseous samples collected over 24-hour periods on a 12-day sampling frequency. The network began in 1986 with six sites and has expanded to its present size of 23 sites. The sampling sites in the network are generally community oriented, and are most directly influenced by area-wide sources. The network also includes a non-urban background site located at Fort Cronkite on the Pacific Ocean coastline. Ambient benzene levels declined dramatically in 1996 with the introduction of CARB Phase 2 reformulated gasoline, with significant reductions in ambient 1,3-butadiene levels also occurring. Due largely to these observed reductions in ambient benzene and 1,3-butadiene levels, the calculated network average cancer risk has been reduced in recent years.

Health Effects

Cancer Risk: The primary health risk 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 many scientists currently believe that there are not "safe" levels of exposure to carcinogens. Any exposure to a carcinogen poses some risk to causing cancer. The proportion of cancer deaths attributable to air pollution has not been estimated using epidemiological methods. CARB has estimated the average potential cancer risk from outdoor ambient levels of air toxics for 2000. Based on the evaluation by CARB Diesel exhaust PM10 contributes 71 percent to the total cancer risk (see Table 3.4-5) CARB, 2000).

Non-cancer Risk: 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. OEHHA develops 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).

TABLE 3.4-4
Concentration of Toxic Air Contaminants in the Bay Area (2002)

Monitoring Station (mean ppb)	Chemical[(1)]											
	BENZ	CCl_4	$CHCl_3$	DCM	EDB	EDC	MTBE	PERC	TCA	TCE	TOL	VC
Oakland – Davie Stadium	0.37	0.11	0.02	0.26	0.01	0.05	0.41	0.05	0.04	0.04	0.95	0.15
San Leandro	0.32	0.10	0.01	0.18	0.01	0.05	0.35	0.03	0.03	0.04	1.31	0.15
Livermore	0.48	0.11	0.02	0.29	0.01	0.05	0.86	0.04	0.44	0.04	1.13	0.15
Oakland – Filbert Street	0.49	0.10	0.02	0.50	0.01	0.05	0.68	0.07	0.04	0.04	1.56	0.15
Pittsburg	0.40	0.12	0.02	0.55	0.01	0.05	0.77	0.06	0.03	0.04	1.09	0.15
Martinez	0.32	0.11	0.01	0.31	0.01	0.05	0.75	0.02	0.12	0.04	0.91	0.15
Crockett	0.24	0.11	0.02	0.56	0.01	0.05	0.40	0.02	0.07	0.04	0.45	0.15
Concord – Treat Blvd.	0.51	0.13	0.03	0.29	0.01	0.05	0.71	0.03	0.05	0.04	1.85	0.15
Richmond	0.44	0.11	0.02	0.27	0.01	0.05	0.61	0.06	0.03	0.04	1.16	0.15
Bethel Island	0.33	0.11	0.01	0.26	0.01	0.05	0.45	0.02	0.03	0.04	0.71	0.15
San Pablo – El Portal Center	0.33	0.10	0.03	0.28	0.01	0.05	0.46	0.02	0.03	0.04	0.69	0.15
Concord – Arnold Ind. Way	0.53	0.11	0.02	0.28	0.01	0.05	0.86	0.07	0.12	0.04	1.05	0.15
San Pablo – Rumrill Blvd.	0.51	0.11	0.01	0.35	0.01	0.05	0.84	0.04	0.03	0.04	5.14	0.15
San Rafael	0.42	0.11	0.01	0.27	0.01	0.05	0.49	0.08	0.04	0.04	0.97	0.15
Fort Cronkite – Sausalito	0.16	0.11	0.01	0.25	0.01	0.05	0.28	0.01	0.04	0.04	0.26	0.15
Napa	0.54	0.11	0.03	0.26	0.01	0.05	1.03	0.03	0.04	004	1.14	0.15
San Francisco	0.44	0.11	0.02	0.27	0.01	0.05	0.61	0.06	0.03	0.04	1.16	0.15
Redwood City	0.63	0.11	0.04	0.27	0.01	0.05	0.91	0.05	0.05	0.16	3.05	0.15
San Jose – 4th Street	0.77	0.11	0.03	0.30	0.01	0.05	1.13	0.08	0.06	0.04	2.04	0.15
Sunnyvale	0.39	0.11	0.03	0.47	0.01	0.05	0.55	0.03	0.03	0.04	0.88	0.15
San Jose – Jackson Street	1.00	0.11	0.03	0.72	0.01	0.05	1.91	0.08	0.05	0.04	2.45	0.15
Vallejo	0.51	0.11	0.03	0.88	0.01	0.05	1.00	0.03	0.04	0.04	1.26	0.15
Santa Rosa	0.46	0.11	0.01	0.28	0.01	0.05	0.67	0.02	1.00	0.04	0.95	0.15

(1) BENZ = benzene, CCl_4 = carbon tetrachloride, $CHCl_3$ = chloroform, DCM = methylene chloride, EDB = ethylene dichloride, MTBE = methyl tertiary butyl ether, perc = perchloroethylene, TCA = 1,1,1-trichloroethane, TCE = trichloroethylene, TOL = toluene, and VC = vinyl chloride.
Source: BAAQMD, 2004.

TABLE 3.4-5

Estimated Statewide Average Potential Cancer Risk From Outdoor Ambient Levels of Air Toxics For 2000[1]

Compound	Potential Cancer Risk[2,3] Excess Cancers/Million	Percent Contribution to Total Risk
Diesel Exhaust PM10	540	71.2
1,3-Butadiene	74	9.8
Benzene	57	7.5
Carbon Tetrachloride	30	4.0
Formaldehyde	19	2.5
Hexavalent Chromium	17	2.2
para-Dichlorobenzene	9	1.2
Acetaldehyde	5	0.7
Perchloroethylene	5	0.7
Methylene Chloride	2	0.1
TOTAL	758	100

(1) CARB, 2000
(2) Diesel exhaust PM10 potential cancer risk based on 2000 emission inventory estimates. All other potential cancer risks based on air toxics network data. 1997 monitoring data were used for para-dichlorobenzene. 1998 monitoring data was used for all other pollutants.
(3) Assumes measured concentrations are equivalent to annual average concentrations and duration of exposure is 70 years, inhalation pathway only.

Based on 2002 ambient monitoring data, the calculated inhalation cancer risk in the District is 163 per million, which is 46 percent less than what was observed in 1995 (BAAQMD, 2004). These figures do not include the risk resulting from exposure to diesel particulate matter. As shown above, recent studies indicate that exposure to diesel particulate matter may contribute to a cancer risk that is greater than all of the other measured TACs combined; however, diesel particulate matter was not sampled in the 2002 monitoring data (BAAQMD, 2004).

Cancer Health Risks from Perc

The U.S. EPA lists perc as one of 188 HAPs and controls the emissions of this chemical through several NESHAPs. OEHHA has established unit risk factors (URFs) and cancer potency factors (CPFs) used to determine the carcinogenic risk to nearby receptors. While the precise carcinogenicity classification of perc has been debated within the scientific community, all major government agencies list perc as a possible or probable carcinogen. Only one organization, a consortium of scientists and physicians funded by the dry cleaning industry, does not classify perc as a carcinogen. Table 3.5-6 lists the various organizations and their current carcinogenicity classifications of perc.

TABLE 3.4-6

Local, National and International Carcinogenicity Classification of Perc

Organization Name	Type of Organization	Perc Carcinogenicity Classification
American Council of Science and Health (ACSH)	Consortium of more than 350 scientists and physicians, funded by the dry cleaning industry (not a government agency)	Not hazardous to humans at typical levels of use.
International Agency for Research on Cancer (IARC)	Part of the World Health Organization, an international organization	Tetrachloroethylene is listed as a probable human carcinogen (Group 2A) but from various international studies on worker exposure in dry cleaning operations, perc is possibly carcinogenic (Group 2B) to humans.
State of California's Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB)	State government agencies under California's Environmental Protection Agency (CalEPA)	Possible human carcinogen. (risk values approved by Scientific Review Panel, body of experts established by state of California law)
United States Environmental Protection Agency (U.S. EPA)	Federal government agency	Hazardous air pollutant; intermediately classified between a probable and possible human carcinogen (Group B/C).

CARB identified perc as a TAC because "there is sufficient evidence that exposure to perc poses a public health hazard, perc is detected in ambient and indoor air and does not break down in the atmosphere at a rate that would eliminate public exposure, and perc is listed as a HAP by the federal government pursuant to section 7412 of Title 42 of the United States Code; therefore, pursuant to section 39655 of the California Health and Safety Code, perc is required to be identified as a TAC." After reviewing available carcinogenicity data, CARB concluded that perc is a "potential human carcinogen." OEHHA's website refers to the classification of perc by IARC as "2B: The agent is possibly carcinogenic to humans," which was the conclusion IARC made from various international studies with regards to worker exposure to perc. OEHHA has established a URF used to determine the maximum individual cancer risk of perc to nearby receptors.

Noncancer Health Risks from Perc

Perc is also listed by OEHHA as causing chronic and acute noncarcinogenic health effects. Effects of perc on human health and the environment depend on the amount of perc present and the length and frequency of exposure. Effects also depend on the health of a person or the condition of the environment when exposure occurs.

The acute health effects from breathing perc for short periods of time target the nervous system, eye, and respiratory system. The predominant route of exposure to the solvents used in dry cleaning is by inhalation, though skin absorption and ingestion may also occur. Symptoms associated with inhalation exposure include: dizziness, headache, drowsiness, nausea, vomiting, irritation of respiratory tract, depression of the central nervous system, impaired memory, confusion, and loss of consciousness. Repeated dermal exposure may result in dermatitis. Eye contact may result in temporary corneal damage. Ingestion exposure may cause damage to the liver and kidneys, nausea, vomiting, headaches, dizziness, and gastrointestinal irritation. Target organs for chronic health effects from longer exposure periods are kidney, gastrointestinal tract, liver, and respiratory system. Chronic effects from overexposure may include damage to kidneys, liver, lungs, blood, or central nervous system.

In addition, a wide range of chemicals are used in 'spotting' (treatment of spots); they may include chlorinated solvents, amyl acetate, bleaching agents, acetic acid, aqueous ammonia, oxalic acid, hydrogen peroxide, and dilute hydrogen fluoride solutions.

Perc Emissions Inventory

Currently, there are approximately 635 dry cleaning facilities (675 machines) in the District that emit approximately 214 tons of perc per year. Table 3.4-7 provides the current URFs and RELs which were derived by OEHHA to evaluate cancer and non-cancer risk.

TABLE 3.4-7

Perc Cancer Risk and Non-Cancer Risk Values

	Unit Risk Factor $(\mu g/m^3)^{-1}$	Reference Exposure Level $(\mu g/m^3)$ (chronic)	Reference Exposure Level $(\mu g/m^3)$ (acute)
Cancer Risk	5.9E-06	N/A	N/A
Non-Cancer Risk	N/A	35	20000

The current usage of perc from existing dry cleaning operations is estimated to be 214 tons per year of TAC emissions**.** In order to estimate current perc emissions, the SCAQMD tested 20 perc machines with primary and secondary control. The SCAQMD studied purchase records and waste manifest records from each facility and verified the data with perc suppliers and waste recyclers. The perc consumption by an individual dry cleaner ranges from 20 to 245 gallons per year, but the average usage in Southern California is approximately 96 gallons per year (eight gallons per month). The percent of perc emitted from the perc machine is 15 to 92 percent by weight and the average is approximately 50 percent (SCAQMD, 2002). Mass balance data for machines in the Bay Area is similar to that of SCAQMD and the estimated emissions of perc in the Bay Area is 214 tons per year.

3.4.2 SIGNIFICANCE CRITERIA

To determine whether or not air quality impacts from the proposed project are significant, impacts will be evaluated and compared to the significance criteria in Table 3.4-8. If impacts equal or exceed any of the following criteria, they will be considered significant.

TABLE 3.4-8

Air Quality Significance Thresholds for Project Operations

Significance Thresholds for Localized Impacts	
Pollutant	**Significance Threshold**
Toxic Air Contaminants (TACs)	Maximum Exposed Individual (MEI) Cancer Risk $\geq$ 10 in 1 million Hazard Index $\geq$ 1.0 at the MEI
Significance Thresholds for Regional Impacts	
Pollutant	**Significance Threshold**
ROG	Regulation 2, Rule 5 results in a net increase in emissions
NOx	Regulation 2, Rule 5 results in a net increase in emissions
PM10	Regulation 2, Rule 5 results in a net increase in emissions

3.4.3 ENVIRONMENTAL IMPACTS

This subchapter evaluates secondary air pollutant emissions that could occur as a consequence of efforts to reduce TAC emissions. Secondary air quality impacts are potential increases in air pollutants that occur indirectly from implementation of control measures that may be necessary to comply with the Air Toxics NSR Rules.

3.4.3.1 Criteria Pollutants

The potential secondary air quality impacts for criteria pollutants are evaluated in this section.

Secondary Air Quality Impacts from Construction Activities

PROJECT-SPECIFIC IMPACTS: The BAAQMD considers construction emission impacts to be less than significant if the recommended construction mitigation measures are used.

While implementing the Air Toxic NSR rules are expected to reduce TAC emissions, construction-related activities associated with installing or replacing equipment, for example, are expected to generate emissions from construction worker vehicles, trucks, and construction equipment. Implementation of some of the Air Toxics NSR rules may require construction of new infrastructure including construction of controls at stationary sources, and modifications to dry cleaning facilities.

Construction activities include the installation of control equipment, which would not involve extensive construction activities and would not be expected to result in significant emissions. Further, construction projects are expected to implement the BAAQMD construction mitigation measures, so that secondary air quality impacts from construction impacts are not expected to be significant.

PROJECT-SPECIFIC MITIGATION: Each individual project should employ the current BAAQMD-recommended construction emissions to reduce impacts. Implementation of the BAAQMD construction mitigation measures are expected to reduce secondary air quality impacts from construction impacts to less than significant.

Secondary Impacts from Control of Stationary Sources

PROJECT SPECIFIC IMPACTS: Emission reductions from the control of emissions at certain stationary sources could result in secondary emissions. A number of additional pollutants will be included in the Air Toxic NSR rules that could require additional control (see Table 3.4-9).

The Air Toxic NSR Rules could result in an increased use of air pollution control equipment to decrease VOC emissions. The methods to control fugitive VOC emissions could include leakless valves and vapor recovery devices. Some vapor abatement devices, e.g., afterburners, incinerators, or flares, might also be installed resulting in combustion emissions, including NOx and CO emissions. Some control equipment may cause a small increase in CO and NOx emissions. The emission control devices require air permits to operate. Emissions from vapor abatement devices are generally controlled by using efficient combustion practices, so that the secondary impacts from these control measures are expected to be less than significant.

PROJECT-SPECIFIC MITIGATION: No significant secondary air quality impacts from control of stationary source have been identified so no mitigation measures are required.

Secondary Impacts from Alternatives to Perc Use

Limiting or eliminating perc emissions will result in substantial air quality and health benefits to residents and businesses near dry cleaners. The benefit of decreases in perc emission is expected to reduce cancer risk, as well as, chronic and acute health effects of residents in the District.

Alternative technologies to perc dry cleaning equipment currently available include: wet cleaning, carbon dioxide (CO_2) cleaning, hydrocarbon-based alternative solvents such as synthetic aliphatic hydrocarbon or substituted aliphatic glycol ether, and exempt VOC alternative cleaners such as volatile methylated siloxanes (VMS). VMS is exempt from the definition of a VOC, but is classified as a Group II depleter, or a greenhouse gas.

Testing by the manufacturer on VMS indicates minimal toxicity with most categories reporting no significant toxic responses (SCAQMD, 2002).

TABLE 3.4-9

Potentially Emitted Chemicals and Associated Health Effects

CHEMICAL	Carcinogen	Noncarcinogen	
		Chronic	Acute
Acrylic Acid		X	X
Antimony Compounds		X	
Arsine		X	X
Chlorine dioxide		X	
Chloracetophenone, 2-		X	
Chloroprene		X	
Chromium trioxide (as chromic acid mist)	X	X	
Cyanide and Compounds (inorganic)		X	X
Diethanolamine		X	
Dimethyl formamide, N,N-		X	
Epoxybutane, 1,2-		X	
Ethylbenzene		X	
Ethylene glycol		X	
Fluorides and compounds		X	X
Hydrogen selenide			X
Methyl tertiary-butyl ether (MTBE)	X	X	
Mineral fibers (<1% free silica)		X	
Ozone		X	X
Propylene (propene)		X	
Propylene glycol monomethyl ether		X	
Sulfates		X	X
Sulfuric acid and oleum		X	X
Triethylamine		X	X
Vanadium compounds			X
Vinyl acetate		X	
Vinyl bromide		X	

While there are various compliance options, hydrocarbon cleaning equipment currently tends to be the preferred choice of alternative technology. The choice of a hydrocarbon-based cleaner such as synthetic aliphatic hydrocarbon or substituted aliphatic glycol ether would result in an increase in VOC emissions in the district. The amount of increase is dependent upon the number of facilities that choose this alternative, the type of solvent chosen, such as synthetic aliphatic hydrocarbon or substituted aliphatic glycol ether, the amount of solvent used and the emission rate from the replacement machines.

The SCAQMD conducted a sampling of hydrocarbon machines using standard sampling and data collection techniques, and standard laboratory procedures. Actual solvent usage

was obtained from the purchase records and waste manifests from nine dry cleaner facilities. Much of the data were verified from solvent suppliers and waste recyclers (SCAQMD, 2002). The data collected by the SCAQMD on the maximum and average hydrocarbon emission were used to estimate the potential increase in VOC emissions if all perc dry cleaning machines in the Bay Area were converted to hydrocarbon machines (see Table 3.4-10).

TABLE 3.4-10

Range of Potential Daily VOC Emissions From Perc Dry Cleaners Converting to Hydrocarbon Solvents in the Bay Area

			Hydrocarbon Solvent Options			
All Affected Equipment	Solvent Usage (gallons/ month)[1]	Operation (days/month)	VOC Content Synthetic Aliphatic Hydrocarbon (lbs/gal)	VOC Content Substituted Aliphatic glycol ether (lbs/gal)	VOC Emissions	Potential VOC Emissions (lbs/day)
675	22.5 (maximum potential)	22	6.4	7.3	34%	1,502 – 1,713* (0.75 – 0.86 tons/day)
675	5.3 (actual)	22	6.4	7.3	34%	353 – 403** (0.18 - 0.20 tons/day)

[1]Source: SCAQMD, 2002.
Note: lbs = pounds; gal = gallon
#This calculation assumes an operating schedule of 5 days per week, 52 weeks/year. (5 days/week x 52 weeks/year)/12 months/year = 22 days per month;
* 6.4 lbs/gal x 22.5 gallon/month / (22 days/month) x 675 machines x 34% = 1,502 lbs per day
7.3 lbs/gal x 22.5 gallon/month / (22 days/month) x 675 machines x 34% = 1,713 lbs per day
** 6.4 lbs/gal x 5.3 gallon/month / (22 days/month) x 675 machines x 34% = 353 lbs per day
7.3 lbs/gal x 5.3 gallon/month / (22 days/month) x 675 machines x 34% = 403 lbs per day

The maximum potential solvent usage is the typical maximum solvent usage limited on a facility's air quality permit, although the actual limits on hydrocarbon machines are determined on a case-to-case basis. The amount of 22.5 gallons per month of hydrocarbon solvent was used to reflect a typical dry cleaner's maximum potential usage although industry records show a much lower actual usage (SCAQMD, 2002).

The potential increase in VOC emissions from solvent cleaning machines is based on a "worst-case" analysis, which means all existing 675 permitted dry cleaning machines using perc in the District would switch to solvent cleaning and use the solvent with the highest VOC content, substituted aliphatic glycol ether, which has a VOC content of 7.3 pounds per gallon. Depending upon how much solvent and which solvent is used, VOC emissions in the district could increase between 353 pounds per day to about 1,713 pounds per day. This estimate is based upon an assumption using maximum potential solvent usage and the highest VOC concentration on each machine at each cleaner. Information obtained during the sampling by the SCAQMD, however indicates that estimated actual average solvent usage is likely to be far less. Using this estimated actual

average usage information and the most popular solvent, it is estimated that an actual increase in VOCs would be approximately 403 pounds per day. In either case, the potential VOC emissions would exceed the BAAQMD's regional mass daily significance threshold.

Because affected facilities have other compliance options to choose from, actual environmental impacts are expected to be less. Table 3.4-10 lists the variables used in the calculation, as well as the methodology used in the calculation, to determine the range of potential daily VOC emission increases from the proposed project if all dry cleaners switched to two known solvents as their non- perc alternative. VOCs contribute to ozone formation and the District is currently mandated by state and federal law to develop an ozone strategy that demonstrates attainment of all state and ambient air quality standards. Demonstrating attainment requires including control measures aimed at reducing ozone precursors (VOCs and NO_X). The BAAQMD prepared the 2000 CAP and the 2001 Ozone Attainment Plan, which demonstrates how the Bay Area will attain and maintain the state and federal ozone standards, respectively.

Although the above air quality analysis provides a range of potential VOC emission increases based on estimated actual average solvent usage to maximum potential solvent usage, it should be noted that the analysis is a conservative, "worst-case" analysis. First, it is unlikely that all dry cleaners will need to eliminate the use of perc to comply with the 10 per million cancer risk threshold for new and modified sources, however, over several decades many dry cleaners will undoubtedly switch to alternatives. Dry cleaners in commercial or industrial areas where no sensitive receptors are located may be able to continue to use perc. Second, it is unlikely, for instance, that all perc dry cleaning facilities would switch to hydrocarbon technologies, or would use the solvent with the highest VOC content, or would use the maximum potential solvent amount permitted. The solvent with the highest VOC content has not been the most popular solvent of choice. The synthetic aliphatic hydrocarbon (DF-2000) is currently the most commonly used solvent in hydrocarbon machines in the District (about 225 machines) and the VOC content of the synthetic aliphatic hydrocarbon is 6.4 pounds per gallon. Staff is not aware of any facilities in the District using the substituted aliphatic glycol ether, which has a VOC content of 7.3 pounds per gallon. Third, dry cleaners with an emission increase will be subject to BACT. BACT, by definition is the most stringent emissions control that has been achieved in practice. However, in the meantime, there is a potential increase of VOC emissions from hydrocarbon technology installed and operated to comply with the proposed project, which exceed the BAAQMD's significance thresholds and are considered potentially significant. The public health benefits associated with reduced exposure to perc will compensate for the regional increase in VOC emissions.

An increase in mobile source emissions from delivery trucks is not expected because the trucks needed to deliver the new solvents for hydrocarbon dry cleaning equipment should not substantially change from the current number of delivery trips of perc. SCAQMD studies reflected a lower amount of solvent consumption, 30 to 140 gallons per year compared to the perc usage from 20 to 245 gallons per year. Because customer behavior to dry clean clothes is not expected to be altered by the cleaning method, dry cleaning

facilities are not expected to substantially change the amount of laundry being cleaned as a result of the proposed project. The same holds true for waste disposal trucks. The amount of sludge will not significantly change between perc machines and hydrocarbon machines because the level of dirt, lint, and detergent on clothes constituting the sludge will not be altered by the cleaning method (SCAQMD, 2002). Therefore, no additional emissions are expected from delivery trucks or waste recyclers.

Other alternative dry cleaning technologies do not create any known air quality impacts. The proposed new rules will not create localized impacts because VOC is an ozone precursor and ozone is considered a regional pollutant. Wet cleaning equipment does not create any adverse air quality impacts and does not require an air quality permit. Like wet cleaning, operations using liquid CO_2 would not be subject to certain air quality rules, assuming the detergents and additives used in the operations contained less than 50 grams per liter of VOC. Additionally, these machines would not require a BAAQMD Permit to Operate.

PROJECT SPECIFIC MITIGATION: The analysis is conservative and "worst-case" because it is unlikely that all perc dry cleaning facilities would switch to hydrocarbon technologies and actual average solvent usage is expected to be much lower. Current and future ozone control measures, and strict local regulation and restrictions will assist in reducing the potential increase in VOC emissions. The BAAQMD prepared the 2000 CAP and the 2001 Ozone Attainment Plan, which demonstrates how the Bay Area will attain and maintain the state and federal ozone standards, respectively. A new Bay Area Ozone Strategy is currently being prepared to update the previous ozone plans and will include additional control measures to minimize VOC and NOx emissions, and ultimately ozone concentrations. The new ozone plan is expected to be available this summer.

Additional VOC emission reductions may occur when owners or operators of affected facilities voluntarily take permit caps on their solvent usage and they comply with TBACT on their technology of choice at the time of permitting. To avoid having to offset emission increases through purchases of costly emission reduction credits, facilities in the past have voluntarily taken a permit cap. Solvent machines with potential VOC emissions over ten pounds per day require a permit and compliance with BACT requirements. In addition, the District, along with the California EPA (Cal EPA) and CARB, provides educational outreach to the industry and available to the public in the form of a self-inspection handbook. The handbook is designed to help understand air pollution control laws dealing with the dry cleaning industry and its operations. It reminds industry that perc is toxic, provides reaction to the exposure of perc at various concentrations, and reminds the owner/operator of the equipment to check for leaks, fix problems, and store the solvent properly.

While there is no enforceable mitigation measure to directly offset or reduce the VOC emissions generated by the increased operation of hydrocarbon equipment, the BAAQMD will still attain the goal of ozone reduction, maintain consistency with the ozone strategy, and demonstrate compliance with federal and state ambient air quality standards.

REMAINING AIR QUALITY IMPACTS: The air quality analysis concluded that significant adverse air quality impacts could be created by the proposed amendments. Because the mitigation measure listed above will not directly reduce the increased VOC emissions, the air quality impacts remain significant.

Secondary Impacts from Increased Electricity Demand

PROJECT-SPECIFIC IMPACTS: Electricity is often used as the power source to operate various components of add-on control equipment, such as ventilation systems, fan motors, vapor recovery systems, etc. Increased demand for electrical energy may require generation of additional electricity, which in turn could result in increased indirect emissions of criteria pollutants in the Bay Area and in other portions of California.

An incremental increase in electricity demand would not create significant adverse air quality impacts. However, if electricity demand exceeds available power, additional sources of electricity would be required. Electricity generation within the District is subject to BAAQMD Regulation 9, Rule 9, which regulates NOx emissions (the primary pollutant of concern from combustion to generate electricity) from existing power generating equipment. Regulation 9, Rule 9 establishes NOx concentration limits from electric generating facilities. As a result, NOx emissions from existing electric generating facilities will not increase significantly, regardless of increased power generation for add-on control equipment or electrification activities.

New power generation equipment would be subject to Regulation 9, Rule 9. New power generating equipment would not result in air quality impacts because they would be subject to BACT requirements, and all emission increases would have to be offset (through emission reduction credits) before permits could be issued.

The BAAQMD does not regulate electricity generating facilities outside of the District so the rules and regulations discussed above do not apply to electricity generating facilities outside of the District. About 82 percent of the electricity used in California is generated in-state and about 18 percent is imported (CEC, 2002). While these electricity generating facilities would not be subject to BAAQMD rules and regulations, they would be subject to the rules and regulations of the local air pollution control district and the U.S. EPA. These agencies also have established New Source Review regulations for new and modified facilities that generally require compliance with BACT or lowest achievable emission reduction technology. Most electricity generating plants use natural gas, which provides a relatively clean source of fuel (as compared to coal- or diesel-fueled plants). The emissions from these power plants would also be controlled by local, state, and federal rules and regulations, minimizing overall air emissions. These rules and regulations may differ from the BAAQMD rules and regulations because the ambient air quality and emission inventories in other air districts are different than those in the Bay Area. Compliance with the applicable air quality rules and regulations are expected to minimize air emissions in the other air districts to less than significant.

Electricity in California is also generated by alternative sources that include hydroelectric plants (about 23 percent), geothermal energy (about five percent), wind power (one percent), and solar energy (less than one percent) which are clean sources of energy. These sources of electricity generate little, if any, air emissions. Increased use of these and other clean technologies will continue to minimize emissions from the generation of electricity.

PROJECT-SPECIFIC MITIGATION: No significant secondary air quality impacts from increased electricity demand have been identified so no mitigation measures are required.

Miscellaneous Air Quality Issues

The purpose of the Air Toxic NSR rules is to reduce exposure to TACs. The proposed project has the potential to increase VOC emissions due to the use of alternatives to the use of perc in the dry cleaning industry. The 2000 Clean Air Plan or (2000 CAP) addresses state and national air quality planning requirements for ozone and includes control measures to reduce VOC and NOx emissions, in order to reduce ozone formation.

Issues on the CEQA environmental checklist related to impacts on the air quality plan, rules and regulations or future compliance dates are not applicable to the Air Toxic NSR rules. No significant adverse impacts are anticipated on the air quality plan as sufficient control measures are included in the 2000 CAP to demonstrate attainment of federal ozone standards. Therefore, no significant adverse impacts have been identified for the CEQA environmental checklist topics under the air quality plan, rules and regulations, and future compliance dates.

3.4.3.2 Non-Criteria Pollutants

PROJECT SPECIFIC IMPACTS: The proposed project is not expected to create significant adverse toxic air contaminant impact to air quality, but rather will provide a toxic air quality benefit by reducing perc emissions and other TACs. The proposed project will provide beneficial impacts to public health by reducing exposure to TACs. No significant adverse impacts or emission increases associated with non-criteria pollutants are expected as the proposed Air Toxic NSR rules will reduce the allowable exposure levels and regulate more pollutants which requires that TAC emissions be reduced or demonstrate to be within acceptable limits.

3.4.4 MITIGATION MEASURES

Mitigation measures have been discussed under each subcategory. In summary, feasible mitigation measures were required due to potential increases in VOC emissions associated the conversion of perc dry cleaning machines to hydrocarbon machines, as they would exceed the BAAQMD significance thresholds. Specific mitigation measures to reduce the VOC emission increases to less than significant have not been identified.

3.4.5 CUMULATIVE IMPACTS

3.4.5.1 Criteria Pollutants

The preceding analysis concluded no additional construction activities are anticipated beyond what would be expected when dry cleaning facilities normally replace their equipment. Construction activities are required to implement BAAQMD mitigation measures. Consequently, no cumulative construction air quality impacts are anticipated from implementing the Air Toxics NSR Program.

If new, modified, or relocated perc dry cleaning equipment is permitted in the future, it is expected that there would be a potential increase of VOC emissions from hydrocarbon technology installed and operated to comply with the proposed project. Cumulative air quality impacts from the proposed project and all other ozone control measures considered together, however, are not expected to be significant because implementation of all control measures is expected to result in net emission reductions and overall air quality improvement. The proposed project has the potential to increase VOC emissions due to the use of alternatives to the use of perc in the dry cleaning industry. The 2000 CAP (BAAQMD, 2000) and the 2001 Ozone Attainment Plan addresses state and national air quality planning requirements for ozone and includes control measures to reduce VOC and NOx emissions, in order to reduce ozone formation A new Bay Area Ozone Strategy is currently being prepared to update the previous ozone plans and will include additional control measures to minimize VOC and NOx emissions, and ultimately ozone concentrations. The new ozone plan is expected to be available this summer. Future VOC control measures will assist in achieving and maintaining attainment of the state and federal ozone standards. Cumulative air quality impacts are expected to be less than significant.

3.4.5.2 Non-Criteria Pollutants

The Air Toxics NSR Program is not expected to create significant adverse toxic air contaminant impact to air quality, but rather will provide a toxic air quality benefit by reducing perc emissions and other TACs, reducing exposure to TACs, and providing a public health benefit due to reduced exposure to TACs. Dry cleaners will no longer be allowed to exceed the 10 per million cancer threshold when replacing machines. It is expected that some dry cleaners will convert to non-perc technologies in order to comply with the proposed new rule. The proposed project would also change some of the assumptions used in HRAs, which will overall lead to a reduction in the allowable emissions. In addition, the proposed project would regulate additional TACs that are not currently regulated. This is expected to require additional air pollution control equipment within the District and reduce overall exposure to TACs.

3.4.6 CUMULATIVE MITIGATION MEASURES

No mitigation measures are required because existing rules and regulations, as well as implementation of current and future ozone control measures will result in an overall improvement in air quality.

3.5 BIOLOGICAL RESOURCES

3.5.1 ENVIRONMENTAL SETTING

The Bay Area supports an extensive diversity of distinct vegetative communities. Broad habitat categories generally include coastal scrubs, oak woodlands, grasslands, estuaries, coastal salt marsh, riparian habitats, and eucalyptus groves, wetlands and rivers and streams. Wetlands, estuaries, rivers and streams, and urban disturbed habitats are not vegetative communities but provide wildlife habitats. The California Department of Fish and Game (CDFG) has identified several specific native vegetative communities as rare and/or sensitive. These natural communities are of special significance because present rate of loss indicates that further habitat degradation may threaten the viability of plant and wildlife species within the community and hinder the long-term sustainability of the community or species. Natural communities within the Bay Area generally include coastal shrub and chaparral, grasslands, riparian, coastal marsh and estuaries, wetlands, woodlands, eucalyptus grove, and rivers and streams. These communities support a large diversity of wildlife.

The San Francisco Bay and Delta make up the Pacific Coast's largest estuary, encompassing roughly 1,600 miles of waterways and draining over 40 percent of California's fresh water. The Sacramento and San Joaquin Rivers flow from Northern California's inland valleys into the Delta's winding system of islands, sloughs, canals, and channels before emptying into San Francisco Bay and the Pacific Ocean (MTC, 2001). The marine environment supports a wide variety of species including fish, birds and mammals. The U.S. Fish and Wildlife Service recognizes several threatened and endangered species that occur in San Francisco Bay. These include the Steller sea lion (*Eumetopias jubatus*), the loggerhead sea turtle (*Caretta caretta*), the leatherback turtle (*Dermochelys coriacea*), the olive ridley sea turtle (*lepidochelys olivacea*), and several fish species including coho salmon, steelhead, tidewater goby, delta smelt, Pacific lamprey, and Sacramento splittail. The four later species are native residents; the other species, however, are expected to use open water habitat either seasonally or infrequently (MTC, 2001).

The facilities affected by the proposed Air Toxic NSR Rules are expected to be located in the commercial and industrial areas within the Bay Area. These commercial/industrial areas have been graded to develop the various structures, and are typically surrounded by other commercial and industrial facilities. Native vegetation, other than landscape vegetation, has usually been removed from these facilities.

3.5.2 SIGNIFICANCE CRITERIA

The impacts on biological resources will be considered significant if any of the following criteria apply:

> The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
>
> The project interferes substantially with the movement of any resident or migratory wildlife species.
>
> The project adversely affects aquatic communities through construction or operation of the project.

3.5.3 ENVIRONMENTAL IMPACTS

No direct or indirect impacts from implementing the proposed Air Toxic NSR Rules were identified which could adversely affect plant and/or animal species in the District. The effects of implementing the proposed Air Toxic NSR Rules result in new or modifications to equipment at commercial or industrial facilities to control or further control emissions. New and existing commercial or industrial facilities are generally located in appropriately zoned commercial or industrial areas, which typically do not support candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or U.S. Fish and Wildlife Service. Similarly, modifications at existing facilities would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with native or resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Further, since the proposed Air Toxic NSR Rules primarily regulates stationary emission sources at commercial or industrial facilities, it does not directly or indirectly affect land use policy that may adversely affect riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations, or identified by the CDFG or U.S. Fish and Wildlife Service. Improving air quality is expected to provide health benefits to plant and animal species in the District.

The proposed Air Toxic NSR Rules may require modifications at existing industrial or commercial facilities to control or further control emissions at these affected facilities. As a result, the proposed project will not affect land use policies or designations.

3.5.4 MITIGATION MEASURES

The impacts on biological resources associated with the Air Toxic NSR Rules are less than significant so no mitigation measures are required.

3.5.5 CUMULATIVE IMPACTS

Implementation of various air quality plans, rules and regulations typically affect commercial or industrial facilities, so they are not expected to generate any new construction of buildings or other structures that would require construction outside of existing industrial/commercial facilities. Therefore, the cumulative impacts on biological impacts are expected to be less than significant.

3.5.6 CUMULATIVE MITIGATION MEASURES

No significant adverse cumulative biological impacts are expected so no mitigation measures are required.

3.6 CULTURAL RESOURCES

3.6.1 ENVIRONMENTAL SETTING

Cultural resources are defined as buildings, sites, structures, or objects that might have historical architectural, archaeological, cultural, or scientific importance.

The Carquinez Strait represents the entry point for the Sacramento and San Joaquin Rivers into the San Francisco Bay. This locality lies within the San Francisco Bay and the west end of the Central Valley archaeological regions, both of which contain a rich array of prehistoric and historical cultural resources. The moderate climate, combined with the abundant natural resources found throughout the Bay Area, have supported human habitation for several thousand years. Rising sea levels, the formation of the San Francisco Bay, and the resulting filling of inland valleys have covered these early sites, which were most likely located along the then existing bayshore and waterways. Existing evidence indicates the presence of many village sites from at least 5,000 years ago in the region (MTC, 2001).

Six different groups of native population, identified by their language, lived within the Bay Area, including Coastanoan, Eastern Miwok, Patwin, Coast Miwok, Pomo and Wappo. These native populations increased between 5,000 years ago and the arrival of the Spanish in the later 18th century. Native villages and campsites were inhabited on a temporary basis and are found in several ecological niches due to the seasonal nature of their subsistence base (MTC, 2001). Approximately 6,800 Native American and historic cultural resources have been recorded in the Bay Area and are listed with the Historical Resources Information System. About 760 cultural resources are listed on the National Register of Historic Places, of which approximately 240 are designated California Historic Landmarks. The California Inventory of Historic Resources includes a total of about 820 historic buildings, sites, or objects and 2,340 archaeological sites. The greatest concentration of listed historic resources occurs in San Francisco with 171 sites on the National Register. Alameda County has the second highest number of listed historic resources with 138 (MTC, 2001).

Dense concentrations of the Native American archaeological sites occur along the historic margins of San Francisco and San Pablo Bays. Archaeological sites have also been identified in the following environmental settings in all Bay Area counties: along historic bayshore margins, near sources of water (such as vernal pools and springs), along ridgetops, on midslope terraces, at the base of hills, and on alluvial flats (MTC, 2001).

CEQA Guidelines define a significant cultural resources as a "resource listed or eligible for listing on the California Register of Historical Resources" (Public Resources Code Section 5024.1). A project would have a significant impact if it would cause a substantial adverse change in the significance of a historical resource (CEQA Guidelines Section 15064.5(b)).

3.6.2 SIGNIFICANCE CRITERIA

Impacts to cultural resources will be considered significant if:

> The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.
>
> Unique paleontological resources are present that could be disturbed by construction of the proposed project.
>
> The project would disturb human remains.

3.6.3 ENVIRONMENTAL IMPACTS

Implementing the proposed Air Toxic NSR Rules is primarily expected to result in controlling stationary source emissions at commercial or industrial facilities. Affected facilities are typically located in appropriately zoned commercial or industrial areas that have previously been graded and developed. Because potentially affected facilities are existing facilities, and controlling stationary source emissions does not typically require extensive cut-and-fill activities, or excavation, it is unlikely that additional stationary source control measures that may result from the proposed Air Toxic NSR Rules will: (1) adversely affect historical or archaeological resources as defined in CEQA Guidelines §15064.5; (2) destroy unique paleontological resources or unique geologic features; or (3) disturb human remains interred outside formal cemeteries.

In a small number of cases, the proposed Air Toxic NSR Rules may require minor site preparation and grading at an affected facility to install new or modify existing equipment. Under this circumstance, it is possible that archaeological or paleontological resources could be uncovered. Even if this circumstance were to occur, significant adverse cultural resource impacts are not anticipated because there are existing laws in place that are designed to protect and mitigate potential adverse impacts to cultural resources. As with any construction activity, should archaeological resources be found

during construction that results from implementing the proposed BAAQMD rules, the activity would cease until a thorough archaeological assessment is conducted.

3.6.4 MITIGATION MEASURES

The cultural resources impacts associated with the Air Toxic NSR Rules are less than significant so no mitigation measures are required.

3.6.5 CUMULATIVE IMPACTS

Implementation of various air quality plans, rules and regulations, including the Toxic NSR rule, typically affect commercial or industrial facilities, so they are not expected to generate any new construction of buildings or other structures that would require construction outside of existing industrial/commercial facilities. In general, construction activities could uncover archaeological or paleontological resources. Significant adverse cultural resource impacts are not anticipated because there are existing laws in place that are designed to protect and mitigate potential adverse impacts to cultural resources. As with any construction activity, should archaeological resources be found during construction that results from implementing the proposed BAAQMD rules, the activity would cease until a thorough archaeological assessment is conducted.

3.6.6 CUMULATIVE MITIGATION MEASURES

The cumulative cultural resources impacts are expected to be less than significant so no mitigation measures are required.

3.7 GEOLOGY AND SOILS

3.7.1 ENVIRONMENTAL SETTING

The Bay Area is located in the Coast Range geomorphic province, with portions of Contra Costa and Solano Counties extending into the Great Valley geomorphic province. The Coast Range extends about 400 miles along the Pacific Coast, from Oregon into southern California. The province is characterized by a series of northwest trending ridges and valleys controlled by tectonic folding and faulting and generally characterize the geologic setting of the San Francisco Bay region, examples of which include the Suisun Bay, East Bay Hills, Briones Hills, Vaca Mountains, Napa Valley, and Diablo Ranges.

Regional basement rocks consist of the highly deformed Great Valley Sequence, which include massive beds of sandstone interfingered with siltstone and shale. Unconsolidated alluvial deposits, artificial fill, and estuarine deposits, (including Bay Mud) underlie the low-lying region along the margins of the Carquinez Straight and Suisun Bay. The estuarine sediments found along the shorelines of Solano County are soft, water-saturated mud, peat and loose sands. The organic, soft, clay-rich sediments along the San

Francisco and San Pablo Bays are referred to locally as Bay Mud and can present a variety of engineering challenges due to inherent low strength, compressibility and saturated conditions. Landslides in the region occur in weak, easily weathered bedrock on relatively steep slopes.

The San Francisco Bay Area is a seismically active region, which is situated on a plate boundary marked by the San Andreas Fault System. Several northwest trending active and potentially active faults are included with this fault system. Under the Alquist-Priolo Earthquake Fault Zoning Act, Earthquake Fault Zones were established by the California Division of Mines and Geology along "active" faults, or faults along which surface rupture occurred in Holocene time (the last 11,000 years). In the Bay area, these faults include the San Andreas, Hayward, Calaveras, Rodgers Creek-Healdsburg, Concord-Green Valley, Greenville-Marsh Creek, Seal Cove-San Gregorio and West Napa faults (Figure 3.7-1). Other smaller faults in the region classified as potentially active include the Southampton and Franklin faults. The San Andreas and the Hayward faults are the two main active, strike-slip faults in the Bay Area and have experienced movements within the last 150 years. The San Andreas Fault is a major structural feature in the region and forms a boundary between the North American and Pacific tectonic plates. Recent earthquakes over 5.0 magnitude are included in Table 3.7-1.

Ground movement intensity during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geological material. Areas that are underlain by bedrock tend to experience less ground shaking than those underlain by unconsolidated sediments such as artificial fill. Earthquake ground shaking may have secondary effects on certain foundation materials, including liquefaction, seismically induced settlement, and lateral spreading.

Liquefaction is a phenomenon whereby unconsolidated and/or near saturated soils lose cohesion and are converted to a fluid state as a result of severe vibration (e.g., earthquake). The relatively rapid loss of soil shear strength during strong earthquake shaking results in the temporary fluid-like behavior of the soil. Soil liquefaction causes ground failure that can damage homes, buildings, roads, pipelines, etc. Liquefaction can occur in areas characterized by water-saturated, cohesionless, granular materials at depths less than 40 feet. In addition, liquefaction can occur in areas with unconsolidated or artificial fill sediments such as those located in reclaimed areas along the margin of the San Francisco Bay. Liquefaction potential is highest in areas underlain by Bay fills, Bay Mud, and unconsolidated alluvium.

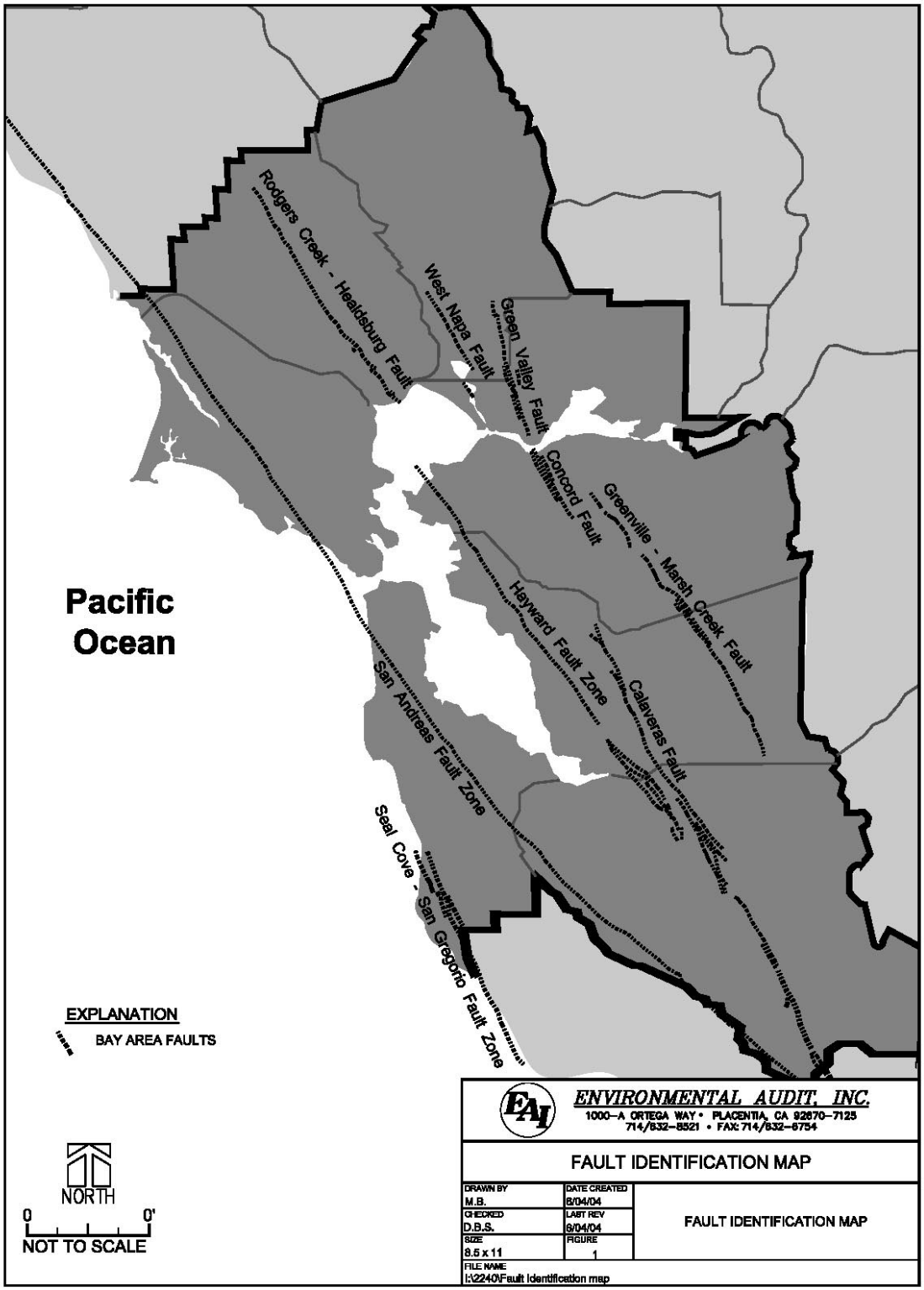

Rodgers Creek - Healdsburg Fault
West Napa Fault
Green Valley Fault
Concord Fault
Greenville - Marsh Creek Fault
Hayward Fault Zone
Calaveras Fault
San Andreas Fault Zone
Seal Cove - San Gregorio Fault Zone
Pacific Ocean
EXPLANATION
BAY AREA FAULTS
NORTH
0
0'
NOT TO SCALE
ENVIRONMENTAL AUDIT, INC.
1000-A ORTEGA WAY • PLACENTIA, CA 92870-7125
714/632-8521 • FAX: 714/632-6754
FAULT IDENTIFICATION MAP
DRAWN BY
M.B.
DATE CREATED
6/04/04
CHECKED
D.B.S.
LAST REV
6/04/04
SIZE
8.5 x 11
FIGURE
1
FAULT IDENTIFICATION MAP
FILE NAME
I:\2240\Fault Identification map

FIGURE 3.7-1

TABLE 3.7-1

EARTHQUAKES OVER 5.0 MAGNITUDE SINCE 1960

YEAR	LOCATION (epicenter)	MAGNITUDE
1960	West of Cape Mendocino	6.2
1980	Livermore	5.8
1984	Morgan Hill	6.1
1984	Mendocino Fracture Zone	6.7
1989	Loma Prieta	7.1
1992	Cape Mendocino	7.2
1992	Cape Mendocino	6.5
1992	Cape Mendocino	6.6
1994	Mendocino Fracture Zone	6.9
2000	Mendocino Fracture Zone	5.9

Source: California Division of Mines and Geology, 2004

Tsunamis are tidal waves or period waves that are caused by underwater seismic disturbances, volcanic eruptions, or submerged landslides. Tsunamis affecting the Bay Area would most likely originate west of the Bay, within the Pacific Rim. During the period between 1854 and 1964, approximately 21 tsunamis were recorded at the Fort Point tide gauge in San Francisco. The largest wave height recorded was 7.4 feet resulting from the 1964 Alaska earthquake. It is estimated that a tsunami with a wave height or run up to 20 feet could pass through the Golden Gate every 200 years. A ten-foot wave is estimated to occur every 90 years. Areas that are highly susceptible to tsunami inundation tend to be located in low-lying coastal areas such as tidal flats, marshlands, and former bay margins that have been artificially filled (MTC, 2001).

3.7.2 SIGNIFICANCE CRITERIA

The impacts on the geological environment will be considered significant if any of the following criteria apply:

Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.

Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.

Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.

Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.

Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

3.7.3 ENVIRONMENTAL IMPACTS

The proposed Air Toxic NSR Rules will not directly expose people or structures to earthquake faults, seismic shaking, seismic-related ground failure including liquefaction, landslides, mudslides or substantial soil erosion: BAAQMD rules or regulations do not directly or indirectly result in construction of new structures. Some new structures, or structural modifications at existing affected facilities may occur as a result of installing control equipment or making process modifications, e.g., new drycleaning equipment. In any event, existing affected facilities or modifications to existing facilities would be required to comply with relevant Uniform Building Code requirements in effect at the time of initial construction or modification of a structure.

New structures must be designed to comply with the Uniform Building Code Zone 4 requirements since the District is located in a seismically active area. The local cities or counties are responsible for assuring that projects comply with the Uniform Building Code as part of the issuance of the building permits and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The goal of the Code is to provide structures that will: (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage but with some non-structural damage; and (3) resist major earthquakes without collapse but with some structural and non-structural damage. The Uniform Building Code bases seismic design on minimum lateral seismic forces ("ground shaking"). The Uniform Building Code requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes. The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represents the foundation conditions at the site.

Any potentially affected facilities that are located in areas where there has been historic occurrence of liquefaction, e.g., coastal zones, or existing conditions indicate a potential for liquefaction, including expansive or unconsolidated granular soils and a high water table, may have the potential for liquefaction induced impacts at the project sites. The Uniform Building Code requirements consider liquefaction potential and establish more stringent requirements for building foundations in areas potentially subject to liquefaction. Therefore, compliance with the Uniform Building Code requirements is expected to minimize the potential impacts associated with liquefaction. The issuance of building permits from the local cities or counties will assure compliance with the Uniform Building Code requirements. Therefore, no significant impacts from liquefaction are expected.

Because facilities affected by any BAAQMD control equipment are typically located in industrial or commercial areas, which are not typically located near known geological

hazards (e.g., landslide, mudflow, seiche, tsunami or volcanic hazards), no significant adverse geological impacts are expected.

Although the proposed Air Toxic NSR Rules may require modifications at existing industrial or commercial facilities, such modifications are not expected to require substantial grading or construction activities. Any new air pollution control equipment is not expected to substantially increase the area subject to compaction or overcovering since the subject areas would be limited in size and, typically, have already been graded or displaced in some way. Therefore, significant adverse soil erosion impacts are not anticipated from implementing the Air Toxic NSR Rules.

The CEQA environmental checklist includes a discussion of septic tanks and alternative wastewater disposal systems within the discussion of Geology and Soils. Therefore, a discussion of septic tanks and alternative septic systems is included herein for completeness. Septic tanks or other similar alternative wastewater disposal systems are typically associated with small residential projects in remote areas. The proposed Air Toxic NSR Rules do not contain any requirements which generate construction of residential projects in remote areas. BAAQMD rules typically affect existing industrial or commercial facilities, which already are hooked up to appropriate sewerage facilities so no impacts on septic tanks or alternative wastewater disposal systems are expected.

3.7.4 MITIGATION MEASURES

No significant adverse impacts on geology and soils are expected so no mitigation measures are required.

3.7.5 CUMULATIVE IMPACTS

The cumulative impacts are essentially the same as the direct impacts outlined above. The projected increase in population in the Bay Area will result in increased risk of exposure of people and property to the potentially damaging effects of strong seismic shaking, fault rupture, seismically induced ground failure and slope instability. The potential for structural failures, injuries and loss of life would be greatest on raised structures, on earthquake susceptible soils and within fault zones. These issues are related to population growth and not to air quality plans, rules or regulations. The 2000 Clean Air Plan or (2000 CAP) addresses state and national air quality planning requirements for ozone and includes control measures to reduce VOC and NOx emissions, in order to reduce ozone formation. Therefore, no significant cumulative impacts on geology and soils are expected.

3.7.6 CUMULATIVE MITIGATION MEASURES

No significant adverse cumulative impacts on geology and soils are expected so no mitigation measures are required.

3.8 HAZARDS AND HAZARDOUS MATERIALS

3.8.1 ENVIRONMENTAL SETTING

The goal of the Air Toxic NSR Rules are to reduce emissions of TACs, thus improving air quality and protecting public health. Some of the proposed control equipment intended to improve overall air quality may, however, have direct or indirect hazards associated with their implementation. Hazard concerns are related to the potential for fires, explosions or the release of hazardous substances in the event of an accident or upset conditions.

The potential hazards associated with industrial activities are a function of the materials being processed, processing systems, and procedures used to operate and maintain the facility. The hazards likely to exist are identified by the physical and chemical properties of the materials being handled and their process conditions, including the following events:

- **Toxic gas clouds:** Toxic gas clouds are releases of volatile chemicals (e.g., anhydrous ammonia, chlorine, and hydrogen sulfide) that could form a cloud and migrate off-site, thus exposing individuals. "Worst-case" conditions tend to arise when very low wind speeds coincide with an accidental release, which can allow the chemicals to accumulate rather than disperse.

- **Torch fires (gas and liquefied gas releases), flash fires (liquefied gas releases), pool fires, and vapor cloud explosions (gas and liquefied gas releases):** The "worst-case" upset would be a release that produces a large aerosol cloud with flammable properties. If the flammable cloud does not ignite after dispersion, the cloud would simply dissipate. If the flammable cloud were to ignite during the release, a flash fire or vapor cloud explosion could occur. If the flammable cloud were to ignite immediately upon release, a torch fire would ensue.

- **Thermal Radiation:** Thermal radiation is the heat generated by a fire and the potential impacts associated with exposure. Exposure to thermal radiation would result in burns, the severity of which would depend on the intensity of the fire, the duration of exposure, and the distance of an individual to the fire.

- **Explosion/Overpressure:** Explosions may occur if the flammable/explosive vapors came into contact with an ignition source. An explosion could cause impacts to individuals and structures in the area due to overpressure.

3.8.1.1 Hazardous Materials Incidents

The California Hazardous Materials Incident Reporting System (CHMIRS) is a post incident reporting system to collect data on incidents involving the accidental release of hazardous materials. Information on accidental releases of hazardous materials are

reported to and maintained by OES. In 2001, there were a total of 1,398 incidents reported in the nine counties regulated by the BAAQMD (see Table 3.8-1).

TABLE 3.8-1
Hazardous Materials Transportation Incidents 2001 by County

COUNTY	REPORTED INCIDENTS
Alameda	307
Contra Costa	372
Marin	72
Napa	33
San Francisco	97
San Mateo	133
Santa Clara	128
Solano	143
Sonoma	113
Total No. of Incidents	1,398

Source: Governor's Office of Emergency Services, 2001

3.8.1.2 Perchloroethylene Used In Dry Cleaning

Perchloroethylene, whose product name is tetrachloroethylene, is a chlorinated aliphatic hydrocarbon compound containing a double bond. At room temperature, Perchloroethylene or perc is a nonflammable, colorless, dense liquid with a mildly sweet, chloroform-like odor. It is relatively insoluble in water, but miscible in alcohol, ether, chloroform, and benzene. Perc is available in many forms, from worm pills to dry-cleaning grades containing various stabilizers. A majority of dry cleaning facilities in the district use perc in their dry cleaning operations. Perc is harmful if swallowed or inhaled. Exposure to perc can occur in the workplace or in the environment following releases to the air. Exposure can also occur when people use products containing perc, spend time in dry cleaning facilities that use perc, live above or adjacent to dry cleaning facilities or bring dry cleaned garments into their home. Perc enters the body when breathed in with contaminated air and is less likely to be absorbed through skin contact. Once in the body, perc can remain, stored in fat tissue.

A number of physical or chemical properties may cause a substance to be hazardous, including toxicity, ignitability, corrosivity, and reactivity. Based on a hazard rating from 0 to 4 (0 = no hazard; 4 = extreme hazard) located on the Material Safety Data Sheet (MSDS) for perc, health is rated 3 (severe, cancer causing), contact is rated 3 (severe, life), flammability is rated 0 (none) and reactivity is rated 0 (none). Perc or its vapors in contact with flames or hot glowing surfaces may form corrosive acid fumes and therefore is recommended to keep perc away from heat, sparks and flame. The boiling point for perc is 250 degrees Fahrenheit and the vapor pressure at typical ambient temperature is 0.25 psi. A closed perc container exposed to heat may explode, however it is considered an unusual fire and explosion hazard. Firefighters are instructed to use water to keep fire-

exposed containers of perc cool and to move the containers from a fire area if it can be done without risk. According to the MSDS, some toxic gases which may be produced if perc is exposed to fire are hydrogen chloride, phosgene, carbon monoxide and carbon dioxide.

The use, storage and transport of hazardous materials are subject to numerous laws and regulations at all levels of government. The most relevant existing hazardous materials laws and regulations include hazardous materials management planning, hazardous materials transportation, hazardous materials worker safety requirements, hazardous waste handling requirements and emergency response to hazardous materials and waste incidents. Potential risk of upset is a factor in the production, use, storage and transportation of hazardous materials. Risk of upset concerns are related to the risks of explosions or the release of hazardous substances in the event of an accident or upset conditions.

3.8.1.3 Hazardous Materials Management Planning

State law requires detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of to prevent or mitigate injury to health or the environment in the event that such materials are accidentally released. Federal laws, such as the Emergency Planning and Community-Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act or SARA, Title III) impose similar requirements. These requirements are enforced by the California Office of Emergency Services.

The Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business or government agency that handles hazardous materials prepare a business plan, which must include the following (HSC, Section 25504):

- details, including floor plans, of the facility and business conducted at the site;
- an inventory of hazardous materials that are handled or stored on the site;
- an emergency response plan; and
- a training program in safety procedures and emergency response for new employees, and an annual refresher course in the same topics for all employees.

3.8.1.4 Hazardous Materials Transportation

The U.S. Department of Transportation (DOT) has the regulatory responsibility for the safe transportation of hazardous materials between states and to foreign countries. DOT regulations govern all means of transportation, except for those packages shipped by

mail, which are covered by the U.S. Postal Service (USPS) regulations. DOT regulations are contained in the Code of Federal Regulations, Title 49 (49 CFR); USPS regulations are in 39 CFR.

Every package type used by a hazardous materials shipper must undergo tests, which imitate some of the possible rigors of travel. While not every package must be put through every test, most packages must be able to meet the following generic test criteria: the ability to be (a) kept under running water for one-half hour without leaking; (b) dropped, fully loaded, onto a concrete floor; (c) compressed from both sides for a period of time; (d) subjected to low and high pressure; and (e) frozen and heated alternately.

Common carriers are licensed by the California Highway Patrol (CHP) pursuant to the California Vehicle Code, §32000, which requires licensing of every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time and every carrier, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards.

Under the federal Resource Conservation and Recovery Act (RCRA) of 1976, the U.S. EPA set standards for transporters of hazardous waste. In addition, the State of California regulates the transportation of hazardous waste originating or passing through the state; state regulations are contained in CCR, Title 13. Hazardous waste must be regularly removed from generating sites by licensed hazardous waste transporters. Transported materials must be accompanied by hazardous waste manifests.

Two state agencies have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies: the CHP and the California Department of Transportation (Caltrans). CHP enforces hazardous materials and hazardous waste labeling and packing regulations that prevent leakage and spills of material in transit and provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of CHP, which conducts regular inspections of licensed transporters to assure regulatory compliance. Caltrans has emergency chemical spill identification teams at 72 locations throughout the state and can respond in the event of an emergency.

3.8.1.5 Hazardous Material Worker Safety Requirements

The California Occupational Safety and Health Administration (Cal/OSHA) and the Federal Occupational Safety and Health Administration (Fed/OSHA) are the agencies responsible for assuring worker safety in the handling and use of chemicals in the workplace. In California, Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations.

Under the authority of the Occupational Safety and Health Act of 1970, Fed/OSHA has adopted numerous regulations pertaining to worker safety (contained in 29 CFR – Labor). These regulations set standards for safe workplaces and work practices, including the

reporting of accidents and occupational injuries. Some OSHA regulations contain standards relating to hazardous materials handling, including workplace conditions, employee protection requirements, first aid, and fire protection, as well as material handling and storage. Because California has a federally-approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in 29 CFR.

Cal/OSHA regulations concerning the use of hazardous materials in the workplace (which are detailed in CCR, Title 8) include requirements for employee safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances as well as communicating hazard information related to hazardous substances and their handling. The hazard communication program also requires that Material Safety Data Sheets (MSDSs) be available to employees and that employee information and training programs be documented. These regulations also require preparation of emergency action plans (escape and evacuation procedures, rescue and medical duties, alarm systems, and emergency evacuation training).

Both federal and state laws include special provisions for hazard communication to employees, including training in chemical work practices. The training must include methods in the safe handling of hazardous materials, an explanation of MSDSs, use of emergency response equipment and supplies, and an explanation of the building emergency response plan and procedures. Chemical safety information must also be available. More detailed training and monitoring is required for the use of carcinogens, ethylene oxide, lead, asbestos, and certain other chemicals listed in 29 CFR. Emergency equipment and supplies, such as fire extinguishers, safety showers, and eye washes, must also be kept in accessible places. Compliance with these regulations reduces the risk of accidents, worker health effects, and emissions.

National Fire Codes (NFC), Title 45 (published by the National Fire Protection Association) contains standards for facilities using chemicals, which are not requirements, but are generally employed by organizations in order to protect workers. These standards provide basic protection of life and property through prevention and control of fires and explosions, and also serve to protect personnel from exposure to non-fire health hazards.

While NFC Standard 45 is regarded as a nationally recognized standard, the California Fire Code (24 CCR) contains state standards for the use and storage of hazardous materials and special standards for buildings where hazardous materials are found. Some of these regulations consist of amendments to NFC Standard 45. State Fire Code regulations require emergency pre-fire plans to include training programs in first aid, the use of fire equipment, and methods of evacuation.

3.8.1.6 Hazardous Waste Handling Requirements

RCRA created a major federal hazardous waste regulatory program that is administered by the U.S. EPA. Under RCRA, U.S. EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from "cradle to grave." RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle-to-grave" system of regulating hazardous wastes. HSWA specifically prohibits the use of certain techniques for the disposal of some hazardous wastes.

Under RCRA, individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as federal RCRA requirements. U.S. EPA approved California's program to implement federal regulations as of August 1, 1992.

The Hazardous Waste Control Law (HWCL) is administered by the California Environmental Protection Agency Department of Toxic Substance Control (DTSC). Under HWCL, DTSC has adopted extensive regulations governing the generation, transportation, and disposal of hazardous wastes. HWCL differs little from RCRA; both laws impose "cradle to grave" regulatory systems for handling hazardous wastes in a manner that protects human health and the environment. Regulations implementing HWCL are generally more stringent than regulations implementing RCRA.

Regulations implementing HWCL list over 780 hazardous chemicals as well as 20-30 more common materials that may be hazardous; establish criteria for identifying, packaging and labeling hazardous wastes; prescribe management practices for hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

Under both RCRA and HWCL, hazardous waste manifests are required to be prepared by the facility that generates hazardous waste. The hazardous waste manifest must accompany the hazardous waste as it is transported, treated and/or disposed. Hazardous waste manifests list a description of the waste, its intended destination and regulatory information about the waste. A copy of each manifest must be filed with DTSC. The generator must match copies of hazardous waste manifests with certification notices from the treatment, disposal, or recycling facility.

3.8.1.7 Emergency Response to Hazardous Materials and Wastes Incidents

Pursuant to the Emergency Services Act, the State has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government agencies and private persons. Response to hazardous materials incidents is one part of this plan. The Plan is administered by the state Office of Emergency Services (OES), which coordinates the responses of other agencies including CalEPA, CHP, the Department of Fish and Game, the Regional Water Quality Control Board (RWQCB), and local fire departments. (See California Government Code, §8550.)

In addition, pursuant to the Hazardous Materials Release Response Plans and Inventory Law of 1985 (the Business Plan Law), local agencies are required to develop "area plans" for response to releases of hazardous materials and wastes. These emergency response plans depend to a large extent on the business plans submitted by persons who handle hazardous materials. An area plan must include pre-emergency planning of procedures for emergency response, notification and coordination of affected government agencies and responsible parties, training, and follow-up.

3.8.2 SIGNIFICANCE CRITERIA

The impacts associated with hazards will be considered significant if any of the following occur:

> Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
>
> Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

3.8.3 ENVIRONMENTAL IMPACTS

3.8.3.1 Hazards Associated with Alternatives to Perc

<u>Flammability and Fire Hazards</u>

Perc is considered to be a nonflammable solvent. Some replacement solvents are more flammable than perc. By providing incentives to use alternatives to perc, the Air Toxic NSR Rules could result in the increased use of flammable materials, such as some of the hydrocarbon solvents. There could be a potentially significant increase in fire hazards at affected facilities or an increase in the probability of a release of flammable materials into the environment in the event of an accidental release during transport. The replacement solvents will, however, be used in equipment that has been designed to comply with stringent flammability standards. Wet cleaning is a water-based system, is not flammable and is not considered further in this analysis. Likewise, carbon dioxide (CO_2) is not flammable.

Historically, perc has been used in the dry cleaning industry because it is effective and non-flammable. Before perc, the dry cleaning industry has used a variety of petroleum solvents such as Stoddard, 140F, and LPA-142 in dry cleaning operations. Because these substances are highly flammable VOCs, the dry cleaning industry has been motivated to develop solvents that have fewer or less severe physical or chemical properties.

With the development of closed-loop technology, a new generation of solvents has been developed. These newer hydrocarbon solvents, including synthetic aliphatic hydrocarbon, VMS (decamethylcyclopentasiloxane) and substituted aliphatic glycol ether, may have greater hazardous physical or chemical properties (e.g., higher flashpoint, autoignition temperature, etc.) than perc (see Table 3.8-2). The newer hydrocarbon alternatives are regulated as Class III combustible liquids according to the National Fire Protection Association (NFPA) ratings. Perc is non-combustible.

TABLE 3.8-2
Hazards Associated with Alternatives to Perc Use at Dry Cleaners(1)

	SOLVENT CLEANING				
Hazard Characteristic	**synthetic aliphatic hydrocarbon**	**decamethylcycl-opentasiloxane**	**substituted aliphatic glycol ether**	**CO_2**	**Wet Cleaning**
Flashpoint	145°F	170°F	>200°F	N/A	N/A
Flammable Limits					
LEL	1.3	0.7	0.7	1.7	N/A
UEL	8.8	Unknown	7.0	6.7	N/A
Auto ignition Temperature	640°F	738°F	451°F	>700° F	N/A
NFPA*					
Health	1	0	1	2	
Flammability	2	2	2	1	
Reactivity	0	0	0	0	
HMIS**					
Health	1	0	1		
Flammability	2	2	2		
Reactivity	0	0	0		

(1) Source: SCAQMD, 2002.
* National Fire Protection Association
** Hazardous Materials Identification System
0 = minimal; 1 = slight, 3 = serious, 4 = severe
LEL = lower explosive limit UEL = upper explosive limit

NFPA regulations require closed-loop machines using solvents that are combustible to be equipped with either a fire suppressant or a prevention system. A fire suppressant system injects an inert gas (e.g. nitrogen or argon) to displace available oxygen to keep the concentration of oxygen present below eight percent by volume. The timing of the inert gas injection depends on the solvent used in the machine and is linked to a percentage of the solvent's assigned lower explosive limit (LEL). The LEL of a substance is the minimum concentration of gas or vapor in air below which the substance will not burn when exposed to a source of ignition. This concentration is usually expressed in percent by volume. Below this concentration, the mixture is too "lean" to burn or explode. The upper explosive limit (UEL) of a substance is the maximum concentration of gas or vapor

above which the substance will not burn when exposed to a source of ignition. Above this concentration, the mixture is too "rich" to burn or explode. Some closed-loop machines are equipped with a fire prevention system that maintains the operating equipment under a vacuum to remove oxygen so that its concentration is maintained below eight percent by volume to eliminate a condition that could result in fire or an explosion (SCAQMD, 2002).

Solvent machines are not expected to result in flammability hazards because all four elements needed for flammability (solvent, flash point temperature, oxygen, and a flame or source of ignition) will never be together. As noted above, the oxygen is removed and the temperature is lowered before the door is opened when oxygen enters the chamber. Also, the solvent will never reach 143, 147 or 170 degrees Fahrenheit, which are the flash points of the HC-DCF, DF 2000 and Green Earth ™ solvents, respectively (SCAQMD, 2002).

The proposed Air Toxic NSR rules would not affect equipment, fire suppressant or prevention system specifications. Equipment would continue to comply with NFPA requirements. Neither would the proposed project interfere with, or alter, local governments' and fire departments' approval process for installing and operating dry cleaning machines. Local fire departments regularly inspect dry cleaning facilities before and during operation to ensure the equipment and cleaning process complies with the fire codes and regulations. City, county and regulatory agencies usually adopt the Uniform Fire Code (UFC), which outline these fire codes. For example, according to Section 3602.4.3 (Article 36 – Dry Cleaning of the 1997 UFC), "dispensing of flammable or combustible liquids for spotting operations shall be from approved containers. The amount of flammable and combustible liquid solvents at each workstation shall not exceed one gallon." Facilities are required to make design or process changes to satisfy the local fire prevention authorities before operating. The more significant design requirements of the UFC include the following:

- Operating temperature limits with visual and audible alarms;
- Room occupancy (design) requirements;
- Fire sprinkler systems for dry cleaning facilities;
- Remote location of boilers with open flame heating, and four-hour fire resistance separating wall;
- Room ventilation of one cubic foot per square foot of floor area;
- Emergency relief ventilation for solvent tanks and containers;
- Pressure relief devices for pressure operated filters;

- Explosion-proof electrical wiring, controls, and motors; and
- Bonding and grounding of system components.

Because perchloroethylene is not flammable, perchloroethylene machines are not designed for combustion control. It is therefore imperative that any new installation of alternative technologies includes the installation of all required safety devices and adaptations necessary to ensure both fire prevention (e.g., nitrogen blanketing, oxygen monitoring, temperature limits) and fire protection (internal sprinklers, pressure vents, explosion-proof motors, air-purge devices, etc.). The proposed Air Toxic NSR rules do not require the use of petroleum solvents in dry cleaning operations. Even so, the safety controls on a number of perc alternative dry cleaning machines are designed for operation with hydrocarbon solvents with a flash point and an LEL at safe parameters and one type of machine can operate without the necessity of nitrogen interjection, temperature limitation or vacuum drying (SCAQMD, 2002).

235 dry cleaning facilities in the district have already converted and are successfully operating hydrocarbon solvent technology. The likelihood of requiring sprinkler systems and firewalls are dependent on the local permitting authority and generally reviewed on a case-by-case basis. Dry cleaners are required to obtain a permit from the local fire authority. Fire codes generally require that dry cleaning plants and associated operations be separated from other occupancies by fire-resistive occupancy separations and limits the quantity of material that can be stored on-site without more resistive fire walls. Dry cleaning rooms containing Class II (perc) or Class IIIA solvents are usually separated from other uses including solvent storage, offices, laundering, scouring, scrubbing, pressing and ironing operations by fire-resistive occupancy separations. Local fire departments can also allow for alternate methods of compliance which allow for less restrictive requirements where there is minimal storage of dry cleaning chemicals or when dry cleaning using non-flammable materials occurs.

Concerns have been raised regarding the potential flammability of hydrocarbon emissions emanating from petroleum solvent machines. In response to these concerns, SCAQMD staff visited three dry cleaning shops operating five DF2000 petroleum solvent machines in June 2002. The object of these visits was to measure hydrocarbon emissions within the shop utilizing a calibrated organic vapor analyzer (Foxboro Century OVA-108). For all three shops the measurements typically ranged from 10 to 30 parts per million (ppm) [based on distances ranging from 20 feet from the machine up to the machine's flanges, valves, seals, and filters]. During the visit one shop was experiencing a major breakdown resulting in a significant leak. The hydrocarbon leakage caused by the breakdown was measured to be a maximum of 250 ppm. It should be noted that the 250 ppm concentration is less than four percent of the lower explosive limit for hydrocarbons from typical petroleum solvent formulations (SCAQMD, 2002).

In conclusion, compliance with NFPA standards, which are established, enforceable regulations, and compliance with fire prevention, combined with improved equipment

design and safety mechanisms, will reduce the potential fire hazards associated with flammable solvents to a less than significant impact.

PROJECT SPECIFIC MITIGATION MEASURES: None Required

Hazards Associated with CO_2 Equipment

The CO_2 machines pressurize the liquid carbon dioxide gas in a drum between 700 and 800 pounds per square inch (psi). The potential danger of explosion is minimal particularly when comparing pressure with similar products found in residential or commercial facilities. For example, a refrigerator is at 350 psi pressure, a fire extinguisher is at 800 psi, and a home oxygen tank is at 2,400 psi. CO_2 has no flash point and is not flammable. In addition, compliance with American Society of Mechanical Engineers (ASME) ensures safety standards and strict enforcement of mechanical performance regulations, combined with improved equipment design and safety mechanisms, should eliminate the danger of explosion and provide a safe environment for workers and customers.

In conclusion, compliance with ASME standards, which are established, enforceable regulations, and compliance with mechanical performance regulations, combined with improved equipment design and safety mechanisms, will reduce the potential explosive properties related to CO_2 equipment to a less than significant impact.

PROJECT SPECIFIC MITIGATION MEASURES: None required.

Transport of Hazardous Materials

Dry cleaning facilities are not expected to increase or decrease the amount of laundry being cleaned as a result of the proposed project. Therefore, the number of trucks needed to deliver the new solvents for hydrocarbon dry cleaning equipment should not significantly change from the current number of delivery trips of perc. There is no regular delivery necessary for wet cleaning equipment since water is used to clean the garments and CO_2 machines use approximately one quart per week of CO_2, which is non-hazardous. Therefore deliveries of CO_2 should not occur as often as for perc or hydrocarbon solvents (SCAQMD, 2002). Thus, there would generally be little or no net change in the probability of accidental releases of solvent materials compared to perc.

The consequences of an accidental spill involving perc is pooling and evaporation of a TAC into the atmosphere. Inhalation of perc is the most significant route of exposure. Perc is easily absorbed from the lung following inhalation exposure. Acute (short-term) exposure to very high levels of perc in humans has caused death. Effects noted from acute, inhalation exposure include intense irritation of the upper respiratory tract and eyes, kidney dysfunction, and neurological effects, such as reversible mood and behavioral changes, impairment of coordination and anesthetic effects. Perc, however is not flammable and unless under unusual circumstances, such as being enclosed with extreme high heat, perc will not explode. In the case of a large spill, the MSDS instructs

users to wear a National Institute for Occupational Safety and Health (NIOSH)-approved respirator and to ventilate the area. Additional instructions include constructing a dike to retain the fluid and not flushing it to a sewer or waterway (SCAQMD, 2002).

The hydrocarbons, including substituted aliphatic glycol ethers, synthetic aliphatic hydrocarbon, and decamethylcyclopentasiloxane are flammable and, thus, could be a potential hazard if in contact with a flame. "Combustible" is listed as a special firefighting procedure but all standard firefighting media is recommended for extinguishing fires from these substances. The handling of a hydrocarbon spill is not substantially different from the cleanup of a perc spill except to remove sources of ignition. A respirator is also recommended during a spill cleanup and the material is to be placed in a container for disposal. CO2 is also not flammable and if released, will dissipate rapidly and harmlessly into the atmosphere (SCAQMD, 2002). As a result of existing accidental response procedures, potential adverse hazard impacts from transporting alternative dry cleaning solvents are not anticipated.

PROJECT SPECIFIC MITIGATION MEASURES: None required.

Other Hazard Impacts

The following discussion of "Other Hazard Impacts" discusses additional topics on the CEQA Environmental Checklist, and some of these topics are not applicable to the Air Toxic NSR Rule. Government Code §65962.5 typically refers to a list of facilities that may be subject to Resource Conservation and Recovery Act (RCRA) permits. Most facilities affected by the proposed project rules are not expected to be on this list and would not typically be expected to generate large quantities of hazardous materials. For any facilities affected by the proposed rule that are on the list, it is anticipated that they would continue to manage any and all hazardous materials in accordance with federal, state and local regulations.

The proposed rule will not adversely affect any airport land use plan or result in any safety hazard for people residing or working in the District. U.S. Department of Transportation – Federal Aviation Administration Advisory Circular AC 70/7460-2K provides information regarding the types of projects that may affect navigable airspace. Projects that involve construction or alteration of structures greater than 200 feet above ground level within a specified distance from the nearest runway; objects within 20,000 feet of an airport or seaplane base with at least one runway more than 3,200 feet in length and the object would exceed a slope of 100:1 horizontally (100 feet horizontally for each one foot vertically from the nearest point of the runway; etc.), may adversely affect navigable airspace. The proposed Air Toxic NSR rules are not expected to require construction of tall structures near airports so potential impacts to airport land use plans or safety hazards to people residing or working in the vicinity of local airports are not anticipated. This potential impact is not considered to be significant.

The proposed rules will not impair implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan. Any existing

commercial or industrial facilities affected by the proposed rules will typically have their own emergency response plans for their facilities already in place. Emergency response plans are typically prepared in coordination with the local city or county emergency plans to ensure the safety of not only the public, but the facility employees as well. Adopting the proposed Air Toxic NSR rules is not expected to interfere with any emergency response procedures or evacuation plans and, therefore, is not considered to be significant.

The proposed Air Toxic NSR rules would typically affect existing urbanized, commercial or industrial facilities in appropriately zoned areas. Since urbanized, commercial and industrial areas are not typically located near wildland or forested areas, implementing the proposed rule is not expected to increase the risk of wildland fires. This impact is considered less than significant.

3.8.4 MITIGATION MEASURES

No significant adverse hazard impacts are expected so no mitigation measures are required.

3.8.5 CUMULATIVE IMPACTS

The preceding analysis concluded no additional construction activities are anticipated beyond what would be expected when new projects are being constructed. New dry cleaners or dry cleaning facilities that replace equipment may require different equipment under the proposed rules but the proposed rules are not expected to require additional construction activities. Consequently, no cumulative construction air quality impacts are anticipated from implementing the proposed Air Toxics NSR rules.

The Air Toxics NSR rules are expected to increase the use of air pollution control equipment and encourage alternatives to the use of perc in the dry cleaning industry. It is expected that the increased use of certain hazardous compounds (e.g., solvents) would generally be balanced by a decreased use of other hazardous and flammable materials (e.g., perc). Therefore, no significant cumulative impacts are identified.

The proposed Air Toxics Rules are not expected to create significant adverse toxic air contaminant impact to air quality, but rather will provide a toxic air quality benefit by reducing perc and other TAC emissions and the related health impacts associated with exposure to perc and other TACs.

There are no provisions of Air Toxic NSR Rules that result in either project-specific or cumulative hazard impacts. Since the proposed project is not expected to create significant adverse project-specific hazard impacts, the proposed project's contribution to significant adverse cumulative hazard impacts are less than cumulatively considerable (CEQA Guidelines §15130(a)(3)) and, therefore, are not significant.

3.8.6 CUMULATIVE MITIGATION MEASURES

No significant adverse cumulative hazard impacts are expected so no mitigation measures are required.

3.9 HYDROLOGY AND WATER QUALITY

3.9.1 ENVIRONMENTAL SETTING

3.9.1.1 Bays and Estuaries

The San Francisco Bay and the San Joaquin-Sacramento River Delta combine to form the West Coast's largest estuary, where fresh water from rivers and numerous smaller tributaries flows out through the Bay into the Pacific Ocean. The San Francisco Bay Estuary (Estuary) encompasses roughly 1,600 square miles, drains more than 40 percent of the state, provides drinking water to approximately two-thirds of California, and irrigates 4.5 million acres of farmland. The Estuary also enables residents of the Bay Area to pursue diverse activities including shipping, fishing, recreation, and commerce (SFEP, 2004). The Estuary is composed of three distinct hydrographic regimes: The South Bay extends from the Bay Bridge to the southern terminus of the Bay in San Jose, and the Central and North Bays connect the Delta and the Pacific Ocean.

The North Bay consists of several small bays, the two largest being San Pablo Bay and Suisun Bay. The bays are connected to each other and the ocean by deep, narrow channels ranging from 42 feet deep in San Pablo Bay to over 360 feet deep at the Golden Gate. San Pablo Bay is characterized by a deep channel surrounded by broad shoals. San Pablo Bay is connected to Suisun Bay by the narrow Carquinez Strait. Suisun Bay is a shallow basin consisting of braided channels and shallow shoals.

The Central Bay has a highly complex bathymetry. East of the Golden Gate, the depth is approximately 300 feet, where extensive intertidal mudflats are present at the eastern edge of the Central Bay. In addition, several islands are located within the Central Bay, including Treasure, Alcatraz, and Angel islands.

The South Bay is characterized by large areas of broad shallows incised by a main channel 30 to 65 feet deep. It has similar bathymetry to San Pablo and Suisun Bays. A relatively deep channel extends along the western side of the South Bay, surrounded by broad mudflats.

Beneficial uses of the Bay include agricultural supply, fish spawning, and wildlife habitat, commercial and sport fishing, estuarine habitat, fresh water replenishment, ground water recharge, industrial water supply, fish migration, municipal and domestic water supply, navigation, industrial process water supply, preservation of rare and endangered species, contact and non-contact water recreation, and shellfish harvesting, (RWQCB, 1995).

3.9.1.2 Water Quality

The region discharges an estimated 5,000 to 40,000 metric tons of at least 65 pollutants into the Estuary each year. These pollutants come from industry, commerce, transportation, agriculture, household maintenance and other activities. The 200 sewage plants and industries that discharge wastewater directly into the Estuary via a specific pipe or drain are known as point sources of pollution. Pollutants also reach the Estuary from "non-point" sources that include urban and agricultural runoff, spills, atmospheric fallout, dredging, landfill seepage, natural erosion, and decay processes (SFEP, 2004).

The overall goals of water quality regulation according to the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) are to protect and maintain thriving aquatic ecosystems and the resources those systems provide to society, and to accomplish these goals in an economically and socially sound manner (RWQCB, 1995).

The San Francisco Estuary Institute (SFES) had administered a Regional Monitoring Program for the Regional Water Quality Control Board (RWQCB) and major wastewater dischargers into the Bay since 1993. Most dischargers to the Bay are required to participate as a condition of their discharge permit. SFEI conducts monitoring three times a year along the central line of the Bay from the Delta to the South Bay. The Regional Monitoring Program measures concentrations of trace constituents in water, sediment, and transplanted bivalves at various locations in the Estuary.

The Regional Monitoring Program monitors conventional water quality (such as salinity, dissolved oxygen, and temperature) and chemistry (such as metals and pesticides), water toxicity (effects on laboratory organisms), sediment characteristics and chemistry, sediment toxicity (effects on laboratory organisms), and contaminant bioaccumulation in shellfish.

Based on water quality analyses, the level of contamination in the Estuary is high enough to impair the health of the ecosystem. The Estuary is described as moderately impaired. Indications of impairment include the toxicity of the water and sediment samples; the frequent presence of contaminant concentrations exceeding water, sediment and fish guidelines; and altered communities of sediment dwelling organisms. Overall, sites in the lower South Bay, the Petaluma River mouth, and San Pablo Bay are more contaminated than other sites. Contamination in the Central Bay is lower primarily due to mixing with relatively clean ocean water. Of all the contaminants measured by the Bay's RMP, results suggest that those of greatest concern are mercury, polychlorinated biphenyls (PCBs), and diazinon, and chlorpyrifos (two pesticides). Also of concern are copper, nickel, zinc, DDT, chlordane, dieldrin, dioxins, polyaromatic hydrocarbons (PAHs) and selenium (SFEI, 2004).

3.9.1.3 Drainage and Runoff

Stormwater pollution occurs when rain comes into contact with materials and picks up and washes contaminants into storm drains, creeks or the Bay. Common sources of pollution include equipment and vehicles that may leak oil, grease, hydraulic fluid or fuel, construction materials and products, waste materials, landscaping runoff containing fertilizers, pesticides or weed killers, and erosion of disturbed soil. Stormwater discharges associated with industrial and construction activities are regulated according to California Code of Regulations Section 402(p) under the National Pollutant Discharge Elimination System (NPDES) permitting system.

Typical pollution control measures include Best Management Practices (BMPs) that are designed to reduce quantities of materials used that may produce pollutants, change the way various products are handled or stored, employ various structural devices to catch and restrict the release of pollutants from the site, and set out appropriate responses to spills and leaks. Examples of BMPs include: temporary silt fences; protection devices such as rock aprons at pipe outlets; stabilized pads or aggregate at points where construction site leads to or from a public street; temporary drain inlet protection devices such as filter fabric and sand bags; concrete washouts for cement mixers; preservation of existing vegetation; vehicle and equipment cleaning, etc. Site-specific BMPs are described in a stormwater pollution prevention plan (SWPPP).

SWPPPs are designed to identify and evaluate sources of pollutants associated with industrial and construction activities that may effect the quality of stormwater discharges and authorized non-stormwater discharges from a facility; and to identify and implement site-specific BMPs to reduce or prevent pollutants associated with industrial or construction activities in stormwater discharges or authorized non-stormwater discharges.

3.9.1.4 Floodplain Risk

Some areas of the Bay along the shoreline and drainages leading to the Bay are potential floodplains. Risk associated with building in a floodplain include threats to life and property. The level of risk is determined by the nature of the facility, its location and appropriate mitigation measures. Local city or county government agencies regulate floodplain construction, management, and mitigation through land use controls, based on determinations of flood elevations.

3.9.1.5 Groundwater

Groundwater is subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated. Where groundwater occurs in a saturated geologic unit that contains sufficient permeable thickness to yield significant quantities of water to wells and springs, it is called an aquifer. A groundwater basin is a hydrogeologic unit containing one large aquifer or several connected and interrelated aquifers. There are three basins beneath the greater San Francisco Bay Area: The San Francisco, Santa Clara, and San Pablo Basins. The San Francisco Basin extends north from the

Dumbarton Bridge to the shoreline south of Richmond and the San Pablo Basin extends north of the San Francisco Basin. The Santa Clara Basin is located south of the San Francisco Basin. The San Francisco and Santa Clara Basins have a similar stratigraphic and tectonic development, while the San Pablo Basin appears to have had a different history. Bedrock appears to be the primary boundary between the San Francisco and San Pablo Basin. The Hayward Fault appears to form a groundwater barrier along portions of the basins (Norfleet Consultants, 1998).

Saltwater intrusion occurred in upper aquifers between Alameda and Niles Cone in the Santa Clara Basin between the mid 1920's and late 1940's. A combination of drought and overpumping caused groundwater levels to fall below sea level in about 1924. When this occurred, there was widespread saltwater intrusion through the young bay mud into the upper aquifer and eventually into the deeper aquifers. Evaluation for the intrusion revealed that there were no natural direct pathways to the deeper aquifers. Intrusion occurred via abandoned wells and reverse hydrostatic head from high pumping rates (Norfleet Consultants, 1998).

The Department of Water Resources (DWR) has identified 31 individual ground water basins in the San Francisco Bay Region that were or could serve as sources of high quality drinking water. Maintaining the high quality of groundwater is the primary objective of the RWQCB, which defines the lowest concentration limit required for groundwater protection. The RWQCB also has water quality limits for bacterial, chemical constituents, radioactivity, taste and odor. Maximum Contaminant Levels (MCLs) and Secondary Maximum Contaminant Levels (SMCLs), have also been implemented to protect the beneficial uses of municipal and domestic drinking water sources (RWQCB, 1995).

3.9.2 SIGNIFICANCE CRITERIA

Potential impacts on water resources will be considered significant if any of the following criteria apply:

> The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
>
> The project will cause the degradation of surface water substantially affecting current or future uses.
>
> The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
>
> The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
>
> The project results in alterations to the course or flow of floodwaters or places structures within a 100-year flood zone.

3.9.3 ENVIRONMENTAL IMPACTS

3.9.3.1 Water Quality Impacts

Implementation of the proposed Air Toxics NSR Rules could impact water quality. Perc is the most common solvent currently used in dry cleaners. The proposed new rules would likely result in less use of perc. Although perc is not readily miscible in water, a small amount of perc does dissolve into water. Drycleaners are not supposed to dispose of their separator water by pouring it into a sanitary sewer. Water used to wash dry cleaning equipment might become contaminated with perc and be disposed to the sanitation system. The local sanitation authorities test for perc in wastewater and dry cleaning represents the largest industrial user of perc. It is assumed that some perc in wastewater comes from dry cleaners.

The Air Toxic NSR Rules will likely result in a reduction in the use of perc at dry cleaning facilities. Reducing the use of perc would also remove it as a source of water contamination, providing some water quality benefits through eliminating or reducing the amount of perc used at dry cleaning facilities. Perc would be replaced by alternative dry cleaning technologies, some of which have little or no water quality impacts, i.e., wet cleaning and CO2. In general, the alternative hydrocarbon solvents are less toxic than perc.

3.9.3.2 Stormwater/Flood Zone Impacts

The proposed Air Toxics Rules would primarily impact existing commercial and industrial stationary sources. Any flooding, seiche, tsunami, 100-year flood, or mudflow risks would be associated with the existing situation. The proposed project could result in modified facilities, e.g., alternatives to perc use or additional control equipment at commercial/industrial areas. The proposed project would not alter the location of these facilities and would not exacerbate any of these potential hazards.

3.9.3.3 Potential Impacts Associated with Ground Water Depletion

The potential increase in water demand is less than significant as discussed in Section 3.17 herein.

3.9.4 MITIGATION MEASURES

No significant adverse hydrology and water impacts are expected so no mitigation measures are required.

3.9.5 CUMULATIVE IMPACTS

Wastewater generated as a result of implementing the Air Toxics NSR rules are expected to be beneficial by reducing the use of perc and the potential water quality impacts.

Implementation of other control measures will have only minor incremental impacts on water quality compared to impacts due to population growth and is not considered significant. There may be significant cumulative impacts on hydrology and water quality due to increases in population associated with increased population (e.g., increased water demand, increased wastewater discharged, etc.). However, these cumulative impacts are not related to the District rules and regulations. No other cumulative impacts have been identified.

3.9.6 CUMULATIVE MITIGATION MEASURES

No significant adverse cumulative hydrology and water impacts are expected so no mitigation measures are required.

3.10 LAND USE AND PLANNING

3.10.1 ENVIRONMENTAL SETTING

The San Francisco Bay Area has grown from the sparsely populated Native American and Spanish settlements of the past, to an urban area of nearly seven million people today. The pattern of land use in the Bay Area runs from one of the most densely populated urban centers in the United States (the City of San Francisco), to open hills and shorelines, and from growing suburban areas, to still-viable farming areas.

Since the mid 1940's, the San Francisco Bay Area has grown from a primarily agricultural region with one major city (San Francisco), to the fourth most populous metropolitan region in the United States with multiple centers of employment, residential development, and peripheral agricultural areas. The pattern of land uses in the Bay Area includes a mix of open space, agriculture, intensely developed urban centers, a variety of suburban employment and residential areas, and scattered older towns. This pattern reflects the landforms that physically define the region, the Bay, rivers, and valleys. Major urban areas are centered around the Bay, with the older centers close to the Golden Gate. Newer urban areas are found in Santa Clara County to the south, the valleys of eastern Contra Costa and Alameda Counties, and Sonoma and Solano Counties to the north.

The Pacific coast and the northern valleys are primarily in agricultural and open space use, while the agricultural areas adjoining the Central Valley have seen substantial suburban development in recent years, particularly in Solano County and western Contra Costa County.

Land uses vary greatly within the Bay Area and include commercial, industrial, residential, agricultural, and open space uses. The amount of land developed in each of the nine counties varies from a low of four percent in Napa County to a high of 81 percent in San Francisco. The Bay Area includes 98 cities. Residential uses continue to

consume the greatest amount of urban land, approximately 70 percent. With respect to residential densities, after San Francisco, the Berkeley/Albany, Daly City/San Bruno, and Sunnyvale/Mountain View areas have the highest densities, while Healdsburg/Cloverdale, Santa Rosa/Sebastopol, and San Ramon/Danville have the lowest. Most of the Bay Area's population and economy is situated along the perimeter of San Francisco Bay (the Bay), in the older, larger cities such as San Francisco, Oakland, and San Jose. However, the majority of new residential and commercial land use development is occurring in the peripheral cities located in the valleys surrounding the Bay, such as Santa Rosa, Fairfield, and Livermore.

The percent of developed land is forecast to increase by 115,000 acres between 2000 and 2020, an increase of 17 percent. This regional development will result in just over 18 percent of all Bay Area land being developed by 2020.

3.10.2 SIGNIFICANCE CRITERIA

Land use and planning impacts will be considered significant if the proposed project conflicts with the land use and zoning designations established by the local jurisdiction (e.g., City or County).

3.10.3 ENVIRONMENTAL IMPACTS

The proposed Air Toxic NSR Rules generally are expected to impose control requirements on stationary sources at existing commercial or institutional facilities. As a result, the proposed Air Toxic NSR Rules do not require construction of structures for new land uses in any areas of the District and, therefore, is not expected to create divisions in any existing communities or conflict with any applicable habitat conservation or natural community conservation plan.

There are existing links between population growth, land development, housing, traffic and air quality. The MTC as the regional transportation planning agency accounts for these links when designing ways to improve air quality, transportation systems, land use, compatibility and housing opportunities in the region. Any facilities affected by the proposed Air Toxic NSR Rules would still be expected to comply with, and not interfere with, any applicable land use plans, zoning ordinances, habitat conservation or natural community conservation plans.

Land use and other planning considerations are determined by local governments. Nevertheless, some potential control measures encourage local governments to favorably consider mixed-use development, in-fill development, jobs/housing balance, and limits on suburban growth.

3.10.4 MITIGATION MEASURES

No significant adverse land use and planning impacts have been identified so no mitigation measures are required.

3.10.5 CUMULATIVE IMPACTS

The forecast development of residential and employment land uses in the Bay Area over the next 25 years would result in significant expansion of urban areas and significant changes in land use and the character of neighborhoods in the Bay Area. The Air Toxics NSR rules and other air quality plans and control measures have been developed, in part, to develop a strategy for attaining and maintaining compliance with ambient air quality standards in spite of this development. While general population growth may impact land use and planning, the District responds to proposed growth by developing control strategies to attain and maintain ambient air quality in spite of substantial population growth.

While the BAAQMD has no land use authority and cannot directly affect the pattern that future land uses will take, it can continue to participate and promote efforts to coordinate regional smart growth efforts to use land more efficiently, optimize transportation and preserve open space. Therefore, no significant cumulative impacts on land use and planning related to the Air Toxics NSR rules are expected.

3.10.6 CUMULATIVE MITIGATION MEASURES

No significant adverse cumulative land use impacts were identified so no mitigation measures are required.

3.11 MINERAL RESOURCES

3.11.1 ENVIRONMENTAL SETTING

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast so that land uses and the affected environment vary greatly throughout the area. The facilities affected by the proposed control measures are expected to be located in the urban portions within the Bay Area.

3.11.2 SIGNIFICANCE CRITERIA

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

> The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
>
> The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

3.11.3 ENVIRONMENTAL IMPACTS

There are no provisions of the proposed rule which would directly 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. The proposed Air Toxic NSR Rules are not expected to deplete non-renewable mineral resources, such as aggregate materials, metal ores, etc., at an accelerated rate or in a wasteful manner because BAAQMD rules and regulations are typically not mineral resource intensive measures. While mineral resources will need to be evaluated as each rule is promulgated, significant adverse impacts to mineral resources are not expected due to the Air Toxic NSR Rule.

3.11.4 MITIGATION MEASURES

No significant adverse mineral resource impacts have been identified so no mitigation measures are required.

3.11.5 CUMULATIVE IMPACTS

The proposed Air Toxics NSR rules and other air quality plans, rules and regulations, are not expected to impact mineral resources. Further, these air quality plans, rules and regulations are not expected to deplete mineral resources on a cumulative basis. Therefore, no significant cumulative impacts on mineral resources are expected.

3.11.6 CUMULATIVE MITIGATION MEASURES

No significant adverse cumulative mineral resources impacts were identified so no mitigation measures are required.

3.12 NOISE

3.12.1 ENVIRONMENTAL SETTING

Noise is defined as unwanted sound. The range of sound pressure perceived as sound is extremely large. The decibel is the preferred unit for measuring sound since it accounts for these variations using a relative scale adjusted to the human range for hearing (referred to as the A-weighted decibel or dBA). The A-weighted decibel is a method of sound measurement which assigns weighted values to selected frequency bands in an attempt to reflect how the human ear responds to sound. The range of human hearing is from 0 dBA (the threshold of hearing) to about 140 dBA which is the threshold for pain. Principal Bay Area noise sources are airports, freeways, arterial roadways, port facilities, and railroads. Additional noise generators included industrial manufacturing plants and construction sites. Local collector streets are not considered to be a significant source of

noise since traffic volume and speed are generally much lower than for freeways and arterial roadways.

Vehicle traffic background noise levels vary throughout the day based on the average density of noise sources in a given area. Traffic noise at a particular location depends upon the traffic volume on the roadway, the average vehicle speed, distance between the receptor and the roadway, the presence of intervening barriers between source and receiver, and the ratio of trucks (particularly heavy trucks) and buses to automobiles.

A number of factors control how traffic noise levels affect nearby sensitive land uses. These include roadway elevation compared to grade; structures or terrain intervening between the roadway and the sensitive receptors; and the distance between the roadway and receptors. Caltrans or other sponsors for freeway projects conduct detailed noise studies for the environmental documents when these projects are ready for implementation.

The Bay Area has a large number of freeways and arterial roadways. Typical arterial roadways have one or two lanes of traffic in each direction, with some containing as many as four lanes in each direction. Noise from these sources can be a significant environmental concern where buffers (e.g., sound walls, buildings, landscaping, etc.) are inadequate or where the distance from centerline to sensitive uses is relatively small.

The two basic types of railroad operations are freight trains, and passenger rail operations, the latter consisting of commuter and intercity passenger trains and steel-wheeled urban rail transit. Generally, freight operations occur at all hours of the day and night, while passenger rail operations are concentrated within the daytime and evening periods.

Trains can generate high, relatively brief, intermittent noise events. Train noise is an environmental concern for sensitive uses located along rail lines and in the vicinities of switching yards. Locomotive engines and the interaction of steel wheels and rails generate primary rail noise. The latter source creates three types of noise: (1) rolling noise due to continuous rolling contact; (2) impact noise when a wheel encounters a rail joint, turn out or crossover; and (3) squeal generated by friction of tight curves. For very high-speed rail vehicles, air turbulence can be a significant noise source (MTC, 2001).

Construction can be another significant, although typically short-term source of noise. Construction is most significant when it takes place near sensitive land uses (e.g., schools and hospitals), occurs at night, or in early morning hours. Local governments typically regulate noise associated with construction equipment and activities through enforcement of noise ordinance standards, implementation of general plan policies, and imposition of conditions of approval for building or grading permits.

The principle noise sources in an industrial area are impact, friction, vibration, and air turbulence from air and gas streams. Process equipment, heaters, cooling towers, pumps and compressors, contribute to noise emitted from industrial facilities. Elevated noise

sources are not attenuated as quickly as ground sources due to the lack of interference from fences, structures, buildings, etc.

3.12.2 SIGNIFICANCE CRITERIA

Impacts on noise will be considered significant if:

> Construction noise levels exceed the local noise ordinance or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
>
> The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

3.12.3 ENVIRONMENTAL IMPACTS

The proposed rules may require existing commercial or industrial owners/operators of affected facilities to install air pollution control equipment or modify their operations to reduce stationary source emissions. Potential modifications will occur at facilities typically located in appropriately zoned industrial or commercial areas. Ambient noise levels in commercial and industrial areas are typically driven primarily by freeway and/or highway traffic in the area and any heavy-duty equipment used for materials manufacturing or processing at nearby facilities. It is not expected that any modifications to install air pollution control equipment would substantially increase ambient operational noise levels in the area, either permanently or intermittently, or expose people to excessive noise levels that would be noticeable above and beyond existing ambient levels. It is not expected that affected facilities would exceed noise standards established in local general plans, noise elements, or noise ordinances currently in effect.

Dry cleaning equipment, like other industrial equipment, emits a certain level of noise, however the noise produced by the alternative non-perc technologies will not increase the ambient levels from the noise currently produced by the perc machines. The facilities with perc machines are subject to local noise ordinances whose requirements will not change when alternative non-perc technologies are installed. These facilities are expected to comply with noise standards and there is no evidence to conclude that these standards will be violated when alternative non-perc technologies are operated. Dry cleaning equipment is generally located inside of commercial buildings so no increase in noise would be expected from dry cleaning facilities.

It is also not anticipated that the proposed control measures will cause an increase in ground-borne vibration levels because air pollution control equipment is not typically

vibration intensive equipment. Consequently, the Air Toxic NSR rules will not directly or indirectly cause substantial noise or excessive groundborne vibration impacts.

Affected facilities would still be expected to comply, and not interfere, with any applicable airport land use plans and disclose any excessive noise levels to affected residences and workers pursuant to existing rules, regulations and requirements. It is assumed that operations in these areas are subject to, and in compliance with, existing community noise ordinances and applicable OSHA or Cal/OSHA workplace noise reduction requirements. In addition to noise generated by current operations, noise sources in each area may include nearby freeways, truck traffic to adjacent businesses, and operational noise from adjacent businesses. There are no components of the proposed rules that would substantially increase ambient noise levels from stationary sources, either intermittently or permanently.

Miscellaneous Noise Impacts

The CEQA environmental checklist includes a discussion of impacts on airports and airport land use plans so a discussion of those impacts are included in this section for completeness. Some Air Toxic NSR rules could apply to facilities within an airport land use plan or within two miles of a public airport or private airstrip. Affected facilities would be expected to comply, and not interfere, with any applicable airport land use plans and disclose any excessive noise levels to affected residences and workers pursuant to existing rules, regulations and requirements, such as CEQA. It is assumed that operations in these areas are subject to and in compliance with existing community noise ordinances and applicable OSHA or Cal/OSHA workplace noise reduction requirements. In addition to noise generated by current operations, noise sources in each area may include nearby freeways, truck traffic to adjacent businesses, and operational noise from adjacent businesses. There are no components of the proposed Air Toxic NSR rules that would substantially increase ambient noise levels, either intermittently or permanently so that no significant impacts would be expected.

3.12.4 MITIGATION MEASURES

No significant adverse noise impacts have been identified, therefore, no mitigation measures.

3.12.5 CUMULATIVE IMPACTS

The control equipment that may be required due to the Air Toxic NSR rules and other related air quality plans and rules are responding to population growth. The growth in traffic throughout the Bay Area could produce unquantifiable cumulative noise impacts that would increase noise but may not reach thresholds for perceptible increases. The cumulative increase in noise related to traffic is a factor of population growth, where as the Air Toxic NSR rules are responding to the population growth in an attempt to attain and maintain ambient air quality standards. Therefore, the cumulative impact of the

proposed project and other related projects are not expected to result in significant adverse noise impacts.

3.12.6 CUMULATIVE MITIGATION MEASURES

No significant adverse cumulative noise impacts were identified so no mitigation measures are required.

3.13 POPULATION AND HOUSING

3.13.1 ENVIRONMENTAL SETTING

The Bay Area's population has increased by 90 percent over the previous 40 years, while jobs have increased 200 percent. Looking ahead to the next 25 years, the Association of Bay Area Governments (ABAG) projects that the Bay Area's population will grow another 18.5 percent (1.3 million more residents) and employment will increase by another 33 percent (1.2 million additional jobs).

During the past 40 years, the locations of people and jobs have become much more dispersed as new urban centers have formed and cities have gained population on the edge of the region. This shift in growth patterns is illustrated in Table 3.13-1. Santa Clara County is now the most populous county in Bay Area, and is home to about 25 percent of the region's residents. The county's largest city, San Jose, is also the largest city in the Bay Area with a population of 895,000. Currently, there are 12 cities in the Bay Area with more than 100,000 residents (MTC, 2001).

TABLE 3.13-1

Population Growth in the Bay Area (1980 – 2025)

COUNTY	1980	2000	2025	Growth: 1980 - 2000	Growth: 2000 - 2025
Alameda	1,105,379	1,462,695	1,701,599	357,316	238,904
Contra Costa	656,380	941,900	1,213,899	285,520	271,999
Marin	222,568	250,402	278,401	27,834	27,999
Napa	99,199	127,600	165,601	28,401	38,001
San Francisco	678,984	799,009	804,804	120,035	5,795
San Mateo	587,329	737,095	823,901	149,766	89,806
Santa Clara	1,295,071	1,755,333	2,062,906	460,262	307,573
Solano	235,203	401,300	581,400	166,097	180,100
Sonoma	299,681	455,305	591,597	155,624	136,292
Region	**5,179,784**	**6,930,639**	**8,224,108**	**1,750,855**	**1,293,469**

Source: Metropolitan Transportation Commission, 2001.

3.13.2 SIGNIFICANCE CRITERIA

The impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

The demand for temporary or permanent housing exceeds the existing supply.

The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

3.13.3 ENVIRONMENTAL IMPACTS

The proposed Air Toxic NSR rules will generally affect existing commercial or industrial facilities located in predominantly industrial or commercial urbanized areas throughout the District. It is expected that the existing labor pool within the Bay Area would accommodate the labor requirements for any modifications at affected facilities. In addition, it is not expected that affected facilities will be required to hire additional personnel to operate and maintain new control equipment on site because air pollution control equipment is typically not labor intensive equipment. In the event that new employees are hired, it is expected that the existing local labor pool in the District can accommodate any increase in demand for workers that might occur as a result of adopting the proposed Air Toxic NSR rules. As such, adopting the proposed Air Toxic NSR rules is not expected to result in changes in population densities or induce significant growth in population.

Although wet cleaning operations require more labor because of resizing, and finishing requirements, it is not expected that the increase in the number of employees at these facilities would be significant enough to result in the creation of any new industries that would affect population growth, or directly or indirectly induce the construction of single- or multiple-family units. For example, even if every dry cleaner in the district required two additional employees (2 x 675) to operate wet cleaning equipment, this would only be 1,350 new employees. Such a small number could be easily accommodated by the existing labor pool in the district. Therefore, implementation of the proposed Air Toxic NSR rules are not growth inducing so no new housing would be required. Further, dry cleaners are dispersed throughout the district, so the creation of a few new positions per facility would not require relocation of the population or housing.

Because of the region's available workforce, history of mobility and existing patterns whereby individuals do not typically live close to their workplaces, any demand for new employees can be accommodated from the local region so no substantial population displacement is expected. Therefore, construction of replacement housing elsewhere in the District is not anticipated.

3.13.4 MITIGATION MEASURES

No significant impacts to population and housing are expected so no mitigation measures are required.

3.13.5 CUMULATIVE IMPACTS

Some of the District's rules and air quality control measures are largely in response to population growth in order to attain and maintain ambient air quality standards despite of the existing population and anticipated population of the area. To the extent that improved air quality attracts population growth to the area the air quality rules could have an impact on population growth. However, air quality regulations themselves are not expected to provide housing or jobs that would attract more population to the area. Therefore, the cumulative impacts on population and housing are considered less than significant.

3.13.6 CUMULATIVE MITIGATION MEASURES

No significant cumulative impacts on population and housing were identified so no mitigation measures are required.

3.14 PUBLIC SERVICES

3.14.1 ENVIRONMENTAL SETTING

Given the large area covered by the BAAQMD that includes all or parts of nine counties, public services are provided by a wide variety of local agencies. Fire protection and police protection/law enforcement services within the BAAQMD are provided by various districts, organizations, and agencies. There are several school districts, private schools, and park departments within the BAAQMD. Public facilities within the BAAQMD are managed by different county, city, and special-use districts.

3.14.2 SIGNIFICANCE CRITERIA

Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

3.14.3 ENVIRONMENTAL IMPACTS

Some of the potential alternative non-perc technologies are more flammable than perc. The possibility of increased fire protection may result due to storing these materials,

although fire codes apply. Fire protection services are generally provided by city and county fire departments with some cities contracting with the county for services. Local fire departments function as the first responding emergency team in the event of a fire or release of hazardous materials. While the potential demand for the fire department could increase if dry cleaning facilities transition to hydrocarbon alternatives and are not careful with the handling and maintenance of the hydrocarbon product, the impact to fire department resources is not anticipated to be significant. The comprehensive emergency response currently available to serve the cities in the district, coupled with the strict design standards of equipment, and the fact that the dry cleaning facilities are located throughout the district reducing impact on an individual local fire department, should ensure potential impacts are not significant.

There is no potential for significant adverse public service impacts as a result of adopting the proposed Air Toxic NSR Rule. The proposed project would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times or other performance objectives. No additional need for fire or police services would be expected. New hydrocarbon dry cleaning machines may require permits and inspection from the local fire authority. However, most existing perc dry cleaning facilities require permits and inspection from the local fire authority. The proposed project would not increase the need for fire services. No additional need for fire or police services would be expected.

Adopting the proposed Air Toxic NSR rules would not induce population growth or alter the distribution of existing population. Thus, implementing the Air Toxic NSR rules would not increase or otherwise alter the demand for schools and parks in the District. No significant adverse impacts to schools or parks are foreseen as a result of adopting the proposed Air Toxic NSR rules.

Based upon the above information, adopting the proposed Air Toxic NSR rules is not expected to create significant adverse public service impacts.

3.14.4 MITIGATION MEASURES

No significant adverse impacts to public services are expected so no mitigation measures are required.

3.14.5 CUMULATIVE IMPACTS

There are no provisions of Air Toxic NSR Rules that result in either project-specific or cumulative public services impacts. Since the proposed project is not expected to create significant adverse project-specific public services impacts, the proposed project's contribution to significant adverse cumulative public services impacts are less than cumulatively considerable (CEQA Guidelines §15130(a)(3)) and, therefore, are not significant.

3.15.6 CUMULATIVE MITIGATION MEASURES

No significant cumulative adverse impacts to public services are expected so no mitigation measures are required.

3.15 RECREATION

3.15.1 ENVIRONMENTAL SETTING

The BAAQMD includes covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. Numerous recreational opportunities are available throughout the Bay Area. The facilities affected by the proposed rule are expected to be located in urban centers within the Bay Area. Public recreational land uses are located throughout the Bay Area, but generally not within the confines of the commercial and industrial areas.

3.15.2 SIGNIFICANCE CRITERIA

The impacts to recreation will be considered significant if:

> The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
>
> The project adversely affects existing recreational opportunities.

3.15.3 ENVIRONMENTAL IMPACTS

As discussed under “Land Use and Planning” above, there are no provisions in the proposed rule which would affect land use plans, policies, ordinances, or regulations. Land use and other planning considerations are determined by local governments. No land use or planning requirements, including those related to recreational facilities, will be altered by the proposed project. The proposed rule does not have the potential to directly or indirectly induce population growth or redistribution. As a result, the proposed rule would not increase the use of, or demand for existing neighborhood and/or regional parks, or other recreational facilities, or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. As a result, no significant adverse impacts on recreation are expected.

3.15.4 MITIGATION MEASURES

No significant adverse impacts to recreation are expected so no mitigation measures are required.

3.15.5 CUMULATIVE IMPACTS

No project specific impacts on recreational activities are expected. The potential for recreational activities associated with other air quality rules, regulations and plans are not expected since these measures usually do not result in land use changes and potential changes in recreations opportunities. Therefore, no significant cumulative impacts on recreational activities are expected.

3.15.6 CUMULATIVE MITIGATION MEASURES

No significant adverse cumulative impacts on recreation were identified so no mitigation measures are required.

3.16 TRANSPORTATION AND TRAFFIC

3.16.1 ENVIRONMENTAL SETTING

Transportation systems located within the Bay Area include railroads, airports, waterways, and highways. The Port of Oakland and three international airports in the area serve as hubs for commerce and transportation. The transportation infrastructure for vehicles and trucks in the Bay Area ranges from single lane roadways to multilane interstate highways. The Bay Area contains over 19,600 miles of local streets and roads, and over 1,400 miles of state highways. In addition, there are over 9,860 transit route miles of services including rapid rail, light rail, commuter, diesel and electric buses, cable cars, and ferries. The Bay Area also has an extensive local system of bicycle routes and pedestrian paths and sidewalks. Bay Area residents make about 21 million person trips per day divided among the following transportation modes: 82.2 percent automobiles; 6.2 percent transit, 1.3 percent bike, and 10.3 percent walk (MTC, 2001).

Cars, buses, and commercial vehicles travel about 128 million miles a day (1998) on the Bay Area Freeways and local roads. Transit serves about 1.1 million riders on the average weekday (MTC, 2001).

The region is served by numerous interstate and U.S. freeways. On the west side of San Francisco Bay, Interstate 280 and U.S. 101 run north-south. U.S. 101 continues north of San Francisco into Marin County. Interstates 880 and 660 run north-south on the east side of the Bay. Interstate 80 starts in San Francisco, crosses the Bay Bridge, and runs northeast toward Sacramento. State Routes 29 and 84, both highways that allow at-grade crossings in certain parts of the region, become freeways that run east-west and cross the Bay. Interstate 580 starts in San Rafael, crosses the Richmond-San Rafael Bridge, joins with Interstate 80, runs through Oakland, and then runs eastward toward Livermore.

Projected population and employment growth in the Bay Area will lead to further travel demand. Total person trips are projected to increase by 24 percent, or close to one percent per year on average, by 2025. This growth rate is higher than population growth,

projected at 19 percent, but lower than the growth of employment (33 percent) (MTC, 2001).

There will also be substantial growth in trips from neighboring counties to the Bay Area as they increasingly supply homes for Bay Area workers, who are unable to find affordable housing in the nine counties. There are three major gateways with significant interregional trips: (1) San Joaquin Valley (Altamont Pass); Interstate 80 (Sacramento); and Route 17 (Santa Cruz). Emerging gateways into the Bay Area include U.S. Highway 101 South (San Benito and Monterey counties). In addition, Route 152 (San Joaquin County to Santa Clara County is a major commercial truck route from the San Joaquin Valley into the Bay Area, and Route 4 access the Central Valley as well.

The facilities affected by the proposed rule are expected to be located in the commercial and industrial areas within the Bay Area and are accessed via highways and local roadway systems.

3.16.2 SIGNIFICANCE CRITERIA

The impacts on transportation/traffic will be considered significant if any of the following criteria apply:

> Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to E or F for more than one month.
>
> An intersection's volume to capacity ratio increases by 0.02 (two percent) or more when the LOS is already E or F.
>
> A major roadway is closed to all through traffic, and no alternate route is available.
>
> There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
>
> The demand for parking facilities is substantially increased.
>
> Water borne, rail car or air traffic is substantially altered.
>
> Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.

3.16.3 ENVIRONMENTAL IMPACTS

Wet cleaning operations at dry cleaning facilities may require additional employees. Please refer to the discussion under Section 3.13 "Population and Housing." Again, if two additional employees are required for each dry cleaning facility, and all dry cleaning facilities install wet cleaning equipment, 1,350 new employees would be needed.

Therefore, 1,350 new additional commute trips would be generated and spread throughout the district. This is not a substantial increase nor would it adversely affect the LOS at any one intersection. Further, less than 1,350 new trips would be generated because this assumes all existing perc is replaced with wet cleaners, which is not likely.

Miscellaneous Traffic/Transportation Issues

The CEQA environmental checklist includes a discussion of air traffic impacts, emergency access and the potential conflicts with adopted policies, plans and programs, so the following discussion is provided. Neither air traffic nor air traffic patterns are expected to be directly or indirectly affected by adopting the proposed Air Toxic NSR rules. Controlling emissions at existing commercial or industrial facilities do not require constructing any structures that could impede air traffic patterns in any way.

Controlling emissions at existing commercial or industrial facilities, are not expected to affect in any way emergency access routes at any affected commercial or industrial facilities. The reason for this conclusion is that the process of controlling emissions (from stationary sources in particular) is not expected to require construction of any structures that might obstruct emergency access routes at any affected facilities.

No significant parking impacts would be expected. Dry cleaning facilities may use alternative technologies. Even if the implementation of the proposed amended rule would require additional full-time employees, such as in the wet cleaning operations, inadequate parking capacity would not result. It is unlikely that the number of new employees per facility (e.g. two) would strain parking facilities.

The adoption and subsequent implementation of the Air Toxic NSR rules is expected to reduce toxic emissions throughout the Bay Area. As such, there are no provisions in the proposed amended rule that in any way conflict with adopted policies, plans, or programs supporting alternative transportation.

3.16.4 MITIGATION MEASURES

No significant adverse impacts on transportation and traffic were identified so no mitigation measures are required.

3.16.5 CUMULATIVE IMPACTS

There are no provisions of Air Toxic NSR Rules that result in either project-specific or cumulative transportation and traffic impacts. Since the proposed project is not expected to create significant adverse project-specific transportation and traffic impacts, the proposed project's contribution to significant adverse cumulative transportation impacts are less than cumulatively considerable (CEQA Guidelines §15130(a)(3)) and, therefore, are not significant.

3.16.5 CUMULATIVE MITIGATION MEASURES

No significant adverse cumulative impacts on transportation and traffic were identified so no mitigation measures are required.

3.17 UTILITIES AND SERVICE SYSTEMS

3.17.1 ENVIRONMENTAL SETTING

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. Given the large area covered by the BAAQMD, public utilities are provided by a wide variety of local agencies.

3.17.1.1 Wastewater

Wastewater treatment is handled by many local wastewater treatment agencies. A discussion of some of the larger wastewater treatment agencies is provided below.

San Francisco Public Utilities Commission

The San Francisco Public Utilities Commission (PUC) is a department of the City and County of San Francisco that provides water, wastewater, and municipal power services to San Francisco. Under contractual agreement with 29 wholesale water agencies, the SFPUC supplies water to 1.6 million customers within three Bay Area counties. The SFPUC system provides four distinct services: Regional Water, Local Water, Clean Water (wastewater collection, treatment and disposal), and Power. The wastewater collection, treatment and disposal system consists of a combined sewer system (which collects both sewer and storm water), three water pollution control plants and effluent outfalls to the San Francisco Bay and Pacific Ocean. The combined sewer system reduces pollution in the San Francisco Bay and Pacific Ocean by treating urban runoff that would otherwise flow to the Bay and Ocean. The collection system consists of approximately 900 miles of underground pipes throughout the City (www.sfwater.org).

The San Francisco PUC treats and discharges approximately 84 million gallons per day of treated wastewater during dry weather to the San Francisco Bay and Pacific Ocean. During wet weather, with additional facilities and increased operations, the plants can treat approximately 465 million gallons of combined flows per day (www.sfwater.org).

Both sanitary wastewater and stormwater are fully combined in San Francisco's collection system. The City has developed a complex web of transport structures to facilitate the capture of storm water and minimize overflows to the receiving waters. The city has over 898 miles of combined sewers that serve the resident population of 800,000. There remains approximately 5% inflow from industrial sources (www.sfwater.org).

In 2004, the San Francisco PUC Wastewater Enterprise served 147,372 residential accounts with a discharge rate for the year of 20,575,000 Ccf. There are about 2,500 significant non-residential dischargers (commercial, industrial, governmental and other businesses) which accounted for 4,702,925 Ccf of discharge for the FY 2004. Minor dischargers (approximately 15,000 non-residential customers not considered to be significant dischargers) accounted for 5,304,454 Ccf. Total discharge for the area was 30,582,379 Ccf (SFPUC, 2005).

East Bay Municipal Utility District

The East Bay Municipal Utility District (East Bay MUD) is a publicly owned utility formed under the Municipal Utility District Act in 1921. The East Bay MUD wastewater system services approximately 640,000 people in an 83-square mile area of Alameda and Contra Costa counties along the Bay's east shore, extending from Richmond on the north, southward to San Leandro. The cities included in this service are Alameda, Albany, Berkeley, El Cerrito, Emeryville, Kensington, Oakland and Piedmont (EBMUD, 2005).

Service in the city of Oakland alone covers approximately 39 square miles and includes 4.5 million linear feet of pipe. Oakland sewer pipes range from 6 to 72 inches in diameter, with most lines predating 1938, and with some parts of the systems more than 100 years old. Most of the system is gravity-fed, with approximately five pumping stations. Some areas of Oakland do not have sewer service. These areas consist primarily of former military bases, cemeteries, large parks and some hillside areas. Over 90 percent of users of the wastewater system in Oakland are residential users (City of Oakland, 2002).

The East Bay MUD has six wastewater treatment plants that can filter and process more that 375 million gallons of water per day. The water treatment plants are Upper San Leandro in Oakland, San Pablo in Kensington, Sobrante in El Sobrante, and plants located in and named for Orinda, Lafayette and Walnut Creek (EBMUD, 2005).

Wastewater collected by the interceptors flows to East Bay MUD's wastewater treatment plant in Oakland near the entrance of the San Francisco-Oakland Bay Bridge. Primary treatment removes floating material, oils and greases, sand and silt and organic solids heavy enough to settle in water. Secondary treatment biologically removes most of the suspended and dissolved organic and chemical impurities that would rob life-giving oxygen from the waters of the Bay if allowed to decompose naturally. The treated effluent is then disinfected, dechlorinated and discharged one mile off the East Bay shore through a deep-water outfall into San Francisco Bay (EBMUD, 2005).

The East Bay MUD provides secondary treatment for a maximum flow of 168 million gallons per day. Primary treatment can be provided for up to 320 million gallons per day. Storage basins provide plant capacity for a short-term hydraulic peak of 415 million gallons per day. The average annual flow is currently 80 million gallons per day (EBMUD, 2005).

Union Sanitary District

The Union Sanitary District (USD) is an independent special district which provides wastewater collection, treatment and disposal services to the residents and businesses of the cities of Fremont, Newark and Union City in Southern Alameda County, covering 60.2 square miles. This includes 756 miles of pipelines which are generally located within public streets or easements used for District use. In January 2004, the population served by USD numbered 323,050. Residential customers account for approximately 73 percent of the sewer flow, commercial customers for approximately 12.5 percent of the flow and industrial customers the remaining 14.5 percent. The USD maintains 164 miles of sewer and treats an average dry weather flow of approximately 29 million gallons per day (USD,2005).

City of San Mateo

The City of San Mateo's Public Works Division is among other things, responsible for the maintenance and repair of 260 miles of sewers, 75 miles of storm drains, 23 sanitary sewer pump stations, 11 storm drainage system pump stations and a wastewater treatment plant that handles all sewage treatment and disposal of treated wastewater and sewage sludge for the cities of San Mateo, Foster City, Part of Hillsborough, the Highlands area of San Mateo County, and a portion of Belmont (about 130,000 people) (San Mateo, 2005).

The City of San Mateo's underground collection system is comprised of 260 miles of sanitary sewer lines and 75 miles of storm drains. Storm drains, or "outdoor storage", typically flows to the nearest creek or watercourse. Indoor waste drains are connected to a network of sewer lines that flow into a wastewater treatment plant. The sewage passes through a series of physical and biological processes which result in high quality effluent being discharged to the deep-water channel of the San Francisco Bay. The wastewater treatment plant has been in operation since 1935 and treats and average of 12.1 million gallons per day. An average of 7.5 dry tons of biosolids (sludge) are removed from the plant process each day (San Mateo, 2005).

Napa

The Napa Sanitation District Collection System Department (NSDCSD) provides wastewater collection and sewer line repair and maintenance services to more than 33,000 homeowner and business connections. The Collection System Department has 13 employees whose job is to ensure that 250 miles of underground pipeline (sewers), which vary in size from 4" to 66" in a 23 square mile area, are able to collect and transport wastewater to NSD's Soscol Water Recycling Facility. The Collection System Department also maintains over 33,143 sewer laterals and 5,651 manholes (NSDCSD, 2005).

3.17.1.2 Water Demand

In 1957, the Department of Water Resources (DWR) published Bulletin 3, the *California Water Plan* (CWP). Bulletin 3 was followed by the Bulletin 160 series, published six times between 1966 and 1993, which updated the CWP. A 1991 amendment to the CWP directed the DWR to update the plan every five years. Bulletin 160-98 is the latest in this series (DWR, 1998). This document is in the ~~Draft~~ *Final* stage, with finalization expected in the Fall of 2005. When possible, the Update 2004 data has been used in the write-up that follows. (www.waterplan.water.ca.gov/b160/workgroups/chapterreviewgroup.htm)

California's moisture originates in the Pacific Ocean. Average annual statewide precipitation is about 23 inches, amounting to a volume if nearly 200 million acre-feet (maf) over California's land surface. Approximately 65 percent of this precipitation is consumed through evaporation and plant transpiration, the remaining 35 percent comprises the State's average annual runoff of about 71 maf. Less than half this runoff is depleted by urban or agricultural use. Available surface water supply totals 78 maf when out-of-state supplies from the Colorado and Klamath Rivers are added. Groundwater supplies about 30 percent of California's urban and agricultural water use (DWR, 1998).

The DWR has divided the state into four districts. The area that includes the BAAQMD area is referred to as the Central District. The state of California is divided up into 10 hydrologic regions. The San Francisco Bay hydrologic region is a portion of the DWR's Central District. The San Francisco Bay region includes the counties of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and all of Solano and Sonoma Counties (www.water.ca.gov). The San Francisco Bay hydrologic region and the BAAQMD area are almost identical, except that the San Francisco Bay region includes the entire counties of Solano and Sonoma, whereas the BAAQMD area only covers portions of those two counties. The San Francisco Bay region is split into to areas, the North Bay and South Bay.

The region is highly urbanized, covers 4,506 square miles (2.8 percent of the state) and includes the San Francisco, Oakland and San Jose metropolitan areas. Average annual precipitation in the region is 25.4 inches. Total reservoir storage capacity is 746 thousand acre feet (taf). As of 2000, there were 71,000 acres of irrigated agriculture. Agricultural acreage is mostly in the north, with the predominate crop being grapes. In the south, more than half of the irrigated acres are in high-value specialty crops, such as artichokes or flowers (DWR, 2005). Table 3.17-1 shows the applied water uses for the San Francisco Hydrologic region.

TABLE 3.17-1

San Francisco Region Applied Water Uses for Water Years 1998, 2000, 2001 (thousand acre-feet)

Year	Urban	Irrigated Agriculture	Wild & Scenic Rivers	Instream Flow	Required Delta Outflow	Managed	Total
1998	991	92	0	23	0	6	1112
2000	1069	110	0	22	0	6	1207
2001	1110	120	0	20	0	6	1256

Source: DWR, 2005.

Table 3.17-2 shows the dedicated water supplies for the San Francisco Hydrologic region.

TABLE 3.17-2

San Francisco Region Dedicated Water Supplies for Water Years 1998, 2000, 2001 (thousand acre-feet)

Year	Local Projects	Colorado Project	Federal Projects	State Project	Ground Water	Dedicated Environ.	Reuse & Recycle	Total
1998	775	0	142	134	38	0	22	1111
2000	747	0	143	155	139	0	22	1206
2001	746	0	147	121	220	0	22	1256

Source: DWR, 2005.

Both the North and South Bay areas are continually working to manage the water supply to the San Francisco Bay hydrologic region. Local agencies are investigating all available options to continue to meet projected water needs. These options include desalination plants, water rights agreements, limitations on future water developments, developing water supply master plans, groundwater banking, water recycling, water transfers, and conservation (DWR, 1998).

North Bay

Municipal and industrial water use will continue to grow as the population in the North Bay grows. The fastest growing communities have been the municipalities in southwestern Solano County. Rapid growth has also been seen in the larger communities of Sonoma and Napa counties. Growth in Marin County has been slow, initially because of a water connection moratorium administered in the 1970's by the Marin Municipal Water District (MWD), and more recently because of the lack of land available for

development. A second moratorium was imposed during the 1987-92 drought. It was lifted in 1993 with the adoption of an integrated water supply program and the signing of a new Russian River water supply contract (DWR, 1998).

There are four major water suppliers within the North Bay (see Table 3.17-3 below): The Sonoma County Water Agency (WA), the Marin MWD, the Napa County Flood Control and Water Conservation District and the Solano County WA. The Sonoma County WA, which wholesales water throughout Sonoma and Marin Counties, is forecasting no water shortages through 2020, and is not looking at water supply reliability enhancement options (DWR, 1998).

TABLE 3.17-3

Major North Bay Water Suppliers

Agency	Primary Source of Supply
Sonoma County WA	Russian River Project
Marin MWD	Local surface and Sonoma County WA contract
Napa County FC & WCD	Local surface and SWP
Solano County WA	Solano Project and SWP

Source: DWR, 1998.

The Marin MWD has negotiated a supplemental water supply contract with Sonoma County WA for 10 taf and now expects to have a more reliable supply as it develops infrastructures to import additional Russian River water (DWR, 1998).

The Napa County Flood control and Water Conservation District (FC&WCD) has a contract for State Water Plan (SWP) with a maximum entitlement of 25 taf per year. The City and County of Napa are examining water supply enhancement options to ensure future supply reliability (DWR, 1998).

The Solano County WA anticipates a water supply deficiency as municipalities in the western part of the county urbanize rapidly without developing additional water supply sources. Solano County WA's 1995 SWP supply was about 21 taf. The agency's annual SWP entitlement is 42 taf. Benicia is the most vulnerable of the agency's service areas to drought year shortages. Vallejo has its own supply from the Delta, which is now conveyed through North Bay Aqueduct facilities (DWR, 1998).

South Bay

The South Bay is highly urbanized – about 16 percent of the State's population lives in two percent of the State's land area. A minor portion of South Bay water use is for agriculture. The South Bay has six major water suppliers (see Table 3.17-4). Those areas not served by the listed suppliers get their water from groundwater and from small locally developed surface supplies. Small independent water systems, such as those along the San Mateo coast, also suffer water supply reliability problems during droughts.

Theses systems often rely on a single source, such as groundwater, and do not have connections to the larger systems in the Bay Area. Alameda County Water District (WD), Zone 7 Water Agency, and Santa Clara Valley Water District recharge and store local and imported surface water in local groundwater basins. Each of the major water agencies supplies several municipalities or water retailers serving the South Bay (DWR, 1998).

TABLE 3.17-4

Major South Bay Water Suppliers

Agency	Primary Source of Supply
San Francisco PUC	Hetch Hetchy Project and local surface
Santa Clara Valley WD	Local surface, groundwater, CVP, and SWP
Alameda County WD	Local surface, groundwater, SWP and Hetch Hetchy Project
Zone 7 WA	Local surface, groundwater, and SWP
East Bay MUD	Mokelumne River project and local surface
Contra Costa WD	CVP and local surface

Source: DWR, 1998.

The San Francisco PUC provides water to more than 2.3 million people in San Francisco, San Mateo, Santa Clara and Alameda Counties, and is forecasting drought year shortages through 2020. In 1991, San Francisco PUC adopted, but did not implement, a 45 percent rationing plan. Recently revised instream flow requirements in the Tuolumne River Basin have reduced the available Hetch Hetchy supply. The city's studies indicate that the annual yield of the Hetch Hetchy system has dropped from 336 taf to 271 taf (DWR, 1998).

The Santa Clara Valley WD, which supplies water to about 1.7 million people, provides water to 16 municipal and industrial retailers as well as to agricultural users in Santa Clara County. A number of these facilities also contract with the San Francisco PUC for water from Hetch Hetchy. The district utilizes imported state project and federal project water, locally developed surface supplies and extensive groundwater recharge programs. Some retailers in the district are vulnerable to drought deficiencies imposed by the State Water Project (SWP), CVP, and Hetch Hetchy Project. These deficiencies may be intensified by diminished local runoff during drought conditions (DWR, 1998).

Alameda County WD serves a population of 292,000 in south-western Alameda County, adjacent to San Francisco Bay. Alameda County WD's Niles Cone groundwater basin supply is augmented by SWP and Hetch Hetchy supplies. The district is vulnerable to drought deficiencies imposed by SWP or San Francisco PUC (DWR, 1998).

Zone 7 WA delivers water in the Livermore-Almaden Valley in eastern Alameda County, as well as agricultural and industrial customers. Zone 7 has an annual SWP entitlement of 46 taf (DWR, 1998).

East Bay Municipal Utility District (MUD) provides water to 1.2 million people in the remainder of northern Alameda County, and part of western Contra Costa County.

Virtually all of the water used by East Bay MUD comes from the 577 square-mile watershed of the Mokelumne River, which collects runoff from Alpine, Amador and Calaveras Counties, on the west slope of the Sierra Nevada. East Bay MUD has water rights for up to 364 taf per year from the Mokelumne River. In average years, district reservoirs in the East Bay capture an additional 30 taf from local watershed runoff. In drought years, evaporation and other reservoir losses may exceed local runoff (DWR, 1998).

Contra Costa WD delivers municipal and industrial water throughout central and eastern Contra Costa County. Deliveries from Contra Costa WD go up during droughts as industrial diverters stop diverting with their own Delta water rights (because of water quality constraints) and use Contra Costa WD's CVP supplies instead. Contra Costa WD's 195 taf CVP contract includes operation of the Los Vaqueros Reservoir. During drought conditions, Contra Costa WD receives 85 percent of the contracted amount of water. Under severe drought conditions, the CVP supply may be reduced to 75 percent of historical use. Contra Costa WD has a smaller locally developed source at Mallard Slough, with an associated right to take up to 26.7 taf per year, however diversions are unreliable due to poor water quality. Average annual diversion from this source from 1988-1998 was only 5.6 taf (DWR, 1998).

3.17.1.3 Stormwater

The storm water setting is addressed in Section 3.9.1.3.

3.17.1.4 Solid Waste

Permit requirements, capacity, and surrounding land use are three of the dominant factors limiting the operations and life of landfills. Landfills are permitted by the local enforcement agencies with concurrence from the California Integrated Waste Management Board (CIWMB). Local agencies establish the maximum amount of solid waste which can be received by a landfill each day and the operational life of a landfill. Landfills are operated by both public and private entities (CIWMB, 2002a).

There are three primary classes of landfill sites permitted to receive varying severity of waste materials. Class I sites are facilities that can accept hazardous waste as well as municipal solid waste, construction debris, and yard waste. Class II sites may receive certain designated waste along with municipal solid waste, construction debris, and yard waste. Class III sites can only accept non-hazardous waste, e.g., solid waste construction debris, wood and yard waste, and certain non-hazardous industrial waste.

A total of 21 Class III active landfills are located within the District with a total capacity of 52,517 tons per day (see Table 3.17-5).

TABLE 3.17-5

Number of Class III Landfills Located within the Bay Area and Related Landfill Capacity

County	Number of Landfills	Capacity (tons/day)
Alameda(1)	3	16,014
Contra Costa	3	7,500
Marin	2	2,375
Napa	1	300
San Mateo	2	3,998
Santa Clara	7	13,100
Solano	2	6,730
Sonoma	1	2,500
TOTAL	21	52,517

(1) Sources: California Integrated Waste Management System.

In addition, there are a total of 16 green waste composting facilities in the Bay Area.

3.17.1.5 Hazardous Waste

There are two hazardous waste (Class I) facilities in California, the Chemical Waste Management Inc. (CWMI) Kettleman Hills facility in King's County, and the Safety-Kleen facility in Buttonwillow (Kern County). Kettleman Hills has an estimated nine million cubic yard capacity (four million currently, with an additional five million expected upon completion of a berm expansion). The facility expects to continue receiving wastes for approximately nine years under its current permit. The facility is in the process of permitting a new landfill that would extend the life of the operation another 15 years. (Personal Communication, Terry Yarbough, Chemical Waste Management Inc., June 2004). Buttonwillow receives approximately 960 tons of hazardous waste per day and has a remaining capacity of approximately nine million cubic yards. The expected life of the Buttonwillow Landfill is approximately 40 years (Personal Communication, Marianna Buoni, Safety-Kleen (Buttonwillow), Inc., June 2004).

Hazardous waste also can be transported to permitted facilities outside of California. The nearest out-of-state landfills are U.S. Ecology, Inc., located in Beatty, Nevada; USPCI, Inc., in Murray, Utah; and Envirosafe Services of Idaho, Inc., in Mountain Home, Idaho. Incineration is provided at the following out-of-state facilities: Aptus, located in Aragonite, Utah and Coffeyville, Kansas; Rollins Environmental Services, Inc., located in Deer Park, Texas and Baton Rouge, Louisiana; Chemical Waste Management, Inc., in Port Arthur, Texas; and Waste Research & Reclamation Co., Eau Claire, Wisconsin.
About 611,400 tons of hazardous waste were generated in the nine counties that comprise the District in 2003 (see Table 3.17-6). The most common types of hazardous waste

generated in the Bay Area include waste oil, other inorganic solid waste, contaminated soils, organic solids, asbestos-containing waste, and unspecified oil-containing wastes. Not all wastes are disposed of in a hazardous waste facility. Many of the wastes generated, including waste oil, are recycled.

TABLE 3.17-6

Hazardous Waste Generation in the Bay Area (tons per year)

WASTE NAME	Alameda	Contra Costa	Marin	San Francisco	San Mateo	Santa Clara	Napa	Solano(1)	Sonoma(1)
Waste Oil	67,850	2,396	130	813	2,739	17,899	62	9,154	298
Inorganic Solid Waste	12,940	10,047	699	4,369	1,548	7,726	1	1,672	3,265
Contaminated Soils	10,159	71,497	1,310	52,592	2,132	12,219	460	2,193	626
Organic Solids	1,582	6,947	61	457	976	5,930	116	410	264
Asbestos Waste	5,854	4,860	1,039	11,602	2,160	5,968	539	896	663
Oil-Containing Waste	2,030	2,197	34	1,077	933	2,048	39	2,753	129
Unspecified Aqueous Solution	424	191	34	27	118	1,640	15	725	7
Unspecified Solvent Mixture	1,491	331	9	48	285	1,167	12	178	60
Aqueous Solution with Organic Residues	5,683	199	36	60	1,217	4,936	15	5,360	100
Total Waste Generated in County	174,412	140,543	5,099	96,912	39,689	105,402	1,771	36,473	11,100

(1) Data presented is for entire county and not limited to the portion of the county within the Bay Area jurisdiction.
Source: DTSC, 2004.

3.17.1.6 Other Issues

Electricity

The two largest power plants in the Bay Area are located in Contra Costa County. Both of these plants consume natural gas, and provide over 1400 Mega Watts (MW) of electricity. Additionally, a 600 MW facility is under construction in Santa Clara County,

and is scheduled to open in the summer of 2005 (CEC, 2004). Local electricity distribution service is provided to customers within the District by privately-owned utilities such as Pacific Gas and Electric (PG&E). Many public-owned utilities, such as Alameda Power and Telecom, East Bay Municipal Utility District and the Santa Clara Electric Department also provide service. PG&E is the largest electricity utility in the Bay Area, with a service area that covers all, or nearly all, of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties. Pacific Gas and Electric (PG&E) provides approximately 94 percent of the total electricity demand in the District (CEC, 2001).

Table 3.17-7 shows the amount of electricity delivered to residential and nonresidential entities in the counties in the BAAQMD in 2000.

TABLE 3.17-7

Bay Area Utility Electricity Deliveries for 2000 by County

	Residential		Non-Residential		Total	
County	**Number of Accounts**	**kWh[1] (million)**	**Number of Accounts**	**kWh (million)**	**Number of Accounts**	**KWh (million)**
Alameda	507,929	3,066	53,839	7,539	561,768	10,605
Contra Costa	341,276	2,761	29,705	4,054	371,426	6,815
Marin	99,628	734	13,489	834	113,117	1,568
Napa	45,477	366	7,671	618	53,148	984
San Francisco	312,258	1,481	31,862	4,267	344,120	5,748
San Mateo	253,893	1,661	26,191	3,474	280,084	5,135
Santa Clara	555,775	3,990	60,054	13,853	615,829	17,843
Solano	126,607	984	14,023	2,088	140,630	3,071
Sonoma	171,448	1,258	24,367	1,735	195,815	2,993
TOTAL	2,414,291	16,301	261,201	38,462	2,675,937	54,762

Source: CEC, 2002

[1] kilowatt-hour (kWh): The most commonly used unit of measure telling the amount of electricity consumed over time. It means one kilowatt (1000 watts) of electricity supplied for one hour.

Natural Gas

Four regions supply California with natural gas. Three of them—the Southwestern U.S., the Rocky Mountains, and Canada—supply 85 percent of all the natural gas consumed in California. The remainder is produced in California. In 2000, approximately 35 percent of all the natural gas consumed in California was used to generate electricity. Residential consumption represented approximately one-fourth of California's natural gas use with the balance consumed by the industrial, resource extraction, and commercial sectors. PG&E provides natural gas service throughout the Bay Area (CEC, 2002a). CEC staff expects that PG&E will need to expand its pipeline capacity to access Canadian supplies by 2013 to meet the projected natural gas demand (CEC, 2003a).

Table 3.17-8 provides the estimated use of natural gas in California by residential, commercial and industrial sectors in 2000. About 71 percent of the natural gas consumed in California is for industrial and electric generation purposes.

TABLE 3.17-8

California Natural Gas Consumption for 2000

Sector	Utility	Non-Utility	Total
Residential	1,381	--	1,381
Commercial	505	--	505
Industrial	1,327	1,044	2,371
Electric Generation	2,281	45	2,326
Total	**5,495**	**1,089**	**6,584**

Source: CEC, 2002

3.17.2 SIGNIFICANCE CRITERIA

The impacts to utilities/service systems will be considered significant if any of the following criteria are met:

> The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
>
> An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
>
> The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use a substantial amount of potable water.
>
> The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

3.17.3 ENVIRONMENTAL IMPACTS

The potential impacts on utilities and service systems have been divided into separate sections to discuss the potentially significant impacts on: (1) wastewater, water demand, storm water, solid and hazardous waste, and energy (electricity and natural). The impacts for each of these resources are discussed in separate subsections below.

3.17.3.1 Wastewater

Although the percentage of dry cleaning facilities expected to use wet cleaning may increase water usage slightly, this would not require the construction of new wastewater treatment or storm water drainage facilities or expansion of existing facilities. The proposed Air Toxics rules should be expected to cause a small but insignificant increase in wastewater generation. This small increase is not expected to place any significant increase demand on wastewater treatment facilities. The number of facilities using wet cleaning is expected to be limited. Consequently, the proposed project has no provisions that would require the construction of additional water resource facilities, the need for new or expanded water entitlements, or an alteration of drainage patterns. Based on the above, the proposed rules are not expected to significantly increase the volume of wastewater, require additional wastewater disposal capacity, or otherwise substantially degrade water quality. Further, the project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge because the proposed project will affect operations at minimum number of facilities. The proposed rules would not create or contribute runoff water at affected facilities that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

3.17.3.2 Water Demand

According to the University of California, Los Angeles (UCLA)/Occidental College study, "An Assessment of Factors Influencing a Switch from Dry Cleaning to Professional Wet Cleaning" (Pollution Prevention Education and Research Center, February 29, 2000), wet cleaning uses approximately 1.77 times more water than perc based dry cleaning. The study indicated that in 1997 average water use per facility was 125,714 gallons per year. An average wet cleaning facility would be expected to use 223,333 gallons per year. As a "worst case" scenario, if all existing permitted dry cleaning facilities that currently use perchloroethylene switched to wet cleaning, the expected annual water use would be 142 million gallons per year. The resulting per day increase for a five-day workweek would be 388,540 gallons per day. Actually, only a small number of facilities are expected to use wet cleaning so the actual water demand is expected to be much lower. This is less than significant, and there are sufficient water supplies available to serve the project from existing entitlements and resources.

Although some sources of water in the Bay Area include groundwater supply, the increase in water use only represents a 0.021 percent increase. This does not represent a significant impact on groundwater sources. Further, it is not likely that every dry cleaning facility in the district would switch to wet cleaning, so the above estimate, although not significant, substantially over-estimates potential water demand from dry cleaners as a result of the proposed new/amended rules.

3.17.3.3 Stormwater

The proposed Air Toxics Rules would primarily impact existing stationary sources. Any flooding, seiche, tsunami, 100-year flood, or mudflow risks would be associated with the existing situation. The proposed project would not exacerbate any of these potential hazards.

3.17.3.4 Solid/Hazardous Waste

Impacts Associated with Alternative Dry Cleaning Technologies

The proposed Air Toxic NSR Rules may result in replacement of many existing dry cleaning machines; it is expected that the dry cleaning equipment will be replaced at the end of its useful life as new equipment is required. Therefore, the landfills or scrap metal collectors would be receiving this equipment whether the new requirements are imposed or not. The impact of the proposed new/amended rules is not expected to increase solid waste from dry cleaning facilities.

The proposed amended rule would not increase the volume of solid or hazardous wastes from existing dry cleaning operations, require additional waste disposal capacity, or generate waste that does not meet applicable local, state, or federal regulations. In fact, newer non-perc technology closed-loop machines would likely generate less waste than the older transfer machines. Older transfer machines typically utilize cartridge filters that are disposed of along with the collected waste as hazardous waste. The newer closed loop machines typically use spin disc filters, which are cleaned and reused. Because customer behavior to dry clean clothes is not expected to be altered by the cleaning method, dry cleaning facilities are not expected to substantially change the amount of laundry being cleaned as a result of the proposed project. The amount of sludge will not significantly change between perc machines and hydrocarbon machines because the level of dirt, lint and detergent on clothes constituting the sludge will not be altered by the cleaning method (SCAQMD, 2002). Consequently, no significant adverse solid or hazardous waste impacts are anticipated.

Additional Air Pollution Control Equipment

It is difficult to quantify the number of facilities that would employ new air pollution control equipment, the rate of disposal necessary to maintain the equipment, type of waste generated by the equipment (i.e., hazardous or non-hazardous) and the timing by which these technologies would come into use.

Particulate matter collected on filters is expected to be small. The amount of material collected from these types of control equipment is expected to be minor and is expected to be handled within the capacity of existing disposal facilities.

Baghouses and HEPA filters collect particulate emissions from stationary sources. These types of filtration control equipment can effectively remove particulate matter, including heavy metals, asbestos, as well as other toxic and nontoxic compounds.

Polytetrafluoroethylene (PTFE) membranes or HEPA filters can increase a system's removal efficiency up to 99.9 percent. In general, as particulate size decreases, the surface area to volume ratio increases, thus increasing the capacity of these filters to adsorb smaller particles (including hazardous materials). An increase in the use of membranes and filters may increase solid waste requiring disposal in landfills in amounts greater than what would be produced if the Air Toxic NSR rules were not adopted. In some cases, the waste generated will be hazardous. The increase in the amount of waste generated from the use of filters and the collection of additional particulate matter are expected to be small as the amount of material collected is small. Therefore, the potential impacts of the use of additional filtration equipment on solid/hazardous waste generation are less than significant.

The Air Toxic NSR rules could result in an increase in the use of oxidation catalysts to control acrolein and other similar compounds. Catalytic oxidation beds generally use a precious metal to add in the conversion of air pollutants. Catalytic oxidizers require periodic replacement of the catalyst bed. The expected life of the catalyst is approximately three to five years, depending on the concentration of materials and type of exhaust flows controlled. Metals used in the catalyst are generally recovered because they are made from precious and valuable metals (e.g., platinum and palladium). These metals could then be recycled. The remaining material would most likely need to be disposed of at a hazardous waste landfill.

If the catalyst is not hazardous, jurisdiction for its disposal then shifts to local agencies such as regional water quality control boards or county environmental agencies. The RWQCB has indicated that if a spent catalyst is not considered a hazardous waste, it would probably be considered a Designated Waste. A Designated Waste is characterized as a non-hazardous waste consisting of, or containing pollutants that, under ambient environmental conditions, could be released at concentrations in excess of applicable water objectives, or which could because degradation of the waters of the state. The type of landfill that the material is disposed at will depend upon its final waste designation. Due to the recycling of catalysts used in catalytic oxidation, no significant impacts on waste disposal are expected.

State law requires hazardous waste generators to attempt to recycle their wastes in lieu of disposal. OEHHA has implemented a hazardous waste exchange program to promote the use, reuse and exchange of hazardous wastes. The program is designed to assist generators of hazardous wastes to recycle their wastes and encourage the reuse of the wastes. The DTSC also publishes a directory catalog of industrial waste recyclers annually so that industries will know where to buy, sell, or exchange their wastes.

Carbon Adsorption

The proposed rule may generate additional solid or hazardous waste in the form of carbon used to control organic emissions, should facilities choose to comply using activated carbon filters. The amount of solid waste, which may be generated by the carbon adsorption process would depend on the number of carbon adsorbers installed, the operating characteristics, and the frequency of carbon replacement.

If carbon adsorption systems are used, the amount of hazardous waste generated on an annual basis is expected to be minimal. Spent carbon is usually recycled and reused rather than disposed of in landfills. Most facilities contract out with vendors that take the spent carbon and deliver regenerated carbon. Activated carbon can have a lifetime of five to 10 years; however, the operating characteristics of the control device may result in a shorter lifetime. Another alternative to the land disposal of regenerated carbon is to burn the spent carbon in a thermal incinerator. With thermal incineration, the organic materials contained in the carbon are oxidized to carbon dioxide, water, and in most cases, harmless combustion by-products. Incineration destroys the toxic constituents and significantly reduces the volume of carbon to be disposed of, thus reducing solid waste impacts. The disadvantage of incineration is that without additional add-on control devices, there may be an increase in criteria pollutant emissions. Incinerators are controlled by District rules and regulations within the Bay Area. In other locations, incinerators are controlled by federal regulations and other local air pollution control districts. Compliance with local and federal regulations is expected to minimize emissions from incinerators to less than significant. It is expected that facilities will continue to choose other more cost-effective options to comply with the rules. Therefore, the solid waste impacts resulting from the use of carbon adsorption are expected to be less than significant.

Early Retirement of Equipment

The California Integrated Waste Management Act of 1989 (AB 939) required cities and counties in California to reduce the amount of solid waste disposed in landfills by 25 percent by 1995 and by 50 percent by 2000, through source reduction, recycling and composting activities. Many cities and counties have not met these waste reduction goals. The generation of additional waste could impact the abilities of cities and counties to further reduce wastes. However, as discussed above, the increase in solid waste which is expected to be diverted to a landfill is small and many of the waste streams are recyclable. Therefore, the proposed project is not expected to have adverse impacts on landfills.

3.17.3.5 Others

Electricity

The potential increase in electricity use due to implementation of the proposed Air Toxic NSR rules is associated with the potential installation of add-on control equipment. The

new rule could result in the installation of add-on control equipment. For stationary sources, the increase in electricity demand is expected to be negligible.

The replacement of older machines with newer equipment that would result from the conversion of perc based equipment with equipment designed for alternative solvents would not result in significant adverse energy impacts. Newer equipment is expected to be more energy efficient. An equipment distributor familiar these systems indicated that only CO2 equipment requires additional electrical power (SCAQMD, 2002). A typical CO2 system requires approximately 70 to 150 amperes (amp) service to operate the refrigeration system necessary to maintain the CO2 in a liquid state. The electricity required to operate the basket motor and compressor on a typical CO2 machine could be up to 20 kilowatt-hour. Most other dry cleaning equipment, including perc, wet cleaning and solvent alternatives require approximately 70 to 100 amp service. For a perc machine, the electricity required to operate the wash motor, extract motor, fan motor, pump motor, air exchange motor and compressor at maximum operating load could be up to 10 kilowatt-hour. Therefore, assuming the same operational time, CO2 equipment could require approximately twice as much electricity as currently used with perc machines. The increase in electricity, however, would not be considered significant.

There are a number of projects under construction or in the planning stages that will provide additional electricity to the region. Assuming all 635 dry cleaning facilities transition into CO2 equipment, the increased amount of electricity consumed would be 12,700 kilowatt-hour (as compared to the total electricity use in the Bay Area of 54,762 million kwh). The analysis indicates that the proposed project will increase electricity demand by 0.000023 percent which is a negligible impact on electricity use. The proposed project will have a negligible effect on the electricity capacity and, therefore, no impact on peak or base demands for electricity.

In general, the proposed project has no potential to conflict with energy conservation plans, result in the need for new or substantially altered power or natural gas utility systems, create any significant effects on local or regional energy supplies and on requirements for additional energy, or create any significant effects on peak and base period demands for electricity and other forms of energy.

Natural Gas

For stationary sources, a slight increase in natural gas demand is expected from the use of add-on air pollution controls. Some air pollution control devices, e.g., thermal oxidizers or afterburners, require natural gas. The amount of natural gas to run these control devices is unknown. Add-on controls are expected to be used only if they are needed for compliance.

It is estimated that the proposed Air Toxic NSR Rule will result in a very small increase in natural gas use (i.e., less one percent), which is an extremely small increase in the amount of natural gas used in California. In 2010, almost 25,000 million therms of natural gas will be consumed in California. The increase in natural gas use associated

with the Air Toxic NSR rules are expected to be within the statewide projections for natural gas use. The natural gas impacts from the implementation of the proposed Air Toxic NSR Rule is expected to be less than significant. These energy impacts are expected to be less than significant because sufficient natural gas capacity and supplies are expected be available.

3.17.4 MITIGATION MEASURES

No significant utility and service system impacts were identified so no mitigation measures are proposed.

3.17.5 CUMULATIVE IMPACTS

Cumulative Wastewater and Water Demand Impacts

The cumulative impacts on wastewater and water demand are expected to be less than significant. The increase in water use and wastewater demand are expected to be within the demand created by population growth. Further, the increase in water use is limited to CO2 machines. CO2 machines are not expected to be commonly used for dry cleaning machines. The use of alternative hydrocarbon solvents are expected to be more commonly used than CO2 machines. Therefore, the overall cumulative impacts associated with the wastewater and water demand are expected to be less than significant.

Cumulative Solid/Hazardous Waste Impacts

The proposed Air Toxic NSR rules are not expected to result in significant, cumulative adverse impacts on solid or hazardous waste. Significant impacts were not identified for an increase in waste from the Air Toxic NSR Rule. The new rules are expected to allow a number of different control methods to comply with required emission reductions. The most cost effective control equipment would be expected to be used. The replacement of perc dry cleaning machines will generally occur as the life of the old equipment is exhausted. Further, recycling of catalysts and carbon is common and expected to continue. Therefore, the increase in solid waste is expected to be within the permit capacity so that no significant cumulative impacts would be expected.

Cumulative Energy Impacts

The analysis of adverse cumulative impacts to energy resources is different than the comparable analysis for other impacts areas. It is difficult to predict if an affected facility will alter its energy demand in the future or switch to a different resource as a result of complying with the Air Toxic NSR rules or because of other business considerations. For example, an affected facility owner might switch to an alternative clean fuel if equipment using that alternative clean fuel is much more efficient than the old equipment using conventional fuels. This decision could have been made for a variety of reasons such as cost savings, increased production capacity, etc., and may not be related to the Air Toxic NSR Rule.

There are no provisions of Air Toxic NSR Rules that result in either project-specific or cumulative energy impacts. Since the proposed project is not expected to create significant adverse project-specific utilities and service systems impacts, the proposed project's contribution to significant adverse cumulative utilities and service system impacts are less than cumulatively considerable (CEQA Guidelines §15130(a)(3)) and, therefore, are not significant.

3.17.6 CUMULATIVE MITIGATION MEASURES

No significant cumulative utility and service system impacts were identified so no mitigation measures are proposed.

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CHAPTER 4

ALTERNATIVES

Introduction
Alternatives Rejected as Infeasible
Alternatives to the NSR Rule Strategy
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    Alternative 2 – Retain the Discretion of the APCO
    Alternative 3 – Alternate Health Risk Thresholds
Alternatives Analysis
    Air Quality
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4.1 INTRODUCTION

This EIR provides a discussion of alternatives to the proposed project as required by CEQA. According to the CEQA guidelines, alternatives should include realistic measures to attain the basic objectives of the proposed project and provide means for evaluating the comparative merits of each alternative (CEQA, Guidelines, § 15126.6(a)). In addition, though the range of alternatives must be sufficient to permit a reasoned choice, they need not include every conceivable project alternative (CEQA Guidelines §15126.6(a)). The key issue is whether the selection and discussion of alternatives fosters informed decision making and public participation. An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative (CEQA Guidelines, § 15126.6(f)(3)).

The alternatives typically included in CEQA documents are developed by breaking down the project into distinct components (e.g., emission limits, compliance dates, applicability, exemptions, etc.) and varying the specifics of one or more of the components. Different compliance approaches that generally achieve the objectives of the project may also be considered as project alternatives.

4.2 ALTERNATIVES REJECTED AS INFEASIBLE

In accordance with CEQA Guidelines §15126.6(c), a CEQA document should identify any alternatives that were considered by the lead agency, but were rejected as infeasible during the scoping process and briefly explain the reason underlying the lead agency's determination. Section 15126.6(c) also states that among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (1) failure to meet most of the basic project objectives; (2) infeasibility; or (3) inability to avoid significant environmental impacts.

Consideration was given to an alternative that would require that the risk assessment for new permits would include the all sources within the entire effected facility, adjacent facilities within the community and include mobile sources in the vicinity of the facility. This alternative was rejected because no state guidelines have been prepared to address this type of "cumulative risk assessment". The "adjacent facilities" that would be included within the community could include numerous sources making these types of risk assessments very complex, delaying or preventing the issuance of air permits, creating staffing problems at the BAAQMD, substantially increasing the cost of permits, and using substantial resources within the District. New thresholds would need to be developed that would encompass total risk levels rather than project-specific risk levels. Facilities could be denied permits, even though their facility was operating within all required rules and regulations. No state guidelines exist for completing this type of risk assessment. Developing these guidelines would take considerable District resources and, in some cases, involve the expertise of agencies outside the District. Therefore, this alternative was rejected as infeasible.

Another alternative considered was the "precautionary principle," was has received considerable attention in a number of international discussions on human health and the environment. Although some statements of the principle are more detailed than others, each has at its core the idea that action should be taken to prevent or minimize harm to human health and the environment even if scientific evidence is inconclusive. For example, the 1998 Wingspread Statement on the Precautionary Principle summarizes the principle in the following manner: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically." The February 2, 2000, European Commission Communication on the Precautionary Principle indicates: "The precautionary principle applies where scientific evidence is insufficient, inconclusive or uncertain and preliminary scientific evaluation indicates that that there are reasonable grounds for concern that the potentially dangerous effects on the environment, human, animal or plant health may be inconsistent with the high level of protection chosen by the EU."

Unfortunately, the precautionary principle does not specify what should trigger action (e.g., how is a potential health threat established, and how is it determined if existing scientific information is inadequate or inconclusive?), nor does it specify what action should be taken after it is triggered. The precautionary principle is therefore difficult to craft into workable policies or regulations and is considered not feasible at this time.

The District believes that many elements of the precautionary principle are built into the proposed Regulation 2, Rule 5. The methods used to estimate health risks are not without uncertainty, but are based on well-established scientific principles, and are intended to err on the side of health protection. The program is designed so that updates in HRA methodology can be used based on improvements in scientific knowledge. (The ATHS program provides a mechanism for the District to address updated HRA information for sources that have already received District permits). Further, the use of incremental project risk significance levels provides a practical and objective basis for determining which projects warrant more detailed assessment and public scrutiny within the pre-construction permitting process. The District intends on monitoring any workable applications of the precautionary principle that may emerge and serve to further improve the Air Toxics NSR Program.

4.3 ALTERNATIVES TO THE NSR RULE STRATEGY

4.3.1 ALTERNATIVE 1: NO PROJECT ALTERNATIVE

The No Project Alternative, would mean the District would not adopt Regulation 2: Permits, Rule 5: New and Modified Sources of Toxic Air Contaminants, and Manual of Procedures Volume II: Engineering Permitting Procedures, Part 4: New and Modified Sources of Toxic Air Contaminants. The District also would not make amendments to: (1) the BAAQMD Rules and Regulations User's Guide; (2) Regulation 2: Permits, Rule 1: General Requirements; (3) Regulation 2: Permits, Rule 2: New Source Review; (4)

Regulation 2: Permits, Rule 9: Interchangeable Emission Reduction Credit; (5) Regulation 3: Fees; (6) Regulation 8: Organic Compounds, Rule 34: Solid Waste Disposal Sites; (7) Regulation 8: Organic Compounds, Rule 40: Aeration of Contaminated Soil and Removal of Underground Storage Tanks; (8) Regulation 8: Organic Compounds, Rule 47: Air Stripping and Soil Vapor Extraction Operations; and (9) Regulation 11: Hazardous Pollutants, Rule 16: Perchloroethylene and Synthetic Solvent Dry Cleaning Operations.

The No Project Alternative would continue the current policies for regulating TACs from new, modified, or relocated equipment as part of the permit review process. The APCO would continue to have the discretion to issue or deny a permit for a proposed project that exceeds specified health risk thresholds, depending on a number of factors. These factors include the degree of uncertainty in the risk analysis, possible net air quality benefits of updated replacement equipment, the lifetime of the project, incorporation of all feasible risk reduction measures, the costs of mitigation, and any benefit of the project to the local community and society.

Consequently, the No Project Alternative would continue regulation of TACs at new and modified facilities using the existing significant threshold levels of: (1) 1.0 per million for the proposed project; (2) 10 per million if all sources in the project have TBACT; and (3) 100 per million for dry cleaners that have TBACT and all reasonable risk reduction measures have been taken. Further, the District would continue to evaluate chronic health effects but not acute health effects under this alternative.

The current versions of the District's REP and RMP were adopted on February 3, 2000, with the exception of the RMP for diesel-fueled engines which was adopted on January 11, 2002. These documents describe the existing District Air Toxics NSR Program which would continue to be implemented under the No Project Alternative. Portions of the REP and RMP are outdated because OEHHA has revised toxicity values and exposure assumptions. While modifications to update the existing air toxics policy would not be made under the No Project Alternative, it is assumed that the District would take action to make the existing air toxics policy consistent with recent OEHHA and CARB revisions to toxicity values and exposure assumptions.

Since the No Project Alternative does not lower interim or final action levels, a limited number of facilities would be required to implement risk reduction measures. Further, there would be less incentive for dry cleaners to convert from the use of perc to another dry cleaning alternative.

4.3.2 ALTERNATIVE 2: RETAIN THE DISCRETION OF THE APCO

Under Alternative 2, the discretionary risk management actions of the APCO for proposed projects that exceed project risk limits would be clarified and expanded.

The existing RMP indicates that the APCO is responsible for risk management at the District and may consider a number of factors in determining whether to issue or deny a

permit for a proposed project together with the results of a risk screening analysis. Under this alternative, the District would retain this provision, which has been eliminated under the proposed project.

Under Alternative 2, the following criteria would be met before a permit would be issued if the risks for a proposed project exceed stated project risk requirements (e.g., 10 in a million cancer risk):

1. Specified facility risk limits would be met for existing sources and the proposed project. These are a cancer risk of 100 in a million, non-cancer hazard indices of 10.0, and a cancer burden of 1.0.

2. The facility would be required to implement all reasonable risk reduction measures. The risk reduction measures would be applied to the proposed new and modified sources in the project. In addition, unless onsite contemporaneous emission reductions from existing sources indicate that the net health risk is within project risk limits (e.g., 10 in a million cancer risk), the risk reduction measures would also be applied to all existing permitted sources with TAC emissions at the facility.

3. A Specific Findings Report would be prepared in which a number of factors are identified which may be considered by the APCO in making a discretionary permitting decision. In addition to the results of the HRSA for the proposed project, these factors would include: (1) the degree of uncertainty in the HRSA, (2) the period of time over which the emissions from the project are expected to occur, (3) the frequency at which an acute hazard index greater than 1.0 is expected to occur and a summary of the severity of these potential adverse health effects, (4) the existing air quality of the project area, based on available information, (5) the location of the project relative to sensitive receptors, (6) a summary of required risk reduction measures, (7) the results of a net-project health risk demonstration, if applicable, (8) the results of the HRA completed for the entire facility, if applicable, (9) any federal, state, or local mandates that require the permit applicant to propose the project, (10) any benefits that the project would have on the local community, (11) the findings of the Lead Agency for the proposed project under CEQA, and (12) any other information that the APCO determines to be relevant in making a risk management decision for the proposed project.

4. The APCO would be required to inform individuals in the area of the proposed project of any preliminary decision to issue a permit, and would consider any comments received before a final permit is issued.

If a permit is to be issued, the APCO would be required to find that the proposed project will comply with Section 41700 of the California Health and Safety Code. These findings are that the emissions from the proposed source(s) would not: (1) cause injury, detriment, nuisance, or annoyance to the public, nor (2) endanger the comfort, repose, health, or safety of any such persons or the public.

It is assumed that all other portions of the proposed project would be implemented under Alternative 2.

4.3.3 ALTERNATIVE 3: ALTERNATE HEALTH RISK THRESHOLDS

Under Alternative 3, it is assumed that the health risk thresholds would be reduced. The maximum cancer risk threshold would be limited to 1 per million and the hazard index would be limited to 0.2 for all cases. There would be no additional allowance for projects to go to 10 per million with TBACT. It is assumed that additional air pollution control equipment would be required under this alternative than the proposed project, in order to comply with the 1 per million threshold.

4.4 ALTERNATIVES ANALYSIS

The environmental analyses completed in Chapter 3 concluded that the potential impacts of the Air Toxics NSR rules on some of the environmental resources were very minor including potential impacts on aesthetics, agricultural resources, biological resources, cultural resources, geology, hydrology and water quality, land use, mineral resources, noise, population/housing, public services, recreation, and transportation and traffic. The alternatives would involve introduction of either similar or fewer components as the proposed project. Therefore, the potential impact of Alternatives 1, 2, and 3 on aesthetics, agricultural resources, cultural resources, geology, hydrology and water quality, land use, mineral resources, population/housing, public services, recreation, and transportation and traffic are expected to be less than significant. The potential impacts of the alternatives on the remainder of the environmental resources are addressed in this section.

4.4.1 AIR QUALITY

The proposed project could result in potentially significant VOC emissions associated with the conversion of perc dry cleaning machines to hydrocarbon machines. Other potential secondary impacts including construction impacts, secondary emissions associated with the use of additional control equipment, and increase in electricity demand, are expected to be less than significant. The proposed project is expected to provide a beneficial impact to public health by reducing TAC emissions and the potential exposure to TACs.

4.4.1.1 Alternative 1 - No Project Alternative

Under the No Project Alternative, the existing Air Toxic Policy would remain in place. Therefore, no additional incentive would be created to convert perc dry cleaning machines to alternative cleaning solvents. Under Alternative 1, it is expected that fewer existing dry cleaning machines would be converted to hydrocarbon machines so that the potentially significant impacts of VOC emissions would be reduced to less than significant.

However, Alternative 1 is expected to result in higher TAC emissions than the proposed project since the higher cancer risk level of 100 per million would continue to be allowed for dry cleaners that took all reasonable risk reductions measures. Further, acute exposures would not be evaluated and permit applications would not be evaluated for acute health effects. Therefore, Alternative 1 could result in permit approvals for facilities that exceed the CEQA significance threshold level of 10 per million and the acute hazard index of 1.0. Alternative 1 would result in potentially significant impacts associated with exposure to TACs.

4.4.1.2 Alternative 2 – Retain the Discretion of the APCO

Under Alternative 2, the discretionary risk management actions of the APCO that exceed project risk limits would be clarified and expanded. Alternative 2 is expected to result in fewer sources being converted to less toxic alternatives as compared to the proposed project and less air pollution control equipment installed. Secondary air quality impacts would remain less than significant. District staff determined that dry cleaners would not be eligible for discretionary risk because of the availability of less toxic solvents; Alternative 2 would not impact this issue and the potentially significant impact of VOC emissions would remain the same as the proposed project.

Alternative 2 is expected to result in higher TAC emissions than the proposed project since the higher cancer risk level of 100 per million would continue to be allowed for sources that took all reasonable risk reductions measures. Therefore, Alternative 2 could result in permit approvals for facilities that exceed the CEQA significance threshold level of 10 per million and would result in potentially significant impacts associated with exposure to TACs.

4.4.1.3 Alternative 3 – Alternate Health Risk Thresholds

Alternative 3 is expected to result in more dry cleaners being converted to non-perc alternatives as compared to the proposed project and more air pollution control equipment installed due to reduce acceptable threshold levels. Therefore, the potentially significant impacts of VOC emissions associated with the conversion of perc dry cleaning machines to alternative technologies would remain significant. Other secondary air quality impacts are expected to remain less than significant.

Alternative 3 is expected to result in less TAC emissions than the proposed project since the cancer risk level would be limited to 1 per million and the hazard index would be limited to 0.2. Therefore, Alternative 3 is expected to result in higher emission reductions of TACs than the proposed project and greater public health benefits.

4.4.2 HAZARDS AND HAZARDOUS MATERIALS

The proposed project impacts on hazards and hazardous materials due to the use of alternatives to perc were considered to be less than significant. No significant hazards associated with transportation of hazardous materials were identified.

4.4.2.1 Alternative 1 - No Project Alternative

Under the No Project Alternative, the existing Air Toxic Policy would remain in place. Therefore, there would be no increase in hazards associated with the use of hazardous chemicals or the transport of chemicals. Hazard impacts would remain less than significant.

4.4.2.2 Alternative 2 – Retain the Discretion of the APCO

Alternative 2 is expected to result in fewer sources being converted to less toxic alternatives as compared to the proposed project and less air pollution control equipment installed. The hazard impacts associated with converting to less toxic alternatives are expected to be less than significant. Therefore, the hazard impacts associated with Alternative 2 are potentially greater than proposed project but likely less than significant. Other hazard impacts are expected to remain less than significant.

4.4.2.3 Alternative 3 – Alternate Health Risk Thresholds

Alternative 3 is expected to result in more dry cleaners being converted to non-perc alternatives as compared to the proposed project. The hazard impacts associated with converting to non-perc alternatives are expected to less than significant. Therefore, the hazard impacts associated with Alternative 3 are also expected to be less than significant. Other hazard impacts are expected to remain less than significant.

4.4.3 UTILITIES AND SERVICE SYSTEMS

The proposed project impacts on wastewater, water demand, storm water, solid and hazardous waste and energy impacts were considered to be less than significant.

4.4.3.1 Alternative 1 - No Project Alternative

Under the No Project Alternative, the existing Air Toxic Policy would remain in place. There would be no increase in water demand, wastewater generation, storm water generation, solid/hazardous waste generation, or energy use because there would be no change in the current requirements. The impacts on utilities and service systems would remain less than significant.

4.4.3.2 Alternative 2 – Retain the Discretion of the APCO

Alternative 2 would be expected to require less energy as it is expected that less air pollution control equipment would be installed. Impacts on storm water generation, and solid/hazardous waste generation are expected to remain less than significant. The impacts of Alternative 2 on water usage, utilities and service systems are expected to remain less than significant.

4.4.3.3 Alternative 3 – Alternate Health Risk Thresholds

Alternative 3 is expected to result in more dry cleaners being converted to non-perc alternatives as compared to the proposed project. The potential for wastewater to be contaminated with perc is expected to decrease under this alternative because fewer dry cleaners are expected to use perc. This alternative would require more energy than the proposed project as it is expected that more air pollution control equipment would be installed. The energy impacts are expected to remain less than significant as the energy impacts associated with additional equipment is still expected to be a small fraction of the total energy use in the District. Impacts on storm water generation, and solid/hazardous waste generation are expected to remain less than significant. The impacts of Alternative 3 on utilities and service systems are expected to remain less than significant.

4.5 COMPARISON

Pursuant to CEQA Guidelines §15126.6(d), an EIR should include sufficient information about each alternative to allow meaningful comparison with the proposed project. Section 15126.6(d) also recommends the use of a matrix to summarize the comparison. Table 4.5-1 provides this matrix comparison. The No Project Alternative would ultimately achieve less of the long-term benefits of reduced TAC emissions and reduced exposure to TACs than the proposed project would achieve. The No Project Alternative (Alternative 1) would reduce the potentially significant impacts of increased VOC emissions associated with the proposed project to less than significant but would provide no benefit associated with TAC emission reductions.

Alternative 3 results in potentially significant impacts due to increased VOC emissions associated with converting perc dry cleaning equipment to alternative technologies. Alternative 3 would also provide greater TAC emission reductions and greater health benefits.

TABLE 4.5-1

COMPARISON OF ALTERNATIVES

ENVIRONMENTAL RESOURCE	Proposed Project	Alternative 1	Alternative 2	Alternative 3
Air Quality:				
Increase in VOC Emissions	PS	NS	PS	PS(+)
Other Secondary Air Impacts	NS	NS(-)	NS(-)	NS(+)
TAC Emissions	B	PS	PS	B
Hazards:				
Alternatives to Perc	NS	NS	NS	NS
Transportation Hazards	NS	NS	NS	NS
Utilities and Service Systems:				
Wastewater	NS	NS(-)	NS	NS(-)
Water Demand	NS	NS(-)	NS(-)	NS(+)
Storm Water	NS	NS(-)	NS(-)	NS(+)
Solid/Hazardous Waste	NS	NS(-)	NS(-)	NS(+)
Energy Demand	NS	NS(-)	NS(-)	NS(+)

B = Beneficial
NS = Not Significant Impact
MNS = Mitigated to Not Significant Impact
PS = Potentially Significant Impact
(+) = Impacts are greater than the proposed project
(-) = Impacts are less than the proposed project
(=) = Impacts are equal to the proposed project

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CHAPTER 5

OTHER CEQA TOPICS

Regulation Between Short-Term and Long-Term Productivity
Significant Irreversible Environmental Changes
Growth-Inducing Impacts

5.0 OTHER CEQA TOPICS

5.1 REGULATION BETWEEN SHORT-TERM AND LONG-TERM PRODUCTIVITY

An important consideration when analyzing the effects of a proposed project is whether it will result in short-term environmental benefits to the detriment of achieving long-term goals or maximizing productivity of these resources. Implementing the Air Toxic NSR rules are not expected to achieve short-term goals at the expense of long-term environmental productivity or goal achievement. The purpose of the Air Toxic NSR rules is to reduce TAC emissions and exposure to TACs, providing public health benefits. By reducing TAC emissions, human exposure to TACs is also reduced, providing long-term health benefits.

Implementing the Air Toxic NSR rules would not narrow the range of beneficial uses of the environment. Of the potential environmental impacts discussed in Chapter 3, those related to air quality are considered potentially significant due to the potential increase in VOC emissions associated with hydrocarbon dry cleaning machines versus perc dry cleaning machines. Implementation of ozone control measures in the 2000 CAP are expected to reduce the cumulative VOC emissions to less than significant.

Because no short-term environmental benefits are expected at the expense of long-term environmental goals being achieved, there is no justification for delaying the proposed action. The proposed project should be implemented now in order to update and enhance the existing District Air Toxics NSR Program. Most of the changes that are proposed are intended to increase conformity with updated State health risk assessment and risk management guidelines. Therefore, no short-term benefits at the expense of long-term impacts have been identified. In fact, the proposed project is expected to result in long-term TAC emission reductions and long-term public health benefits.

5.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA requires an EIR to discuss significant irreversible environmental changes which would result from a proposed action should it be implemented. Irreversible changes include a large commitment of nonrenewable resources, committing future generations to specific uses of the environment (e.g., converting undeveloped land to urban uses), or enduring environmental damage due to an accident.

Implementation of the Air Toxic NSR rules are not expected to result in significant irreversible adverse environmental changes. The proposed project could result in significant air quality impacts since the conversion of perc dry cleaning machines to other solvents could result in VOC emissions that exceed the BAAQMD significance thresholds. However, cumulative air quality impacts are expected to be less than significant as other ozone control measures associated with the 2000 CAP and 2001

Ozone Attainment Plan will result in overall emission reductions of NOx and VOCs. In addition, a new ozone strategy is expected to be available this summer. The rules would place only an incremental demand on nonrenewable and limited resources, such as energy and water supplies, relative to the accelerated rate of use of these resources due to population growth and increased consumer demand. The largely irretrievable conversion of undeveloped/agricultural land to urban uses is a function of the growing population and local land use authority, not the proposed project.

The Air Toxic NSR rules are expected to result in long-term benefits associated with improved air quality even though the population of the Bay Area is expected to increase. The project would result in reduced emissions of TACs, thereby improving air quality and related public health.

5.3 GROWTH-INDUCING IMPACTS

A growth-inducing impact is defined as the "ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Growth-inducing impacts can generally be characterized in three ways. In the first instance, a project is located in an isolated area and brings with it sufficient urban infrastructure to result in development pressure being placed on the intervening and surrounding land. This type of induced growth leads to conversion of adjacent acreage to higher intensity uses because the adjacent land becomes more conducive to development and, therefore, more valuable because of the availability of the extended infrastructure.

A second type of growth-inducing impact is produced when a large project, relative to the surrounding community or area, affects the surrounding community by facilitating and indirectly promoting further community growth. The additional growth is not necessarily adjacent to the site or of the same land use type as the project itself. A project of sufficient magnitude can initiate a growth cycle in the community that could alter a community's size and character significantly.

A third and more subtle type of growth-inducing impact occurs when a new type of development is allowed in an area, which then subsequently establishes a precedent for additional development of a similar character (e.g., a new university is developed which leads to additional educational facilities, research facilities and companies, housing, commercial centers, etc.)

None of the above scenarios characterize the project in question. The Air Toxic NSR rules will control TAC emissions from stationary sources and were developed, in part to accommodate the projected growth for the region – they are not the cause of residential, commercial, industrial, and infrastructure development. The proposed project would not change jurisdictional authority or responsibility concerning land use or property issues (Section 40716 of the California Health and Safety Code) and, therefore, is not considered to be growth-inducing.

CHAPTER 6

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6.1 REFERENCES

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6.2 ORGANIZATIONS AND PERSONS CONSULTED

The CEQA statues and Guidelines require that organizations and persons consulted be provided in the EIR. A number of organizations, state and local agencies, and private industry have been consulted. The following organizations and persons have provided input into this document.

Organizations

California Air Resources Board
East Bay Municipal Utility District
Department of Water Resources
City of San Mateo
Napa Sanitation District Collection System Department
Marin Municipal Water District
San Francisco Public Utilities Commission
Union Sanitary District

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San Francisco, California

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CHAPTER 7

ACRONYMS

AAQS	Ambient Air Quality Standard
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AB939	California Integrated Waste Management Act of 1989
AB1807	California Toxic Air Contaminants Program (Tanner Bill)
AB2728	Revised Tanner Bill
AB2588	Air Toxic "Hot Spots" Information and Assessment Act
AB2595	California Clean Air Act
ACE2588	Assessment of Chemical Exposure for AB2588
ADT	Average Daily Traffic
AEL	Acute Exposure Limit
AER	Annual Emission Reporting
AFV	Alternative Fuel Vehicles
AHM	Acutely Hazardous Material
APCO	Air Pollution Control Officer
API	American Petroleum Institute
ARB	Air Resources Board
ASC	Area Source Credits
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATCM	Airborne Toxic Control Measure
ATHS	Air Toxics Hot Spots Program
ATIR	Air Toxics Inventory Report
ATT	Advanced Transportation Technology
AVR	Average Vehicle Ridership
AWT	Advanced Water Treatment
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BACM	Best Available Control Measures
BARCT	Best Available Retrofit Control Technology
BCM	Best Available Control Measures for Fugitive Dust Sources
BMPs	Best Management Practices
BPTCP	Bay Protection and Toxic Clean Up Plan
BTU	British Thermal Units
BTU/hr	British Thermal Units per hour
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
Caltrans	California Department of Transportation
CalOSHA	California Occupational Safety and Health Administration
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CARE	Community Air Risk Evaluation
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFG	California Department of Fish and Game

CDWR	California Department of Water Resources
CEC	California Energy Commission
CEMS	Continuous Emissions Monitoring System
CEQA	California Environmental Quality Act
CFCs	Chloroflorocarbons
CFR	Code of Federal Regulations
CH4	Methane
CHMIRS	California Hazardous Materials Incident Reporting System
CHP	California Highway Patrol
CH&SC	California Health & Safety Code
CIWMB	California Integrated Waste Management Board
CMAQ	Community Multi-scale Air Quality
CNEL	community noise equivalent level
CNG	Compressed Natural Gas
CNS	Central nervous system
CO	Carbon monoxide
CO_2	Carbon dioxide
COLA	Cost of Living Adjustment
CPUC	California Public Utilities Commission
CRA	Colorado River Aqueduct
CPFs	cancer potency factors
CUP	Conditional Use Permit
CWA	Clean Water Act
CWAP	Clean Water Action Plan
CWP	California Water Plan
CWMI	Chemical Waste Management Inc.
dBA	decibel
DHS	Department of Health Services
DMV	Department of Motor Vehicles
DOC	Diesel Oxidation Catalyst
DOE	Department of Energy
DOT	U.S. Department of Transportation
DPR	Department of Pesticide Regulation
DTSC	California Environmental Protection Agency, Department of Toxic Substances Control
DWR	California Department of Water Resources
ERC	Emission Reduction Credit
EGR	Exhaust Gas Re-circulation
EHS	Extremely Hazardous Substance
EIP	Economic Incentive Program
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ERPG	Emergency Response Planning Guideline
^{o}F	Degrees Fahrenheit
FC&WCD	Flood Control & Water Conservation District
Fed/OSHA	Federal Occupational Safety and Health Administration

FGR	flue gas recirculation
FHWA	Federal Highway Administration
FIP	Federal Implementation Plan
FR	Federal Register
FTEs	full time equivalents
GDFs	gasoline dispensing facilities
GWRS	Groundwater Replenishment System
H_2	Hydrogen
HAP	Hazardous Air Pollutants
HARP	Hotspots Analysis and Reporting Program
HAZOP	hazards and operation process
HCFs	Hydrochlorofluorcarbons
HDV	Heavy Duty Vehicles
HEPA	High-Efficiency Particulate Air
HEV	Hybrid Electric Vehicles
HFP	high flashpoint petroleum
HHV	Higher Heating Value
HI	Hazard Index
HMBP	Hazardous Materials Business Plan
HNO_3	Nitric Acid
HOV	High Occupancy Vehicle
HRA	Health Risk Assessment
HRSA	Health Risk Screening Analysis
HSWA	Hazardous and Solid Waste Act
HMTA	Hazardous Materials Transportation Act
HWCL	Hazardous Waste Control Law
IARC	International Agency for Research on Cancer
ICE	Internal Combustion Engine
IM	Industrial Maintenance
ISO	Independent System Operator
kWh	Kilowatt Hour
^{o}K	degrees Kelvin
LAER	lowest achievable emission reduction
lbs	pounds
lbs/hr	pounds per hour
LEL	lower explosive limit
LEV	Low Emission Vehicle
LOS	Level of Service
LPG	liquefied petroleum gas
Lpk	Peak sound level
MACT	maximum achievable control technology
maf	million acre-feet
m/s	meters per second
MCLs	Maximum Contaminant Levels
MECA	Manufacturer’s of Emission Controls Association
MEI	maximum exposed individual

MEIR	maximum exposed individual resident
MEIW	maximum exposed individual worker
MICR	Maximum Increased Cancer Risk
MMBD	Million Barrels Per Day
MMcfd	Million Cubic Feet per Day
MOP	Manual of Procedures
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MSDS	Material Safety Data Sheet
MSW	Municipal Solid Waste
MTC	Metropolitan Transportation Commission
MUD	municipal utility district
MW	megawatts
MWD	Municipal Water District
N_2	Nitrogen
NAAQS	National Ambient Air Quality Standards
nanograms/m^3	nanograms per cubic meter
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NIOSH	National Institute for Occupational Safety and Health
NPDES	National Pollutant Discharge Elimination System
NFC	National Fire Codes
NFPA	National Fire Protection Agency
NH_3	Ammonia
NIOSH	National Institute of Occupational Safety and Health
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NOP	Notice of Preparation
NOP/IS	Notice of Preparation/Initial Study
NOV	Notice of Violation
NOx	Nitrogen Oxide
NPDES	National Pollutant Discharge Elimination System
NRC	Nuclear Regulatory Commission
NS	No significant impacts
NSDCSD	Napa Sanitation District Collection System Department
NSPS	New Source Performance Standards
NSR	New Source Review
O_3	Ozone
OADP	Ozone Attainment Demonstration Plan
OEHHA	Environmental Health Hazards Assessment
OEM	Original Equipment Manufacturer
OES	Office of Emergency Services
OSHA	Occupational Safety and Health Administration
PAHs	Polynuclear Aromatic Hydrocarbons
PCBF	Perchlorobenzotrifluoride
PCBTF	p-chlorobenzotriflouride
PCE	passenger car equivalents

Perc	Perchloroethylene
PG&E	Pacific Gas and Electric Company
pH	potential hydrogen ion concentration
PM2.5	particulate matter less than 2.5 microns equivalent aerodynamic diameter
PM10	particulate matter less than 10 microns equivalent aerodynamic diameter
POTW	Publicly Owned Treatment Works
PUC	Public Utilities Commission
ppbv	parts per billion by volume
ppm	parts per million
ppmv	parts per million by volume
PRC	Process Related Emissions
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
psia	pounds per square inch absolute
psig	pounds per square inch (gauge)
PSM	Process Safety Management Program
PTFE	Polytetrafluoroethylene
RACM	Reasonably Available Control Measure
RCPG	Regional Comprehensive Plan and Guide
RCRA	Resource Conservation and Recovery Act
REL	Reference exposure level
REP	Risk Evaluation Process
RFG	reformulated fuels gasoline
RMP	Risk Management Plan
RMPP	Risk Management and Prevention Program
ROC	Reactive Organic Compound
ROG	Reactive Organic Gases
ROP	rate of progress
RRP	Risk Reduction Plan
RSF	Risk Screening Fee
RTIP	Regional Transportation Implementation Plan
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
RVP	Reid Vapor Pressure
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Revitalization
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCR	Selective Catalytic Reduction
SCS	Soil Conservation Service
SFEI	San Francisco Estuary Institute
SFR	Specific Findings Report
SIP	State Implementation Plan
SMCLs	Secondary Maximum Contaminant Levels

SNCR	Selective Non-Catalytic Reduction
SO_2	sulfur dioxide
SO_3	Sulfur Trioxide
SOFC	Solid Oxide Fuel Cell
SOx	sulfur oxide
SPCC	Spill Prevention, Control and Countermeasure
SWP	State Water Project
SWMPS	Storm Water Management Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
Taf	thousand acre feet
TBACT	Best Available Control Technology for Toxics
TCM	Transportation Control Measure
TCE	Trichloroethylene
Tcf	trillion cubic feet
TDM	transportation demand management
TDS	total dissolved solids
TEA	Transportation Equity Act
TIMP	Transportation Improvement and Mitigation Program
TMA	Transportation Management Association
TMDL	Total Maximum Daily Loads
TOG	Total Organic Gases
TPA	Transportation Planning Agency
TPD	Tons per Day
TPH	total petroleum hydrocarbons
TPY	Tons per Year
TSF	Toxic Surcharge Fee
TSP	Total Suspended Particulates
TSS	Total Suspended Solids
UFC	Uniform Fire Code
ULF	Ultra Low Flush
URF	unit risk factor
U.S.	United States
USBR	United States Bureau of Reclamation
USDOT	United States Department of Transportation
U.S. EPA	United States Environmental Protection Agency
USPS	U.S. Postal Service
USC	United States Code
USCG	United States Coast Guard
ug/l	micrograms per liter
ug/m^3	micrograms per cubic meter
UV	Ultra Violet
UWA	Unified Watershed Assessment
V/C	volume to capacity ratio
VMS	volatile methylated siloxanes

VMT	Vehicle Miles Traveled
VOC	volatile organic compounds
volatiles	purgeable organics
WA	Water Agency
WD	Water District
WRCB	Water Resources Control Board

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APPENDIX A

NOTICE OF PREPARATION

CEQA

NOTICE OF PREPARATION OF DRAFT ENVIRONMENTAL IMPACT REPORT FOR ADOPTION OF DISTRICT REGULATION 2, RULE 5: NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS

Interested Agencies, Organizations and Individuals:

Subject: Notice is hereby given that the Bay Area Air Quality Management District (BAAQMD) will be the lead agency and will prepare an Environmental Impact Report (EIR) in connection with the project described in this notice. This Notice of Preparation is being prepared pursuant to California Public Resources Code § 21080.4 and CEQA Guidelines Section 15082.

Project Title: BAAQMD Regulation 2: Permits, Rule 5: New Source Review of Toxic Air Contaminants

Project Location: The rule will apply within the BAAQMD, which includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, and the southern portions of Solano and Sonoma counties.

Project Description: The District is proposing to codify the policies and procedures that make up the existing Air Toxics New Source Review (NSR) Program by adopting a new District rule, Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants, and a new part to its Manual of Procedures. Amendments to several other District rules are also proposed in order to maintain consistency with Regulation 2, Rule 5. The goal of the District Air Toxics NSR Program is to prevent significant increases in health risks resulting from new and modified sources of toxic air contaminants (TACs) based on preconstruction permit review. The program is also intended to reduce existing health risks by requiring updated control requirements when older, more highly polluting, sources are modified or replaced. District staff completes a site-specific health risk screening analysis (HRSA) as part of the permit evaluation process for any proposed project with TAC emissions that exceed specified de minimis toxic trigger levels. Depending on the results of an HRSA, new and modified sources may be required to control emissions of TACs using the Best Available Control Technology for Toxics, or TBACT. The residual emissions remaining after the use of TBACT are also evaluated to make sure that the health risks for any exposed individual in the surrounding community will not be significantly increased by the proposed project. The existing program also allows the District's Air Pollution Control Officer discretion to consider the degree of uncertainty in the HRSA, along with a number of other factors, in making a risk management decision to issue or deny a permit. The most significant changes in the Air Toxics NSR Program included in the proposed rule are: (1) adding the consideration of acute health risks in HRSAs, (2) requiring TBACT for chronic non-cancer health risks, (3) using updated
toxicity values and exposure assessment procedures, and (4) removing "special" project risk limits for dry cleaners.

Probable Environmental Impacts: Codification of the Air Toxics NSR program and the proposed changes to the program is intended to and expected to benefit public health

and the environment. However, even though the project is not expected to result in significant environmental impacts, the District has chosen to prepare an EIR to ensure a comprehensive exploration of any potential for impacts.

Response: This notice provides information on the above project and provides you an opportunity to submit comments on potential environmental effects that should be considered in the EIR. If the proposed project has no bearing on you or your agency, no action on your part is necessary. Due to the time limits mandated by State law, your response must be sent at the earliest possible date but ***not later than 30 days*** after receipt of this notice. If you or your agency wishes to submit comments, they may be sent to Scott Lutz, via the contact information below.

Scott Lutz, Air Quality Engineering Manager
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109
Phone: (415) 749-4676 Fax: (415) 749-4949
Email: slutz@baaqmd.gov
Date: January 26, 2005

APPENDIX B

COMMENTS AND RESPONSES TO COMMENTS RECEIVED ON THE DRAFT EIR

APPENDIX B

FINAL ENVIRONMENTAL IMPACT REPORT

Bay Area Air Quality Management District's Air Toxics NSR Rule

RESPONSE TO COMMENTS

INTRODUCTION

This Appendix, together with other portions of the Draft Environmental Impact Report (Draft EIR) constitutes the Final EIR for the Bay Area Air Quality Management District's Air Toxic New Source Review Rule, Regulation 2, Rule 5.

The Draft EIR was circulated for a 30-day public review and comment period that ended on May 23, 2005. The Draft EIR is available at the Bay Area Air Quality Management District (BAAQMD), 939 Ellis Street, San Francisco, CA 94109 or by phone at (415) 749-4650. The Draft EIR can also be downloaded by contacting the BAAQMD's web pages at http://www.baaqmd.gov/pln/ruledev/12-12/1212_drEIR_0527.pdf.

The Draft EIR contained a detailed project description, the environmental setting for each environmental resource where the NOP/IS determined there was a potential significant adverse impact, an analysis of the potentially significant environmental impacts including cumulative impacts, project alternatives, and other areas of discussion as required by CEQA. The discussion of environmental impacts included a detailed analysis of air quality, and hazards and hazardous materials.

The BAAQMD received one comment letter on the Draft EIR during the public comment period. The comment letter and responses to the comments raised in that letter is provided in this appendix. The comments are bracketed and numbered. The related responses are identified with the corresponding number and are included following the comment letter.

GOLDEN GATE UNIVERSITY School of Law

Environmental Law and Justice Clinic

May 20, 2005

Scott Lutz
Manager, Toxics Evaluation, Permit Services Division
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109
FAX: 415.749.4949

Re: BAAQMD Air Toxics New Source Review—Comments on Draft EIR

Dear Mr. Lutz:

On behalf of the Environmental Justice Air Quality Coalition ("EJAQC"), Bayview Hunters Point Community Advocates ("Bayview Advocates"), and Our Children's Earth Foundation ("OCE") (collectively "Commenters"), the Environmental Law and Justice Clinic ("ELJC") submits these comments on the "Draft Environmental Impact Report for the Bay Area Air Quality Management District's Air Toxics NSR Rule," prepared by Environmental Audit, Inc. for BAAQMD, dated April 20, 2005 ("DEIR").

I. Introduction

In 2003, Commenters reviewed the District's initial draft rulemaking for Air Toxics NSR and submitted comments on the proposal, including the District's Initial Study and Proposed Negative Declaration. See Letter to Brian Bateman from ELJC, July 15, 2003 ("2003 Comments"). We hereby incorporate the relevant sections of our 2003 Comments addressing issues under the California Environmental Quality Act, Cal. Pub. Res. Code §21000 *et seq.* ("CEQA") (2003 Comments at 16-24). At that time, we said the District must prepare an EIR due to the potentially significant and adverse environmental impacts of the proposed rules.

The purpose of an EIR is to inform the public and agencies of detailed information about the potential significant impacts that may result from a project and to identify ways to avoid or substantially reduce potential harm. Cal. Code Regs. Tit. 14, §15000 *et seq.* ("Guidelines") §15002(a). An EIR must be "prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences." Guidelines §15151.

We are pleased that BAAQMD has prepared this DEIR. However, we believe the DEIR is deficient as it fails to sufficiently analyze potential significant adverse effects including cumulative impacts, it relies on a flawed baseline, and fails to evaluate mitigation and analyze reasonable alternatives that might avoid these impacts.

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We believe the DEIR therefore should be revised and re-circulated to correct these deficiencies.

As a preliminary matter, the "notice of completion" of the DEIR (dated April 18, 2005) states that "all supporting documentation" for the DEIR is available from the District. The public notice for the June 15 hearing states that the final regulatory text and final staff report will be available to the public 30 days prior to the hearing. Commenters note the final proposed regulatory text was unavailable to the public until May 13, 2005 (10 days prior to the DEIR public comment deadline). As of May 20, 2005, the District still had not made available to the public a final staff report on the project (just 3 days prior to the public comment deadline). As a result, Commenters were unable to review the full record for the proposed project.

Comment 1

II. DEIR Summary Ignores Known Areas of Controversy

The EIR must contain a summary identifying any "areas of controversy" known to the District, including those raised by the public. Guidelines §15123(b)(2). The DEIR states that no such "areas of controversy" are known to BAAQMD as no comments were received in response to the Notice of Preparation ("NOP") of the DEIR. DEIR at 1-3. However, known "areas of controversy" are not limited to issues identified in response to a NOP. Rather, issues raised by the public in response to the District's Initial Study and Proposed Negative Declaration are in fact "known" to the District. In our 2003 Comments, we identified several potential issues that would qualify as "areas of controversy." For instance, we stated that implementation of the project could result in significant adverse impacts as accumulated "incremental" health risks may be "cumulatively considerable." 2003 Comments at 17-21. In addition, on several occasions between December 2003 and April 2005, representatives met with District officials to discuss issues raised in our 2003 Comments. Further, in March 2004, Commenters presented a list of recommendations related to these issues to the District. Therefore, the DEIR Summary should have identified the main issues raised as "areas of controversy" known to the District.

Comment 2

III. Environmental Setting for Air Quality Impacts Is Inadequate

To properly determine and evaluate the potential impacts of a proposed project, the DEIR must define the "environmental setting," which is a description of the physical environmental conditions in the project area existing at the time the DEIR is prepared. Guidelines §15125(a). Because this setting is normally considered the "baseline" from which anticipated impacts are evaluated and measured for significance, establishing the setting in the DEIR is critical.

The DEIR's description of "health effects" of toxic air contaminants ("TACs") in the "environmental setting" for air quality (Section 3.4.1) is insufficient. First, it fails to discuss existing health effects in a way that would enable potential impacts to be evaluated for significance. See DEIR at 3-17. The project includes issuance of permits for new and modified TAC sources. Human health could be significantly adversely affected by additional TAC emissions in the environment. In addition to the risk of cancer, there are numerous non-cancer risks posed by exposure to TACs. The "environmental setting" includes estimated ambient "cancer risk" for 2000. DEIR at 3-17. For "non-cancer risks" of TACs, the DEIR merely states that a "hazard index" represents the estimated exposure level at which health effects are not expected. DEIR at 3-17. There is no effort to characterize either the *type* or *extent* of existing

Comment 3

"non-cancer risks," however. As a result, it is impossible to consider potentially significant effects, particularly those that might be cumulatively considerable as a result of accumulated TAC exposures. In other words, the DEIR contains no effective baseline for existing health conditions from which the significance of the proposed project's impacts can be evaluated.

Second, while the "environmental setting" for air quality generally describes the types of emission sources in the region, there is no specific information about stationary sources and their associated health risk levels. The DEIR includes no information about the amount of toxic chemicals emitted by existing point and area sources, or about the locations of any of these sources. DEIR at 3-13-14. Consequently, the "environmental setting" includes no discussion about locations of potential toxic "hot-spots"—areas affected by multiple pollution sources—or about particularly vulnerable communities or sub-populations in the area. There is no discussion of areas known to be heavily impacted by stationary and mobile source pollution, such as Richmond, Bayview-Hunters Point or West Oakland, for instance.[1] There is no consideration of how the project may contribute to such disproportionate impacts. Indeed, CEQA Guidelines recognize that "the significance of an activity may vary with the setting," Guidelines §15064(d), *i.e.,* what might be appropriate in one setting might not be appropriate in another. As a result, it is impossible to evaluate the potential significant adverse impacts of the proposed project.

Comment 3 cont.

IV. The DEIR Fails To Properly Evaluate Potentially Significant Air Quality Impacts

The DEIR's analysis of potential significant adverse impacts is deficient because it uses an improper baseline, it fails to define appropriate "significance criteria" and its illegal "piecemeal" approach ignores cumulative impacts.

A. Determination of Significance—Generally

An EIR must identify and focus on the "significant" effects of a project. See *e.g.,* Guidelines §15162.2(a). The agency's determination of significance must be based on substantial evidence "in light of the whole record." CEQA §21082.2(a); Guidelines §15064(a)(1). A project may have a "significant" impact if the record before the agency contains "substantial evidence" that supports a "fair argument" that the project may have a significant environmental effect. See *e.g, No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal. 3d 68, 75; *Gentry v. City of Murrieta* (1995) 36 Cal. App. 4th 1359, 1399-1400. "Substantial evidence" includes "facts, reasonable assumptions predicated on facts, and expert opinion supported by facts." CEQA §21080(e)(1); Guidelines §15064(f)(5). In making this determination, the agency must consider "direct" and "reasonably foreseeable indirect" changes that could be caused by the project, "giving due consideration to both the short-term and long-term effects." Guidelines §§15064(d); 15126.2(a). This includes evaluation of "health and safety problems caused by the physical changes," as well as "irreversible damage." Guidelines §15126.2(a) & (c).

[1] In discussing the "project location," the DEIR states that due to climate and topology, there is a "reduced potential" for accumulated build-up of air pollutants "along the coast." DEIR at 2-5-6. But this statement is unsupported and the "environmental setting" does not address the issue.

B. The DEIR Fails to Define Proper Significance Criteria for Air Quality Impacts & The Illegal Piecemeal Approach Ignores Cumulative Risks

The EIR must evaluate the significance of the full range of a proposed project's impacts, including all phases of project implementation. Guidelines §15063(a)(1). Because the project is a rulemaking for the District's Air Toxics NSR program, it includes permit decisions under the proposed rules. The DEIR attempts to define "significance criteria" for evaluating the air quality impacts of the project (Section 3.4.2). However, the DEIR defines "significance criteria" only for "project operations"—*i.e.,* the proposed risk limits for *individual* permits. There are no criteria for evaluating the project *as a whole*. See DEIR at 3-22, Table 3.4-8.

Limiting the significance criteria in this way constrains the scope of analysis to individual elements of the proposed project and avoids analysis of the cumulative impact of permit decisions made over the life of the project. The stated criteria are inappropriate for the purpose of analyzing the proposed project's impacts, as they provide no means to measure the significance of the full impact of project approval. As a result, there are no criteria to guide the determination of significance even where such a finding is required by law. Specifically, the "significance criteria" fail to include criteria for measuring impacts that may be "individually limited but cumulatively considerable" or impacts that will cause substantial harm to human health, either directly or indirectly. See Guidelines §15065(a)(3) & (4).

Comment 4

Second, the absence of appropriate "significance criteria" creates a further problem in the DEIR's discussion of project alternatives that were rejected as "infeasible" (Section 4.2). According to the DEIR, one reason for rejecting an alternative that would include "cumulative risk assessment" is that "[n]ew thresholds would need to be developed that would encompass total risk levels rather than project-specific risk levels." DEIR at 4-1. Perhaps this explains why District made no effort to evaluate the cumulative impacts of the project with regard to TACs. As discussed further below, however, the DEIR can not avoid analyzing the severity of the problem by ignoring effects which, in isolation, may appear insignificant, but collectively may be quite significant. Rather, the DEIR must sufficiently analyze the "collective effect" or cumulative impact of the project. See *e.g., Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal. App. 3d 692, 721 ("*Kings County*").

The District's definition of "significance criteria" results in an illegal "piecemeal" approach to project review under CEQA. This prevents a thorough evaluation of cumulative project impacts. A focus on "incremental" effects of future related projects or activities isolates and "piecemeals" individual effects, and "runs counter to the combined approach that CEQA cumulative impact law requires." *Communities for a Better Environment v. Cal. Res. Agency* (2002), 103 Cal. App. 4th 98, 121 ("*Cal. Res. Agency*").

C. The DEIR Fails to Use the Appropriate Baseline to Determine Significance

In evaluating potential significant "environmental impacts" for air quality, the DEIR improperly relies on the wrong "baseline." In particular, the DEIR confuses the "baseline" (*i.e.,* the existing conditions at the time of preparation) with the "no project" alternative (*i.e.,* the impacts that would continue under the existing toxics policy). See DEIR Section 3.4.3.

Comment 5

As discussed above, the "environmental setting" should be considered the "baseline" from which potential impacts may be evaluated and measured for significance. California law is clear that the EIR must report on the proposed project's impacts on the existing environment. *Environmental Planning and Information Council v. County of El Dorado* (1982) 131 Cal. App. 3d 350, 352 ("*EPIC*"); Guidelines §§15125(a); 15126.2(a). The EIR should not analyze impacts to an existing *plan or policy*, but rather must analyze impacts to existing *environmental conditions*. The *EPIC* Court's ruling was codified in CEQA Regulations section 15125. Additional amendments have further clarified that impacts are to be assessed against the "existing physical conditions in the affected area" at the time the NOP is published. Guidelines §15126.2(a). "These amendments reflect and clarify a central concept of CEQA, widely accepted by the courts, that the significance of a project's impacts cannot be measured unless the EIR first establishes the actual physical conditions on the property." *Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal. App. 4th 99, 125 (citing *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal. App. 4th 931, 953 ("*Amador*"); *EPIC*, 131 Cal. App. 3d at 354; *City of Carmel-by-the-Sea v. Bd. of Supervisors* (1986) 183 Cal. App. 3d 229. "In assessing the impact of the [project], the local agency must examine the potential impact of the [project] on the existing physical environment; a comparison between the proposed [project] and the existing general plan is insufficient." *Christward Ministry v. Sup. Ct.* (1986), 184 Cal. App. 3d 180, 187 (citing *EPIC,* 131 Cal. App. 3d at 358).

Comment 5 cont.

The CEQA Guidelines properly maintain the distinction between the "baseline" and the "no project" alternative. The DEIR must evaluate the "no project" alternative to compare the impacts of approving or not approving the project. But "[t]he no project alternative is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline (see Section 15125)." Guidelines §15126.6(e)(1). Here, the "no project" alternative is *not* identical to the "baseline" because the "no project" alternative assumes that permits will continue to be issued under the existing policy, while the "baseline" establishes current conditions that are presumed to remain in existence, with no added pollution. Furthermore, where the existing policy ("no project" alternative) has never been subject to final CEQA review before adoption, it is inappropriate to use this as the "baseline." *Benton v. Bd. of Supervisors* (1991) 226 Cal. App. 3d 1467, 1477 n.10 (distinguishing *EPIC* as the proposed project was merely a modification of a prior project that had undergone final CEQA review).

Here, the District's Air Toxics NSR policy has never undergone CEQA review—*i.e.,* its effects have never been fully evaluated or measured for potential significance to human health or the environment, nor have any significant effects been mitigated or alternatives analyzed. Therefore, the District can not use the existing policy as the baseline for the purpose of determining significance of the new proposed rules.

To evaluate potential significant effects, the DEIR should therefore analyze impacts to existing environmental conditions as of January 31, 2005 (date the NOP was published). Instead, the DEIR relies on an improper "baseline" as it compares the impacts of the proposed rules to impacts that would continue under the existing policy ("no project" alternative). See DEIR Section 3.4.3. For instance, the DEIR's analysis of "project-specific" impacts for "non-criteria

pollutants" (or TACs) is flawed as it considers only the potential benefits that may result from the proposed rules, as compared to the impacts of the existing policy. The DEIR concludes that "[t]he proposed project will provide beneficial impacts to public health by reducing exposure to TAC emissions." DEIR at 3-29. This presumes either that (1) permits for new and modified TAC sources issued under the new rules should only be compared to the existing policy, or (2) there will be no additional TAC emissions from new or modified sources and no new exposures, so benefits will occur through TAC reductions in ambient air. Since the second presumption is inconsistent with the project, the DEIR's conclusion must be based on the first. There is no discussion or analysis of the potential impacts of *newly added* TAC emissions to the existing environment, however, either in specific areas or the region as a whole.

Comment 5 concluded

Indeed, there is evidence that levels of at least certain TACs actually increased between 2000-2002, the last two years for which the District has analyzed TAC data. See Memo from Dr. Ken Kloc, Ph.D., to ELJC (May 20, 2005) (*attached*).

The DEIR provides limited historical data on the number of risk screening analyses conducted by the District between 1987-2004. DEIR at 3-15. For instance, the District conducted 403 risk screenings for TAC permit applications in 2004, and 432 in 2003. *Id.* Yet the discussion of air quality impacts for TACs includes no data or analysis regarding how many applications were for *new* sources or to *increase throughput* at existing sources (which add new pollution to the environment)—as opposed to applications for upgrades or modifications (which might reduce existing levels of TACs). DEIR at 3-29. There is no data or analysis regarding the number of applications that will result in *increased* TAC emissions in an affected area. Further, there is no data or analysis regarding the *types* and *locations* of these sources such that potential impacts could be measured for significance. Indeed, CEQA recognizes that the measure of significance may vary with the setting. Guidelines §15064(d); *Los Angeles Unified School District v. City of Los Angeles* (1997) 58 Cal. App. 4th 1019, 1026. Therefore, the DEIR's conclusion that the proposal is not expected to result in significant adverse impacts but rather will provide air quality benefits is unfounded, not supported by the record, and is clearly based on a comparison to an improper baseline (the "no-project" alternative).

Similarly, as discussed further below, the discussion of cumulative impacts for TACs is also inadequate. Based on the presumption that "beneficial impacts" will result, the DEIR merely concludes that there will be no significant adverse cumulative impacts. DEIR at 3-30. The DEIR provides no evidence or analysis to support this conclusion.

D. The Analysis of Cumulative Impacts is Deficient

Comment 6

A project has "significant" impacts if its effects are "individually limited but cumulatively considerable"—*i.e.,* if its "incremental effects" are "considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effect of probable future projects." Guidelines §§15065(a)(3); 15064(h)(1); 15355; CEQA §21083(b). An EIR must discuss the cumulative impacts of a proposed project when its "incremental" effects are "cumulatively considerable." Guidelines §15130(a). All phases of project implementation must be considered. Guidelines §15063(a)(1). "It is vitally important that an EIR avoid minimizing the cumulative impacts. Rather, it must reflect a conscientious effort to provide public agencies

and the general public with adequate and relevant detailed information about them." *Kings County,* 221 Cal. App. 3d at 723 (citations omitted). Where the agency limits the scope of cumulative impacts analysis and its record is incomplete regarding other developments in the area to make a determination, the EIR is inadequate. *Id.* at 724; see also *Amador*, 76 Cal. App. 4th at 946 (final EIR that "omits material necessary to informed decisionmaking and informed public participation" subverts CEQA and the "error is prejudicial") (citations omitted).

As discussed above, the DEIR concludes the proposed project is not expected to result in significant adverse impacts, but rather will provide air quality benefits. DEIR at 3-29. Consequently, the DEIR concludes the project will not result in significant adverse cumulative impacts, but rather will provide a "public health benefit due to reduced exposure to TACs." DEIR at 3-30. The DEIR's discussion of "cumulative impacts" for air quality (Section 3.4.5) is merely conclusory and contains no analysis or evidence to support its conclusion.

The conclusory nature of the cumulative impacts analysis, not supported by evidence or analysis, contravenes CEQA's requirements. See *Kings County,* 221 Cal. App. 3d 692 (a conclusion that impacts will be insignificant must be supported by rigorous analysis and concrete substantial evidence). "Conclusory comments in support of environmental conclusions are generally inappropriate." See *Laurel Heights Improvement Assoc. of San Francisco, Inc. v. Regents of the University of California* (1988) 47 Cal. 3d. 376, 404. In *Concerned Citizens of Costa Mesa, Inc. v. 32nd District Agricultural Assoc.* (1986) 42 Cal. 3d 929, the court held that "the EIR must contain facts and analysis, not just the agency's bare conclusions or opinions." In a final EIR, "conclusory statements, unsupported by factual information, will not suffice." *Amador*, 76 Cal. App. 4th at 945 (citations omitted). Comment 6 cont.

In *Citizens to Preserve the Ojai v. Board of Supervisors*, the court said that the cumulative impact analysis must be interpreted "so as to afford the fullest possible protection of the environment within the reasonable scope of the statutory and regulatory language." 176 Cal. App. 3d 421, 431-432 (1985) (citing *Friends of Mammoth v. Bd. of Supervisors* (1972) 8 Cal.3d. 247, 259; see also *San Franciscans for Reasonable Growth v. City and County of San Francisco* (1984) 151 Cal. App. 3d 61 ("*San Franciscans*") (EIR deficient because cumulative impact analysis did not "afford the fullest possible protection to the environment").

In *Whitman v. Board of Supervisors*, the Court found three elements necessary for an adequate cumulative impacts discussion: "(1) a list of projects producing related or cumulative impacts; (2) a brief but understandable summary of the expected environmental impacts to be produced by those projects with specific reference to additional impact information where such information is available; and (3) a reasonable analysis of the combined or cumulative impacts of all the projects." 88 Cal. App. 3d 397, 408 (1979) ("*Whitman*") (EIR was clearly deficient as cumulative impacts discussion was just one sentence) (citations omitted). The burden of producing the relevant data for an adequate cumulative impact analysis in the DEIR is on the District, not the public. *Kings County*, 221 Cal. App. 3d at 724.

Here, the DEIR's "cumulative impacts" analysis is deficient in a number of ways. The DEIR's cursory conclusion that the project will not result in significant adverse cumulative impacts from TAC exposure but rather will provide "beneficial impacts" is not supported. First, there is no

analysis of the impact of new TAC emissions to the existing environment. Second, the DEIR fails to consider the potential for localized concentrated impacts due to exposure to multiple sources. Third, the DEIR ignores the District's cumulative risk modeling analysis indicating potentially significant cumulative impacts. Fourth, the DEIR ignores potential significant cumulative impacts that could result when considering TAC emissions together with criteria pollutants and other emissions. Finally, the DEIR fails to state the basis for concluding that additional "incremental" effects are not "cumulatively considerable." Guidelines §15130(a).

Comment 6 concluded

1. The DEIR Ignores Impact of Additional Pollution to Existing Environment

As described in the DEIR's "environmental setting" for air quality (Section 3.4.1), current types of emissions sources include stationary and mobile sources. DEIR at 3-13-14. For stationary sources, the District maintains a database for "roughly 20,000 different [point] sources" at "nearly 4,000 facilities" throughout the Bay Area. DEIR at 3-13. There are thousands of small but highly toxic "area sources" diesel generators, gasoline stations and dry cleaners in close proximity to Bay Area residents and workers. "Area sources are stationary sources that are individually very small, but that collectively make a large contribution to the inventory." DEIR at 3-13. For instance, there are about 635 dry cleaning facilities with 675 machines that emit an estimated 214 tons per year of perchloroethylene (or perc) per year. DEIR at 3-21. Existing dry cleaning facilities are permitted to operate with health risks of up to 100 per million for cancer, and may continue to do so unless and until a source is modified.

Comment 7

Additionally, District records indicate that as of February 2005, there are 4,367 stationary diesel engines (not including those that are exempt from District regulations), and 2,635 gasoline service stations permitted in the Bay Area.[2] These area sources are currently the two most common types of sources evaluated for air toxics risks. BAAQMD Draft Staff Report at 11.

Although the scope of the project covers stationary sources, the DEIR should also analyze the impacts of other sources. Mobile source emissions also contribute to existing health risks, particularly for those in close proximity to traffic from roads and facilities. While the DEIR notes a reduction in calculated inhalation cancer risk in the ambient air between 1995 and 2002, this figure does not include cancer risks from diesel exhaust. DEIR at 3-19. In addition, the DEIR notes the majority of this decline is "largely" attributable to reductions achieved in 1996 through CARB measures. DEIR at 3-17. CARB estimated that diesel particulate matter (PM-10) was responsible for 71.2% of ambient cancer risk in 2000.

Additionally, as noted above, there is evidence that levels of at least certain TACs actually increased between 2000-2002, the latest years for which the District has analyzed TAC data. See Memo from Dr. Ken Kloc, Ph. D., to ELJC, May 20, 2005. In fact, the District's Annual TAC

[2] District area source databases provided by Scott Lutz, BAAQMD, to Ken Kloc, ELJC, on Feb. 8, 2005 (Gasoline Dispensing Facilities) and Feb. 22, 2005 (Stationary Diesel Engines). It appears that these sources are not included in the District's inventory.

Reports indicate increased emissions of total TACs reported between 2001 and 2002.[3] Commenters are unable to determine whether total TAC emissions from stationary sources are in fact increasing, or whether these figures are attributable to a greater number of TACs being measured, or a greater number of reporting facilities.

Under the project, any permits for new or modified TAC sources issued by the District may add to the overall existing risk. According to recent permitting history, the District conducted risk screening analyses for 403 TAC permit applications in 2004, and 432 in 2003. DEIR at 3-15. However the DEIR fails to evaluate the impacts of *additional* TAC emissions to human health or the existing environment. While the District posits that the "incremental" effects of such permits will not be cumulatively significant because individually they are not significant, this line of reasoning directly contradicts the intent and mandate of CEQA.

The District's focus on "incremental" effects, see *e.g.,* DEIR at 3-22, Table 3.4-8,[4] results in a "piecemeal" approach that would "contravene the very concept of cumulative impacts" as its application "would turn cumulative impact analysis on its head by diminishing the need to do a cumulative impact analysis" as a problem worsens. *Cal. Res. Agency,* 103 Cal. App. 4th 98 at 117. "Cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum." *Cal. Res. Agency*, 103 Cal. App. 4th 98, 114; see also *Whitman,* 88 Cal. App. 3d 397, 408. The District's approach attempts to gauge potential impacts of TAC emissions in a "vacuum." Comment 7 cont.

In evaluating whether there may be "cumulatively considerable" impacts, CEQA requires consideration of all potential individual effects, as "environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact." *Cal. Res. Agency,* 103 Cal. App. 4th at 114 (citing *Kings County*). Air pollution may be the best example of the problem of "incremental degradation," where thousands of sources together may "cause a serious environmental health problem." See *Kings County,* 221 Cal. App. 3d at 720. "Because of the critical nature of this concern, courts have been receptive to claims that environmental documents paid insufficient attention to cumulative impacts." *Id.*

The relevant question is *not* whether a potentially incremental effect is significant compared to a pre-existing problem, but rather whether any *additional adverse* effects should be considered significant in light of the serious nature of a pre-existing problem. *Cal. Res. Agency*, 103 Cal. App. 4th at 118, 120 (citing *Kings County*, where EIR improperly used magnitude of pre-existing ozone problem in air basin to trivialize project impact). "In the end, the greater the existing environmental problems are, the lower the threshold should be for treating a project's contribution to cumulative impacts as significant." *Id.* Therefore, the DEIR must evaluate whether the impact of new emissions may be significant considering existing levels of pollution.

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[3] Total pounds of reported TACs per year: 2000: 6,810,013 lbs (70 pollutants); 2001: 6,766,000 lbs. (75 pollutants); 2002: 6,975,000 lbs (77 pollutants). BAAQMD Annual TAC Reports, Appendix B-3 (2001); Appendix B-4 (2003, 2004).

[4] Table 3.4-8 lists "Air Quality Significance Thresholds for Project Operations" (for individual activities).

In addition, the DEIR fails to state the basis for concluding that additional "incremental" effects are not "cumulatively considerable." Guidelines §15130(a).

Comment 7 concluded

2. The DEIR Ignores Localized Concentrations of Pollution

The DEIR's conclusion that no significant adverse cumulative impacts will result is not supported by fact or analysis. The DEIR claims the project will result in "beneficial impacts" due to decreased TAC exposures because dry cleaners will be regulated more stringently, additional TACs will be regulated, and certain assumptions used in risk assessments will be more protective. DEIR at 3-30. But no data or analysis is provided to support the assertion that regulating new TACs will lead to additional controls on existing sources. In fact, existing sources will only be subject to the new rules by applying for a permit to modify or expand. In addition to ignoring the potential impacts of added pollution from new or expanded sources, the DEIR ignores the localized adverse impacts that may result from even higher pollutant concentrations in certain areas.

However, even if the proposed project includes measures that will reduce exposures to specific TACs, the DEIR fails to evaluate the potential for localized cumulative impacts that some communities could face as a result of the project. For instance, while the average "ambient" cancer risk in the region may in fact be decreasing, the DEIR ignores the potential for significant impacts from accumulated risks due to exposures to multiple sources. Under the proposed rules, TAC emission sources could become more geographically concentrated in some neighborhoods, resulting in significant *localized* pollution *increases* at the same time that *average* pollution levels in the region may be decreasing. Geographic concentration could arise from systematic causes or could also happen randomly. In either case, the proposed project does not contain any measures that would prevent the concentration of sources or the creation of toxic "hot-spots." Therefore, the proposed project could result in significant adverse health impacts.

Comment 8

We recently discovered an example of this problem in Southeast San Francisco. Using data obtained from the District, we identified a single building in the Bayview community where seven communications or technology companies are located at the same street address, along with their substantial diesel backup generator systems. See Table below & Memo from Ken Kloc, Ph.D., to ELJC, May 20, 2005. Each of these companies was likely permitted by the District as a single isolated source of pollution, which means that each facility was allowed to apply for a permit to emit diesel particulate matter up the regulatory cancer risk level of 10 in one million. The cumulative impact of the combined pollution of these seven companies was not considered in the District's permitting process. As a result, the health risk emanating from this single building could be *several times* higher than the proposed level of "significance." While this example represents permit proceedings under the District's current toxics policy, it is reasonable to assume that cumulative exposure problems such as this will continue to occur under the proposed project because the rules do not contain any provisions that would mitigate environmental impacts under similar circumstances. The Table below provides information about the location and operational limits on these diesel backup generators.

Co-located Diesel Backup Generators in Southeast San Francisco[5]				
Facility	**Facility Address**	**Location Coordinate (UTM E)**	**Location Coordinate (UTM N)**	**Yearly Operation (Hp-hours)**
San Francisco Wave Exchange	200 Paul Avenue & 400 Bldg F, Mezz	553106	4175226	1102100
Qwest Communications Corporation	200 Paul Avenue	553106	4175226	148096
RCN Telecom Services, Inc.	200 Paul Avenue	553106	4175226	185000
XO Communications, Inc.	200 Paul Avenue	553106	4175226	45864
Cingular Wireless	200 Paul Avenue, Bldg D, Suite 100	553068	4175220	37388
Verizon Global Networks	200 Paul Avenue	553112	4175209	29650
Wiltel Communications	200 Paul Avenue	553112	4175209	587000

Comment 8 concluded

Our 2003 Comments indicated that the proposed rules may not protect the health of the most sensitive and over-exposed individuals, communities and sub-populations. The example above is indicative of the potential for this problem. Even the District's "Initial Study" under CEQA acknowledged that the project may "expose sensitive receptors to substantial pollutant concentrations" but then concluded that potential impacts are "less than significant" without any discussion. BAAQMD Initial Study at D-5. The DEIR fails to explain how individuals' aggregate exposures to "substantial pollutant concentrations" will have "less than significant" effects. Lacking comprehensive assessment and consideration of cumulative health risks, the DEIR fails to evaluate whether the project may result in significant and adverse human health impacts due to accumulated exposures to "substantial pollutant concentrations."

[5] Information is based upon the District's electronic database of Stationary Diesel Engines, provided by Scott Lutz, BAAQMD, to Ken Kloc, ELJC (Feb. 22, 2005). See Memo from Ken Kloc, Ph.D., to ELJC, May 20, 2005.

3. Cumulative Risk Modeling Indicates Potentially Significant Impacts

The DEIR should have included the District's recent cumulative risk modeling analysis[6] discussed in the Draft Staff Report to provide a more complete discussion of the project's potential for significant cumulative impacts. District staff conducted limited air dispersion modeling of TAC emissions in several localized cumulative exposure scenarios, including: (i) four gas stations at a single intersection, (ii) multiple diesel back-up generators at a location, and (iii) a gas station-dry cleaner-furniture stripper-diesel BUG combination. Cumulative exposures were elevated above individual source exposures at the neighborhood level in these multiple-source scenarios, and were more than twice as high for one of the configurations. The cumulative risk posed by these common source scenarios ranged from 1.4 to 2.2 times higher than the maximum allowable individual risk levels. BAAQMD Draft Staff Report at 42.

Comment 9

Given that many sources under the proposed project will be permitted to emit pollution up to the significance "threshold" of 10 in one million cancer risk or a hazard index of 1.0,[7] it is reasonable to assume the project could result in significant cumulative impacts. However, the DEIR fails to present or discuss this study. It includes no analysis or evaluation of potentially significant impacts that are known to the District. Further, there is no discussion of potential mitigation or alternatives to avoid or substantially lessen any significant impacts.

4. The DEIR Ignores Potential Impacts of Other Types of Air Pollution

Finally, the cumulative impacts analysis is deficient because it fails to evaluate potentially significant impacts that could arise from the cumulative effects of TAC emissions from a permitted source, when considered together with criteria pollutant emissions from the same source, or in combination with TACs or criteria pollutants from other sources. For example, regional ozone pollution in some areas may come close to the health-based ozone standard. Likewise, particulate matter concentrations in the Bay Area rise close to and above the health-based standards during certain times of the year, and some neighborhoods in the immediate vicinity of freeways have elevated levels of mobile source pollutants such as diesel particulate matter, butadiene, and carbon monoxide. Under the proposed project, the District will ignore this fact when reviewing TAC permit applications. Thus, the proposed project could allow situations where toxic emissions from the permitted source, considered alone, are below regulatory thresholds, but exceed the thresholds when these emissions are considered in combination with pollution from other sources. Such considerations indicate the proposed rule could produce significant adverse impacts. See Memo from Ken Kloc, Ph.D., to ELJC, May 20, 2005. The DEIR fails to address the potential for such possibility of such impacts.

Comment 10

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[6] See "Scenario-Based Cumulative Impact Assessment," Toxics Evaluation Section, BAAQMD, March 2003. Risks were calculated for the following scenarios: (i) four gas stations at a single intersection, (ii) multiple diesel back-up generators ("BUGs") at a location, and (iii) a gas station-dry cleaner-furniture stripper-diesel BUG combination. See also BAAQMD Draft Staff Report (April 2003) at 42.

[7] Table 3.4-8 of the DEIR defines the following "significance thresholds" for toxic air contaminants: a cancer risk of 10 in 1 million, and a hazard index greater than or equal to 1.0, for a maximally exposed individual. These are also the maximum acceptable risk levels proposed for the Air Toxics NSR rule.

V. The DEIR Fails to Sufficiently Discuss Mitigation Measures

CEQA requires agencies to adopt all feasible mitigation measures or alternatives to avoid or substantially lessen significant adverse impacts of projects. CEQA §§21002; 21081(a); Guidelines §§15002(a)(3); 15021(a)(2); 15091(a)(1). The EIR must describe all feasible measures which could minimize significant impacts. Guidelines §15126.4(a)(1). The DEIR's discussion of mitigation measures is deficient in at least two ways.

First, failure to analyze mitigation measures is inappropriate as the project may result in significant or cumulatively significant adverse impacts. See CEQA §§21001 & 21081(a); Guidelines §§15002(a)(3) & 15021. As discussed above, the DEIR's discussion of cumulative impacts merely concludes without analysis that there will be no significant adverse effects from TAC exposures. A proper cumulative impacts analysis would have indicated that significant adverse impacts may result, particularly in certain settings. Therefore, the EIR should have discussed feasible mitigation measures to avoid or substantially lessen any significant adverse impacts from TAC exposure. In addition, if these particular potentially significant impacts are not mitigated to insignificance, the DEIR should have made findings regarding a statement of overriding considerations. See Guidelines §15093. No such findings or statement is provided.

Comment 11

Specific measures have been previously suggested by Commenters, including a cumulative risk "cap" to assure there will be no cumulative health risks exceeding a particular significance "threshold." Other potential measures include consideration of the additive toxic effects of criteria pollutants when evaluating risk, or requiring contemporaneous facility-wide risk reductions, such as offsets. See Recommendations to BAAQMD APCO, March 2004 (*attached*).

Second, the DEIR suggests that "secondary impacts from construction activities" could be significant without project-specific mitigation measures, which are "expected" to be implemented. DEIR at 3-21-22. However, mitigation measures must be fully enforceable, for instance, through permit conditions or some legally-binding instrument. Guidelines §15126.4(a)(2). The DEIR's recommendation that such measures "should" be implemented is not enforceable. Consequently, the DEIR's conclusion that there will be no cumulative impacts associated with increased construction activities due to mitigation, DEIR at 3-30, relies on the flawed presumption that any impacts will be reduced through enforceable mitigation measures. While in some cases, feasible mitigation measures may involve the adoption of measures outside the scope of the project, such measures still must be made enforceable by ordinance or regulation. Guidelines §15130(c).

VI. The DEIR Fails to Analyze a Full Range of Reasonable Alternatives

CEQA requires agencies to adopt all feasible mitigation measures or alternatives to avoid or substantially lessen significant adverse impacts. CEQA §§21002; 21081(a); Guidelines §§15002(a)(3); 15021(a)(2); 15091(a)(1). The EIR must describe and evaluate a "range of reasonable alternatives" to the project that would "feasibly attain most of the basic objectives" but would "avoid or substantially lessen" any significant adverse impacts. Guidelines §15126.6(a); CEQA §21100(b)(4).

Comment 12

The analysis of alternatives is a critical element of an EIR. The court in *Citizens of Goleta Valley v. Bd. of Supervisors* said that "the core of an EIR is the mitigation and alternatives sections." 52 Cal.3d 553, 564 (1990). The EIR must discuss a sufficient range of alternatives "that will foster informed decision-making and public participation." Guidelines §15126.6(a) & (f). The reasons for selecting alternatives for analysis must be stated, and the EIR must "evaluate the comparative merits" of each alternative. Guidelines §15126.6(a). The EIR must include "sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project." Guidelines §15126.6(d). Thus, the EIR must provide information sufficient to understand the impacts and to permit an informed choice among alternatives. See *Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal.3d. 376 ("*Laurel Heights*"). "Without meaningful analysis of alternatives in the EIR, neither the courts nor the public can fulfill their proper roles in the CEQA process." *Laurel Heights,* 47 Cal.3d. at 404.

Comment 12 concluded

Just as the DEIR fails to adequately analyze the project's potentially significant cumulative impacts, so too it fails to properly assess a full "range of reasonable alternatives" that would mitigate such impacts. First, the EIR rejects outright consideration of two broad alternatives, without considering whether certain discrete elements might be appropriate alternatives to mitigate significant adverse impacts. Second, in its consideration of alternatives, the DEIR ignores the project's potential for any adverse impacts to human health.

A. The DEIR Rejects Alternatives Without Considering Whether Discrete Elements are Reasonable and Feasible

The EIR must identify alternatives the agency rejects as "infeasible" and its analysis must explain in "meaningful detail" the relevant reasons and facts supporting the determination. Guidelines §15126.6(c); *Marin Mun. Water Dist. v. KG Land Cal. Corp.* (1991) 235 Cal. App. 3d 1652, 1664.

The DEIR rejects as "infeasible" two alternative approaches to the project (Section 4.2). One alternative is to use "cumulative risk assessment" and the other is to incorporate the "precautionary principle." DEIR at 4-1-2. The first alternative is rejected as infeasible due to complexity, cost, and the lack of guidance for implementation. DEIR at 4-1. Additional cost, however, is not necessarily an appropriate reason for rejecting an alternative. See Guidelines §15126.6(b) & (c). Because the purpose is to avoid or substantially lessen potentially significant impacts, alternatives that would be more costly must be considered. Guidelines §15126.6(b). "Environmentally superior alternatives must be examined whether or not they would impede to some degree the attainment of project objectives." *Kings County,* 221 Cal. App. 3d at 736-37.

Comment 13

The "rule of reason" requires the EIR to consider alternatives that would avoid or substantially lessen any significant impacts and to analyze in detail those that "could feasibly attain most of the basic objectives of the project." Guidelines §15126.6(f). While "economic viability" may be a factor, this alone may not limit the scope of alternatives. Guidelines §15126.6(f); *Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal.3d 553; see also *Save Our Residential Environment v. City of West Hollywood* (1992) 9 Cal. App. 4th 1745, 1753, fn.1.

Moreover, the DEIR fails to analyze whether specific, discrete, reasonable elements of these broad approaches would be appropriate and feasible to avoid or lessen significant impacts. As the DEIR states, CEQA alternatives typically "are developed by breaking down the project into distinct components…and varying the specifics of one or more components." DEIR at 4-1. Yet the DEIR ignores this methodology when discussing alternatives that could mitigate potentially significant cumulative impacts. By rejecting the first alternative approach, which combines several distinct components, the DEIR rejects numerous potential alternatives, including cumulative risk assessment of "all sources within the entire facility, adjacent facilities within the community and includ[ing] mobile sources in the vicinity of the community." DEIR at 4-1. The DEIR dismisses these three elements in a single stroke, without analyzing the feasibility of any one, or without "varying the specifics of one or more components."

For example, the DEIR could have discussed an alternative that considered the cumulative impact of all sources within the permit applicant's facility (*i.e.,* not considering adjacent facilities or mobile source pollution). These limits may already be evaluated for certain facilities under AB2588, the Air Toxics Hot Spots Act. Another single and more modest change would be to consider risks from operations of multiple companies that are located at the same address (see Section IV.D.2 above). Yet another alternative could be developed that considered cumulative point source risk within a small buffer zone around a new source. Since the District's own cumulative risk modeling analysis indicates the radius of potential cumulative impact around many point sources is quite limited, any one permitting decision would typically require evaluation of a limited set of sources in the immediate vicinity of the applicant's facility. Comment 13 cont.

In addition, the DEIR should have considered other reasonable measures as feasible alternatives to mitigate any additional health risks, such as contemporaneous facility-wide risk offsets, for instance. Several such recommendations were provided by Commenters in 2003 and 2004. See Recommendations to BAAQMD APCO, March 3, 2004. Commenters further note that some of these methods are already utilized by the District. For instance, area-wide assessments for specific pollutants are commonly prepared for planning purposes under the federal Clean Air Act. Moreover, as indicated by its cumulative risk modeling analysis, the District is capable of conducting at least some form of cumulative risk evaluation.

By ignoring the potential feasibility of lesser measures that could address some aspects of the cumulative impacts problem, the DEIR inhibits informed decision-making and public participation. Without sufficient analysis of reasonable and feasible alternatives that could mitigate potential significant cumulative impacts and attain the project objectives, "meaningful evaluation" of the DEIR is not possible. Guidelines §15126.6(a) & (d). Therefore we request that the DEIR be revised and re-circulated to correct these deficiencies.

B. The DEIR Alternatives Analysis Ignores Potential Adverse Impacts to Human Health

As with the "significance" determination for air quality discussed above, the DEIR's "alternatives analysis" (Section 4.4) is flawed as it operates on the presumption that only "beneficial impacts" to human health will result from the project. DEIR at 4-5. So too is the

"comparison" of alternatives (Section 4.5). DEIR at 4-9. The DEIR plainly ignores the potential for *any* adverse impacts to human health from the project, which includes issuance of permits for new and modified TAC sources.

The alternatives analysis is distorted by an improper baseline and inadequate cumulative impacts analysis. As discussed above, proper analysis would have indicated that potentially significant and adverse impacts could result from the project. Absent this, the alternatives analysis is complete and misleading. For instance, while alternative #3, lower risk thresholds, is "expected to result in higher emissions reductions of TACs" and "greater public health benefits" than the proposed project, DEIR at 4-6, the comparison to the proposed project is faulty. When viewed against the proper baseline, the project may actually result in greater exposures and adverse impacts in some areas. As a result, the superior benefits of alternative #3 are compared to an incomplete picture of the proposed project. Because the DEIR ignores potential significant adverse impacts of the project, the alternatives analysis and comparison are flawed.

Comment 13 concluded

VII. Compliance with "Thresholds of Significance" Is Not Conclusive Evidence of No Significance

Through the Air Toxics NSR rulemaking and in the DEIR, the District seeks to establish "significance criteria" for "project operations" (Section 3.4.2). The purpose is "[t]o determine whether or not air quality impacts from the proposed project are significant." DEIR at 3-22. As discussed above, the criteria are not defined in an attempt to measure the significance of the project as a whole, however. Rather the criteria seek to establish "thresholds of significance" for individual project activities. See Section IV.B above. Yet the District proposes to classify these individual activities—issuance of permits for TAC sources—as "ministerial" to systematically exempt such projects from CEQA review. See Proposed BAAQMD Reg. 2-1-428; BAAQMD Regs. 2-1-311; 2-1-427. This is inconsistent with the intent and purpose of CEQA.

Although agencies are encouraged to formally establish "thresholds of significance" to assist with determining whether there may be significant effects, see Guidelines §15064.7, compliance with such "thresholds" is *not* conclusive evidence that there are no potentially significant impacts. *Cal. Res. Agency*, 103 Cal. App. 4th 98 at 112-114. Compliance with a "threshold of significance" merely means that a project's potential effects "normally will be determined to be less than significant." Guidelines §15064.7. However, "*any* substantial evidence supporting a fair argument that a project may have a significant environmental effect would trigger the preparation of an EIR." *Cal. Res. Agency*, 103 Cal. App. 4th at 113 (emphasis in original). Therefore, future "project operations" that meet these "thresholds" should not be automatically precluded from a potential finding of significance.

Comment 14

First, as discussed above, the risk levels proposed as "thresholds of significance" for future projects fail to take into account substantial evidence that significant and adverse effects may result to human health and the environment. Second, classification of projects that meet these limits as "ministerial" allows the District to avoid determining whether potential effects of multiple projects may be "cumulatively considerable." Finally, establishing these risk levels as "thresholds of significance" for the purpose of automatically exempting projects from CEQA review improperly precludes evidence of potential significance from consideration. Again,

compliance with these limits is *not* conclusive evidence of no significance. *Cal. Res. Agency*, 103 Cal. App. 4th at 112-114.

The District's classification and reliance on such "thresholds" to avoid CEQA review for potential significance and cumulative impacts—particularly when no such analysis has been included in the DEIR—is therefore inconsistent with CEQA. The District can not have it both ways. The District can not avoid analyzing the cumulative impact of the proposed project in the DEIR and also seek to avoid analyzing the cumulative impacts of project activities under the proposed rules. CEQA requires otherwise. Accordingly, future projects that meet the proposed risk limits should not be automatically exempted from CEQA review, and would expose the District to a legal challenge for each permit contributing to cumulative impacts. Commenters note, however, that an exemption for future projects that comply with appropriate cumulative risk limits may be acceptable.

Comment 14 concluded

VIII. Conclusion

The DEIR's failure to utilize a proper baseline, adequately evaluate potential significance and analyze mitigation and alternatives to avoid or substantially lessen these impacts violates CEQA. Further, the District's "piecemeal" approach to permitting TAC sources violates CEQA. For the reasons stated above, Commenters suggest that BAAQMD redraft and recirculate its DEIR for its failure to properly evaluate potential significance and analyze a full range of reasonable alternatives. We believe a proper definition of baseline and a thorough review of potential significant cumulative impacts and alternatives will result in a more appropriate environmental analysis of this project.

Sincerely,

Amy S. Cohen

Amy S. Cohen
Staff Attorney

Environmental Law and Justice Clinic
Golden Gate University School of Law

Attorneys for:
Environmental Justice Air Quality Coalition
Bayview Hunters Point Community Advocates
Our Children's Earth Foundation

Attachments:

Memo from Dr. Ken Kloc, Ph.D., Chemistry, MPH, to ELJC, May 20, 2005

- "Some Suggestions for Addressing Cumulative Health Impacts & the Precautionary Principle in Toxics New Source Review," March 3, 2004 (Prepared by ELJC for Commenters)

Environmental Law and Justice Clinic
Memorandum

From: Ken Kloc, Ph.D. (Chemistry), MPH
To: Amy Cohen, Staff Attorney
Date: May 20, 2005
Subject: Environmental Impact Report for BAAQMD's Proposed Air Toxics New Source Review Regulation

I have reviewed the Draft Environmental Impact Report ("EIR") for the San Francisco Bay Area Air Quality Management District's proposed project of promulgating New Source Review Regulations for stationary sources of toxic air contaminants (TACs). The EIR was prepared by the District in order to evaluate the possible environmental impacts of adopting the proposed rules. Based upon my assessment of the EIR sections that are relevant to air quality, I have concluded that the proposed project may produce significant adverse air quality impacts. My reasons are provided in the following paragraphs.

As a preliminary matter, I have assumed that the baseline environmental setting for evaluating impacts of the proposed rule is defined by the existing physical conditions in the affected area at the time that the Notice of Preparation was published. The baseline for the purposes of the air quality analysis includes current Bay Area air quality conditions and the pollutant emission inventory from stationary sources that have been permitted under the current air toxics permit policy. It also consists of the current patterns of land use and levels of industrial development.

Since the project is a set of regulations that will permit new stationary sources of TACs, the main issue to address is whether these regulations will add significantly to existing levels of air pollution and the related ambient (i.e., cumulative) health risk. Since the proposed project would allow any single project activity[1] to emit TACs up to regulatory significance levels regardless of the surrounding ambient air quality, it may produce significant impacts when used to permit new sources that have not been offset either by a regional reduction of ambient risk levels, or by the contemporaneous reductions from existing toxic sources in the locality of the new source.

Significant impacts could occur in two ways. First, the combination of ambient risk with risk due to the project activity may rise above 10 in one million cancer risk or a hazard index of one.[2] Second, the activity may add to an ambient risk that is already above the

[1] A project activity is the issuance of a permit for individual "projects" as defined in the proposed rule. The proposed rule defines a "project" as "any source or group of sources, at a facility," that fulfills certain conditions.

[2] Hazard indices are used to characterize the possibility of toxic effects from non-carcinogenic substances. When exposure to a chemical or chemicals results in a hazard index less than or equal to one, toxic effects are deemed to be unlikely, even for sensitive individuals. Hazard indices that rise above one indicate an increased potential for toxic effects, and a risk that is generally considered unacceptable.

significance criterion. In this latter case, I would argue that any additional risk due to the activity should be considered significant and subject to some form of mitigation.[3]

Regarding the offsetting of risks, the discussion presented in Section 3.1.4 of the EIR suggests that existing regulatory programs will continue to reduce the ambient risk from current air pollution sources on a regional basis. However, the EIR provides no demonstration that these programs will sufficiently offset the risk of each new source in every neighborhood, or that they will reach a level of exposure that is below the 10 in one million significance level. Information contained in the District's three most recent annual TAC reports[4] suggests that the total emissions of at least some TACs may be increasing as a result of an increase in the number of toxic sources permitted. For example, the following table shows increases in emissions of four TACs between the inventory years 2000 to 2002, and a corresponding increase in the number of plants emitting these chemicals.

Chemical	Number of Plants Emitting			Emissions (lb/year)		
	2000	*2001*	*2002*	*2000*	*2001*	*2002*
Butyl Cellosolve	459	445	462	290,000	300,000	370,000
Dichlorobenzene	34	34	35	1,500	1,400	3,400
Formaldehyde	460	502	770	200,000	210,000	210,000
Nickel	209	233	473	590	730	730

These data suggest that reductions in ambient risk due to other regulatory programs or due to the retirement of existing sources, may not completely offset the added risks of some new sources of pollution. Because the proposed project does not require that existing regulations achieve these reductions, nor does it prohibit any source being permitted which would not be offset by a corresponding reduction, the project may cause a significant risk to Bay Area communities.

Even in the case that other regulatory programs achieve substantial pollution offsets, significant impacts could still occur in particular communities. Under the proposed rules, TAC emission sources could become geographically concentrated in some neighborhoods, resulting in significant local pollution increases at the same time that average TAC levels in the District are decreasing. Geographic concentration could arise

[3] According to the District's 2004 Annual Toxics Report, the average ambient risk from air pollution in the Bay Area in 2002 was 162 per million (not including diesel particulate matter). The toxics reports do not apportion this risk into its mobile and stationary source contributions. Nonetheless, the ambient air pollution data suggests that the cancer risk due to stationary sources alone is greater than 10 in one million.

[4] See the District's most recent Annual Toxics Reports, years 2004, 2003, and 2002, (reporting on the emission inventory for years 2002, 2001, and 2000, respectively) available on the web at: (http://www.baaqmd.gov/pmt/air_toxics/annual_reports/index.asp).

from systematic causes or could also happen randomly. In either case, the proposed rule does not contain any measures that would prevent such concentration. Therefore, the proposed project could result in significant adverse health impacts even in the presence of offsets.

District inventory data for recently permitted diesel backup generators provides an example of this problem. A single building located at 200 Paul Avenue in the Bayview community of Southeast San Francisco hosts seven communications/technology companies along with their diesel backup generator systems. The following table lists the companies, their location, and the level at which their generators operate.

Co-located Diesel Backup Generators in Southeast San Francisco[5]				
Facility	**Facility Address**	**Location Coordinate (UTM E)**	**Location Coordinate (UTM N)**	**Yearly Operation (Hp-hours)**
San Francisco Wave Exchange	200 Paul Ave, &400 Bldg F, Mezz	553106	4175226	1,102,100
Qwest Communications Corporation	200 Paul Avenue	553106	4175226	148,096
RCN Telecom Services Inc	200 Paul Avenue	553106	4175226	185,000
XO Communications Inc	200 Paul Avenue	553106	4175226	45,864
Cingular Wireless	200 Paul Ave, Bldg D, Suite 100	553068	4175220	37,388
Verizon Global Networks	200 Paul Avenue	553112	4175209	29,650
Wiltel Communications	200 Paul Avenue	553112	4175209	587,000

In situations such as this, the risk emanating from a single location could be several times higher than the significance criterion of 10 in one million cancer risk (or a hazard index of one), because each company would be subject to limitations based only upon its own emissions. The proposed project will not guard against this problem because it does not contain any provisions that would prevent or mitigate such localized cumulative exposures that could occur in the future.

[5] The information presented in this table is based on the Distict's electronic database of stationary diesel engines (February 22, 2005 version).

Additional evidence of the potential for localized cumulative impacts is provided by the District's cumulative risk modeling analysis.[6] District staff recently carried out air dispersion modeling of TAC emissions for several cumulative exposure scenarios, including: (i) four gas stations at a single intersection, (ii) multiple diesel back-up generators at a location, and (iii) a gas station-dry cleaner-furniture stripper-diesel backup generator combination. The results of this modeling study indicated that cumulative exposures would be elevated above individual-source exposures at the neighborhood level for the scenarios tested. For one of the multiple-source configurations, cumulative risks were more than two times higher than single-source risks. Given that many activities under the proposed project will be permitted to emit pollution up to the significance threshold of 10 in one million cancer risk or a hazard index of one, the District's air dispersion study indicates that the proposed project could result in significant cumulative impacts by allowing multiple sources of TAC pollution to become overly concentrated in a single locality.

Finally, under the proposed project, significant cumulative impacts could arise from a permitted activity, when its TAC emissions are considered together with criteria pollutant emissions from the activity, or in combination with TACs and criteria pollutants from other sources. For example, in some regions of the District, regional ozone pollution may come close to the health-based ozone standard. Likewise, particulate matter concentrations in the Bay Area rise close to and above the health-based standards during certain times of the year, and some neighborhoods in the immediate vicinity of freeways have elevated levels of mobile source pollutants such as diesel particulate matter, butadiene, and carbon monoxide. Under the proposed rules, the District will ignore these circumstances when considering a permit for a facility. Thus, the proposed rules could allow situations where toxic emissions from the permitted activity, considered alone, are below regulatory thresholds, but exceed the thresholds when these emissions are considered in combination with pollution from other sources. Such considerations indicate that the proposed rule could result in significant adverse impacts.

In my opinion, the impacts of the proposed project could be mitigated by following the various recommendations on cumulative risk assessment and risk-reduction, previously submitted by ELJC's clients. As the District has shown, local-scale cumulative risks can be estimated for various common permit scenarios, and risks for multiple facilities at a single location (i.e., single address) can be characterized using data that is readily available to the District. Without taking these steps, increases in air pollution due to the proposed project may pose significant cancer and non-cancer health impacts to Bay Area communities, and especially to sensitive individuals and subpopulations.

[6] *See* "Scenario-Based Cumulative Impact Assessment," Toxics Evaluation Section, BAAQMD, March 2003.

BAAQMD Staff & APCO Meeting—March 3, 2004

Some Suggestions for Addressing Cumulative Health Impacts & the Precautionary Principle in Toxics New Source Review (prepared by ELJC)

Precautionary Principle

1 Lower overall risk levels as a precautionary measure to address cumulative health risks from multiple sources.
   a. Lower "acceptable" cancer risks at least ten-fold.
   b. Acute & chronic hazard indices ("HIs") should not exceed 1.0; HIs greater than 1.0 erode the margin of safety that is intended to protect sensitive sub-populations.
   c. If exercising discretionary permitting authority, specifically define factors to ensure that precaution is applied in favor of health protection.

2 Use both the chronic & acute HIs as a trigger for the best available control technology (TBACT) requirement. (Note: the draft proposed Toxics NSR rules use only the chronic HI as a TBACT trigger.)

3 Calculate and consider total community air pollution risks when permitting new sources; require mitigation or risk reduction measures such as facility-wide offsets for existing facility sources (e.g., 2-for-1 risk offsets).

4 Consider the additive toxic effects of priority pollutants when considering the risks due to TACs at a facility, i.e., calculate total health risk from the facility.

5 Explore options for requiring use of less toxic compounds and technologies, particularly for common high-risk sources (e.g., diesel backup generators); consider creating incentives for transitions to less-toxic alternatives.

6. Resolve scientific uncertainty in favor of health protection rather than in favor of permit applicant.

7. Facilitate public's right to know about TAC emissions and related health risks by making emissions data and health risk maps web-accessible; identify non-cancer health risks evaluated in acute & chronic HIs.

8. Provide for meaningful public participation in rulemaking and permitting procedures.

9 Eliminate the proposed CEQA exemption from Toxics NSR evaluation and permitting.

Cumulative Health Risks

Collaborate with CARB to collect and analyze data regarding cumulative health risks; identify options for evaluating and limiting cumulative risks from multiple sources of air pollution.

2 Conduct comprehensive pilot programs to evaluate cumulative health impacts in two Bay Area neighborhoods; site areas should be selected and programs implemented with extensive community input

3 Conduct case-by-case cumulative health risk assessment for each proposed project; include risk from all TAC emissions in affected area.

4 Use the South Coast AQMD approach to locate and identify cumulative air risk "hotspots"—i.e., modeling cumulative air exposure and risk in 1 square kilometer parcels.

5. Conduct more extensive modeling of hypothetical but realistic cumulative exposure situations. (The District's limited studies indicate that multiple source scenarios may present risks twice as high as single-source risks.)

6. Consider the aggregate air risk due to TACs and criteria pollutants, from both point & mobile sources.
    a. For example, particulate matter (PM), NOx, SOx, and ozone should be considered together with other TACs when evaluating the risk of asthma in exposed populations.
    b. Require permit applicants to pay for monitoring if none exists.

7. Convert gasoline-dispensing facilities (GDFs) from area source to point source category for District emissions inventory; collect throughput data to estimate risk from these and other common high-risk sources.

8. Develop and implement new programs, goals and rules to address and limit cumulative health impacts; develop more stringent criteria for permitting in areas with disproportionately high health risks.

9. Raise and/or allocate funds to conduct cumulative health risk program; increase permit fees to conduct cumulative risk assessment; increase penalties for violations to help support program.

RESPONSE TO COMMENT
ENVIRONMENT LAW AND JUSTICE CLINIC
May 20, 1005

General Response

The "project" to be analyzed pursuant to CEQA is the adoption of a District rule that would apply to the construction or modification of a source of toxic air contaminants (TACs) and would limit emissions of TACs. The proposed rule would replace existing rules and policy and procedure documents that govern the District's toxics new source review (NSR) program, which has been in place since 1987. The existing regulatory structure would be consolidated in, and made more stringent by, the proposed rule.

Though the District has legal authority to control TAC emissions, it has no legal obligation under federal or state law to maintain a toxics NSR program. Using as a model the criteria pollutants NSR program required under both federal and state law, the District adopted the toxics NSR program on its own initiative in order to better control TAC emissions from new and modified sources.

Stationary sources subject to the proposed rule include a vast array of facilities, from large industrial plants such as oil refineries and power plants to ubiquitous smaller facilities such as gas stations, auto repair shops, dry cleaners, and painting operations. The location and nature of future modifications to existing facilities and future construction of new facilities cannot be known. Unlike a general plan, the rule does not direct development in any way. The modification and construction activities subject to the rule are, with few exceptions, carried out by private entities subject to the local land use authority of cities and counties. The District has no land use authority whatsoever, and the District is rarely the lead agency under CEQA for these future activities. (*See* CEQA Guidelines § 15051.)

The ELJC comments fundamentally mischaracterize this project by redefining it to include the rule *and all future construction and modification activities subject to the rule*. According to ELJC, "[t]he project includes issuance of permits for new and modified TAC sources." (Comment Letter p. 2.). In discussing CEQA thresholds, ELJC states that the District "avoids analysis of the cumulative impact of permit decisions made over the life of the project." (Comment Letter p. 3.) In discussing significance criteria, ELJC states that "[b]ecause the project is a rulemaking for the District's Air Toxics NSR program, it includes permit decisions under the proposed rules." (Comment Letter p. 4.) Through this redefinition of the project, ELJC ascribes to the District's rule effects that the rule does not cause and that the rule, instead, would mitigate. Only by redefinition of the project in this manner can ELJC claim the proposed rule has adverse impacts.

The project definition used by ELJC is improper under CEQA. The project that will come before the Air District Board of Directors and for which the DEIR has been prepared is the adoption of a rule pursuant to the District's powers under Health and

Safety Code sections 40000, 40001, and 40702. No action on any permit issuance of facility modification or construction is proposed or associated with rule adoption.

It may be that ELJC is not suggesting that future construction or modification activities are part of the project, despite ELJC's language to the contrary, but is suggesting, instead, that these activities are reasonably foreseeable consequences of the rule project. But these activities are not caused by, or consequences of, rule adoption. These activities arise from the independent actions of economic actors who open businesses or install or modify equipment or operations. These activities will occur regardless of whether the District has a toxics NSR program or adopts a rule for the program. The District project does not dictate the nature or location of economic activity in any way and is quite different from the projects in the CEQA cases cited by ELJC, which involve decisions by cities and counties that direct economic activity and directly or indirectly cause foreseeable impacts. In contrast, the toxics NSR program acts as a restriction on construction and modification activities rather than as an impetus to them. There is simply no causal link between the proposed rule and effects attributable to the independent activities regulated by the rule. Rather than cause the effects, the District rule will ameliorate them.

The proposed toxics NSR rule imposes restrictions on TAC emissions through the mechanism of a permit that acts as a rule applicable only to a specific source or facility for which the permit is issued. Without the proposed toxics NSR rule or the existing toxics NSR program, air district permits would not be issued for these sources. Issuance of *some* permits is therefore a reasonably foreseeable consequence of the rule. However, permit issuance does not cause activities that have environmental impacts; it limits them through the imposition of TAC control requirements. In the absence of the existing toxics NSR program or the proposed rule, the impacts would occur, unrestricted by limits on risk imposed through the toxics NSR program.

Even if we assume that ELJC is suggesting, despite the lack of logical support, that a toxics NSR permit somehow causes the activities that produce impacts, these impacts are not foreseeable. This is because the District has no way to determine where or when or how construction or modification activities will take place and therefore no way to know which permits of what type will be issued. So, although it may be foreseeable that permits will be issued, the impacts associated with any future construction or modification are not foreseeable. Assessing the likely impacts would be an exercise in pure speculation. The District's project therefore differs from actions by cities and counties to adopt or modify general plans or zoning requirements or issue authorizations for future development. For such activities, the location and nature of impacts are foreseeable and can be analyzed in connection with the planning or zoning action rather than later in connection with the issuance of individual building permits.

The impacts related to construction or modification subject to the toxics NSR program can only be determined at the time the activity is proposed, and the location and nature of a project is known. Issuance of a District permit for this construction or modification would be, for purposes of CEQA analysis, a separate project, distinct from the adoption

of a rule that authorizes such permits. Once construction or modification is proposed, analysis of impacts from a project involves no speculation. The design of the facility, the types of equipment, and the manner of operation can be known with great specificity, and impacts from TAC emissions can be fully analyzed. None of this analysis can happen in connection with rule adoption.

Even if we assume that it is possible to foresee the impacts of future construction and modification activities at the time of rule adoption, despite the lack of any logical support for such a notion, ELJC has provided no evidence to show that the impacts would be a significant increase in TAC emissions or risk, either regionally or locally. Through the imposition of controls on new sources, the toxics NSR program is designed to prevent significant increases in risk. At the same time, other mechanisms, briefly mentioned in the DEIR (pp. 1-4 and 2-2), act to reduce overall risk. One mechanism is that many new sources displace economic activity occurring elsewhere. For example, a new facility will often take business from an older facility, producing a net reduction in TAC emissions attributable to the less-polluting equipment operated by the new facility. Another mechanism is the reduction in TAC emissions that occurs at existing facilities when older sources are modified or replaced, and requirements for updated control equipment are imposed. It is difficult to quantify the emission reductions attributable to these mechanisms because a variety of other programs, operating in concert with the toxics NSR program, also produce emission reductions. The clearest evidence that overall TAC emission reductions are occurring is found in the data presented each year in the District's Toxic Air Contaminant Control Program Annual Report. The DEIR notes that the latest report shows that 2002 average inhalation cancer risk in the Bay Area was 162 in one million, based on measurements of TACs thought to be the primary contributors to risk and excluding risk from diesel particulate, which currently cannot be measured. This risk is 46% percent lower than it was in 1995. (DEIR p. 3-19.) The table below illustrates this general decline in the risk from measured TACs.

Cancer Risk Due to Average Ambient Concentrations of Toxic Air Contaminants Measured in the Bay Area

Year	Cancer Risk[1]
2003	143
2002	162
2001	173
2000	167
1999	186
1998	199
1997	194
1996	212
1995	303

[1] From Table 4 of Toxic Air Contaminant Program Annual Report for each year except 2003. For 2003, the Annual Report has not been prepared, and risk was calculated using the methodology used in the Annual Reports. Cancer risk is the risk associated with exposure to average ambient (outdoor) toxic air contaminant (TAC) levels measured at a number of sites in the Bay Area, assuming 70-year continuous exposure. For further description of assumptions and methodology for each year other than 2003, see Table 4 and footnotes to Table 4 in the Annual Report for each year.

With the addition of diesel particulate risks, average 2002 Bay Area inhalation cancer lifetime risk is approximately 600 in one million. (*See Toxic Air Contaminant Control Program Annual Report 2002*, Vol. 1, pp. 3, 13, 25.) The lifetime risk of cancer is approximately 450,000 in one million for men and 380,000 in one million for women. (*See* National Cancer Institute, *SEER Cancer Statistics Review, 1975-2002* (based on November 2004 SEER data submission, posted to the SEER web site 2005) <http://seer.cancer.gov/csr/1975_2002/>, Table I-14.)

ELJC claims that the rule may produce significant environmental effects through a geographic concentration of risk, either when multiple new sources are located in the same area or a new source is located in an area where there are existing sources of TACs. Assuming that the toxics NSR rule somehow causes this concentration, ELJC presents no substantial evidence of a significant effect. The risk criteria for the rule are project-based, extremely conservative, and set at a level that allows co-location of new sources or location of a new source near existing sources. The project risk criteria are not measures of significance for multiple aggregated sources. As a result, the risk from multiple projects taken together may not be said to be a significant effect simply because the risk exceeds the risk of 10 in one million allowed for a single project. The District has modeled a number of worst-case scenarios involving geographic concentration of sources, and, though the highest risk scenario (involving gas stations located on all four corners of an intersection) was found to slightly exceed 20 in one million, such a level of risk is not much above the 10 in one million single project risk and is a small fraction of the current average Bay Area inhalation risk of 600 in one million. (*See Scenario-Based Cumulative Impact Assessment*, BAAQMD Toxics Evaluation Section, March 2003; *see also* BAAQMD Draft Staff Report (April 2003) at 42.) In addition, any incremental localized risk increases of this magnitude are likely to be outweighed by the documented general decline in ambient risk noted above.

In a more general way, ELJC's repeated assertions that the rule will not benefit public health simply defy common sense. All of the situations that, according to ELJC, involve adverse impacts of the rule would occur in the absence of the rule. Without the rule, construction or modification activity would legally occur unrestricted by the limitations on risk imposed through the toxics NSR program.

Response 1

While it is true that the final regulatory text was not available on the District website until 10 days prior to the DEIR public comment deadline of May 23, 2005, the final regulatory text made only minor clarifying changes to draft text. The draft text was made available on the District website on March 16, 2005 and was continuously available for over two months prior to the close of the 30-day DEIR public comment period. Notices posted on the District website directed those interested in the DEIR and the project to the draft text. The final regulatory text (1) clarified rule applicability by removing applicability language from the definitions of "new source" and "modified source" and adding it to new Section 2-5-112, (2) clarified the definition of "worker receptor," (3) modified

Section 2-5-501 to say that monitoring imposed by the APCO would have to be "reasonable" monitoring, and (4) clarified that the decision to grant or deny an authority to construct is to be based on consideration of all rules in effect. The minor changes made between draft and final regulatory text do not affect in any way any aspect of the environmental analysis contained in the DEIR.

In addition to making the text available well before the DEIR comment period began, the District conducted significant outreach to explain the project. On April 8, 2005, the District conducted a public workshop to discuss the project and the draft regulatory text. On March 17, 2005, the District e-mailed notice of the workshop to ELJC. The e-mail indicated that the draft regulatory language was available on the District website and provided a link to the site. The draft regulatory text was also made available at the workshop, which was attended by ELJC. In addition, on April 12, 2005, District staff visited the ELJC office to discuss the regulatory language.

ELJC complains that the District's staff report for the project was not available during the DEIR comment period. District staff reports for rule development projects are generally not completed until about a week before a public hearing, although draft reports are often made available earlier. The staff report for the project was not completed by the time the DEIR comment period ended on May 23, 2005. However, an April 2003 draft staff report for the project has been continuously available on the District website since May 2003. The final staff report for the current proposal will be a revision of the April 2003 staff report. ELJC cites the April 2003 staff report in its comments (*see* Comment Letter p. 12). While the April 2003 staff report does not address the changes that have been incorporated into the current version of the project for which the DEIR was prepared, regulatory language showing these changes was made available at the April 8, 2005 workshop and has been continuously available on the District website since March 16, 2005.

Response 2

This section of the DEIR has been modified to include a brief discussion of issues raised by ELJC.

Response 3

ELJC asserts that the DEIR is inadequate because it fails to characterize the nature or extent of existing non-cancer risks. However, there is insufficient data presently available to the District that would allow it to characterize "non-cancer risks" from exposure to TACs in the existing environment.

ELJC asserts that the DEIR is inadequate because it fails to include specific information about stationary sources and their associated health risk levels. The health risk associated with any particular source is unique to that source and is determined through a risk analysis that takes into account the type and quantity of emissions, the location of emission points relative to receptors, prevailing winds, and a host of other factors. These

health risks cannot be described specifically except with regard to a particular project. Description of risks in the DEIR for rule adoption would involve pure speculation about the nature and location of future activities. Estimates of annual emissions of TACs for hundreds of existing facilities throughout the Bay Area are included in the Toxic Air Contaminant Annual Report cited on p. 3-17 of the DEIR and by ELJC in its comments. However, this annual emissions information alone is insufficient to characterize facility risks.

ELJC asserts that the DEIR is inadequate because it fails to include information about alleged toxic "hot spots." There is limited data presently available to the District regarding the spatial distribution of risks attributable to TACs in ambient air. The available data from District monitors is presented in the DEIR on p. 3-18. The data from the Richmond, San Francisco (Arkansas Street), and West Oakland monitors show ambient concentrations for the measured TACs that are similar to those for other monitoring stations in the Bay Area. Thus the available data do not suggest the existence of particular "hot spots." Through a new Community Air Risk Evaluation program, the District has undertaken an effort that may help determine whether there are toxic "hot spots" in the Bay Area, but that effort is just beginning.

Even if more of the information that ELJC asserts should be included in the setting description were available, this information would not contribute to the analysis of the impacts of future construction and modification that ELJC says are part of the project because the impacts of future activities are unknown and are unavailable for comparison with data regarding current environmental conditions.

Response 4

ELJC claims that in not establishing significance criteria for evaluating the project – defined by ELJC as all permit decisions made over the life of the project (i.e., all future unknown projects taken together) – the District avoids analysis of cumulative impacts and engages in piecemealing. ELJC's improper redefinition of the project is discussed in the District's General Response to the ELJC comments. Even if the ELJC project description were proper, establishing cumulative impact significance criteria would amount to determining what level of overall risk from TACs in ambient air is acceptable. Not enough is known about overall risk to begin this project nor is there any accepted methodology to apply. Even if such criteria could be established, the impacts of future projects cannot be known, and as a consequence, cumulative impacts cannot be determined for comparison against cumulative impact significance criteria. The ELJC comment appears to assume that impacts are additive and that future projects inevitably increase overall risk. This is not the case. Impacts are not additive, and, in general, risk is reduced over time by construction and modification because, newer, cleaner sources replace older, dirtier sources (see General Response). The approach embodied in both the proposed rule and the existing program is to ensure that new sources pose as little risk as is possible, thereby achieving the greatest reductions in risk over time.

Response 5

ELJC claims that the DEIR relies on the wrong baseline for its analysis of environmental impacts. ELJC states that the baseline must be the environment as it stands at the time that environmental analysis commences and, further, that the baseline may not include the existing toxics NSR program. As a result, ELJC would have the District analyze the impacts of the proposed project, defined by ELJC to include all future construction and modification subject to the rule, against the existing environment. But this cannot be done because the nature and location of these future activities are not foreseeable, as discussed in the District's General Response.

Based on its conclusions about how the analysis should be done, ELJC questions the DEIR's conclusion that the project will produce benefits to public health. According to ELJC, the project could only have benefits if (1) the comparison is to the existing policy, which ELJC argues is an incorrect comparison, or (2) there are no new TAC emissions and no new TAC exposures, which ELJC says is inconsistent with its expansive view of the project. But even if the project were to include all future construction and modification, ELJC fails to recognize that overall TAC emissions can decline even as new sources are added. Declines occur because cleaner new and modified sources replace dirtier, older sources and because any new exposures to TACs are limited to insignificance through the restrictions on risk imposed by the toxics NSR program. The available evidence suggests that such declines are exactly what is happening in the Bay Area.

ELJC cites several CEQA cases involving land use decisions for a general proposition that the baseline for comparison must be the existing environment rather than a future degraded environment that might result under existing land use designations. It is unclear whether these land use cases are apposite. The existing land use policies in the cases provided for future degradation of an existing environment, and the proposed revisions of those policies provided for different or less, but nevertheless some, degradation of an existing environment. In all of the cases, the land use policy was a prerequisite to the development that would degrade the environment. However, the toxics NSR rule, or any environmentally protective rule, generally provides for a less-degraded future environment than the one that would result if the rule did not exist. In the absence of the toxics NSR rule, construction and modification can occur unrestricted by the rule.

Assuming, however, that the planning and land use cases apply, ELJC fails to note a First District case, *Black Property Owners Association v. City of Berkeley* (1st. Dist. 1994) 22 Cal.App.4th 974, in which the court held that, when a city adopts an updated housing element, the project for CEQA purposes does not include preexisting policies that are adopted without change, even where the prior policies were not subjected to CEQA review. Consistent with the holding in this case, the District analyzed the impacts of proposed changes to the existing toxics NSR program embodied in the proposed new rules. The existing program, which has been in place for 18 years, is partially found in rules and partially in guidance. The rules mandating the program have been repeatedly reviewed under CEQA, though the program has never been analyzed in an EIR.

A fundamental purpose of CEQA is to inform responsible officials and the public about the environmental impacts of proposed actions. The analysis suggested by ELJC would not serve that purpose. Unlike land use policies that provide for a less-pristine future environment, the existing toxics NSR program provides for a better future environment than the one that would otherwise exist. To assume away the existing program would simply overstate future benefits of the proposed project.

Response 6

As discussed in the District's General Response, ELJC improperly redefines the rule project to include all future construction or modification activities that will be subject to the rule. It can then claim that all emissions associated with these activities are cumulative impacts of the toxics NSR rule. Because the District did not analyze all of these impacts, which neither ELJC nor the District can possibly identify, ELJC deems the District's analysis of cumulative air quality impacts inadequate. ELJC cites *Whitman v. Board of Supervisors* (2d Dist. 1979) 88 Cal.App.3d 397, for the proposition that a cumulative impacts analysis must include a list of related projects, a summary of the impacts of those projects, and a reasonable analysis of the cumulative impacts of the projects. As discussed in the General Response, such analysis would be an exercise in pure speculation. What is clear, however, is that, in the absence of the proposed rule, impacts would be worse because construction and modification would not be subject to restrictions on TAC emissions. In addition, substantial evidence supports a conclusion that, over the years in which the toxics NSR program has been in effect, ambient risks from TACs have declined.

ELJC objects to the DEIR's conclusion that there will be no significant adverse cumulative air quality impacts on the grounds that the analysis fails to address adverse impacts that ELJC attributes to the project: new TAC emissions, localized concentrations of toxics, the possibility of extreme-case scenarios like those modeled by the District, and impacts of TACs together with criteria pollutants. None of these "impacts" is a consequence of rule adoption as discussed in the District's General Response. Even if the purported impacts are somehow caused by the rule, ELJC provides no evidence showing that the impacts are significant. It is clear, however, that all involve issues that ELJC appears to believe should be addressed by the rule. But the failure of a rule to reach some desired level of stringency does not turn such a “shortfall” into an adverse impact for CEQA purposes.

Response 7

ELJC asserts that the cumulative impact of emissions from new sources of TACs must be considered in the DEIR and that the failure to address them is an improper "piecemeal" approach. In support of this argument, ELJC shows that there are many sources of TACs in the District and suggests that new sources may add to risk. While this is undoubtedly true, this impact, if it is significant, is not an impact of the rule, as discussed in the General Response. An increase in the emissions of a particular TAC or of all TACs

taken together is also not an impact of the rule. Because these are impacts of activities regulated by the rule rather than impacts of the rule, it would be improper and misleading for the DEIR to address them as cumulative impacts. Even if these emissions are somehow properly attributable to the proposed rule, ELJC has not provided substantial evidence of significant impacts, as discussed in the General Response.

Response 8

ELJC claims that the DEIR analysis of cumulative air quality impacts must address localized concentrations of TACs that result from the rule. As evidence that there are such localized concentrations, ELJC cites the opinion of Dr. Ken Kloc, an ELJC staff member, that the issuance of permits to seven companies, each operating one or more diesel backup engines at the same street address on Paul Avenue in San Francisco, results in a significant cumulative impact. Again, as discussed in the General Response, this purported impact is not the result of the toxics NSR program. In the absence of the program, this activity would still occur. It may be true that the program does not prohibit such co-location, but it does not cause it. In any case, Dr. Kloc's analysis improperly uses the 10 in one million single project risk limit as a measure of significant cumulative impacts from multiple projects. The engines cannot be said to cause a significant impact based on total risk exceeding the threshold for a single project. The project risk limits are set at stringent levels that allow co-location without causing significant impacts. The risk for 22 engines subject to toxics NSR review at the San Francisco location, taken together, has been calculated by the District to be 6 in one million for the maximally-exposed residential receptor and 20 in one million for the maximally-exposed worker receptor. (*Risk from Diesel Engines Subject to Toxics NSR at 200 Paul Avenue*, BAAQMD Toxic Evaluation Section, June 3, 2005.) Though this risk exceeds the single project risk limit of 10 in one million, it is well below the 2002 average ambient risk of 600 in one million, and is likely, as noted in the General Response, to be outweighed by general declines in risk from ambient air. In addition, the City of San Francisco, the lead agency for activities at Paul Avenue, conducted a cumulative risk review of engines at this location, concluded that there would be no significant adverse impacts, and adopted a CEQA negative declaration for the project.

Response 9

As further evidence that localized concentrations are a significant impact of the rule, ELJC cites the extreme-case scenarios developed by the District. However, as noted in the General Response, the impacts attributable to these hypothetical situations are not rule impacts and, even if they were, are not considered significant.

Response 10

TAC emissions and criteria pollutant emissions are not caused by this project, as discussed in the General Response. Even if these emissions are somehow properly attributable to the proposed rule, ELJC has not provided substantial evidence of significant impacts, as discussed in the General Response.

Response 11

Based on its argument that the project has significant impacts not discussed in the DEIR, ELJC argues that the failure to discuss mitigation measures for these alleged impacts violates CEQA. As discussed in the General Response and throughout the District responses, the impacts ELJC attributes to the project are not project impacts. As a result, no discussion of mitigation measures, beyond that included in the DEIR, is necessary.

Response 12

CEQA requires a discussion of *feasible* alternatives. The District has identified and discussed feasible alternatives.

The DEIR rejects "cumulative risk assessment" as infeasible, noting that no methodology exists to establish cumulative risk thresholds or to perform cumulative risk analysis. The DEIR then notes that cumulative risk assessment, were it possible, could increase permit costs. ELJC argues that the District has rejected cumulative risk assessment because of cost. This utterly mischaracterizes the statements in the DEIR. Cumulative risk assessment was rejected because it is, at present, not feasible, not because it is costly. No analytical tools exist and the extensive databases that would be necessary do not exist. No element of such an approach, such as analyzing the cumulative impacts of all sources at a single facility, can be carried out without thresholds of significance for cumulative risk.

The DEIR rejects the "precautionary principle" as the basis for risk analysis because it is a very general statement of principle. It provides no trigger for action, and there are no tools available that would allow its use in assessing risk and implementing a toxics NSR program.

Response 13

The alternatives analysis in the DEIR properly analyzes alternatives that might reduce identified impacts. ELJC claims that the DEIR has not addressed impacts that it believes are caused by the project and therefore argues that the alternatives analysis is inadequate in failing to discuss how alternatives could reduce these impacts. As discussed in the General Response and throughout the District responses, the impacts that ELJC attributes to the project are not project impacts. As a result, no analysis of alternatives to reduce these impacts is necessary. As noted in Response 12, none of the ELJC-favored alternatives is feasible.

ELJC also argues that the alternatives analysis relies upon an improper baseline and therefore understates the benefits of alternatives. As discussed in Response 5, the baseline used in the DEIR is proper.

Response 14

ELJC argues that, because compliance with thresholds of significance does not conclusively establish that impacts are not significant, compliance of a future project with project-based thresholds (e.g., 10 in one million) does not rule out significant effects from the project. ELJC then argues that, because the District rule would treat projects that meet the risk limits as ministerial projects, the rule would avoid consideration of evidence of significant cumulative impacts.

If the baseline for this project is, as ELJC argues, the environment without any existing toxics NSR program and, therefore, without any requirement for a toxics NSR permit, then imposing a requirement for a permit through which TAC emissions are restricted would represent an environmental benefit, regardless of whether the action is deemed ministerial. If the baseline for the rule making project is the existing toxics NSR program, which treats projects that comply with project risk limits as ministerial, the proposed rule is more stringent and would also produce benefits. In either case, this treatment of projects that comply with project risk limits as ministerial does not represent an adverse impact of the proposed project, but a policy choice.

Because the project risk limit is also the CEQA threshold of significance, a project meeting the project risk limit cannot be said to cause significant effects. The project risk limits are extremely conservative and are intended to allow for siting in urban areas with existing sources.

In the future, with the development of cumulative impact thresholds and methodologies, a project meeting current project-based risk criteria might be found to exceed cumulative risk criteria. With these developments, it would make sense for the District to adopt thresholds of significance based on cumulative risk. Until the tools are available, however, it cannot be fairly said that the District's proposed use of ministerial exemptions is intended to avoid analysis of cumulative impacts.