

**Initial Study/Negative Declaration for the  
Amendments to Bay Area Air Quality  
Management District Regulation 8, Rule 8**

*Prepared for:*

Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, CA 94109  
Contact: Dan Belik  
(415) 749-4786

*Prepared By:*

Environmental Audit, Inc.  
1000-A Ortega Way  
Placentia, CA 92870  
Contact: Debra Bright Stevens  
(714) 632-8521

May 2004

## Chapter 1

Introduction.....	1-1
Purpose of This Document.....	1-1
Scope of This Document.....	1-1
Impact Terminology.....	1-2
Organization of This Document.....	1-2

## Chapter 2

Description of the Proposed Rule .....	2-1
Background.....	2-1
Objectives .....	2-2
Affected Area.....	2-2

## Chapter 3

Environmental Checklist.....	3-1
Environmental Checklist Form .....	3-1
Environmental Factors Potentially Affected.....	3-2
Determination .....	3-2
I. Aesthetics.....	3-3
Setting.....	3-3
Regulatory Background .....	3-3
Discussion of Impacts.....	3-3
II. Agriculture Resources.....	3-4
Setting.....	3-4
Regulatory Background .....	3-4
Discussion of Impacts.....	3-5
III. Air Quality .....	3-5
Setting.....	3-6
Regulatory Background .....	3-12
Discussion of Impacts.....	3-14
IV. Biological Resources .....	3-17
Setting.....	3-18
Regulatory Background.....	3-18
Discussion of Impacts .....	3-18
V. Cultural Resources.....	3-19
Setting.....	3-19
Regulatory Background.....	3-20
Discussion of Impacts .....	3-20
VI. Geology and Soils.....	3-21
Setting.....	3-21
Regulatory Background.....	3-22
Discussion of Impacts .....	3-23
VII. Hazard and Hazardous Materials .....	3-24
Setting.....	3-25
Regulatory Background .....	3-26
Discussion of Impacts.....	3-27

VIII. Hydrology and Water Quality.....	3-29
Setting.....	3-30
Regulatory Background.....	3-30
Discussion of Impacts.....	3-31
IX. Land Use and Planning.....	3-32
Setting.....	3-32
Regulatory Background.....	3-32
Discussion of Impacts.....	3-32
X. Mineral Resources.....	3-33
Setting.....	3-33
Regulatory Background.....	3-33
Discussion of Impacts.....	3-33
XI. Noise.....	3-34
Setting.....	3-34
Regulatory Background.....	3-35
Discussion of Impacts.....	3-35
XII. Population and Housing.....	3-36
Setting.....	3-36
Regulatory Background.....	3-36
Discussion of Impacts.....	3-36
XIII. Public Services.....	3-37
Setting.....	3-37
Regulatory Background.....	3-37
Discussion of Impacts.....	3-38
XIV. Recreation.....	3-38
Setting.....	3-38
Regulatory Background.....	3-38
Discussion of Impacts.....	3-39
XV. Transportation/Traffic.....	3-39
Setting.....	3-40
Regulatory Background.....	3-40
Discussion of Impacts.....	3-41
XVI. Utilities/Service Systems.....	3-42
Setting.....	3-42
Regulatory Background.....	3-43
Discussion of Impacts.....	3-43
XVII. Mandatory Findings of Significance.....	3-44
Discussion of Impacts.....	3-44

#### **Chapter 4**

References.....	4-1
-----------------	-----

#### **FIGURES:**

Figure 1 – Location of Refineries.....	2-4
--	-----

**TABLES:**

Table 3-1	Federal and State Ambient Air Quality Standards .....	3-9
Table 3-2	Bay Area Air Pollution Summary 2002.....	3-10
Table 3-3	Ten-Year Bay Area Air Quality Summary .....	3-11
Table 3-4	Concentrations of Toxic Air Contaminants in the Bay Area .....	3-12
Table 3-5	Estimated Inventories of Various Components Subject To Rule 8-18 at the Bay Area Refineries.....	3-15
Table 3-6	Estimated Emissions Inventories for All Fugitives Components .....	3-15

## **CHAPTER 1**

### **Introduction**

#### **Purpose of this Document**

This Initial Study/Negative Declaration (IS/ND) assesses the environmental impacts of the proposed adoption of amendments to Regulation 8, Rule 8, by the Bay Area Air Quality Management District (BAAQMD or District) as required by the California Environmental Quality Act (CEQA) and in compliance with the state CEQA Guidelines (Title 14 California Code of Regulations §§1400 et seq.). An IS/ND serves as an informational document to be used in the decision-making process for a public agency that intends to carry out a project; it does not recommend approval or denial of the project analyzed in the document. The BAAQMD is the lead agency under CEQA and must consider the impacts of the proposed rule amendments when determining whether to adopt them. The BAAQMD has prepared this IS/ND because no significant adverse impacts would result from the proposed rule amendments.

#### **Scope of this Document**

This document evaluates the potential impacts of the proposed amendments on the following resource areas:

- aesthetics,
- agricultural resources,
- air quality,
- biological resources,
- cultural resources,
- geology and soils,
- hazards and hazardous materials
- hydrology and water quality,
- land use planning,
- mineral resources,
- noise,
- population and housing,

- public services,
- recreation,
- transportation/traffic, and
- utilities and service systems.

### **Impact Terminology**

The following terminology is used in this IS/ND to describe the levels of significance of impacts that would result from the proposed rule amendments:

- An impact is considered *beneficial* when the analysis concludes that the project would have a positive effect on a particular resource.
- A conclusion of *no impact* is appropriate when the analysis concludes that there would be no impact on a particular resource from the proposed project.
- An impact is considered *less than significant* if the analysis concludes that an impact on a particular resource topic would not be significant (i.e., would not exceed certain criteria or guidelines established by BAAQMD). Impacts are frequently considered less than significant when the changes are minor relative to the size of the available resource base or would not change an existing resource.
- An impact is considered *less than significant with mitigation incorporated* if the analysis concludes that an impact on a particular resource topic would be significant (i.e., would exceed certain criteria or guidelines established by BAAQMD), but would be reduced to a less than significant level through the implementation of mitigation measures.

### **Organization of This Document**

The content and format of this document, described below, are designed to meet the requirements of CEQA.

- Chapter 1, “Introduction,” identifies the purpose, scope, and terminology of the document.
- Chapter 2, “Description of the Proposed Rule,” provides background information of Regulation 8, Rule 8, describes the proposed rule amendments, and describes the area and facilities that would be affected by the amendments.
- Chapter 3, “Environmental Checklist,” presents the checklist responses for each resource topic. This chapter includes a brief setting description for

each resource area and identifies the impact of the proposed rule amendments on the resources topics listed in the checklist.

- Chapter 4, “References Cited,” identifies all printed references and personal communications cited in this report.

## CHAPTER 2

# Description of the Proposed Rule

### Background

Bay Area 2001 Ozone Plan Control Further Study Measure FS-9, was an examination of the volatile organic compound emissions from refinery wastewater components and the potential to control them. The proposed amendments to Bay Area Air Quality Management District Regulation 8, Rule 8: Wastewater (oil-water) Separators result from that study. They propose more stringent controls on wastewater collection systems at petroleum refineries in the Bay Area. Currently, Regulation 8, Rule 8 controls emissions from the wastewater system. It limits organic emissions from oil/water separators and dissolved air flotation units at refinery, chemical and other plants. It also limits emissions from sludge de-watering and slop oil vessels.

The Technical Assessment Document (TAD), prepared by District and CARB staff, deals exclusively with emissions from the collection portion of the wastewater system. The majority of emissions from this portion of the system are generated through volatilization or air entrainment. Several technologies are available to control these emissions. They can be largely grouped into two categories, pollution prevention and emissions controls. Pollution prevention strategies can reduce emissions at their source by changes in operation, while emission controls are designed to reduce emissions after volatile organic compounds (VOC) containing materials have entered the wastewater system.

VOC emissions from wastewater collection systems can be controlled in a variety of ways including enclosing or controlling all openings to the atmosphere, changing the operation of the units that are feeding the wastewater collection system, having a rigid inspection and maintenance (I&M) program or using a combination of controls.

Equipment control strategies can require the installation of new equipment or devices, or can include physical changes to the wastewater system. Potential equipment control strategies applicable for refinery wastewater systems can include a number of different components. Examples of emissions controls are gasketed or sealed collection system components, water sealed collection system components, activated carbon scrubbers, water impingement scrubbers, vacuum stripping columns and thermal oxidizers.

In analyzing the best method for achieving the maximum emissions reduction from these systems allowing for the greatest flexibility for the affected facilities, the BAAQMD staff recommends a combination of emissions controls, a performance based standard (500 ppm) and a mandated I&M program. The use of one or more of these techniques can result in the reduction of emissions from the wastewater transportation system. Currently, the only District standard that deals with wastewater is Regulation 8, Rule 8. This standard mandates gasket-sealed covers for both oil/water separators and DAF units. To get the emissions reductions desired, Regulation 8, Rule 8 will be modified to include:



- A 500 ppm leak standard measured with an Organic Vapor Analyzer (OVA) for all wastewater collection components;
- Control equipment mandate for leaking components; and
- An inspection and maintenance program for wastewater components under regulation.

### **Objectives**

The objectives of the proposed rule amendments are to implement recommendations from the TAD, to reduce emissions of ozone forming compounds (e.g., VOCs), and achieve compliance with state and federal ozone standards.

The U.S. Environmental Protection Agency (U.S. EPA) has set primary national ambient air quality standards for ozone and other air pollutants to define the levels considered safe for human health. CARB has also set a California ozone standard. The federal and state standards are 12 and 9 parts per hundred million (pphm), respectively. The BAAQMD is seeking re-designation to attainment for the federal 1-hour standard for ozone and as a non-attainment area for the state 1-hour standard. Under the requirements of the federal Clean Air Act (CAA), non-attainment areas must prepare ozone attainment demonstrations showing how they will attain the federal standard. The most recent federal attainment demonstration is the Bay Area 2001 Ozone Attainment Plan. Similarly, the California Clean Air Act of 1988 requires areas that do not comply with the standard to prepare ozone attainment plans. The most recent state plan is the Bay Area 2000 Clean Air Plan.

Both federal and state plans include measures to reduce emissions of the pollutants that form ozone. These measures may be already adopted rules or proposal to adopt new regulations or amendments to existing regulations.

### **Affected Area**

The proposed rule amendments would apply to refineries under BAAQMD jurisdiction, which 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 (approximately 5,600 square miles). 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.

The refineries affected by the proposed rule amendments are located within existing refineries located in Contra Costa County and Solano County (see Figure 1) adjacent to the San Francisco Bay. The general locations of the refineries are discussed below.

The ChevronTexaco refinery is located in Richmond, Contra Costa County, California. The refinery lies to the west of Castro Street and mostly to the north of Interstate 580 and some

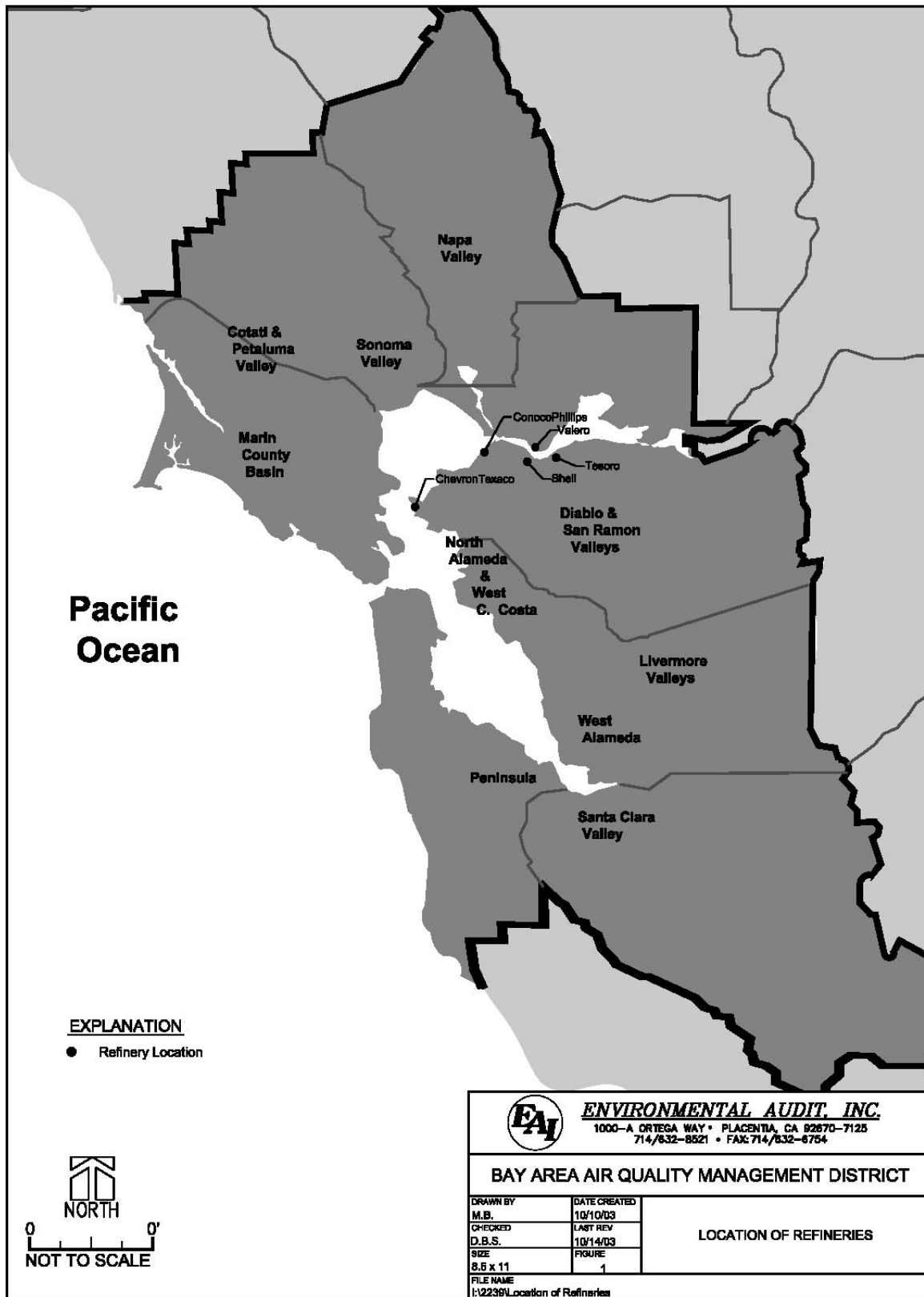
storage tanks and the wharf lie south of I-580. The refinery occupies most of the Point San Pablo Peninsula and covers approximately 2,900 acres. It is generally bordered on the north and south by the residential communities of North Richmond and Point Richmond, respectively. East of the refinery, across Castro Street and Garrard Boulevard, are the Iron Triangle and Santa Fe communities and central and downtown Richmond. San Francisco and San Pablo Bays form the western border of the refinery.

The Valero refinery is located on about 800 acres of land within the City of Benicia. The refinery is located about 0.5 mile north of I-780 and immediately west of I-680. Valero is bisected in a north-south direction by East Second Street. The refinery is bounded on the north by residential development and open space, on the east by an industrial park and I-680, on the south by industrial development, and on the west by residential development.

The ConocoPhillips refinery is located on approximately 1,100 acres of land in the unincorporated area northeast of the community of Rodeo. The refinery property is bounded on the north by San Pablo Bay and a marine terminal, on the east by agricultural lands, on the south and southwest by a residential area and on the west by San Pablo Bay. Interstate 80 runs north-south through the refinery dividing the eastern portion of the refinery.

The Shell Oil refinery is located on about 880 acres in Contra Costa County, partially within the City of Martinez. The main portion of the refinery is bordered by Marina Vista Boulevard to the north, Interstate 680 to the east, Pacheco Boulevard to the South, Merrithew Avenue to the west, and the Shell marine terminal to the northwest. Land use north of the refinery is a combination of industrial and open space; northeast of the refinery is an environmental conservation district; east is residential land use with some light industrial areas; land use south and southwest of the refinery is residential. The Martinez reservoir is also located to the south of the refinery.

The Tesoro refinery is located in Contra Costa County, within the community of Avon. The refinery is located south of Suisun Bay and is bordered by Waterfront road to the north and Solano Way to the west. Land use south and east of the refinery is a combination of industrial and open space. The Tesoro refinery is located east of the Shell Martinez refinery. The Mallard reservoir is also located southeast of the refinery.



## CHAPTER 3 Environmental Checklist

### ENVIRONMENTAL CHECKLIST FORM

- 1. Project Title:** Bay Area Air Quality Management District  
(BAAQMD) Proposed Amendments to Regulation  
8, Rule 8
- 2. Lead Agency Name and Address:** Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, California 94109
- 3. Contact Person and Phone Number:** Dan Belik, Planning and Research Division  
415/749-4786 or [dbelik@baaqmd.gov](mailto:dbelik@baaqmd.gov)
- 4. Project Location:** This rule amendment applies to the area within the  
jurisdiction of the Bay Area Air Quality  
Management District, which encompasses 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 refineries affected by the rule  
are located in Contra Costa and Solano Counties.
- 5. Project Sponsor's Name and Address:** Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, California 94109
- 6. General Plan Designation:** The rule amendments apply to refineries and  
chemical plants which are usually located in heavy  
manufacturing or industrial areas.
- 7. Zoning** The rule amendments apply to refineries, chemical  
plants, bulk plants and bulk terminals that are  
usually located in heavy manufacturing or  
industrial areas.
- 8. Description of Project** See "Background" in Chapter 2.
- 9. Surrounding Land Uses and Setting** See "Affected Area" in Chapter 2.
- 10. Other Public Agencies Whose Approval  
Is Required** None

### Environmental Factors Potentially Affected:

The environmental factors checked below would potentially be affected by this Project (i.e., the project would involve one impact that is a “Potentially Significant Impact”), as indicated by the checklist on the following pages.

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Aesthetics                    | <input type="checkbox"/> Agriculture Resources              | <input type="checkbox"/> Air Quality            |
| <input type="checkbox"/> Biological Resources          | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Geology/Soils          |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality            | <input type="checkbox"/> Land Use/Planning      |
| <input type="checkbox"/> Mineral Resources             | <input type="checkbox"/> Noise                              | <input type="checkbox"/> Population/Housing     |
| <input type="checkbox"/> Public Services               | <input type="checkbox"/> Recreation                         | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems     | <input type="checkbox"/> Mandatory Findings of Significance |   |

**DETERMINATION:**

On the basis of this initial evaluation:

- I find the proposed project COULD NOT have a significant effect on the environment, and that a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be significant effects in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have an impact on the environment that is "potentially significant" or “potentially significant unless mitigated” but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
For

	Potentially Significant Impact	Less Than Significant Impact With Mitigation	Less-than-Significant Impact	No Impact

Incorporated

**I. AESTHETICS.**

Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**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 refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties. Scenic highways or corridors are generally not located in the vicinities of the affected refineries.

**Regulatory Background**

Visual resources are generally protected by the City and/or County General Plans through land use and zoning requirements.

**Discussion of Impacts**

I a-d: The amendments to Regulation 8, Rule 8 propose more stringent controls on wastewater collection systems at existing petroleum refineries, chemical, and other plants in the Bay Area. The proposed amendments are not expected to require new structures or result in any adverse aesthetic impacts.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact

**II. AGRICULTURE RESOURCES.**

In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. Would the project:

- |    |   |                          |                          |                          |                                     |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) | Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) | Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) | Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**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. Some of these agricultural lands are under Williamson Act contracts.

The refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties. Agricultural resources are generally not located in the vicinities of or within the affected refineries.

**Regulatory Background**

Agricultural resources are generally protected by the City and/or County General Plans, Community Plans through land use and zoning requirements, as well as any applicable specific plans, ordinances, local coastal plans, and redevelopment plans.

**Discussion of Impacts**

II a-c: The amendments to Regulation 8, Rule 8 propose more stringent controls on wastewater collection systems at petroleum refineries and chemical plants in the Bay Area. The

amendments would not require construction or impacts outside of the refinery boundaries. The refineries are located within heavy industrial areas. Therefore, no significant adverse impacts on agricultural resources are expected.

---

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------------	---	------------------------------------	-----------

---

### III. AIR QUALITY.

When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

---



---

## Setting

### Meteorological Conditions

The summer climate of the West Coast is dominated by a semipermanent high centered over the northeastern Pacific Ocean. Because this high pressure cell is quite persistent, storms rarely affect the California coast during the summer. Thus the conditions that persist along the coast of California during summer are a northwest air flow and negligible precipitation. A thermal low pressure area from the Sonoran-Mojave Desert also causes air to flow onshore over the San Francisco Bay Area much of the summer.

In winter, the Pacific High weakens and shifts southward, upwelling ceases, and winter storms become frequent. Almost all of the Bay Area's annual precipitation takes place in the November through April period. During the winter rainy periods, inversions are weak or nonexistent, winds are often moderate and air pollution potential is very low. During winter periods when the Pacific high becomes dominant, inversions become strong and often are surface based; winds are light and pollution potential is high. These periods are characterized by winds that flow out of the Central Valley into the Bay Area and often include tule fog.

### Topography

The San Francisco Bay Area is characterized by complex terrain consisting of coastal mountain ranges, inland valleys and bays. Elevations of 1,500 feet are common in the higher terrain of this area. Normal wind flow over the area becomes distorted in the lower elevations, especially when the wind velocity is not strong. This distortion is reduced when stronger winds and unstable air masses move over the areas. The distortion is greatest when low level inversions are present with the surface air, beneath the inversion, flowing independently of the air above the inversion.

### Winds

In summer, the northwest winds to the west of the Pacific coastline are drawn into the interior through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately to the south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more nearly from the west as they stream through the Golden Gate. This channeling of the flow through the Golden Gate produces a jet that sweeps eastward but widens downstream producing southwest winds at Berkeley and northwest winds at San Jose; a branch curves eastward through the Carquinez Straits and into the Central Valley. Wind speeds may be locally strong in regions where air is channeled through a narrow opening such as the Carquinez Strait, the Golden Gate, or San Bruno Gap.

In winter, the Bay Area experiences periods of storminess and moderate-to-strong winds and periods of stagnation with very light winds. Winter stagnation episodes are characterized by outflow from the Central Valley, nighttime drainage flows in coastal valleys, weak onshore flows in the afternoon and otherwise light and variable winds.

### Temperature

In summer, the distribution of temperature near the surface over the Bay Area is determined in large part by the effect of the differential heating between land and water surfaces. This process produces a large-scale gradient between the coast and the Central Valley as well as small-scale local gradients along the shorelines of the ocean and bays. The winter mean temperature high and lows reverse the summer relationship in that daytime variations are small while mean minimum nighttime temperatures show large differences and strong gradients. The moderating effect of the ocean influences warmer minimums along the coast and penetrating the Bay. The coldest temperatures are in the sheltered valleys, implying strong radiation inversions and very limited vertical diffusion.

### Inversions

A primary factor in air quality is the mixing depth, i.e., the vertical dimension available for dilution of contaminant sources near the ground. Over the Bay Area the frequent occurrence of temperature inversions limits this mixing depth and consequently limits the availability of air for dilution. A temperature inversion may be described as a layer or layers of warmer air over cooler air.

### Precipitation

The San Francisco Bay Area climate is characterized by moderately wet winters and dry summers. Winter rains (December through March) account for about 75 percent of the average annual rainfall; about 90 percent of the annual total rainfall is received in November to April period; and between June and September, normal rainfall is typically less than 0.10 inches. Annual precipitation amounts show greater differences in short distances. Annual totals exceed 40 inches in the mountains and are less than 15 inches in the sheltered valleys.

### Pollution Potential

The Bay Area is subject to a combination of physiographic and climatic factors which result in a low potential for pollutant buildups near the coast and a high potential in sheltered inland valleys. In summer, areas with high average maximum temperatures tend to be sheltered inland valleys with abundant sunshine and light winds. Areas with low average maximum temperatures are exposed to the prevailing ocean breeze and experience frequent fog or stratus. Locations with warm summer days have a higher pollution potential than the cooler locations along the coast and bays.

In winter, pollution potential is related to the nighttime minimum temperature. Low minimum temperatures are associated with strong radiation inversions in inland valleys that are protected from the moderating influences of the ocean and bays. Conversely, coastal locations experience higher average nighttime temperatures, weaker inversions, stronger breezes and consequently less air pollution potential.

## **AIR QUALITY**

### **Criteria Pollutants**

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<sub>2</sub>), particulate matter less than 10 microns (PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>) 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 PM<sub>10</sub> and SO<sub>2</sub>, far more stringent. California has also established standards for sulfate, visibility, hydrogen sulfide, and vinyl chloride.

The state and national ambient air quality standards for each of these pollutants and their effects on health are summarized in Table 3-1. The BAAQMD monitors levels of various criteria pollutants at 26 monitoring stations. The 2002 air quality data from the BAAQMD's monitoring stations are presented in Table 3-2.

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 3-3). The District is in attainment of the state and federal ambient air quality standards for CO, nitrogen oxides (NO<sub>x</sub>), and sulfur oxides (SO<sub>x</sub>). The District also is in attainment of the federal 24-hour PM<sub>10</sub> standard. The District is seeking redesignation to attainment for the federal 1-hour ozone standard. However, the District does not comply with the state ozone standards or the state 24-hour PM<sub>10</sub> standard.

The 2002 air quality data from the BAAQMD's monitoring stations are presented in Table 3-2. All monitoring stations were below the standard and federal ambient air quality standards for CO, NO<sub>2</sub>, and SO<sub>2</sub>. The federal 1-hour ozone standard was exceeded on two days in 2002 at the Livermore monitoring station. The other monitoring stations were in compliance with the federal 1-hour ozone standard. Based on the Bay Area ozone record for 2001-2003, the U.S. EPA has now proposed a finding that the Bay Area has attained the federal 1-hour ozone standard (68 Fed. Reg. 62041, October 31, 2003). The federal 8-hour standard was exceeded on seven days in the District in 2002, 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 16 days in 2002 in the District, most frequently in the Eastern District and Santa Clara Valley (see Table 3-2).

All monitoring stations were in compliance with the federal PM<sub>10</sub> standards. The California PM<sub>10</sub> standards were exceeded on six days in 2002 throughout the various monitoring stations in the District. The District exceeded the federal PM<sub>2.5</sub> standards on four days in 2002 at several monitoring stations including Vallejo, San Francisco, and Concord (see Table 3-2).

**TABLE 3-1  
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS**

AIR POLLUTANT	STATE STANDARD CONCENTRATION/ AVERAGING TIME	FEDERAL PRIMARY STANDARD CONCENTRATION/ AVERAGING TIME	MOST RELEVANT EFFECTS
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 in humans and animals (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 <sup>3</sup> , annarithmic mean > 50 µg/m <sup>3</sup> , 24-hr average>	50 µg/m <sup>3</sup> , annual arithmetic mean > 150 µg/m <sup>3</sup> , 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)		15 µg/m <sup>3</sup> , annual arithmetic mean> 150 µg/m <sup>3</sup> , 24-hour average>	Decreased lung function from exposures and exacerbation of symptoms in sensitive patients with respiratory disease; elderly; children.
Sulfates	25 µg/m <sup>3</sup> , 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 <sup>3</sup> , 30-day avg. >=	1.5 µg/m <sup>3</sup> , calendar quarter>	(a) Increased body burden; (b) Impairment of blood formation and nerve conduction
Visibility-Reducing Particles	In sufficient amount to give an extinction coefficient >0.23 inverse kilometers (visual range to less than 10 miles) with relative humidity less than 70%, 8-hour average (10am – 6pm PST)		Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent

**TABLE 3-2  
BAY AREA AIR POLLUTION SUMMARY 2002**

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 Geo Mean	Ann Avg	Max 24-Hr	Nat Days	Cal Days	Max 24-Hr	Nat Days	3-Yr Avg	Ann Avg	3-Yr Avg	
	(pphm)						(ppm)			(pphm)			(ppb)			(µg/m <sup>3</sup> )					(µg/m <sup>3</sup> )						
<b>NORTH COUNTIES</b>																											
Napa	12	0	1	0.0	8	0	6.3	4.2	2.4	0	5	1.3	0	--	--	--	22.6	25.4	67	0	4	--	--	--	--	--	
San Rafael	8	0	0	0.0	6	0	4.7	4.1	1.9	0	6	1.7	0	--	--	--	19.1	21.4	70	0	2	--	--	--	--	--	
Santa Rosa	8	0	0	0.0	6	0	5.2	3.7	2.1	0	5	1.3	0	--	--	--	17.8	19.7	60	0	2	51	0	40.2	10.5	10.5	
Vallejo	11	0	1	0.0	7	0	5.9	5.8	3.9	0	5	1.3	0	4	1.3	0	18.7	21.4	80	0	1	72	1	51.3	13.6	12.6	
<b>COAST &amp; CENTRAL BAY</b>																											
Oakland	5	0	0	0.0	4	0	4.0	4.4	3.3	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Richmond	--	--	--	--	--	--	--	--	--	--	--	--	--	5	1.0	0	--	--	--	--	--	--	--	--	--	--	
San Francisco	5	0	0	0.0	5	0	4.4	3.5	2.6	0	8	1.9	0	6	1.9	0	21.0	24.7	74	0	2	70	4	48.0	13.1	11.9	
San Pablo*	7	0	0	0.0	5	0	4.5	3.7	1.8	0	5	*	0	5	*	0	*	*	67	0	3	--	--	--	--	--	
<b>EASTERN DISTRICT</b>																											
Bethel Island	11	0	5	0.3	10	3	7.9	1.7	1.3	0	4	1.0	0	9	2.5	0	20.8	23.8	58	0	3	--	--	--	--	--	
Concord	10	0	5	0.7	9	3	7.8	3.5	2.3	0	6	1.5	0	6	0.8	0	17.9	20.9	63	0	3	77	4	44.7	13.3	11.4	
Crockett	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1.8	0	--	--	--	--	--	--	--	--	--	--	
Fairfield*	10	0	4	0.0	8	0	7.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Livermore	16	2	10	1.0	11	6	8.2	4.8	2.5	0	8	1.7	0	--	--	--	21.5	24.5	64	0	2	62	0	47.7	13.8	12.3	
Martinez	--	--	--	--	--	--	--	--	--	--	--	--	--	7	1.2	0	--	--	--	--	--	--	--	--	--	--	
Pittsburg	11	0	4	0.0	10	2	7.4	6.2	2.5	0	5	1.3	0	14	2.5	0	21.1	23.7	73	0	3	--	--	--	--	--	
<b>SOUTH CENTRAL BAY</b>																											
Fremont	11	0	3	0.0	7	0	6.1	3.7	2.2	0	6	1.9	0	--	--	--	20.0	22.5	52	0	1	48	0	41.6	12.5	11.4	
Hayward	9	0	0	0.0	7	0	6.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Redwood City	9	0	0	0.0	6	0	5.3	5.8	2.8	0	7	1.7	0	--	--	--	19.5	22.0	53	0	1	43	0	41.8	11.5	11.3	
San Leandro	10	0	1	0.0	6	0	5.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>SANTA CLARA VALLEY</b>																											
Gilroy*	12	0	6	*	9	2	5.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Los Gatos*	11	0	4	0.0	9	2	6.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
San Jose Central*	*	*	*	*	*	*	*	5.3	4.5	0	8	*	0	--	--	--	*	*	70	0	2	58	0	*	*	*	
San Jose East	9	0	0	0.0	7	0	5.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
San Jose, Tully Road	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21.9	25.4	70	0	2	54	0	45.9	12.0	11.8	
San Martin	12	0	8	0.0	10	5	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sunnyvale*	9	0	0	*	7	0	*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Total bay Area Days over Standard</b>		<b>2</b>	<b>16</b>			<b>7</b>				<b>0</b>			<b>0</b>			<b>0</b>				<b>0</b>	<b>6</b>		<b>5</b>				

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

**TABLE 3-3  
TEN-YEAR BAY AREA AIR QUALITY SUMMARY  
(Days over standards)**

YEAR	OZONE		CARBON MONOXIDE				NO <sub>x</sub>	SULFUR DIOXIDE		PM10		PM2.5
	1-Hr		8-Hr		1-Hr		8-Hr	24-Hr		24-Hr*		24-Hr**
	Nat	Cal	Nat	Cal	Nat	Cal	Cal	Nat	Cal	Nat	Cal	Nat
1993	3	19	-	0	0	0	0	0	0	0	10	-
1994	2	13	-	0	0	0	0	0	0	0	9	-
1995	11	28	-	0	0	0	0	0	0	0	7	-
1996	8	34	-	0	0	0	0	0	0	0	3	-
1997	0	8	-	0	0	0	0	0	0	0	4	-
1998	8	29	16	0	0	0	0	0	0	0	5	-
1999	3	2	9	0	0	0	0	0	0	0	12	-
2000	3	12	4	0	0	0	0	0	0	0	7	1
2001	1	15	7	0	0	0	0	0	0	0	10	5
2002	2	16	7	0	0	0	0	0	0	0	6	5

\* 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.

Toxic Air Pollutants

The precursor chemicals that form ozone are VOCs and NO<sub>x</sub>. Some of these VOCs are toxic air contaminants (TACs) and some are known carcinogens. The BAAQMD maintains a network of monitoring stations to monitor certain TACs in ambient air. In addition, the California Air Resources Board (CARB) maintains several monitoring stations in the Bay Area as part of a statewide toxics monitoring effort. The mean ambient concentrations of monitored TACs are listed in Table 3-4 based on monitoring conducted during 2000 for the monitoring stations closest to the refineries. The Richmond station is located at 7<sup>th</sup> Street downwind from the ChevronTexaco refinery and the Richmond parkway. The Crockett station is located at the end of Kendall Avenue generally downwind of the ConocoPhillips refinery. There are two Concord stations.

**TABLE 3-4  
CONCENTRATIONS OF TOXIC AIR CONTAMINANTS  
IN THE BAY AREA<sup>(1)</sup>**

CHEMICAL	MONITORING STATION (mean ppb)				
	Crocket	Concord (Treat Blvd)	Richmond	Bethel Island	Concord (Arnold)
Vinyl Chloride	<0.30	<0.30	<0.30	<0.30	<0.30
Methylene Chloride (DCM)	0.30	0.26	0.26	0.30	<0.50
Chloroform (CHCl3)	<0.30	<0.30	0.01	<0.30	<0.30
Ethylene Dichloride	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,1-Trichloroethane (TCA)	0.12	0.06	0.06	0.05	0.20
Carbon Tetrachloride (CCl4)	0.11	0.11	0.10	0.11	0.10
Trichloroethylene (TCE)	<0.08	0.04	0.05	<0.08	<0.08
Benzene	0.20	0.54	0.41	0.26	0.43
Ethylene Dibromide	<0.02	<0.02	<0.02	<0.02	<0.02
Perchloroethylene	0.02	0.04	0.06	0.03	0.05
Toluene	0.35	2.32	1.92	0.49	0.94
MTBE	0.67	0.54	0.69	0.46	0.59

(1) BAAQMD, Toxic Air Contaminant, 2000 Annual Report, December 2001.

The concentrations of TACs at these monitoring stations are similar to concentrations of TACs in the rest of the Bay Area.

## Regulatory Background

### Criteria Pollutants

At the federal level, the Clean Air Act (CAA) Amendments of 1990 give the U.S. EPA additional authority to require states to reduce emissions of ozone precursors and PM10 in non-attainment areas. The amendments set new attainment deadlines based on the severity of problems. At the state level, CARB has traditionally established state ambient air quality standards, maintained oversight authority in

air quality planning, developed programs for reducing emissions from motor vehicles, developed air emission inventories, collected air quality and meteorological data, and approved state implementation plans. At a local level, California's air districts, including the BAAQMD, are responsible for overseeing stationary source emissions, approving permits, maintaining emission inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA.

The BAAQMD regulates air contaminants from stationary sources. The BAAQMD is governed by a 21-member Board of Directors composed of publicly-elected officials apportioned according to the population of the represented counties. The Board has the authority to develop and enforce regulations for the control of air pollution within its jurisdiction. The BAAQMD is responsible for implementing emissions standards and other requirements of federal and state laws. It is also responsible for developing air quality planning documents required by both federal and state laws.

### Toxic Air Contaminants

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 Hazardous Air Pollutants (HAPs).

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. All NESHAPs were to be promulgated by the year 2000. Specific incremental progress in establishing standards must be made by the years 1992 (at least 40 source categories), 1994 (25 percent of the listed categories), 1997 (50 percent of remaining listed categories), and 2000 (remaining balance). The 1992 requirement was met; however, many of the four-year standards were not promulgated as scheduled. Promulgation of those standards has been rescheduled based on court ordered deadlines, or the aim to satisfy all Section 112 requirements in a timely manner.

Many of the sources of TACs that have been identified under the CAA are also subject to the California TAC regulatory programs. CARB developed three regulatory programs for the control of TACs. Each of the programs is discussed in the following subsections.

**Control of TACs Under the TAC Identification and Control Program:** 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, and CARB adopted a regulation designating all 189 federal HAPs as TACs.



**Control of TACs Under the Air Toxics "Hot Spots" Act:** 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. Inventory reports must be updated every four years under current state law. The BAAQMD uses a maximum individual cancer risk of 10 in one million, or an ambient concentration above a non-cancer reference exposure level, as the threshold for notification.

Senate Bill (SB) 1731, enacted in 1992 (California Health and Safety Code §44390 et seq.), amended AB 2588 to include a requirement for facilities with significant risks to prepare and implement a risk reduction plan which will reduce the risk below a defined significant risk level within specified time limits. At a minimum, such facilities must, as quickly as feasible, reduce cancer risk levels that exceed 100 per one million. The BAAQMD adopted risk reduction requirements for perchloroethylene dry cleaners to fulfill the requirements of SB 1731.

## Discussion of Impacts

III a. The objectives of the proposed rule amendments are to implement recommendations from the TAD in response to Further Study Measure 9 in the Bay Area 2001 Ozone Attainment Plan, to reduce emissions of ozone forming compounds and achieve compliance with state and federal ozone standards. Therefore, the proposed amendments are in compliance with the local air quality plan and implements portions of that plan.

III b, c, d, and f. To determine the emissions from wastewater collection systems District and CARB staff conducted a series of extensive site visits to the five Bay Area refineries. During these visits, the staff established how the collections system worked at each refinery. It was determined that to estimate the emissions from the collection systems, a combination of emissions modeling programs should be used. The TOXCHEM + and the U.S. EPA's Water9 Models.

Initially, District and CARB staff performed extensive wastewater sampling at all five Bay Area refineries. Utilizing these sampling results, emissions estimates for refinery wastewater collection system emissions were developed. TOXCHEM + emissions modeling based on field data collected (such as drain inventories, systems layouts, wastewater flow-rates), and observed wastewater petroleum concentrations, as identified from the laboratory analytical analysis were then performed. A comprehensive explanation of this modeling and the associated sampling results is provided in the TAD. This modeling provided the following partial emissions estimates for refinery wastewater collection systems shown in Table 3-5.

**TABLE 3-5  
VOC EMISSION ESTIMATES FOR REFINERY WASTEWATER DRAINS, MANHOLES, AND  
JUNCTION BOX VENTS  
(BY REFINERY)**

Refinery	Drain Emissions (tpd)	Manhole Emissions (tpd)	Junction Box Emissions (tpd)	Total <sup>2</sup> (tpd)
1	0.411 <sup>1</sup>	0.166	0.126 <sup>1</sup>	0.70
2	0.270	0.048	0.168	0.49
3	0.140	0.164	0.168	0.47
4	0.123	0.034	0.084 <sup>1</sup>	0.24
5	1.164	0.076	0.168	1.41
Total	2.107	0.488	0.714	3.31

1 Partial emissions. Additional information is needed to complete the assessment of drain and junction box vents from these facilities.

2 The emissions reported in this table do not represent the total emissions from the wastewater collection system. Additional work is needed to estimate emissions from wastewater treatment.

By comparison, the District’s emissions inventory (see Table 3-6) lists a total of approximately 1.3 tpd of total VOC emissions from refinery wastewater process drains. These numbers are derived from historical data and sampling, as well as emissions factors. Due to the comprehensive nature of the TAD it is assumed that the VOC estimates it contains, though incomplete, are more reflective of the current situation at Bay Area refineries.

**TABLE 3-6  
VOC EMISSION ESTIMATES FOR REFINERY WASTEWATER COLLECTION  
SYSTEMS FROM THE BAAQMD INVENTORY (BY REFINERY)**

Refinery	Wastewater Collection System Emissions (tpd)
1	0.16
2	0.969
3	0.206
4	0.006
5	0.001
Total	1.342

In evaluating the data in Table 3-5, it is important to note that the VOC emission estimates for Refineries 1 and 4 are incomplete. For Refinery 1, only part of the refinery was sampled during the source tests due to ongoing maintenance to the wastewater system. This did not allow for the full implementation of the refinery sampling plan at Refinery 1 during the source test period. For Refinery 4, it was discovered after the source tests had been completed, that a significant portion of the wastewater collection system was not

sampled, and consequently not included in the refinery VOC emission calculation. Therefore, data was not collected to estimate any VOC emissions from vents associated with this portion of the wastewater system. In addition, this emissions estimate was only developed for the gasoline range compounds (C2 to C10) identified during sampling. Significant amounts of diesel range materials were found in the wastewater samples analyzed as part of this TAD. The significance of emissions from these materials has not been established.

It is estimated that the implementation of the District's regulatory proposal, which includes controls on all wastewater collection system components (drains, manholes and junction boxes), or a District prescribed inspection and maintenance plan and a 500 ppm emissions standard, can achieve approximately 1.9 tpd of VOC reductions. Emissions reduction estimates are based on control of uncontrolled refinery drains, manholes and junction boxes of 65%. While not specifically targeted by this regulation, a reduction in VOC will also decrease the amount of toxic air contaminants released by wastewater collection system components. The toxic compounds reduced will include benzene, toluene and xylene (identified as part of the water analysis performed for the TAD). Based on the TAD analysis, other toxic compounds may also be present, including ethylbenzene and naphthalene. It is anticipated that this proposal would also lead to a significant reduction in the emissions of these compounds.

III e. The proposed amendments are expected to result in better inspection and maintenance of wastewater collection, separation, and treatment systems, thus reducing VOC emissions and potential odors associated with those emissions. The rule amendments are not expected to generate any additional odors at refineries.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IV. BIOLOGICAL RESOURCES. Would the project:</b>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 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. A wide variety of biological resources are located within the Bay Area.

The refineries are located in the Bay Area-Delta Bioregion (as defined by the State's Natural Communities Conservation Program). This Bioregion is comprised of a variety of natural communities, which range from salt marshes to chaparral to oak woodland. The refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties. The refinery sites have been graded to develop the various refinery structures and are typically, surrounded by other commercial and industrial facilities. Native vegetation, other than landscape vegetation, has been removed from operating portions of the refineries to minimize fire hazards.

## Regulatory Background

Biological resources are generally protected by the City and/or County General Plans through land use and zoning requirements which minimize or prohibit development in biologically sensitive areas. Biological resources are also protected by the California Department of Fish and Game, and the U.S. Fish and Wildlife Service. The U.S. Fish and Wildlife Service and National Marine Fisheries Service oversee the federal Endangered Species Act. Development permits may be required from one or both of these agencies if development would impact rare or endangered species. The California Department of Fish and Game administers the California Endangered Species Act which prohibits impacting endangered and threatened species. The U.S. Army Corps of Engineers and the U.S. EPA regulate the discharge of dredge or fill material into waters of the United States, including wetlands.

## Discussion of Impacts

IV a – f. No impacts on biological resources are anticipated from the proposed rule amendments which would apply to existing refinery operations. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries. The proposed rule amendments neither require, nor are likely to result in, activities which would affect sensitive biological resources. Therefore, no significant adverse impacts on biological resources are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>V. CULTURAL RESOURCES.</b> Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside a formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 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. Cultural resources are defined as buildings, sites, structures, or objects which 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 areas surrounding the Carquinez Strait and Suisun Bay have been occupied for millennia given its abundant combination of littoral and oak woodland resources.

The refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties. The sites have been graded to develop the various refinery structures and are typically surrounded by other commercial and industrial facilities. Cultural resources are generally not located within the operating portions of the refineries.

## Regulatory Background

The State 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 (State CEQA Guidelines Section 15064/5(b)). A substantial adverse change in the significance of a historical resource would result from an action that would demolish or adversely alter the physical characteristics of the historical resource that convey its historical significance and that qualify the resource for inclusion in the California Register of Historical Resources or a local register or survey that meets the requirements of Public Resources Code Sections 50020.1(k) and 5024.1(g).

## Discussion of Impacts

V a – d. No impacts on cultural resources are anticipated from the proposed rule amendments that would apply to existing refinery operations. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries. The proposed rule amendments neither require nor are likely to result in activities that would affect sensitive cultural resources. No major construction activities are expected from the proposed rule amendments. Therefore, no significant adverse impacts on cultural resources are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------	---	------------------------------	-----------

**VI. GEOLOGY AND SOILS.**

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>• Strong seismic groundshaking?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>• Seismic-related ground failure, including liquefaction?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>• Landslides?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties.

The refineries are located in the natural region of California known as the Coast Ranges geomorphic province. The province is characterized by a series of northwest trending ridges and valleys controlled by tectonic folding and faulting, 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, Rodgers Creek-Healdsburg, Concord-Green Valley, Greenville-Marsh Creek, Seal Cove/San Gregorio and West Napa faults. Other smaller faults in the region classified as potentially active include the Southampton and Franklin faults.

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.

## **Regulatory Background**

Construction is regulated by the local City or County building codes that provide requirements for construction, grading, excavations, use of fill, and foundation work including type of materials, design, procedures, etc. which are intended to limit the probability of occurrence and the severity of consequences from geological hazards. Necessary permits, plan checks, and inspections are generally required.

The City or County General Plan includes the Seismic Safety Element. The Element serves primarily to identify seismic hazards and their location in order that they may be taken into account in the planning of future development. The Uniform Building Code is the principle mechanism for protection against and relief from the danger of earthquakes and related events.

In addition, the Seismic Hazard Zone Mapping Act (Public Resources Code §§2690 – 2699.6) was passed by the California legislature in 1990 following the Loma Prieta earthquake. The Act required that the California Division of Mines and Geology (DMG) develop maps that identify the areas of the state that require site specific investigation for earthquake-triggered landslides and/or potential liquefaction prior to permitting most urban developments. The act directs cities, counties and state agencies to use the maps in their land use planning and permitting processes.

Local governments are responsible for implementing the requirements of the Seismic Hazards Mapping Act. The maps and guidelines are tools for local governments to use in establishing their land use management policies and in developing ordinances and review procedures that will reduce losses from ground failure during future earthquakes.

## **Discussion of Impacts**

VI a – e. No impacts on geology and soils are anticipated from the proposed rule amendments that would apply to existing refinery operations. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries. No major construction activities are expected from the proposed rule amendments and no new structures would be required. Therefore, no significant adverse impacts on geology and soils are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------	---	------------------------------	-----------

**VII. HAZARDS AND HAZARDOUS**

**MATERIALS.** Would the project:

- |    |   |                          |                          |                          |                                     |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) | Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) | Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) | Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) | Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) | Be located within an airport land use plan or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) | Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) | Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) | Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

---

## Setting

Petroleum refineries handle and process large quantities of flammable, hazardous, and acutely hazardous materials. Accidents involving these substances can result in worker or public exposure to fire, heat, blast from an explosion, or airborne exposure to hazardous substances.

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 that are 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 rupture of a storage tank containing a flammable gaseous material (like propane), without immediate ignition, can result in a vapor cloud explosion. 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:** Process vessels containing flammable explosive vapors and potential ignition sources are present at refineries. 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.

For all refineries, risks to the public are reduced if there is a buffer zone between refinery processes and residences, or the prevailing wind blows away from residential areas. The risks posed by refinery operations are unique and determined by a variety of factors. Refineries tend to be located in industrial areas which helps minimize public exposure in the event of a release.

## Regulatory Background

There are many federal and state rules and regulations that refineries must comply with which serve to minimize the potential impacts associated with hazards at these facilities.

Under the Occupational Safety and Health Administration (OSHA) regulations [29 Code of Federal Regulations (CFR) Part 1910], facilities which use, store, manufacture, handle, process, or move highly hazardous materials must prepare a fire prevention plan. In addition, 29 CFR Part 1910.119, Process Safety Management (PSM) of Highly Hazardous Chemicals, and Title 8 of the California Code of Regulations, General Industry Safety Order §5189, specify required prevention program elements to protect workers at facilities that handle toxic, flammable, reactive, or explosive materials. Prevention program elements are aimed at preventing or minimizing the consequences of catastrophic releases of the chemicals and include process hazard analyses, formal training programs for employees and contractors, investigation of equipment mechanical integrity, and an emergency response plan.

Section 112 (r) of the Clean Air Act Amendments of 1990 [42 U.S.C. 7401 et. Seq.] and Article 2, Chapter 6.95 of the California Health and Safety Code require facilities that handle listed regulated substances to develop Risk Management Programs (RMPs) to prevent accidental releases of these substances, U.S. EPA regulations are set forth in 40 CFR Part 68. In California, the California Accidental Release Prevention (CalARP) Program regulation (CCR Title 19, Division 2, Chapter 4.5) was issued by the Governor's Office of Emergency Services (OES). RMPs consist of three main elements: a hazard assessment that includes off-site consequences analyses and a five-year accident history, a prevention program, and an emergency response program. Refineries are also required to comply with the U.S. EPA's Emergency Planning and Community Right-to-Know Act (EPCRA).

The refineries are required to have a Spill Prevention Control and Countermeasures (SPCC) Plan per the requirements of 40 Code of Federal Regulations, Section 112. The SPCC is designed to prevent spills from on-site facilities and includes requirements for secondary containment, provides emergency response procedures, establishes training requirements, and so forth.

The Hazardous Materials Transportation (HMT) Act is the federal legislation that regulates transportation of hazardous materials. The primary regulatory authorities are the U.S. Department of Transportation, the Federal Highway Administration, and the Federal Railroad Administration. The HMT Act requires that carriers report accidental releases of hazardous materials to the Department of Transportation at the earliest practical moment (49 CFR Subchapter C). The California Department of Transportation (Caltrans) sets standards for trucks in California. The regulations are enforced by the California Highway Patrol.

California Assembly Bill 2185 requires local agencies to regulate the storage and handling of hazardous materials and requires development of a plan to mitigate the release of hazardous materials. Businesses that handle any of the specified hazardous materials must submit to government agencies (i.e., fire departments), an inventory of the hazardous materials, an emergency response plan, and an employee training program. The business plans must provide a description of the types of hazardous materials/waste on-site and the location of these materials. The information in the business plan can then be used in the event of an emergency to determine the appropriate response action, the need for public notification, and the need for evacuation.

Contra Costa County has adopted an industrial safety ordinance that addresses the human factors that lead to accidents. The ordinance requires stationary sources to develop a written human factors program that includes the following:

- Consideration of human factors in the process hazards analysis process;
- Consideration of human systems as causal factors in the incident investigation process for major accidents or releases or for incidents that could have led to a major accident or release;
- Training of employees in the human factors program;
- Operating procedures;
- Management of changes in staffing, staffing levels, or organization in operations or emergency response;
- Participation of employees and their representatives in the development of the written human factors program;
- Development of a program that includes issues such as staffing, shiftwork, and overtime; and
- Incorporation of the human factors program description in the facility safety plan.

## Discussion of Impacts

VII a. The proposed rule amendment does not affect in any way the transport of hazardous material into, out of, or within any of the refineries. Therefore, no significant adverse impacts on transportation of hazardous materials are expected.

VII b – c. The proposed rule amendments are expected to reduce emissions from existing wastewater collection, separation, and treatment systems within refineries thus reducing the emissions and releases of potentially toxic air contaminants. Therefore, no significant adverse impacts on releases of hazardous materials into the environment are expected.

VII d. No impacts on hazardous material sites are anticipated from the proposed rule amendments that would apply to existing refinery operations. Some of the refineries may be located on the hazardous materials sites list pursuant to Government Code Section 65962.5. However, the proposed rule amendments would have no affect on hazardous materials nor would the amendments create a significant hazard to the public or environment. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries. The proposed rule amendments neither require, nor are likely to result in, activities that would affect hazardous materials or existing site contamination. Therefore, no significant adverse impacts on hazards are expected.

VII e – f. No impacts on airports or airport land use plans are anticipated from the proposed rule amendments that would apply to existing refinery operations. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries. The proposed rule amendments neither require nor are likely to result in activities which would affect the environment outside of the refinery boundaries. No major construction activities are expected from the proposed rule amendments. Further, the refineries are not located within two miles of airports. Therefore, no significant adverse impacts on hazards at airports are expected.

VII g. No impacts on emergency response plans are anticipated from the proposed rule amendments that would apply to existing refinery operations. Each refinery has prepared an emergency response plan; however, the wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries. The proposed rule amendments neither require, nor are likely to result in, activities that would impact the emergency response plan. No major construction activities are expected from the proposed rule amendments. Therefore, no significant adverse impacts on emergency response plans is expected.

VII h. No increase in hazards related to wildfires are anticipated from the proposed rule amendments that would apply to existing refinery operations. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries. No major construction activities are expected from the proposed rule amendments and no activities would occur outside the confines of the existing refineries. Vegetation surrounding the operating portions of the refinery has been removed to reduce the potential fire hazards. Therefore, no significant adverse impacts on fire hazards are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------	---	------------------------------	-----------

**VIII. HYDROLOGY AND WATER QUALITY.**

Would the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



- |    |   |                          |                          |                          |                                     |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| i) | Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| j) | Inundation by seiche, tsunami, or mudflow?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

## 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 and affected environment vary substantially throughout the area and include commercial, industrial, residential, agricultural, and open space uses.

The refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties and are generally surrounded by other commercial and industrial facilities. The refineries are located within rolling, low elevation hills along the shores of the San Francisco Bay, San Pablo Bay, Carquinez Strait, and Suisun Bay. ChevronTexaco is bordered by the San Francisco and San Pablo Bays on the western border of the refinery. The ConocoPhillips refinery is bounded on the north and west by San Pablo Bay. The Valero, Shell, and Tesoro refineries are located adjacent to Suisun Bay along the Carquinez Straits.

Reservoirs and drainage streams are located throughout the area and discharge into the Bays. Marshlands incised with numerous winding tidal channels containing brackish water are located near the refineries.

The refineries are located within the San Francisco Bay Area Hydrologic Basin. The primary regional groundwater water-bearing formations include the recent and Pleistocene (up to two million years old) alluvial deposits and the Pleistocene Huichica formation. Salinity within the unconfined alluvium appears to increase with depth to at least 300 feet. Water of the Huichica formation tends to be soft and relatively high in bicarbonate, although usable for domestic and irrigation needs.

## Regulatory Background

The Federal Clean Water Act of 1972 primarily establishes regulations for pollutant discharges into surface waters in order to protect and maintain the quality and integrity of the nation’s waters. This Act requires industries that discharge wastewater to municipal sewer systems to meet pretreatment standards. The regulations authorize the U.S. EPA to set the pretreatment standards. The regulations also allow the local treatment plants to set more stringent wastewater discharge requirements, if necessary, to meet local conditions.

The 1987 amendments to the Clean Water Act enabled the U.S. EPA to regulate, under the National Pollutant Discharge Elimination System (NPDES) program, discharges from industries and large municipal sewer systems. The U.S. EPA set initial permit application requirements in 1990. The State of California,

through the State Water Resources Control Board, has authority to issue NPDES permits, which meet U.S. EPA requirements, to specified industries.

The Porter-Cologne Water Quality Act is California's primary water quality control law. It implements the state's responsibilities under the Federal Clean Water Act but also establishes state wastewater discharge requirements. The RWQCB administers the state requirements as specified under the Porter-Cologne Water Quality Act, which include storm water discharge permits. The water quality in the Bay Area is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board.

In response to the Federal Act, the State Water Resources Control Board prepared two state-wide plans in 1991 and 1995 that address storm water runoff: the California Inland Surface Waters Plan and the California Enclosed Bays and Estuaries Plan. Enclosed bays are indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. San Francisco Bay, and its constituents parts, including Carquinez Strait and Suisun Bay, fall under this category.

The San Francisco Bay Basin Plan identifies the: (1) beneficial water uses that need to be protected; (2) the water quality objectives needed to protect the designated beneficial water uses; and (3) strategies and time schedules for achieving the water quality objectives. The beneficial uses of the Carquinez Strait that must be protected which include water contact and non-contact recreation, navigation, ocean commercial and sport fishing, wildlife habitat, estuarine habitat, fish spawning and migration, industrial process and service supply, and preservation of rare and endangered species. The Carquinez Strait and Suisun Bay are included on the 1998 California list as impaired water bodies due to the presence of chlordane, copper, DDT, diazinon, dieldrin, dioxin and furan compounds, mercury, nickel, PCBs, and selenium.

## **Discussion of Impacts**

VIII a – j. No significant adverse impacts on hydrology/water quality resources are anticipated from the proposed rule amendments that would apply to existing refinery operations. The refineries affected by the proposed rule amendments are required to treat and monitor wastewater discharges from their facilities. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries. The changes to the monitoring for wastewater collection, separation, and treatment systems will have no adverse impact on wastewater discharges, alter drainage patterns, create additional water runoff, place any additional structures within 100-year flood zones or other areas subject to flooding, or contribute to inundation by seiche, tsunami or mudflow. No major construction activities are expected from the proposed rule amendments and no new structures are required. Therefore, no significant adverse impacts on hydrology/water quality are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IX. LAND USE AND PLANNING.</b> Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to a general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 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 refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties and generally adjacent to industrial and commercial land uses.

## Regulatory Background

Land uses are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

## Discussion of Impacts

IX a-c. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries within industrial areas. The proposed rule amendments neither require, nor are likely to result in, construction inside or outside of those facilities. Therefore, no land use impacts are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>X. MINERAL RESOURCES.</b> Would the project:				
a) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 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 and the affected environment vary greatly throughout the area. The refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties.

## Regulatory Background

Mineral resources are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

## Discussion of Impacts

X a-b. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries within industrial areas. The proposed rule amendments neither require, nor is likely to result in, construction inside or outside of those facilities. The proposed rule amendments are not associated with any action that 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, or of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Therefore, no impacts on mineral resources are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XI. NOISE.</b> Would the project:				
a) Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Expose persons to or generate of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be located within the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 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 and the affected environment vary greatly throughout the area. The refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties and are typically surrounded by other commercial and industrial facilities.

## **Regulatory Background**

Noise issues related to construction and operation activities are addressed in local General Plan policies and local noise ordinance standards. The General Plan and noise ordinances generally establish allowable noise limits within different land uses including residential areas, other sensitive use areas (e.g., schools, churches, hospitals, and libraries), commercial areas, and industrial areas.

## **Discussion of Impacts**

XI a-f. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries within industrial areas. The proposed rule amendments neither require, nor are likely to result in, construction inside or outside of those facilities, and will not alter noise levels either within or outside of the refineries. No new equipment which would generate noise is required as part of the proposed rule amendments. Therefore, no noise impacts are expected.

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XII. POPULATION AND HOUSING.</b> Would the project:				
a) Induce substantial population growth in an area either directly (e.g., by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 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 and the affected environment vary greatly throughout the area. The refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties.

## Regulatory Background

Population and housing growth and resources are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

## Discussion of Impacts

XII a. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries within industrial areas. The proposed rule amendments neither require nor are likely to result in, construction inside or outside of those facilities. No additional workers will be required at the refineries; therefore, no increase in population is expected.

XII b-c. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries within industrial areas. No housing would be impacted or

removed by the proposed rule amendments and no displacement housing would be required. Therefore, no significant adverse impacts on population/housing are expected.

---

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------------	---	------------------------------------	-----------

---

**XIII. PUBLIC SERVICES.** Would the project:

- a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

---

## 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 and the affected environment vary greatly throughout the area. The refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties.

Given the large area covered by the BAAQMD, 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.

## Regulatory Background

City and/or County General Plans usually contain goals and policies to assure adequate public services are maintained within the local jurisdiction.



## Discussion of Impacts

XIII a. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries within industrial areas. The proposed rule amendments do not require the installation of new equipment or new public services. No impacts on the need for fire or police protection are expected. The proposed rule amendments are not expected to require additional workers at the refinery or result in population growth so no impacts on schools or parks are expected. Therefore, no significant adverse impacts on public services are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------	---	------------------------------	-----------

### XIV. RECREATION. Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

## 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 there are numerous areas for recreational activities. The refiners affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties. Public recreational land uses are not located within the confines of the refineries.

## Regulatory Background

Recreational areas are generally protected and regulated by the City and/or County General Plans at the local level through land use and zoning requirements. Some parks and recreation areas are designated and protected by state and federal regulations.

## Discussion of Impacts

XIV a-b. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries within industrial areas. The proposed rule amendments neither require, nor are likely to result in, construction inside or outside of those facilities. No additional workers will be required at the refineries, no increase in population is expected and, therefore, no significant adverse impacts on recreation are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------	---	------------------------------	-----------

**XV. TRANSPORTATION/TRAFFIC.** Would the project:

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Cause, either individually or cumulatively, exceedance of a level-of-service standard established by the county congestion management agency for designated roads or highways?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Substantially increase hazards because of a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in inadequate emergency access?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Result in inadequate parking capacity?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

## 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). Transportation systems located within the Bay Area include railroads, airports, waterways, and highways. The transportation infrastructure for vehicles and trucks in the Bay Area ranges from single lane roadways to multilane interstate highways. The refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties and are accessed via highways and local roadway systems.

Interstate 80 is a major east-west freeway link providing access between Richmond and Oakland/San Francisco to the south and west and Sacramento to the east. Interstate 80 is a six-lane north-south freeway which connects Contra Costa County to Solano County via the Carquinez Bridge. The ConocoPhillips Refinery is bisected by Interstate 80, south of the Carquinez Bridge, near the interchange with State Route 4.

The ChevronTexaco Refinery is located north and adjacent to Interstate 580. Interstate 580 is a six-lane freeway and connects Interstate 80 east of the ChevronTexaco Refinery with U.S. 101 in Marin County via the Richmond-San Rafael Bridge.

The Shell Martinez Refinery is located north of State Route 4 and west of Interstate 680, south of the Benicia-Martinez Bridge. The Tesoro Avon Refinery is located north of State Route 4 and east of Interstate 680, south of the Benicia-Martinez Bridge and several miles east of the Shell Martinez Refinery.

The Valero Benecia Refinery is also located near Interstate 680. Interstate 680 is a four-lane, north-south freeway near the Valero, Tesoro, and Shell refineries. From the Benicia-Martinez Bridge, Interstate 680 extends north to Interstate 80 in Cordelia. Caltrans constructed a second freeway bridge adjacent and east of the existing Benicia-Martinez Bridge. The new bridge consists of five northbound traffic lanes. The existing bridge was re-stripped to accommodate four lanes for southbound traffic.

Interstate 780 is a four lane, east-west freeway extending from the Benicia-Martinez Bridge west to I-80 in Vallejo.

## Regulatory Background

Transportation planning is usually conducted at the county level and the refineries in the Bay Area are located in Contra Costa and Solano Counties. The County of Contra Costa and the Contra Costa Transportation Authority share the duties of transportation planning and administration of improvement projects in the County of Contra Costa. The Contra Costa County Community Development Department conducts and oversees the transportation and planning for new development projects. The Contra Costa Transportation Agency implements the transportation programs and projects created by the County's Measure C, the Transportation Improvement and Growth Management Program and also serves as the County's Congestion Management Agency.

The Solano Transportation Authority is the designated Congestion Management Agency for Solano County and develops the Congestion Management Plan (CMP) for Solano County. The CMP identifies a system of

state highways and regionally significant principal arterials and specifies level of service standards for those roadways.

## **Discussion of Impacts**

XV a-b. The wastewater collection, separation, and treatment systems to be monitored already exist and are located within the confines of existing refineries within industrial areas. The proposed rule amendments do not require construction activities or the installation of new equipment. The transport of additional materials will not be required and no additional workers will be required. Some refineries use contractors to implement inspection and maintenance programs. The proposed rule amendments may require that the contractor visit the site on additional days to re-inspect some components. The increase in traffic would be limited to about one trip per day per refinery. Additional traffic at the existing facilities that would result in changes to traffic patterns or levels of service at local intersections is not expected.

XV c. The proposed rule amendments include minor modifications to the operation of existing facilities. The project will not involve the delivery of materials via air so no increase in air traffic is expected.

XV d - e. The proposed rule amendments are not expected to increase traffic hazards or create incompatible uses at or adjacent to the site. Emergency access is provided at the refinery sites, will continue to be maintained at the refinery sites, and will not be impacted by the proposed rule amendments.

XV f. No construction activities are expected, so no parking is required for construction workers. No increase in permanent workers is expected. Therefore, the proposed rule amendments will not result in significant adverse impacts on parking.

XV g. The proposed rule amendments involve modifications to the operations within the confines of an existing refinery. The proposed rule amendments are not expected to conflict with adopted policies, plans, or programs supporting alternative transportation modes (e.g., bus turnouts, bicycle racks).

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less-than-Significant Impact	No Impact
--	--------------------------------	---	------------------------------	-----------

**XVI. UTILITIES/SERVICE SYSTEMS.** Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements needed?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Comply with federal, state, and local statutes and regulations related to solid waste?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**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 and the affected environment vary greatly throughout the area. The refineries affected by the proposed rule amendments are located in the industrial portions of Contra Costa and Solano Counties.

Given the large area covered by the BAAQMD, public utilities are provided by a wide variety of local agencies. The refineries have wastewater and storm water treatment facilities and discharge treated wastewater under the requirements of NPDES permits.

Water is supplied to the refineries by several water purveyors in the Bay Area. Solid waste is handled through a variety of municipalities, through recycling activities and at disposal sites.

There are no hazardous waste disposal sites within the jurisdiction of the BAAQMD. Hazardous waste generated at area facilities, which is not reused on-site, or recycled off-site, is disposed of at a licensed in-state hazardous waste disposal facility. Two such facilities are the Chemical Waste Management Inc. (CWMI) Kettleman Hills facility in King's County, and the Safety-Kleen facility in Buttonwillow (Kern County). Hazardous waste can also 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.

## **Regulatory Background**

City and/or County General Plans usually contain goals and policies to assure adequate utilities and service systems are maintained within the local jurisdiction.

## **Discussion of Impacts**

XVI a – g. The proposed rule amendments will not generate or affect wastewater or solid waste, will not affect storm water, or storm water drainage, and will not require water, or affect water supplies. No increases in demand for public utilities are expected as a result of the proposed rule amendments.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------	---	------------------------------	-----------

**XVII. MANDATORY FINDINGS OF SIGNIFICANCE.**

- |    |  |                          |                          |                          |                                     |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) | Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) | Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) | Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Discussion of Impacts**

XVII a. The proposed rule amendments do not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory, as discussed in the previous sections of the CEQA checklist. The proposed rule amendments are expected to result in emission reductions from refineries, thus providing a beneficial air quality impact and improvement in air quality. No significant adverse impacts are expected.

XVII b. The proposed rule amendments are expected to result in emission reductions from refineries, thus providing a beneficial air quality impact and improvement in air quality. The proposed rule amendments are part of a long-term plan to bring the Bay Area into compliance with the federal and state ambient air quality standards for ozone. The proposed rule amendments do not have adverse environmental impacts that are limited individually, but cumulatively considerable when considered in conjunction with other regulatory control projects. The proposed rule amendments do not have environmental effects that will cause

substantial adverse effects on human beings, either directly or indirectly. No significant adverse impacts are expected.

XVII c. The proposed rule amendments are expected to result in emission reductions from refineries, thus providing a beneficial air quality impact and improvement in air quality. The proposed rule amendments are part of a long-term plan to bring the Bay Area into compliance with the federal and state ambient air quality standards for ozone, thus reducing the potential health impacts due to ozone exposure. The proposed rule amendments do not have significant adverse effects (either directly or indirectly) to human beings.

M:\DBS\2239 BAAQMD-R\Reg 8, Rule 8\R8Ch.3.doc



**CHAPTER 4**  
**References**

Bay Area Air Quality Management District (BAAQMD), 2004. Staff Report, Proposed Revision of Regulation 8, Rule 8: Water Collection Systems, March 14, 2004.

BAAQMD, 2001. Revised 2001 San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard, adopted October 24, 2001.

BAAQMD, 2001. Toxic Air Contaminant 2000 Annual Report. December 2001.

BAAQMD, 2002. 2002 BAAQMD Ambient Air Quality Data.

M:\DBS\2239 BAAQMD-R\Reg. 8, Rule 8\R8Ch.4.doc