Initial Study/Negative Declaration for the Amendments to Bay Area Air Quality Management District Regulation 9, Rule 10: Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators and Process Heaters in Petroleum Refineries

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Chapter 1

Introduction

Purpose of this Document

This Negative Declaration assesses the environmental impacts of the proposed adoption of amendments to Regulation 9, Rule 10 – Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators and Process Heaters in Petroleum Refineries (Regulation 9-10) - by the Bay Area Air Quality Management District (BAAQMD or District). This assessment is required by the California Environmental Quality Act (CEQA) and in compliance with the state CEQA Guidelines (Title 14 California Code of Regulations §15000 et seq.). A Negative Declaration 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 Negative Declaration because no significant adverse impacts are expected to 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,
- agriculture and forestry resources,
- air quality,
- biological resources,
- cultural resources,
- geology / soils,
- greenhouse gas emissions,
- hazards & hazardous materials,
- hydrology / water quality,
- land use / planning,

- mineral resources,
- noise,
- population / housing,
- public services,
- recreation,
- transportation / traffic, and
- utilities / service systems.

Impact Terminology

The following terminology is used in this Initial Study/Negative Declaration 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 9, Rule 10, 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.

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Chapter 2

Description of the Proposed Rule

BACKGROUND

The BAAQMD regulates nitrogen oxides (NOx) and carbon monoxide (CO) by setting emission limits for certain combustion devices at petroleum refineries in the San Francisco Bay Area under Regulation 9, Rule 10, (Regulation 9-10). Regulation 9-10 currently imposes a 0.033 lb NOx per million British Thermal Units (BTU) heat input (daily average) for each refinery operating within the District's jurisdiction. The regulation imposes a refinery-wide average NOx emissions limit on refinery boilers, steam generators, and process heaters (excluding CO boilers) that were permitted prior to the adoption of the rule (collectively referred to herein as pre-1994 heaters). Regulation 9-10 includes "best available retrofit control technology" (BARCT) NOx limits and "reasonably achievable control technology" (RACT) NOx limits for pre-1994 heaters, and separate BARCT and RACT limits for CO boilers. BARCT limits satisfy California requirements for ozone non-attainment areas, while RACT standards satisfy less-stringent federal requirements for ozone non-attainment areas.

Regulation 9-10 is unusual because most of the heaters subject to the rule do not have source-specific emission limits, but instead are subject to the refinery-wide daily, average BARCT and RACT NOx limits. The rule was structured this way in order to minimize costs of compliance with the required NOx emission reductions, and to allow operational flexibility on a day to day basis as heater demand changes.

OBJECTIVES

The objective of the alternative standard is to provide operational flexibility to refinery operators and encourage energy efficiency improvements, including replacement of refinery heaters, which, if done, reduces overall NOx emissions because the new source review (NSR) provisions for new heaters are much more stringent than the Regulation 9-10 provisions. Because of AB32 requirements, if refineries need to replace heaters to gain energy efficiency and reduce greenhouse gas emissions, (which are largely carbon dioxide emissions), the Regulation 9-10 standard will not serve as a disincentive to replace heaters subject to the rule. The alternative standard would not require retro-fitting of existing heaters with control equipment to meet the pounds of NOx per million BTU heat input standard, instead, the emissions cap would decrease by the average amount of NOx emitted from the heater that was removed.

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. The California Air Resources Board (CARB) has also set a California ozone standard. The Bay Area is a non-attainment area for the state one-hour ozone standard and federal eight-hour ozone standard. Under State law, ozone non-attainment

areas must prepare plans showing how they will attain the state standard. The 2010 Clean Air Plan (CAP) is the most recent planning document for the State one-hour ozone standard. Because the Bay Area is a marginal non-attainment area for the national one-hour standard, the least severe non-attainment classification, the BAAQMD is not required to prepare an attainment plan for the national standard. In addition, NOx emissions react in the atmosphere to form secondary particulate matter. The Bay Area is not in attainment of California ambient air standards for particulate matter of 10 microns or less (PM10) or for particulate matter of 2.5 microns or less (PM2.5).

RULE AMENDMENTS UNDER CONSIDERATION

The proposed amendment creates a voluntary alternative to the refinery-wide, average NOx limit in Section 301 of Regulation 9-10. The alternative standard applies to the same, pre-1994 population of heaters that are subject to Section 9-10-301. While Section 301 includes a *daily average emission rate* limit expressed in units of "pounds of NOx per million BTU of heat input", the alternative limit is a *daily total mass* limit expressed in units of "pounds of NOx per day". The value of the alternative standard is not set in the rule, since the value will be different for each refinery that elects to use the alternative standard. Instead, the proposed amendment includes a procedure for establishing the alternative limit for each refinery. The alternative limit would be the sum of the baseline emissions for each of the heaters subject to Section 9-10-301 at the time of the application to use the alternative standard. Each heater would establish a baseline emission based on 10 days of historical operation in the last three years. All heaters in the refinery would use the same 10 days. In this way, the alternative limit would continue to offer flexibility in complying with the regulation, since individual heaters would not have specific emission limits. However, unlike the current limit in Section 9-10-301, the alternative limit would not be perceived as a disincentive to remove or modify any heater subject to the alternative, because removal or modification of a heater would not result in a requirement to add additional NOx controls on the remaining heaters. After the alternative limit is set, the limit would be reduced whenever a heater subject to the alternative limit is permanently removed from service by the contribution of that heater to the total.

Although adoption of the alternative standard by a refinery would prevent a pre-1994 heater removal or modification from triggering new NOx control requirements on existing heaters, the alternative standard might require new NOx controls. This would occur if a refinery were to increase its fuel usage at pre-1994 heaters in the future such that the refinery would exceed its mass NOx emissions allowance, even if the emissions still met the standard based on heat input in Section 9-10-301, 0.033 lb NOx/MM BTU.

For a refinery that relied on inter-changeable emission reduction credits (IERC) to comply indirectly with Regulation 9-10 during the baseline period, the alternative mass emission limit would provide a mechanism to establish a mass emission limit. A refinery could use ERCs at a 1.15:1 ratio in the same way as ERCs can be used to offset the emissions from a new source. This would be an expansion of the use of ERCs under District regulations, which currently only allow ERCs to be used for offsets for NSR

permitting purposes or to be exchanged for (time-limited) IERC. Of course, a facility also could continue to use IERCs to comply with the alternate standard.

In addition, the District is also proposing to amend the monitoring provisions for NOx emissions in this rule. Regulation 9-10 requires compliance with the emission rate limit to be demonstrated using either a continuous emissions monitoring system (CEMS) data or a parametric monitoring system commonly referred to as the "NOx box." A CEMS is an automated, high-frequency sampling system that is widely considered the most accurate monitoring method available. CEMS coverage by refineries varies, from 55% of the number of heaters monitored by CEMS to nearly 90%. To make CEMS coverage more consistent among the Bay Area refineries, to improve the enforceability of the rule and to reduce the administrative burden of regulating parametric monitoring system heaters, the District is now proposing to expand CEMS coverage at all Bay Area refineries such that at least 95% of the NOx mass emissions to be monitored with CEMS, regardless of whether the refinery is operating under the existing rate-based limit or the proposed alternative mass limit. For the small subset of pre-1994 heaters that are not equipped with CEMS at a refinery, the District is proposing to eliminate the NOx boxes and simplify the monitoring and calculations required to demonstrate compliance with the rule. Finally, the District is proposing that refineries submit information on burners in heaters subject to the rule, and update the information when burners are replaced. This information is useful for assessing opportunities for further NOx emission reductions at these heaters, particularly as AB 32 requirements are implemented.

PROPOSED METHOD OF CONTROL

Refineries comply with the current emission standard for pre-1994 heaters in Regulation 9-10 by applying a variety of NOx control technologies to refinery heaters in a combination that allows compliance with the daily, average emission rate limit. These technologies range from basic, low-NOx burners that have NOx emission rates around 30 ppmv (at three percent oxygen) to more-advanced burners that achieve lower NOx emission rates through staged combustion techniques and other NOx-minimization techniques. Some heaters are controlled with selective catalytic reduction (SCR) systems, or with a variation of SCR that omits the catalytic reaction stage – "selective non-catalytic reduction" (SNCR).

The District is proposing a new, alternate emission standard that would be a mass-based limit for pre-1994 heaters subject to Regulation 9-10. Between the time that the rule was adopted in 1994 and the time that the standards became fully effective in 2002, each refinery examined its particular population of heaters and applied NOx controls in the most effective manner possible from the perspective of both costs and emissions reductions. And since 2002, the refineries have had to add additional controls on pre-1994 heaters under certain circumstances. There are two situations where the current rule would require a refinery to add additional NOx controls to pre-1994 heaters in order to maintain compliance. The first situation occurs when a pre-1994 heater is removed from service and the average rate of the heaters remaining in the population exceeded the 0.033 lb NOx/MM BTU standard. In that case, one or more of the remaining heaters

would be required to be retrofitted with additional NOx controls to bring the overall average down to the standard. The second situation occurs when a refinery operator has complied indirectly with this limit by using IERCs as allowed under Regulation 2, Rule 9: Interchangeable Emission Reduction Credits, and the source of the IERCs is lost. In this situation, similar to the first, the amount of the required additional NOx emission reductions on pre-1994 heaters is equal to the amount of emission reductions previously provided by the source of IERC. It has been argued that the current rule creates a disincentive to replace or modernize heaters that are subject to Regulation 9-10 because the less expensive, most cost effective emissions reductions have already been achieved.

As the less expensive control options have been implemented, only more expensive control options remain. (The District examined the further costs of control of pre-1994 heaters at each refinery recently, as part of the rule development effort that led to the 2010 amendments to Regulation 9, Rule 10. Staff concluded that a further reduction in the 0.033 lb NOx/MM BTU standard was not cost effective at that time.)

POTENTIAL EMISSION REDUCTIONS

The proposed alternative emission standard is voluntary and therefore is not assured of producing any particular level of emission reduction. Even if adopted by a refinery, as with the existing rate-based standard, if no heaters subject to Regulation 9-10 were replaced, there would be no change in the emissions. The proposed amendment contains requirements, however, to ensure that if a refinery elects to adopt the alternative standard, that emission reductions that would have been required by the current provisions of Regulation 9-10 will still occur for any known project.

AFFECTED AREA

The proposed rule amendments would apply to facilities under BAAQMD jurisdiction. The BAAQMD jurisdiction 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.

See Figure 1 depicting the area covered by the Bay Area Air Quality Management District. The refineries that fall within the District are located in Contra Costa and Solano counties adjacent to the San Francisco Bay.

The Chevron refinery is located in the City of Richmond in Contra Costa County. 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 Interstate 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 Interstate 780 and immediately west of Interstate 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 Interstate 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.

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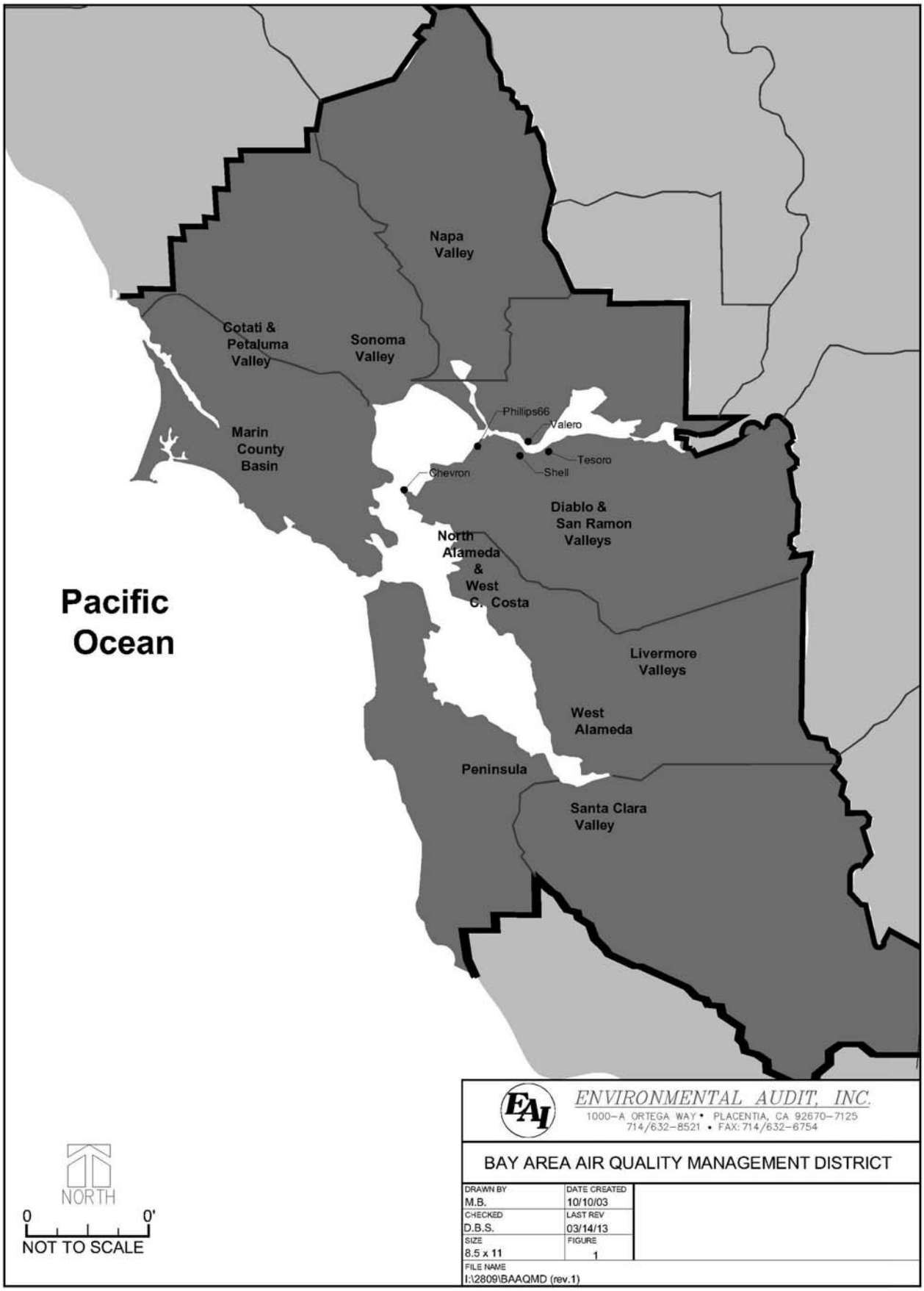
Napa Valley
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Sonoma Valley
Marin County Basin
Phillips66
Valero
Tesoro
Shell
Chevron
Diablo & San Ramon Valleys
North Alameda & West C. Costa
Pacific Ocean
Livermore Valleys
West Alameda
Peninsula
Santa Clara Valley
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ENVIRONMENTAL AUDIT, INC.
1000-A ORTEGA WAY • PLACENTIA, CA 92670-7125
714/632-8521 • FAX: 714/632-6754
BAY AREA AIR QUALITY MANAGEMENT DISTRICT
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Chapter 3

Environmental Checklist

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	Bay Area Air Quality Management District (BAAQMD) Proposed Amendments to Regulation 9, Rule 10.
Lead Agency Name:	Bay Area Air Quality Management District
Lead Agency Address:	939 Ellis Street San Francisco, California 94109
Contact Person:	Julian Elliot
Contact Phone Number:	415-749-4705
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.
Project Sponsor's Name:	Bay Area Air Quality Management District
Project Sponsor's Address:	939 Ellis Street San Francisco, California 94109
General Plan Designation:	Rule 9-10 applies to boilers, steam generators, and process heaters that are used in petroleum refineries throughout the District, which are primarily located in industrial areas.
Zoning:	Rule 9-10 applies to boilers, steam generators, and process heaters at petroleum refineries throughout the District, which are primarily located in industrial areas.
Description of Project:	See “Background” in Chapter 2.
Surrounding Land Uses and Setting:	See “Affected Area” in Chapter 2.
Other Public Agencies Whose Approval is Required:	None

Environmental Factors Potentially Affected:

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology / Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Utilities / Service Systems	☐ 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 in 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 a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, 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 EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature: Date:

Printed Name: Date:

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis.

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, Program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063 (c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This checklist is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

d) The significance criteria or threshold, if any, used to evaluate each question; and

e) The mitigation measure identified, if any, to reduce the impact to less than significance.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less-than-Significant Impact	No Impact
I.	**AESTHETICS.**				
	Would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b)	Substantially damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	☐	☐	☐	☑
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☑
d)	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	☐	☑

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 proposed rule amendment focuses on NOx emissions from pre-1994 process heaters in petroleum refineries. The rule amendment for these heaters will affect five refineries currently operating within the Bay Area. The refineries are located in industrial areas and scenic highways or corridors are generally not located in the vicinity of these refineries.

Regulatory Background

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

Impacts

I a-d. Regulation 9-10 limits emissions of NOx from existing boilers, steam generators, and process heaters (heaters) in petroleum refineries in order to reduce ozone levels in the Bay Area and reduce transport of air pollutants to neighboring air basins. The proposed amendments create a voluntary alternative standard to incentivize modernization of existing heaters, which will result in lower levels of NOx emissions and allow refineries to move toward compliance with California's Global Warming Solutions Act (AB 32) requirements. The amendments would also require increased use of continuous emissions monitoring systems (CEMS) to measure NOx output. The proposed amendments are not expected to require the construction of any major new structures that would be visible to areas outside of existing refinery boundaries, with the possible exception of CEMS installations on existing stacks, and are not expected to result in any adverse aesthetic impacts. Any refinery modifications are expected to be minor, e.g. installation of CEMS, which would be located on existing stacks within the refinery. The heaters affected by the proposed rule amendments are located within existing refineries within the Bay Area, which are not typically located in areas with scenic vistas. If refineries chose to pursue the alternative standard, the alternative standard would not require retro-fitting of existing heaters with additional control equipment. The refinery facilities are all industrial facilities located within industrial areas. Therefore, the installation of CEMS within an industrial area would not be expected to generate significant adverse impacts on aesthetics. The proposed amendment to Regulation 9-10 would also not generate any new light or glare impacts, as no additional lighting would be required.

Based upon these considerations, no significant adverse aesthetic impacts are expected from the implementation of the amendment to Regulation 9-10.

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

II. AGRICULTURE and FOREST 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 as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.--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?	☐	☐	☐	☑
b)	Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	☐	☐	☐	☑
a)	Conflict with existing zoning for, or cause rezoning of, forest land as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				
b)	Result in the loss of forest land or conversion of forest land to non-forest use?				
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

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 proposed amendment will affect pre-1994 boilers, steam generators, and process heaters at existing refineries within the Bay Area. Agricultural or forest resources are currently not located within the confines of the refineries located within the Bay Area.

Regulatory Background

Agricultural and forest 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-e. Regulation 9-10 limits emissions of NOx from existing heaters in petroleum refineries in order to reduce ozone levels in the Bay Area and reduce transport of air pollutants to neighboring air basins. The proposed amendments create a voluntary alternative standard to incentivize modernization of existing heaters, which will result in lower levels of NOx emissions and allow refineries to move toward compliance with California's Global Warming Solutions Act (AB 32) requirements. The amendments would also require increased use of CEMS to measure NOx output. The refineries are located in industrial areas where no agricultural or forest resources are located. Any refinery modifications would be made within the confines of the existing refinery facilities. No development outside of existing refinery facilities would be required by the proposed amendment to Regulation 9-10; therefore, no impacts to agricultural or forestland resources are expected.

Based upon these considerations, no significant adverse impacts to agricultural and forest resources are expected from the implementation of the proposed rule amendments.

	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?	☐	☐	☐	☑
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☐	☐	☑
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)?	☐	☐	☐	☑
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☑
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☑

Setting

Meteorological Conditions

The summer climate of the West Coast is dominated by a semi-permanent 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; 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 temperature 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_2), PM_{10}, $PM_{2.5}$, sulfur dioxide (SO_2) and lead. These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are more stringent than the federal standards. 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 monitored levels of various criteria pollutants at 24 monitoring stations in 2012.

The 2012 air quality data from the BAAQMD monitoring stations are presented in Table 3-2. The data indicate that the air quality at all monitoring stations were below the state standard and federal ambient air quality standards for CO and SO_2. The federal 8-hour ozone standard was exceeded on 4 days in the District in 2012, while the state 8-hour standard was exceeded on 8 days. The State 1-hour ozone standard was exceeded on 3 days in 2012 in the District. The ozone standards are most frequently exceeded in the Eastern District (Bethel Island, 4 days in excess of the California 8-hr standard; Concord, 3 days; Fairfield, 2 days; Livermore, 4 days) and in the Santa Clara Valley (Gilroy, 2 days; Los Gatos, 1 day; and San Martin, 4 days) (see 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, NO_2, and SO_2. The District is not considered to be in attainment with the ozone standards and State PM_{10} and $PM_{2.5}$ standards.

TABLE 3-1

Federal and State Ambient Air Quality Standards

	STATE STANDARD	FEDERAL PRIMARY STANDARD	MOST RELEVANT EFFECTS
AIR POLLUTANT	CONCENTRATION/ AVERAGING TIME	CONCENTRATION/ AVERAGING TIME	
Ozone	0.09 ppm, 1-hr. avg. > 0.070 ppm, 8-hr	0.075 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	0.03 ppm, annual avg.> 0.18 ppm, 1-hr avg. >	0.053 ppm, ann. avg.> 0.10 ppm, 1-hr 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. >	0.5 ppm, 3-hr. avg.> 0.075 ppm, 1-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 (PM_{10})	20 µg/m3, annual arithmetic mean > 50 µg/m3, 24-hr average>	150 µg/m3, 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 ($PM_{2.5}$)	12 µg/m3, annual arithmetic mean>	12 µg/m3, annual arithmetic mean> 35 µg/m3, 24-hour average>	Decreased lung function from exposures and exacerbation of symptoms in sensitive patients with respiratory disease; elderly; children.
Sulfates	25 µg/m3, 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/m3, 30-day avg. >=	1.5 µg/m3, calendar quarter> 0.15 µg/m3, 3-mo. avg. >	(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 - 2012

MONITORING STATIONS	Ozone						Carbon Monoxide			Nitrogen Dioxide				Sulfur Dioxide				PM_{10}				$PM_{2.5}$				
	Max 1-hr	Cal 1-hr days	Max 8-hr	Nat 8-hr days	Cal 8-hr days	3-yr Avg	Max 1-hr	Max 8-hr	Nat/ Cal days	Max 1-hr	Ann Avg	Nat 1-hr days	Cal 1-hr days	Max 1-hr	Max 24-hr	Nat 1-hr days	Cal 24-hr days	Ann Avg	Max 24-hr	Nat 24-hr days	Cal 24-hr days	Max 24-hr	Nat 24-hr days	3-yr Avg	Ann Avg	3-yr Avg
North Counties	(ppb)						(ppm)			(ppb)				(ppb)				($\mu g/m^3$)				($\mu g/m^3$)				
Napa*	81	0	64	0	0	63	2.2	1.5	0	50	8	0	0	-	-	-	-	16.1	38	0	0	*	*	*	*	*
San Rafael*	76	0	57	0	0	51	2.3	1.1	0	52	11	0	0	-	-	-	-	13.2	37	0	0	26.5	0	*	8.0	*
Santa Rosa	64	0	51	0	0	47	2.2	1.5	0	43	9	0	0	-	-	-	-	-	-	-	-	25.7	0	22	8.2	8.0
Vallejo	85	0	62	0	0	59	2.8	2.2	0	52	9	0	0	14.2	2.5	0	0	-	-	-	-	36.8	1	25	9.0	8.8
Coast/Central Bay																										
Oakland	72	0	45	0	0	44	2.9	1.6	0	65	12	0	0	-	-	-	-	-	-	-	-	33.6	0	24	9.5	9.1
Oakland-West*	61	0	48	0	0	*	2.8	2.4	0	53	15	0	0	68.1	8.0	0	0	-	-	-	-	*	*	*	*	*
Richmond	-	-	-	-	-	-	-	-	-	-	-	-	-	13.3	2.3	0	0	-	-	-	-	-	-	-	-	-
San Francisco	69	0	48	0	0	47	2.0	1.2	0	124	13	1	0	-	-	-	-	17.4	51	0	1	35.7	1	24	8.2	9.4
San Pablo*	86	0	59	0	0	51	1.6	0.9	0	55	9	0	0	14.8	6.4	0	0	15.6	47	0	0	*	*	*	*	*
Eastern District																										
Bethel Island	98	1	87	2	4	73	1.5	0.9	0	32	7	0	0	19.7	2.5	0	0	14.1	52	0	1	-	-	-	-	-
Concord	93	0	85	2	3	72	1.2	0.8	0	40	8	0	0	8.7	2.5	0	0	12.6	35	0	0	32.2	0	24	6.5	7.2
Crockett	-	-	-	-	-	-	-	-	-	-	-	-	-	19.2	5.9	0	0	-	-	-	-	-	-	-	-	-
Fairfield	88	0	77	1	2	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Livermore	102	2	90	3	4	73	-	-	-	53	11	0	0	-	-	-	-	-	-	-	-	31.1	0	25	6.5	7.3
Martinez	-	-	-	-	-	-	-	-	-	-	-	-	-	16.5	4.1	0	0	-	-	-	-	-	-	-	-	-
Patterson Pass	-	-	-	-	-	-	-	-	-	45	4	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-
San Ramon*	99	1	86	3	3	*	-	-	-	44	8	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-
South Central Bay																										
Hayward*	94	0	65	0	0	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Redwood City	63	0	54	0	0	53	4.0	1.8	0	60	11	0	0	-	-	-	-	-	-	-	-	33.3	0	23	8.5	8.5
Santa Clara Valley																										
Cupertino*	83	0	66	0	0	*	1.9	0.8	0	45	8	0	0	28.2	3.0	0	0	13.5	42	0	0	-	-	-	-	-
Gilroy	92	0	73	0	2	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.3	0	20	7.4	7.9
Los Gatos	85	0	72	0	1	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
San Jose	101	1	62	0	0	61	2.6	1.9	0	67	13	0	0	7.9	2.8	0	0	18.8	60	0	1	38.4	2	28	9.1	9.3
San Martin	92	0	77	1	4	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Days over Standard		3		4	8				0			1	0			0	0			0	2		3			

*Due to the opening dates or temporary closures at various monitoring stations, 3-yr average ozone and/or PM2.5 data are not available
(ppb) = parts per billion, (ppm) = parts per million, ($\mu g/m^3$) = micrograms per cubic meter.

TABLE 3-3

Bay Area Air Quality Summary
Days over Standards

YEAR	OZONE			CARBON MONOXIDE				NITROGEN DIOXIDE		SULFUR DIOXIDE		PM_{10}		$PM_{2.5}$
	8-Hr*	1-Hr	8-Hr	1-Hr		8-Hr		1-Hr		24-Hr		24-Hr		24-Hr***
	Nat	Cal	Cal	Nat	Cal	Nat	Cal	Nat**	Cal	Nat**	Cal	Nat	Cal	Nat
2003	7	19	-	0	0	0	0	-	0	-	0	0	6	0
2004	0	7	-	0	0	0	0	-	0	-	0	0	7	1
2005	1	9	9	0	0	0	0	-	0	-	0	0	6	0
2006	12	18	22	0	0	0	0	-	0	-	0	0	15	10
2007	1	4	9	0	0	0	0	-	0	-	0	0	4	14
2008	12	9	20	0	0	0	0	-	0	-	0	0	5	12
2009	8	11	13	0	0	0	0	-	0	-	0	0	1	11
2010	9	8	11	0	0	0	0	0	0	0	0	0	2	6
2011	4	5	10	0	0	0	0	0	0	0	0	0	3	8
2012	4	3	8	0	0	0	0	1	0	0	0	0	2	3

* In 2008, the U.S. EPA revised the 8-hour ozone standard from 0.08 ppm to 0.075 ppm. Stating in 2008, ozone exceedance days reflect the new standard.

** In 2010, the U.S. EPA implemented a new national 1-hour nitrogen dioxide standard of 100 ppb and a new national 1-hour sulfur dioxide standard of 75 ppb.

*** In 2006, the U.S. EPA revised the national 24-hour PM2.5 standard from 65 µg/m3 to 35 µg/m3. Starting in 2006, PM2.5 exceedance days reflect the new standard.

Toxic Air Pollutants

The BAAQMD maintains a database that contains information concerning emissions of TACs from permitted stationary sources in the Bay Area. This inventory, and a similar inventory for mobile and area sources compiled by CARB, is used to plan strategies to reduce public exposure to TACs. The detailed concentrations of various TACs are reported in the BAAQMD, Toxic Air Contaminant Control Program, 2003 Annual Report (BAAQMD, 2007) and summarized in Table 3-4. The 2003 TAC data show decreasing concentrations of many TACs in the Bay Area. The most dramatic emission reductions in recent years have been for certain chlorinated compounds that are used as solvents including 1,1,1-trichloroethane, methylene chloride, and perchloroethylene. Table 3-4 contains a summary of ambient air toxics listed by compound.

TABLE 3-4

Summary of BAAQMD Ambient Air Toxics Monitoring Data[1]

Pollutant	Units	Average MDL [1]	% less than MDL	Max Sample Value	Min Sample Value	Average Sample Value [2] [3]
1,3-Butadiene	ppb	5.00E-02	87%	2.60E-01	0.00E+00	3.51E-02
Acetaldehyde	ppb	1.00E-01	1%	2.66E+00	1.00E-01	6.47E-01
Acetone	ppb	3.00E-01	0%	4.30E+01	4.00E-01	2.53E+00
Acetonitrile	ppb	3.00E-01	29%	1.25E+00	0.00E+00	3.88E-01
Antimony	ng/m^3	3.00E+00	98%	3.10E+00	1.50E+00	1.53E+00
Arsenic	ng/m^3	1.50E+00	98%	9.30E+00	7.50E-01	8.70E-01
Benzene	ppb	5.00E-02	1%	1.11E+00	0.00E+00	2.04E-01
Bromomethane	ppb	3.00E-02	92%	7.00E-02	1.50E-02	1.79E-02
Cadmium	ng/m^3	1.50E+00	96%	2.80E+00	7.50E-01	8.14E-01
Carbon Tetrachloride	ppb	1.00E-02	0%	1.50E-01	1.00E-02	9.81E-02
Chlorine	$\mu g/m^3$	7.18E-03	12%	1.87E+00	0.00E+00	2.54E-01
Chloroform	ppb	2.00E-02	66%	5.90E-01	0.00E+00	1.71E-02
Chromium	ng/m^3	3.00E+00	54%	8.50E+01	1.50E+00	4.76E+00
Cis-1,3-Dichloropropylene	ppb	1.00E-01	100%	5.00E-02	5.00E-02	5.00E-02
Cobalt	ng/m^3	1.50E+00	98%	4.10E+00	7.50E-01	7.90E-01
Copper	ng/m^3	1.50E+00	0%	4.00E+01	3.00E+00	1.38E+01
Dichloromethane	ppb	1.00E-01	48%	8.67E+00	0.00E+00	1.65E-01
Ethyl Alcohol	ppb	6.60E-01	4%	9.00E+01	0.00E+00	2.48E+01
Ethylbenzene	ppb	2.00E-01	48%	1.01E+00	0.00E+00	9.66E-02
Ethylene Dibromide	ppb	1.00E-02	100%	0.00E+00	0.00E+00	5.00E-03
Ethylene Dichloride	ppb	1.00E-01	100%	0.00E+00	0.00E+00	5.00E-02
Formaldehyde	ppb	1.00E-01	0%	4.60E+00	2.72E-01	1.07E+00
Lead	ng/m^3	1.50E+00	4%	2.50E+01	7.50E-01	5.94E+00
M/P Xylene	ppb	2.00E-01	11%	3.31E+00	0.00E+00	3.55E-01
Magnesium	$\mu g/m^3$	1.33E-02	47%	2.02E-01	0.00E+00	3.30E-02
Manganese	ng/m^3	1.50E+00	8%	1.70E+02	7.50E-01	1.71E+01
Mercury	$\mu g/m^3$	6.08E-03	98%	1.04E-02	0.00E+00	3.12E-03
Methyl Chloroform	ppb	2.00E-02	89%	1.16E+00	0.00E+00	2.60E-02
Methyl Ethyl Ketone	ppb	1.00E-01	31%	1.71E+00	0.00E+00	1.81E-01
Naphthalene	ng/m^3	6.35E-01	0%	2.09E+02	1.74E+01	6.97E+01
Nickel	ng/m^3	9.00E+00	67%	1.00E+02	4.50E+00	1.05E+01
O-Xylene	ppb	1.00E-01	29%	1.14E+00	0.00E+00	1.27E-01

TABLE 3-4 (Concluded)

Pollutant	Units	Average MDL (1)	% less than MDL	Max Sample Value	Min Sample Value	Average Sample Value (2) (3)
PAHs(4)	ng/m^3					1.79E-01
Selenium	ng/m^3	1.50E+00	84%	5.40E+01	7.50E-01	1.74E+00
Styrene	ppb	1.00E-01	98%	8.40E-01	5.00E-02	6.01E-02
Tetrachloroethylene	ppb	1.00E-02	29%	2.00E+00	0.00E+00	2.26E-02
Toluene	ppb	2.00E-01	2%	3.38E+00	4.00E-02	6.54E-01
Trans-1,3-Dichloropropylene	ppb	1.00E-01	100%	5.00E-02	5.00E-02	5.00E-02
Trichloroethylene	ppb	2.00E-02	87%	7.70E-01	0.00E+00	1.40E-02
Trichlorofluoromethane	ppb	1.00E-02	0%	7.40E-01	1.60E-01	2.58E-01
Vanadium	ng/m^3	1.50E+00	34%	6.10E+01	7.50E-01	3.79E+00
Vinyl Chloride	ppb	1.00E-01	100%	0.00E+00	0.00E+00	5.00E-02
Zinc	ng/m^3	3.00E+00	0%	5.90E+01	8.00E+00	2.45E+01

(1) Source: BAAQMD 2008 Toxic Air Contaminant Monitoring Data. Data are a summary of data from all monitoring stations within the District.
(2) Some samples (especially metals) have individual MDLs for each sample. An average of these MDLs was used to determine 1/2 MDL for the Average Sample Value.
(3) If an individual sample value was less than the MDL (Method Detection Limit), then 1/2 MDL was used to determine the Average Sample Value.
(4) These substances are PAH-derivatives that have OEHHA-developed Potency Equivalency Factors (PEFs). PAHs should be evaluated as benzo(a)pyrene equivalents. This evaluation process consists of multiplying individual PAH-specific emission levels with their corresponding PEFs listed below. The sum of these products is the benzo(a)pyrene-equivalent level.

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 particulate matter in non-attainment areas. The amendments set 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 is governed by a 22-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 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 were to 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.

Targeted Control of TACs Under the Community Air Risk Evaluation Program: In 2004, BAAQMD established the Community Air Risk Evaluation (CARE) program to identify locations with high emissions of toxic air contaminants (TAC) and high exposures of sensitive populations to TAC and to use this information to help establish policies to guide mitigation strategies that obtain the greatest health benefit from TAC emission reductions. For example, BAAQMD will use information derived from the CARE program to develop and implement targeted risk reduction programs, including grant and incentive programs, community outreach efforts, collaboration with other governmental agencies, model ordinances, new regulations for stationary sources and indirect sources, and advocacy for additional legislation.

Discussion of Impacts

III a, b. The 2010 Clean Air Plan is the most recently adopted air quality plan for the Bay Area. Regulation 9-10 was adopted on January 5, 1994, amended on July 17, 2002, and amended again on December 15, 2010. The objective of the proposed rule amendments is to provide an alternative compliance strategy for pre-1994 refinery heaters. The alternative would set a mass emission limit for heaters subject to the rule for any refinery that selected this alternative. The proposed rule amendments would also allow refineries to use emission reduction credits to account for expiring interchangeable emission reduction credits (IERC) or heater replacement or modification for which an Authority to Construct (A/C) had been issued to set the mass emission limit for that refinery. As the proposed amendments would provide an alternative compliance strategy for pre-1994 heaters, it is expected that additional emission reductions could be achieved because the alternative would incentivize modernization or replacement of older heaters. When older heaters are modernized or replaced, they would be subject to District new source review requirements under District Regulation 2, Rule 2. The replacement of pre-1994 heaters with newer heaters results in large NOx emission reductions (generally about 50 percent) as Best Available Control Technology (BACT) applies to new heaters and BACT requirements have become stricter with time (currently 5 ppm NOx for 50 mmBTU/hr heaters or greater). New heaters also can incorporate the latest energy-efficient designs, allowing refineries to make progress towards meeting AB 32 requirements. Therefore, the proposed amendments to Regulation 9-10 do not allow an increase in NOx emissions nor would do they conflict with an existing air quality plan. By providing another alternative compliance measure and potentially encouraging additional NOx emission reductions, the proposed amendments are expected to provide beneficial impacts associated with reduced NOx emissions and related ozone concentrations in the Bay Area. Therefore, the proposed rule amendments are considered to be compatible with the 2010 Clean Air Plan and are not expected to result in an increase in air emissions or violate or contribution to the violation of any air quality standard.

III c. CEQA Guidelines indicate that cumulative impacts of a project shall be discussed when the project's incremental effect is cumulatively considerable, as defined in CEQA Guidelines §15065(c). The overall impact of the proposed amendments to Rule 9-10 is a decrease in NOx emissions and an associated decrease in ozone concentrations. Therefore, the cumulative air quality impacts of the proposed rule amendments are expected to be beneficial.

III d. The proposed amendments would provide an alternative method for pre-1994 heaters to comply with Regulation 9-10 which is ultimately expected to result in reduced NOx emissions from refineries. Reduced NOx emissions from refineries would reduce exposure to NOx and ozone in the surrounding

communities. Therefore, the proposed amendments would not expose sensitive receptors to substantial pollutant concentrations.

The amendments to Regulation 9-10 could allow emission reduction credits to be used to set the mass emission limit at a refinery in limited circumstances. The use of credits, however, will not allow any increase in emissions above the current level. They are only usable to offset foreseeable circumstances (where IERC have been used to comply, but are expiring, or where an A/C has been issued that would require further reductions in other heaters) where the current rule would require reductions. Sources of air pollution that are shut down – either existing sources that are taken out of service to make way for the new/modified source, or past sources that were taken out of service some time ago and used to generate a "banked" credit. Since the use of offsets represents a reduction in emissions from another source, the use of offsets is also not expected to result in increased exposure to sensitive receptors. It should also be noted that CEQA applies to individual projects at the time of permitting and the potential for significant impacts would also be evaluated at the time of permitting. Should projects be proposed that could potentially generate significant impacts or are unusual in nature, a separate project-specific CEQA analysis would be expected to be applied.

III e. The proposed project is not expected to result in an increase in odors. The proposed amendments to Regulation 9-10 would provide an additional strategy for refineries to use to comply with Regulation 9-10, but is not expected to result in any substantial refinery modifications or result in an increase use or generation of odor-causing substances. Therefore, no increase in odors is expected due to implementation of the proposed amendments.

Based upon these considerations, no significant adverse air quality impacts are expected from the implementation of the proposed rule amendments. In fact, the proposed rule amendments are expected to provide beneficial air quality impacts by potential reducing NOx emissions and subsequent formation of ozone.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV.	**BIOLOGICAL RESOURCES.** Would the project:				
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☑	☐
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?	☐	☐	☑	☐
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
e)	Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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 areas affected by the proposed rule amendment 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 areas affected by the proposed rule amendment are located within the boundaries of the five existing refineries within the Bay Area. The affected areas have been graded to develop various petroleum refining structures. Native vegetation, other than landscape vegetation, has generally been removed from refinery areas to minimize safety and fire hazards. Any new development would fall under compliance with the City or County General Plans.

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 Wildlife, 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 Wildlife 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 amendment which would apply to existing refinery facilities. Existing heaters affected by the proposed amendment are located within the operating portions of refineries, which do not typically include sensitive biological species. The refineries have been graded and developed, and biological resources, with the exception of landscape species, have been removed. Any construction activities associated with the proposed amendment to Regulation 9-10 will be limited to within the boundaries of existing refineries and no development outside of existing facilities is expected.

Based upon these considerations, no significant adverse impacts to biological resources are expected from the implementation of the proposed amendments to Regulation 9-10.

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

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 their abundant combination of littoral and oak woodland resources.

The pre-1994 heaters affected by the proposed rule amendment are within the five refineries located in Contra Costa and Solano counties. These facilities have already been graded to develop petroleum refining facilities and are typically surrounded by other industrial uses. Cultural resources are generally not located within these areas.

Regulatory Background

The State CEQA Guidelines define a significant cultural resource 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 amendment that would apply to pre-1994 heaters. The pre-1994 heaters affected by the proposed rule amendment already exist and are located within the confines of existing refinery facilities. Any modifications to existing equipment is expected to be minor (e.g., CEMS) and would occur within the boundaries of existing refineries. The existing refinery areas have been graded and developed. No new construction would be required outside of the existing facility boundaries due to the adoption of the proposed amendment to Regulation 9-10. Therefore, no significant adverse impacts to cultural resources are expected due to the proposed amendment to Regulation 9-10.

Based upon these considerations, no significant adverse impacts to cultural resources are expected from the implementation of the proposed amendment to Regulation 9-10.

		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:				
i)	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 know fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☑
ii)	Strong seismic ground shaking?	☐	☐	☐	☑
iii)	Seismic-related ground failure, including liquefaction?	☐	☐	☐	☑
iv)	Landslides?	☐	☐	☐	☑
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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 facilities affected by the proposed rule amendments are located primarily in industrial areas within the Bay Area.

The affected refineries with pre-1994 fired heaters 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 inter-fingered 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 California 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. The heaters affected by the proposed rule amendment already exist and are located within the confines of the five existing refinery facilities in the Bay Area. Any new construction activities required as a result of adopting the proposed amendment to Regulation 9-10, are expected to be minimal, e.g., adding CEMS to existing heaters. The local cities and counties are responsible for assuring that new construction complies with the California Building Code as part of the issuance of the building permits and can conduct inspections to ensure compliance. The California Building Code is considered to be a standard safeguard against major structural failures and loss of life. The goal of the code is to provide structures that will: (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage, but with some non-structural damage; and (3) resist major earthquakes without collapse, but with some structural and non-structural damage. The California Building Code bases seismic design on minimum lateral seismic forces ("ground shaking"). The California Building Code requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes. The basic formulas used for the California Building Code seismic design require determination of the seismic zone and site coefficient, which represent the foundation conditions at the site.

Any new refinery development would be required to obtain building permits, as applicable, for new structures at any site. The issuance of building permits from the local agency will assure compliance with the California Building Code requirements which include requirements for building within seismic hazard zones. No significant impacts from seismic hazards are expected since no new major development is expected for implementation of the proposed amendment to Regulation 9-10.

VI b. No new significant construction activities would be required due to the adoption of Regulation 9-10. Heaters affected by the proposed rule amendment already exist and are located within the confines of existing petroleum refining facilities. Any upgrades to existing equipment would be installed within the confines of the existing boundaries in similar locations. Therefore, the proposed amendment is not

expected to result in substantial soil erosion or the loss of topsoil as no major construction activities would be required.

VI c – e. The heaters affected by the proposed rule amendment already exist and are located within the confines of existing refinery facilities so no major construction activities are expected. Since the petroleum refining facilities already exist, no construction activities are expected to occur on a geologic unit or soil that is unstable or that would become unstable, or potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse. Likewise, no structure would be constructed on expansive soil, as defined in Table 18-1-B of the California Uniform Building Code, creating substantial risks to life or property. Compliance with the California Building Code would minimize the impacts associated with existing geological hazards. Construction would not affect 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, as the proposed rule amendments have no impact on wastewater treatment/disposal systems. Therefore, no adverse significant impacts to geology and soils are expected due to the proposed amendment to Regulation 9-10.

Based upon these considerations, no significant geology and soils impacts are expected from the implementation of the proposed rule amendment.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS.				
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☑
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☑

Setting

Global climate change refers to changes in average climatic conditions on the earth as a whole, including temperature, wind patterns, precipitation and storms. Global warming, a related concept, is the observed increase in the average temperature of the earth's surface and atmosphere. One identified cause of global warming is an increase of greenhouse gases (GHGs) in the atmosphere. The six major GHGs identified by the Kyoto Protocol are (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), haloalkanes (HFCs), and perfluorocarbons (PFCs). The GHGs absorb longwave radiant energy reflected by the earth, which warms the atmosphere. GHGs also radiate longwave radiation both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation absorbed by the atmosphere is known as the "greenhouse effect." Some studies indicate that the potential effects of global climate change may include rising surface temperatures, loss in snow pack, sea level rise, more extreme heat days per year, and more drought years.

Events and activities, such as the industrial revolution and the increased combustion of fossil fuels (e.g., gasoline, diesel, coal, etc.), are believed to have contributed to the increase in atmospheric levels of GHGs. Approximately 80 percent of GHG emissions in California are from fossil fuel combustion and over 70 percent of GHG emissions are carbon dioxide emissions (CARB, 2007 and CARB, 2009). The emission inventory in Table 3-5 focuses on GHG emissions due to human activities only, and compiles estimated emissions from industrial, commercial, transportation, domestic, forestry, and agriculture activities in the San Francisco Bay Area region of California. The GHG emission inventory in Table 3-5 reports direct emissions generated from sources within the Bay Area and estimates future GHG emissions.

TABLE 3-5

Bay Area Greenhouse Gas Emission Inventory Projections
(million metric tons CO_2-Equivalent)

SOURCE CATEGORY Year	2005	2009	2012	2015	2020
INDUSTRIAL/COMMERCIAL					
Oil Refineries					
Refining Processes	3.4	3.5	3.6	3.7	3.9
Refinery Make Gas Combustion	4.7	4.9	5.0	5.2	5.4
Natural Gas and Other Gases Combustion	4.8	5.0	5.1	5.3	5.5
Liquid Fuel Combustion	0.1	0.1	0.1	0.1	0.1
Solid Fuel Combustion	1.0	1.0	1.1	1.1	1.1
Waste Management					
Landfill Combustion Sources	0.0	0.0	0.0	0.0	0.0
Landfill Fugitive Sources	1.2	1.2	1.2	1.2	1.2
Composting/POTWs	0.4	0.4	0.4	0.4	0.4
Other Industrial/ Commercial					
Cement Plants	0.9	0.9	0.9	0.9	1.0
Commercial Cooking	0.1	0.1	0.1	0.1	0.2
ODS Substitutes/Nat. Gas Distrib./Other	3.6	5.2	6.3	7.5	9.4
Reciprocating Engines	0.6	0.6	0.6	0.7	0.7
Turbines	0.4	0.4	0.4	0.4	0.4
Natural Gas- Major Combustion Sources	1.6	2.5	2.6	2.7	2.8
Natural Gas- Minor Combustion Sources	8.8	9.2	9.5	9.9	10.4
Coke Coal	1.0	1.0	1.1	1.1	1.2
Other Fuels Combustion	0.3	0.4	0.4	0.4	0.4
Subtotal	32.8	36.3	38.4	40.6	44.2
RESIDENTIAL FUEL USAGE					
Natural Gas	6.4	6.6	6.8	6.9	7.2
LPgas/Liquid Fuel	0.2	0.2	0.2	0.2	0.2
Solid Fuel	0.1	0.2	0.2	0.2	0.2
Subtotal	6.7	6.9	7.1	7.2	7.5
ELECTRICITY/ CO-GENERATION					
Co-Generation	5.5	5.5	5.7	6.0	6.4
Electricity Generation	2.8	3.1	3.2	3.3	3.5
Electricity Imports	6.8	7.3	7.6	7.9	8.3
Subtotal	15.1	15.8	16.5	17.2	18.3
OFF-ROAD EQUIPMENT					
Lawn and Garden Equipment	0.1	0.1	0.1	0.1	0.1
Construction Equipment	1.7	1.9	1.9	2.0	2.2
Industrial Equipment	0.7	0.8	0.8	0.9	1.0
Light Commercial Equipment	0.2	0.2	0.3	0.3	0.3
Subtotal	2.8	3.0	3.2	3.3	3.6
TRANSPORTATION					
Off-Road					
Locomotives	0.1	0.1	0.1	0.1	0.1
Ships	0.7	0.8	0.8	0.9	1.0
Boats	0.6	0.6	0.5	0.5	0.6

TABLE 3-5 (concluded)

SOURCE CATEGORY Year	2005	2009	2012	2015	2020
Commercial Aircraft	1.8	2.0	2.1	2.3	2.6
General Aviation	0.2	0.2	0.2	0.3	0.3
Military Aircraft	0.5	0.5	0.5	0.5	0.5
On-Road					
Passenger Cars/Trucks up to 10,000 lbs	26.6	27.1	27.9	29.0	30.9
Medium/Heavy Duty Trucks > 10,000 lbs	3.3	3.3	3.4	3.5	3.7
Urban, School and Other Buses	0.8	0.8	0.8	0.8	0.9
Motor-Homes and Motorcycles	0.2	0.2	0.2	0.2	0.2
Subtotal	34.8	35.6	36.7	38.1	40.7
AGRICULTURE/FARMING					
Agricultural Equipment	0.2	0.2	0.2	0.2	0.2
Animal Waste	0.6	0.6	0.6	0.6	0.6
Soil Management	0.3	0.3	0.3	0.3	0.3
Biomass Burning	0.0	0.0	0.0	0.0	0.0
Subtotal	1.1	1.1	1.1	1.1	1.1
GRAND TOTAL EMISSIONS	**93.4**	**98.7**	**103.0**	**107.5**	**115.4**

Source: BAAQMD, 2009

Regulatory Background

In response to growing scientific and political concern regarding global climate change, California has recently adopted a series of laws over the last decade to reduce both the level of GHGs in the atmosphere and to reduce emissions of GHGs from commercial and private activities within the state.

In September 2006, Governor Schwarzenegger signed California's Global Warming Solutions Act of 2006 (AB32). AB32 required CARB to:

- Establish a statewide GHG emissions cap for 2020, based on 1990 emissions, by January 1, 2008;
- Adopt mandatory reporting rules for significant sources of GHG emissions by January 1, 2008;
- Adopt an emissions reduction plan by January 1, 2009, indicating how emissions reductions will be achieved via regulations, market mechanisms, and other actions; and,
- Adopt regulations to achieve the maximum technologically feasible and cost-effect reductions of GHGs by January 1, 2011

In October 2011, CARB approved the cap-and-trade regulation designed to reduce California's greenhouse gas emissions under its AB 32 law. The regulation sets a statewide limit on the emissions from sources responsible for 80 percent of California's greenhouse gas emissions. The regulation will cover 360 businesses representing 600 facilities and is divided into two broad phases: an initial phase beginning in 2012 that will include all major industrial sources along with utilities; and, a second phase that starts in 2015 and brings in distributors of transportation fuels, natural gas and other fuels.

Companies are not given a specific limit on their greenhouse gas emissions but must supply a sufficient number of allowances (each covering the equivalent of one ton of carbon dioxide) to cover their annual emissions. Each year, the total number of allowances issued in the state drops, requiring companies to find the most cost-effective and efficient approaches to reducing their emissions. By the end of the program in 2020 there will be a 15 percent reduction in greenhouse gas emissions compared to today, reaching the same level of emissions as the state experienced in 1990, as required under AB 32.

There has also been activity at the federal level on the regulation of GHGs. On October 30, 2009, the U.S. EPA issued the Final Mandatory Report of Greenhouse Gases Rule. The rule requires reporting of GHG emissions from large sources and suppliers (facilities that emit 25,000 metric tons of GHGs per year or more) in the United States, and is intended to collect accurate and timely emissions data in order to make informed policy decisions.

Discussion of Impacts

VII a. and b. Combustion of conventional hydrocarbon fuel results in the release of energy as bonds between carbon and hydrogen are broken and reformed with oxygen to create water vapor and CO_2. CO_2 is not a pollutant that occurs in relatively low concentrations as a by-product of the combustion process; CO_2 is a necessary combustion product of any fuel containing carbon. Therefore, attempts to reduce emissions of greenhouse gases from combustion focus on increasing energy efficiency – consuming less fuel to provide the same useful energy output.

The analysis of GHG emissions is a different analysis than for criteria pollutants for the following reasons. For criteria pollutant, significance thresholds are based on daily emissions because attainment or non-attainment is typically based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects to human health, e.g., one-hour and eight-hour. Using the half-life of carbon dioxide, 100 years, for example, the effects of GHGs are longer-term, affecting the global climate over a relatively long time frame. GHGs do not have human health effects like criteria pollutants. Rather, it is the increased accumulation of GHGs in the atmosphere that may result in global climate change. Due to the complexity of conditions and interactions affecting global climate change, it is not possible to predict the specific impact, if any, attributable to GHG emissions associated with a single project. Furthermore, the GHG emissions associated with the proposed amendment would be small relative to total global or even state-wide GHG emissions. Thus, the significance of potential impacts from GHG emissions related to the proposed amendment has been analyzed for long-term operations on a cumulative basis, as discussed below.

Cumulative GHG impacts in the Bay Area are generally evaluated in terms of the air quality management plan that controls overall air emissions within the District. Therefore, the cumulative GHG impacts include the proposed Rule 9-10 along with implementing the control measures in the 2010 Clean Air Plan, the most recent air quality plan approved in the District.

The proposed amendment is expected to directly result in minor changes to refineries, e.g., installation of CEMS. These devices require electricity for operation. The potential increase in electricity could result in an increase in GHG emissions. However, the energy use is very minor compared to the scope of the underlying production process. Therefore, the proposed amendment is not expected to result in a

substantial increase in electricity or generate substantial GHG emissions. In addition, construction activities, although minor in nature, could require construction equipment which could also generate GHG emissions.

The proposed amendment, along with the 2010 CAP as a whole, is expected to promote a net decrease in GHG emissions. The 2010 CAP control measure strategy promotes fuel efficiency and pollution prevention, which reduces greenhouse gas emissions. The existing standard in Regulation 9, Rule 10 requires that NOx emissions from pre-1994 heaters meet a certain standard (0.033 lb NOx/MMBTU), on average, across each refinery. The standard does not limit NOx emissions except in relative to the rate of fuel usage. The standard applies to heaters that were in service before 1994 when the rule was adopted. Heaters installed after that time, or existing heaters modified so as to trigger the District's new source review requirements emit NOx at a much lower rate. However, when a heater subject to the rule (pre-1994) is replaced or modified, the remaining heaters must still meet the Reg. 9-10 standard, even if existing heaters must be retrofitted with additional control equipment to reduce emissions. It has been suggested that this requirement creates a disincentive to replacement or modernization of these pre-1994 heaters. Replacement of modernization of heaters to incorporate energy-efficient designs is one way that refineries can comply with AB 32 requirements to reduce GHG emissions. The alternative standard removes that disincentive without allowing an increase in criteria emissions. Strategies that conserve energy and promote clean technologies reduce greenhouse gas emissions. As shown in Table 3-5, the fuel combustion and the generation of electricity are responsible for a large portion of greenhouse gases produced in California.

Based on the above discussion, implementation of the proposed amendment is not expected to result in a significant increase in GHG emissions, and removes a disincentive to reduce GHG emissions. Based on the above, no significant adverse GHG impacts are expected due to implementation Regulations 9-10.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII.	**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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
e)	For a project 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?	☐	☐	☐	☑
f)	For a project within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
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?	☐	☐	☐	☑

Setting

The affected petroleum refining facilities 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 handling such materials are a function of the materials being processed, processing systems, and procedures used to operate and maintain the facilities where they exist. 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 or vessel 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 many types of industrial facilities. 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 affected facilities, risks to the public are reduced if there is a buffer zone between industrial processes and residences or other sensitive land uses, or the prevailing wind blows away from residential areas and other sensitive land uses. The risks posed by operations at each facility are unique and determined by a variety of factors. The areas affected by the proposed amendment are typically located in industrial areas.

Regulatory Background

There are many federal and state rules and regulations that facilities handling hazardous materials 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.

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.

Affected facilities that store materials 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 business 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 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 considers human factors as part of process hazards analyses, incident investigations, training, operating procedures, among others.

Discussion of Impacts

VIII a - c. Regulation 9-10 would provide an alternative compliance strategy for existing pre-1994 heaters at petroleum refineries operating in the Bay Area. Major modifications are not expected to be required at the existing refineries. If refineries choose to pursue the alternative standard, the alternative standard would not require retrofitting of existing control equipment. Additional CEMS would be required on existing heaters. The use of additional monitoring equipment would not introduce, utilize, or generate new hazardous materials at the affected petroleum refineries.

Existing refinery operations are not expected to change from current practice and, thus, the amount of hazardous materials used or transported is not expected to change. As the throughput is not expected to change at the refineries as a result of implementing Regulation 9-10, no additional transport of the hazardous materials is expected and, thus, no new hazards to the public will be created through transport, use, or disposal of hazardous materials. As a result, the proposed amendment is not expected to increase the probability of a hazardous material release. Local fire department and OSHA regulations coupled with standard operating practices ensure that conditions are in place to protect against hazard impacts. Therefore, no significant impacts on hazards are expected.

VIII d. No impacts on hazardous material sites are anticipated from the proposed amendment that would apply to existing operations at petroleum refineries within the District's jurisdiction. Some of the affected refineries may be located on the hazardous materials sites list pursuant to Government Code §65962.5. However, the proposed amendment would have no effect on hazardous materials nor would the rules create a significant hazard to the public or environment. The affected refineries already exist and are located within the confines of existing industrial facilities and no major construction activities are expected to be required. The proposed project neither requires, nor is likely to result in, activities that would affect hazardous materials or existing site contamination. Therefore, no significant adverse impacts on hazards are expected.

VIII e – f. No impacts on airports or airport land use plans are anticipated from the proposed rule amendments, which would apply to existing petroleum refineries. The refineries already exist and are located within the confines industrial facilities. If refineries choose to pursue the alternative standard, the alternative standard would not require retrofitting of existing control equipment. The amendments would require the installation of additional CEMS. These changes are expected to be made with the confines of the existing refineries. No development outside of existing facilities is expected to be required by the proposed amendment. Therefore, no significant adverse impacts on an airport land use plan or on a private air strip are expected.

VIII g. No impacts on emergency response plans are anticipated from the proposed amendment that would apply to existing petroleum refineries. The refining operations already exist and are located within the confines of existing industrial facilities. The proposed amendment neither requires, nor is likely to result in, activities that would impact the emergency response plan, and any new development would consider emergency response as part of the City/County General Plans prior to approval. The affected facilities already store and transport hazardous materials, so emergency response plans already include hazards associated with potential incidents. Therefore, no significant adverse impacts on emergency response plans are expected.

VIII h. No increase in hazards related to wildfires is anticipated from the proposed amendment. The petroleum refining operations affected by the proposed amendment already exist and are located within the confines of existing industrial facilities. Native vegetation has been removed from the operating portions of the refineries to minimize fire hazards. Any modifications will occur within the confines of the existing facilities. Therefore, no increase in exposure to wildfires will occur due to the proposed amendment.

Based upon these considerations, no significant adverse hazards and hazardous materials impacts are expected from the implementation of the proposed amendment to Regulation 9-10.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY and WATER QUALITY.					
Would the project:					
a)	Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☑
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)?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
f)	Otherwise substantially degrade water quality?	☐	☐	☐	☑
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?	☐	☐	☐	☑
h)	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☑

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?	☐	☐	☐	☑
j)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☑

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 petroleum refining facilities affected by the proposed rule amendment are located in Contra Costa and Solano counties. Affected areas are generally surrounded by other industrial or commercial facilities. 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 throughout the Bay Area.

The affected areas 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 is required to develop, adopt, and implement a Basin Plan for the Region. The Basin Plan is the master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the Region. 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 (RWQCB, 2011). The first comprehensive Basin Plan for the San Francisco Bay Region was adopted and approved in April 1975. Subsequently, major revisions were adopted in 1982, 1986, 1992, 1995, 2002, 2004, and 2011. The beneficial uses of the Carquinez Strait, San Pablo Bay, and Suisun Bay 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.

Discussion of Impacts

IX a, f. No significant adverse impacts on hydrology and water quality resources are anticipated from the proposed rule amendment, which would apply to existing petroleum refining facilities. The proposed rule amendment is not expected to require additional water use and no increase in wastewater discharge is expected. Therefore, no violation of any water quality standards or waste discharge requirements, and no decrease in water quality is expected from the proposed amendment to Regulation 9-10.

IX b. The pre-1994 heaters affected by the proposed rule amendments already exist and are located within the confines of existing petroleum refining facilities. The proposed amendment to Regulation 9-10 is not expected to require additional water use. In the unlikely event a refinery choses to install NOx control technologies (e.g., SCR and SNCR equipment), those technologies do not require additional use of water. Therefore, the proposed amendment is not expected to deplete groundwater supplies or interfere with groundwater recharge. Therefore, no significant impacts on groundwater supplies are expected due to the proposed amendment to Regulation 9-10.

IX c - f. Petroleum refining facilities would have the option to comply with the optional emission standard amendment to Regulation 9-10 by replacing the current daily, average emission rate limit of 0.033 lb NOx/MM BTU with a total mass emission limit. Any refinery modifications to comply with the requirement for additional CEMS are expected to be minor. All affected equipment is located within existing refineries, where storm water drainage has been controlled and no construction activities outside of the existing refineries is expected to be required. Therefore, the proposed amendments are not expected to substantially alter the existing drainage or drainage patterns, result in erosion or siltation, alter 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. Nor are the proposed amendments expected to 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. The proposed amendment is not expected to substantially degrade water quality. Therefore, no significant adverse impacts to storm water runoff are expected.

IX g – i. The pre-1994 heaters affected by the proposed rule amendment are located within existing refineries. No construction activities outside the boundaries of existing facilities are expected due to the adoption of the proposed amendments to Regulation 9-10. Petroleum refining facilities are generally located to avoid flood zone areas and other areas subject to flooding. Further, storm water is controlled and collected onsite for analysis and subsequent discharge. The proposed amendments are not expected to require any substantial construction activities, place any additional structures within 100-year flood zones, or other areas subject to flooding. Therefore, no significant adverse impacts due to flooding are expected.

IX j. The petroleum refining facilities affected by the proposed rule amendments are located within existing refineries. Any refinery modifications to comply with the requirement for additional CEMS are expected to be minor. No construction activities are expected outside of the boundaries of the existing refinery facilities. The proposed amendments are not expected to place any additional structures within areas subject to inundation by seiche, tsunami or mudflow. Therefore, no significant adverse impacts on hydrology/water due to seiche, tsunami or mudflow are expected.

Based upon these considerations, no significant adverse hydrology and water quality impacts are expected from the implementation of the proposed amendment to Regulation 9-10.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X.	**LAND USE and PLANNING.** Would the project:				
a)	Physically divide an established community?	☐	☐	☐	☑
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?	☐	☐	☐	☑
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☑

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 amendment are primarily located in industrial areas of Contra Costa and Solano counties.

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

X a-c. The pre-1994 heaters affected by the proposed rule amendment already exist and are located within the confines of existing petroleum refining facilities within existing industrial areas. The refineries would have the option to comply with the emission limitations of Regulation 9-10 by replacing the current daily, average emission rate limit of 0.033 lb NOx/MM BTU with a total mass emission limit. Refinery modifications are expected to be minor, e.g. installation of additional CEMS. Any construction activities associated with the proposed project are expected to occur within the confines of the existing refineries within existing industrial areas. No new construction outside of the confines of the existing facilities is expected to be required due to the adoption of the proposed amendment to Regulation 9-10. Therefore, the proposed amendments would not divide an established community or conflict with land use plans/policies. Further, the operating portions of refineries are not

located within habitat conservation or natural community conservation plans, therefore, the proposed project will not conflict with any such plans.

Based upon these considerations, no significant adverse land use impacts are expected from the implementation of the proposed amendment to Regulation 9-10.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI.	**MINERAL RESOURCES.** 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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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 amendment are located in 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

XI a-b. The pre-1994 heaters affected by the proposed rule amendment already exist and are located within the confines of existing petroleum refining facilities. Any modifications, e.g. installation of additional CEMS, associated with the proposed project are expected to be installed within the confines of existing facilities. The proposed rule amendment is 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.

Based upon these considerations, significant mineral resource impacts are not expected from the implementation of the proposed rule amendment.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. NOISE. 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?	☐	☐	☐	☑
b)	Expose persons to or generate of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☑
c)	Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑
e)	For a project 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?	☐	☐	☐	☑
f)	For a project within the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

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 amendment are located in industrial areas of Contra Costa and Solano counties.

Regulatory Background

Noise issues related to construction and operation activities are addressed in local General Plan policies and local noise ordinance standards. The General Plans 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

XII a-d. The existing noise environment at each of the affected refinery facilities is typically dominated by noise from existing equipment onsite, vehicular traffic around the facilities, and trucks entering and exiting facility premises. The pre-1994 heaters affected by the proposed rule amendment already exist and are located within the confines of existing petroleum refining facilities. The rule amendment applies to NOx emissions from this equipment. The refineries would have the option to comply with the optional emission standard amendment to Regulation 9-10 by replacing the current daily, average emission rate limit of 0.033 lb NOx/MM BTU with a total mass emission limit. The rule would require the installation of additional CEMS, however, no major construction activities are expected to be required. Any noise generated during the construction is expected to be minimal and occur during daylight hours. Noise related to construction activities would cease following completion of the construction phase. The CEMS do not generate noise when operating.

It is not expected that any modifications associated with the proposed project would substantially increase ambient operational noise levels in the area, either permanently or intermittently, or expose people to excessive noise levels that would be noticeable above and beyond existing ambient levels. Noise from the proposed project is not expected to produce noise in excess of current operations at each of the existing refineries, as equipment that could be added to the refineries is not a source of noise, e.g, monitoring equipment. It is expected that each refinery affected by the proposed amendments would comply with all existing noise control laws or ordinances. Further, OSHA and California-OSHA (Cal/OSHA) have established noise standards to protect worker health. Any potential noise increases are expected to be small, if at all, and thus less than significant. The proposed rule amendment would not substantially increase ambient noise levels from stationary sources, either intermittently or permanently. Therefore, noise impacts associated with the proposed amendments are expected to be less than significant.

It is also not anticipated that modification associated with the proposed project will cause an increase in groundborne vibration levels because air pollution monitoring equipment (CEMS) is not vibration intensive equipment. Consequently, the proposed rule amendment will not directly or indirectly cause substantial noise or excessive groundborne vibration impacts.

XII. e-f. If applicable, the refineries would still be expected to comply, and not interfere, with any applicable airport land use plans. All noise producing equipment must comply with local noise ordinances and applicable OSHA or Cal/OSHA workplace noise reduction requirements. In addition to noise generated by current operations, noise sources in each area may include nearby freeways, truck traffic to adjacent businesses, and operational noise from adjacent businesses.

Based upon these considerations, significant noise impacts are not expected from the implementation of the proposed amendment to Regulation 9-10.

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. POPULATION and HOUSING. 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)?	☐	☐	☐	☑
b) Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑
c) Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

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 areas affected by the proposed rule amendment are located in industrial areas of Solano and Contra Costa 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

XIII. a. Any construction activities associated with the proposed rule amendment at each affected refinery are not expected to involve the relocation of individuals, require new housing or commercial facilities, or change the distribution of the population. The reason for this conclusion is that operators of affected facilities who need to perform any construction activities to comply with the proposed rule amendment can draw from the existing labor pool in the local Bay Area, as no major construction activities would be required. Further, it is not expected that modifications to existing refineries will require new employees to operate the modified equipment, including additional CEMS. Human population within the jurisdiction of the BAAQMD is anticipated to grow regardless of implementing the proposed project. As a result, the proposed rule amendment is not anticipated to generate any

significant adverse effects, either direct or indirect, on population growth in the district or population distribution.

XIII b-c. Because the proposed rule amendment includes modifications and/or changes at existing refineries located in industrial settings, it is not expected to result in the creation of any industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of people or housing elsewhere in the Bay Area. Based upon these considerations, significant population and housing impacts are not expected from the implementation of the proposed project.

Based upon these considerations, significant population and housing impacts are not expected from the implementation of the proposed amendment to Regulation 9-10.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. 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?	☐	☐	☐	☑
Police protection?	☐	☐	☐	☑
Schools?	☐	☐	☐	☑
Parks?	☐	☐	☐	☑
Other public facilities?	☐	☐	☐	☑

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 amendment are located in industrial areas 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

XIV a. Implementation of the proposed rule amendment may result in minor modifications at the affected refineries, e.g., installation of monitoring equipment (CEMS). The proposed project is not expected to significantly affect fire service because of the proposed amendments would not introduce any new hazards and, therefore, would not increase the need for fire department response at the

refineries. Further, the refineries are completely enclosed and access is limited to manned gates on a 24-hour basis. Therefore, the proposed project is not expected to increase the need or demand for additional public services (e.g., fire departments, police departments, government, et cetera) above current levels.

As noted in the "Population and Housing" discussion above, the proposed project is not expected to induce population growth in any way because the local labor pool (e.g., workforce) is expected to be sufficient to accommodate any construction activities that may be necessary at affected facilities and operation of new or modified equipment is not expected to require additional employees. Therefore, there will be no increase in local population and thus no impacts are expected to local schools or parks.

Based upon these considerations, significant public services impacts are not expected from the implementation of the proposed rule amendment.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. 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?	☐	☐	☐	☑
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☑

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 refineries affected by the proposed rule amendment are located in industrial areas of Contra Costa and Solano counties. Public recreational land can be located adjacent to, or in reasonable proximity to these areas.

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

XV a-b. As discussed under "Land Use" above, there are no provisions of the proposed amendment that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments; no land use or planning requirements will be altered by the proposed amendment. Any required modifications would occur within the confines of the existing refineries so no changes in land use would be required. Further, the proposed amendment would not increase the use of existing neighborhood and regional parks or other recreational facilities or include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment because the proposed amendment is not expected to induce population growth. Therefore, no significant adverse impacts on recreation are expected.

Based upon these considerations, significant recreation impacts are not expected from the implementation of the proposed rule amendment.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☑	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established b the county congestion management agency for designated roads or highways?	☐	☐	☑	☐
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?	☐	☐	☐	☑
d) Substantially increase hazards because of a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☐	☑
e) Result in inadequate emergency access?	☐	☐	☐	☑
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☑

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 Port of Oakland and three international airports in the area serve as hubs for commerce and transportation. The transportation infrastructure for vehicles and trucks in the Bay Area ranges from single lane roadways to multilane interstate highways. The Bay Area contains over 19,600 miles of local streets and roads, and over 1,400 miles of state highways. In addition, there are over 9,040 transit route miles of services including rapid rail, light rail, commuter, diesel and electric buses, cable cars, and ferries. The Bay Area also has an extensive local system of bicycle routes and pedestrian paths and sidewalks. At a regional level, the share of workers driving alone was about 68 percent in 2007. The portion of commuters that carpool was about 10 percent in 2007. About 4 percent of commuters walked to work in 2007. In addition, other modes of travel (bicycle, motorcycle, etc.), account for 3 percent of commuters in 2007 (MTC, 2008). Cars, buses, and commercial vehicles travel about 145 million miles a day (2000) on the Bay Area Freeways and local roads. Transit serves about 1.6 million riders on the average weekday (MTC, 2008).

The region is served by numerous interstate and U.S. freeways. On the west side of San Francisco Bay, Interstate 280 and U.S. 101 run north-south. U.S. 101 continues north of San Francisco into Marin County. Interstates 880 and 660 run north-south on the east side of the Bay. Interstate 80 starts in San Francisco, crosses the Bay Bridge, and runs northeast toward Sacramento. Interstate 80 is a six-lane north-south freeway which connects Contra Costa County to Solano County via the Carquinez Bridge. State Routes 29 and 84, both highways that allow at-grade crossings in certain parts of the region, become freeways that run east-west, and cross San Francisco Bay. Interstate 580 starts in San Rafael, crosses the Richmond-San Rafael Bridge, joins with Interstate 80, runs through Oakland, and then runs eastward toward Livermore. From the Benicia-Martinez Bridge, Interstate 680 extends north to Interstate 80 in Cordelia. 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 state and county level. Planning for interstate highways is generally done by the California Department of Transportation.

Most local counties maintain a transportation agency that has the duties of transportation planning and administration of improvement projects within the county and implements the Transportation Improvement and Growth Management Program, and the congestion management plans (CMPs). 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

XVI a-b. Construction activities resulting from implementation of the proposed amendment to Regulation 9-10 are expected to be minor, including installation of additional CEMS, and therefore any increase in traffic is also expected to be temporary and minor, e.g., two to four additional trips per day. The proposed amendments are not expected to cause a significant increase in traffic at any refinery or

require any additional permanent employees. Also, the proposed project is not expected to exceed, either individually or cumulatively, the current level of service at streets and intersections in areas surrounding the refineries. The work force at each affected refinery is not expected to significantly increase as a result of the proposed rule amendment and no increase in operation-related traffic is expected. Thus, the traffic impacts associated with the proposed rule amendment is expected to be less than significant.

XVI c. Though some of the facilities that will be affected by the proposed amendment may 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, actions that would be taken to comply with the proposed amendment, such as installing new continuous monitoring equipment, are not expected to significantly influence or affect air traffic patterns. Further, the size and type of equipment that would be installed would not affect navigable air space. Thus, the proposed amendments would not result in a change in air traffic patterns including an increase in traffic levels or a change in location that results in substantial safety risks.

XVI d - e. The proposed amendment will not alter traffic patterns or existing roadways. The proposed project is not expected to substantially increase traffic hazards or create incompatible uses at or adjacent to the affected refineries. All construction activities, if necessary, will occur within the confines of the existing refineries. Aside from the temporary effects due to a slight increase in traffic for those facilities that will undergo construction activities, generally from the installation of additional CEMS, the proposed amendments is not expected to alter the existing long-term circulation patterns. The proposed amendments would not require any street modifications or improvements, thus, no long-term impacts on the traffic circulation system are expected to occur. The proposed amendment does not involve construction of any roadways, so there would be no increase in roadway design feature that could increase traffic hazards. Emergency access at each affected refinery is not expected to be impacted by the proposed amendments or require construction that could interfere with any existing emergency access. Further, each affected facility is expected to continue to maintain their existing emergency access gates and will not be impacted by the proposed rule amendments.

XVI f. Construction and operation activities resulting from the proposed rule amendment are not expected to conflict with policies supporting alternative transportation since the proposed project does not involve or affect alternative transportation modes (e.g. bicycles or buses) because the construction and operation activities related to the proposed project will occur solely within the confines of existing refineries.

Based upon these considerations, significant transportation/traffic impacts are not expected from the implementation of the proposed rule amendment.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVII. UTILITIES/SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements needed?	☐	☐	☐	☑
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?	☐	☐	☐	☑
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☑
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☑

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

Water is supplied to 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.

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; Laidlaw Environmental Services located in Lake Point, Utah; Envirosafe Services, in Grandview, Idaho; Chemical Waste Management Inc. in Carlyss, Louisiana, and Waste Control Specialists in Andrews, Texas. Incineration is provided at Laidlaw Environmental Services, Inc., located in Deer Park, Texas.

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

XVII a, b, d and e. The pre-1994 heaters affected by the proposed rule amendment already exist and are located within the confines of existing petroleum refining facilities. Any modifications, e.g. installation of additional CEMS, would occur within the confines of the existing refineries. The proposed rule amendment would not result in the use of any additional water or an increase in any wastewater generated at the refineries. No increase in water consumption would be associated with monitoring equipment. Therefore, no impacts on wastewater treatment requirements or wastewater treatment facilities are expected.

XVII c. Petroleum refining facilities would have the option to comply with the optional emission standard amendment to Regulation 9-10 by replacing the current daily, average emission rate limit of 0.033 lb NOx/MM BTU with a total mass emission limit, with refinery modifications expected to be minor, e.g. installation of monitoring equipment. Therefore, the proposed amendment is not expected to alter the existing drainage or require the construction of new storm water drainage facilities. Nor is the proposed amendment expected to create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. Therefore, no significant adverse impacts on storm drainage facilities are expected.

XVII f and g. The proposed rule amendment would not affect the ability of petroleum refining facilities to comply with federal, state, and local statutes and regulations related to solid waste. No significant impacts on waste generation are expected from the proposed rule amendment, since the proposed amendment is not expected to require major construction or demolition activities. Minor construction may occur to install additional CEMS, but waste associated with this construction should be minor. Any waste generation from equipment subject to Regulation 9-10 would likely occur regardless of the proposed amendments. Metals are usually recycled so no significant impact to land disposal facilities would be expected. Therefore, no significant impacts to hazardous or solid waste disposal facilities are expected due to the proposed rule amendment. Facilities are expected to continue to comply with all applicable federal, state, and local statutes and regulations related to solid and hazardous wastes.

Based upon these considerations, significant impacts to utilities and service systems are not expected from the implementation of the proposed amendment to Regulation 9-10.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII.	**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?	☐	☐	☐	☑
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)	☐	☐	☐	☑
c)	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☑

Discussion of Impacts

XVIII a. The proposed amendment to Regulation 9-10 does 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 amendment is expected to provide refineries with an alternative compliance mechanism for pre-1994 heaters and boilers, potentially removing regulatory obstacles to further reduce NOx emissions from petroleum refining facilities, thus providing a beneficial air quality impact and improvement in air quality. The proposed amendment will also require that additional CEMS be installed to monitor NOx emissions. Any modifications would occur within the confines of an existing refinery which has already been graded and disturbed. As discussed in Section IV, Biological Resources and Section V, Cultural Resources, no significant adverse impacts are expected to biological or cultural resources.

XVIII b-c. The proposed rule amendment is expected to provide refineries with an alternative compliance mechanism for pre-1994 heaters and boilers, potentially removing regulatory obstacles to further reduce NOx emissions from petroleum refining facilities, thus providing a beneficial air quality impact and improvement in air quality. Therefore, no significant adverse cumulative air quality impacts are expected. The proposed rule amendment is part of a long-term plan to bring the Bay Area into compliance with the state ambient air quality standards for ozone, thus reducing the potential health impacts due to ozone exposure. The proposed rule amendment does not have adverse environmental impacts that are limited individually, but cumulatively considerable when considered in conjunction with other regulatory control projects. The proposed amendment to Regulation 9-10 is not expected to have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. No significant adverse environmental impacts are expected.

Chapter 4

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