SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Program Environmental Assessment for:

Proposed Amended Rule 1401– New Source Review of Toxic Air Contaminants; Impact Assessment for Facilities Subject to Rule 1402 – Control of Toxic Air Contaminants from Existing Sources; and Proposed Rule 1472 - Requirements for Facilities with Multiple Stationary Emergency Standby Diesel-Fueled Internal Combustion Engines

February 7, 2008

SCAQMD No. 071220MK
State Clearinghouse No. 2007121101

Author:	Michael Krause	Air Quality Specialist
Technical Assistance:	Cheryl Marshall	Air Quality Specialist
	Andrew Lee, P.E.	Program Supervisor
Reviewed By:	Steve Smith, Ph.D.	Program Supervisor
	Barbara Baird	Principal District Counsel
	William Wong	Senior Deputy District Counsel

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
GOVERNING BOARD

Chairman: WILLIAM A. BURKE, Ed.D.
Speaker of the Assembly Appointee

Vice Chairman: S. ROY WILSON, Ed.D.
Supervisor, Fourth District
County of Riverside

MEMBERS

MICHAEL D. ANTONOVICH
Supervisor, Fifth District
County of Los Angeles

MICHAEL A. CACCIOTTI
Mayor, City of South Pasadena
Cities of Los Angeles County, Eastern Region

BILL CAMPBELL
Supervisor, Third District
County of Orange

JANE W. CARNEY
Senate Rules Committee Appointee

RONALD O. LOVERIDGE
Mayor, City of Riverside
Cities of Riverside County

JOSEPH K. LYOU, PH.D
Governor's Appointee

GARY C. OVITT
Supervisor, Fourth District
County of San Bernardino

JAN PERRY
Councilmember, Ninth District
City of Los Angeles Representative

MIGUEL A. PULIDO
Mayor, City of Santa Ana
Cities of Orange County

TONIA REYES URANGA
Councilmember, City of Long Beach
Cities of Los Angeles County, Western Region

DENNIS YATES
Mayor, City of Chino
Cities of San Bernardino County

EXECUTIVE OFFICER

BARRY WALLERSTEIN, D. Env.

PREFACE

The Draft Program Environmental Assessment (PEA) for the Proposed Amended Rule 1401– *New Source Review of Toxic Air Contaminants*; Impact Assessment for Facilities Subject to Rule 1402 – *Control of Toxic Air Contaminants from Existing Sources*; and Proposed Rule 1472 - *Requirements for Facilities with Multiple Stationary Emergency Standby Diesel-Fueled Internal Combustion Engines*, was circulated for a 30-day public review and comment period from December 20, 2007 to January 18, 2008. One public comment letter was received and minor modifications were made to the Draft PEA so it is now a Final PEA. Deletions and additions to the text of the PEA are denoted using ~~strikethrough~~ and underlined, respectively. No modifications were made since the release of the Draft PEA that would change the conclusions made in the Draft PEA or worsen the environmental impact analyzed in the Draft PEA. Therefore, pursuant to CEQA Guidelines §15088.5, recirculation is not necessary since the information provided does not result in new avoidable significant effects.

TABLE OF CONTENTS

List of Figures

List of Tables

CHAPTER 1 - PROJECT DESCRIPTION

Introduction

Legislative Authority

California Environmental Quality Act

CEQA Documentation for Rules 1401 and 1402

Project Location

Project Background

Project Objectives

Project Description

Affected Facilities and Engines

INTRODUCTION

A substance is considered toxic if it has the potential to cause adverse health effects in humans. A toxic substance released to the air is considered a toxic air contaminant (TAC) or "air toxic." TACs are identified by state and federal agencies based on a review of available scientific evidence. Federal agencies also use the term hazardous air pollutant (HAP). In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act, Assembly Bill (AB) 1807, Tanner. This two-step process of risk identification and risk management was designed to protect residents from the health effects of toxic substances in the air. During the first step (identification), the California Air Resources Board (CARB) and the Office of Environmental Health Hazard Assessment (OEHHA) determines if a substance should be formally identified as a toxic air contaminant (TAC) in California. In the second step (risk management), the CARB reviews the emission sources of an identified TAC to determine if any regulatory action is necessary to reduce the risk. Exposure to TACs can potentially increase the risk of contracting cancer or result in other adverse health effects (e.g., birth defects). TACs can cause health effects through both short-term, high-level or "acute" exposure and long-term, low-level or "chronic" exposure. Many TACs are hydrocarbon substances or varieties of metals. A health risk assessment is used to estimate the likelihood that an individual would contract cancer or experience other adverse health effects as a result of exposure to listed TACs. TACs are regulated by the SCAQMD based on the recommendations of the OEHHA. OEHHA is the state agency responsible for developing risk assessment methodologies and risk factors to be used for conducting risk evaluations, thereby establishing a state-wide standard procedure for evaluating potential health risks.

The South Coast Air Quality Management District (SCAQMD) is proposing modifications to Rule 1401, which regulates TAC emissions from new, modified, and relocated sources. Rule 1402 regulates the same TACs that are listed in Table I in 1401 at existing facilities. Because adding diesel PM to Table I in 1401 affects facilities subject to Rule 1402, it is necessary to perform an impact assessment for facilities subject to Rule 1402. Further, staff is proposing a new Rule 1472, which would regulate diesel particulate matter (diesel PM) emissions at facilities with three or more stationary diesel-fueled emergency standby internal combustion engines. The primary objective of proposed amended Rule (PAR) 1401, which also affects facilities subject to Rule 1402, and proposed Rule (PR) 1472 is to reduce diesel PM emissions from stationary sources located within the area of SCAQMD's jurisdiction.

Specifically, the proposed project consists of adding diesel PM from diesel-fueled internal combustion engines to the Rule 1401 Table I list of TACs as a carcinogen, which would affect new, modified, or relocated diesel-fueled non-emergency engines. Rule 1402 regulates the same TACs that are listed in Table I in Rule 1401

at existing facilities. Paragraph (j)(5) of Rule 1402 requires a report to the Governing Board regarding a preliminary estimate of Rule 1402 impacts that are associated with the addition of new compounds to the list of TACs in Rule 1401. Depending on the facility and its potential toxic risk, Rule 1402 may require toxic emissions inventories, health risk assessments (HRS), public notification, and/or risk reduction as required under Assembly Bill (AB) 2588 Air Toxics Hot Spots Program. Thus, adding diesel PM to Table I in 1401 means this TAC would be included in the facility risk calculated at existing facilities, which may require risk reduction measures. Since amending Rule 1401 is expected to impact many facilities under Rule 1402, the PEA analyzes the impact assessment for facilities subject to Rule 1402.

Facilities with three or more stationary emergency standby diesel-fueled internal combustion engines (ICEs) will be required under PR 1472 to submit a compliance plan and possibly reduce diesel PM emission using strategies such as reducing maintenance and testing hours, installing add-on controls, averaging emissions and/or replacing older, high emitting engines with new engines. Compliance with proposed Rule 1472 would also exempt diesel-fueled internal combustion engines located at affected facilities from risk reduction requirements of Rule 1402.

The SCAQMD Governing Board approved an air toxics planning document in March 2000 called "Final Draft Air Toxics Control Plan (ATCP) for the Next Ten Years." PAR 1401, which affects facilities regulated by Rule 1402, and PR 1472 satisfy the following two programmatic measures as outlined in the ATCP: AT-PRG-01 – New Source Review of Toxic Air Contaminants (Amend Rule 1401); and AT-PRG-02 – Control of Toxic Air Contaminants from Existing Sources (Rule 1402). Specifically, AT-PRG-01 is a strategy that recommends continuing efforts to update Rule 1401, which would indirectly update Rule 1402 since it regulates the TACs listed in Rule 1401, by incorporating current TACs with risk values finalized by OEHHA and approved by the state Scientific Review Panel (SRP). Feasible after-treatment technologies for regulating diesel PM, for example, diesel particulate filters. The effectiveness of Rules 1401 and 1402 is enhanced when more chemicals, such as diesel PM, are regulated. PAR 1401, Rule 1402 and PR 1472 provides emission reductions/risk reductions so the proposed project is consistent with the ATCP.

This Draft Program Environmental Assessment (PEA), prepared pursuant to the California Environmental Quality Act (CEQA), identifies only air quality impacts during construction as a potentially significant adverse impact from implementing the proposed project but determined after evaluation and analysis that the potential air quality impacts are not significant. Regardless, all environmental impacts were evaluated in the Draft PEA. Throughout this document, references to the proposed project or PAR 1401, impact assessment for facilities subject to Rule 1402, and PR 1472 are used interchangeably.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

PAR 1401, impact assessment for facilities subject to Rule 1402, and PR 1472 are "projects" as defined by CEQA Guidelines §15378. California Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report once the Secretary of the Resources Agency has certified the regulatory program. The SCAQMD's regulatory program was certified by the Secretary of the Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110.

This CEQA document has been prepared pursuant to CEQA Guidelines §15252 and is a substitute document for a Negative Declaration. Therefore, pursuant to CEQA Guidelines §15252 (a)(2)(B), alternatives to the proposed project are not required because review of the proposed project showed that the proposed project would not have any significant effects on the environment and, therefore, no alternatives are proposed to avoid or reduce any significant effects on the environment. This conclusion is supported by the environmental checklist in Chapter 2 showing the possible effects examined in reaching this conclusion.

CEQA includes provisions for program CEQA documents in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, including adoptions of broad policy programs as distinguished from those prepared for specific types of projects (e.g., land use projects) (CEQA Guidelines §15168). The EA for the proposed project is a PEA because it examines the environmental effects of proposed rule amendments and a new rule that are intended to be promulgated as part of a continuing ongoing regulatory program. Further, PAR 1401, the impact assessment for facilities subject to Rule 1402, and PR 1472 are related because their primary objective is to regulate diesel PM from stationary sources.

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

the PEA and no new environmental document would be required (CEQA Guidelines §15168(c)[2]).

The degree of specificity required in a CEQA document corresponds to the degree of specificity involved in the underlying activity described in the CEQA document (CEQA Guidelines §15146). A CEQA document on a construction project will necessarily be more detailed in the specific effects of the project than will be a CEQA document on the adoption of a local general plan…because the effect of a construction project can be predicted with greater accuracy (CEQA Guidelines §15146(a)). Because the level of information regarding some potential impacts related to the siting and consideration of future projects is relatively general at this time, the environmental impact forecasts of cumulative impacts from these projects are also general or qualitative in nature. In certain instances, such as future construction and operation of affected facilities, impacts are quantified or modeled to the degree feasible.

CEQA requires that the potential environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA, the SCAQMD has prepared this PEA to address the potential environmental impacts associated a broad policy program that includes PAR 1401, impact assessment for facilities subject to Rule 1402, and PR 1472. This Draft PEA is intended to: (a) provide the lead agency, responsible agencies, decision makers and the general public with detailed information on the environmental effects of the proposed project; and, (b) to be used as a tool by decision makers to facilitate decision making on the proposed project.

All comments received during the public comment period on the analysis presented in the Draft PEA will be responded to and included in the Final PEA. Prior to making a decision on the proposed amendments, the SCAQMD Governing Board must review and certify the PEA as providing adequate information on the potential adverse environmental impacts of the amended rule.

CEQA DOCUMENTATION FOR RULES 1401 AND 1402

In addition to this Draft PEA, a number of CEQA documents have been prepared for previous amendments to Rules 1401 and 1402. The following subsections briefly summarize the previously prepared CEQA documents for Rules 1401 and 1402. Since PR 1472 is a new rule, there is no previous CEQA documentation.

Addendum to the July 1998 Final Environmental Assessment (EA) for Rule 1401 – New Source Review for Toxic Air Contaminants, and March 2000 Final Environmental Assessment (EA) for Rule 1402 – Control of Toxic Air

Contaminants from Existing Sources (SCAQMD No. 050211MK, March 4, 2005): Amendments updated the list of compounds and effective dates in Table I of Rule 1401 based on a new cancer risk value for naphthalene, new or updated cancer and chronic risk values for speciated polychlorinated biphenyls (PCBs), two polychlorinated dibenzo-p-dioxins (PCDDs), and one polychlorinated dibenzofuran (PCDF). Amendments also clarified the emission calculation procedure for addition of control equipment to existing equipment in Rule 1401 and updated the definition of maximum individual cancer risk (MICR) in Rules 1401 and 1402 for consistency with OEHHA's new risk guidelines. An addendum was prepared because no significant adverse impacts were identified and no significant adverse impacts were made substantially worse. Further, only minor changes are necessary to make the previously prepared CEQA document adequate for the modified project.

Addendum to July 1998 Final Environmental Assessment for Rule 1401– New Source Review of Toxic Air Contaminants and the March 2000 Final Environmental Assessment for Rule 1402 – Control of Toxic Air Contaminants from Existing Sources (SCAQMD No. 020409MK, May 2, 2003): Amendments modified Table I – Toxic Air Contaminants in Rule 1401 to include an effective date to regulate one toxic air contaminant (TAC), methyl tert-butyl ether (MTBE), because its maximum individual cancer risk (MICR) had recently been approved by the state. An addendum was prepared because no significant adverse impacts were identified and no significant adverse impacts were made substantially worse. Further, only minor changes are necessary to make the previously prepared CEQA document adequate for the modified project.

Addendum to July 1998 Final Environmental Assessment for Rule 1401– New Source Review of Toxic Air Contaminants and the March 2000 Final Environmental Assessment for Rule 1402 – Control of Toxic Air Contaminants from Existing Sources (SCAQMD No. 021217MK, January 10, 2003): Amendments modified Table I in Rule 1401 that would include a new chronic reference exposure level (REL) to one toxic compound, triethylamine, and make more stringent the REL for a second toxic compound, phosphine. The new chronic RELs were included in the risk assessment guideline document and became effective on the date of adoption of the amendments. An addendum was prepared because no significant adverse impacts were identified and no significant adverse impacts were made substantially worse. Further, only minor changes are necessary to make the previously prepared CEQA document adequate for the modified project.

Addendum to July 1998 Final Environmental Assessment for Rule 1401– New Source Review of Toxic Air Contaminants and the March 2000 Final Environmental Assessment for Rule 1402 – Control of Toxic Air Contaminants from Existing Sources (SCAQMD No. 020402MK, May 3, 2002): Thirteen chronic RELs (13 individual chemicals) were incorporated into the risk assessment

guidance document. OEHHA had previously approved the methodology to determine chronic RELs on November 28, 2001, and published the final technical support document on December 28, 2001. An addendum was prepared because no significant adverse impacts were identified and no significant adverse impacts were made substantially worse. Further, only minor changes are necessary to make the previously prepared CEQA document adequate for the modified project.

Addendum to July 1998 Final Environmental Assessment for Rule 1401– New Source Review of Toxic Air Contaminants and the March 2000 Final Environmental Assessment for Rule 1402 – Control of Toxic Air Contaminants from Existing Sources (SCAQMD No. 010509MK, June 15, 2001): Amendments added six compounds with new chronic RELs to Rule 1401's Table I - Toxic Air Contaminants and added to Rule 1401's Table I OEHHA-approved chronic RELs for 20 compounds which had been analyzed previously based on unapproved lower, higher or equivalent chronic REL values. The new chronic RELs were included in the risk assessment guideline document and became effective on the date of Board approval. An addendum was prepared because no significant adverse impacts were identified and no significant adverse impacts were made substantially worse. Further, only minor changes are necessary to make the previously prepared CEQA document adequate for the modified project.

Addendum for Proposed Amended Rule 1401– New Source Review of Toxic Air Contaminants and Report on Potential Impacts Relative to Sources Subject to Rule 1402 – Control of Toxic Air Contaminants from Existing Sources (SCAQMD No. 000719MK, August 18, 2000): Amendments added eight compounds with new chronic RELs to Rule 1401's Table I - Toxic Air Contaminants that were previously listed in Rule 1401's Table II – Toxic Air Contaminants with Proposed Risk Values. In addition, the amendments added to Rule 1401's Table I OEHHA-approved chronic RELs for 68 compounds which had been analyzed previously with unapproved lower, higher or equivalent chronic REL values. The new chronic RELs were included in the risk assessment guideline document and became effective on the date of Board approval, except one that took effect on February 23, 2000. Finally, acetone was deleted from Rule 1401's Table II, and removed from the rule. An addendum was prepared because no significant adverse impacts were identified and no significant adverse impacts were made substantially worse. Further, only minor changes are necessary to make the previously prepared CEQA document adequate for the modified project.

Final Environmental Assessment for the Proposed Amended Rule 1402 - Control of Toxic Air Contaminants from Existing Sources, and Proposed Amended Rule 1401 – New Source Review for Toxic Air Contaminants (SCAQMD No. 991223MK, March 17, 2000): Proposed amendments to Rule (PAR) 1402 maintained the existing MICR significant threshold levels for cancer risk

at 100 in one million and the HI for non-carcinogens at 5.0, established a cancer burden level of 0.5 and established a facility-wide interim MICR action level of 25-in-one-million (25×10^{-6}). In addition, the amendments established a facility-wide interim HI action level of 3.0 and a facility-wide final action level of 10-in-one-million (10×10^{-6}) and HI of 3.0. The timeframe for achieving the interim action levels were reduced from five years to three years with no additional extensions allowed. In addition, effective January 1, 2005, affected facilities would begin implementing risk reduction measures to achieve the final MICR action level. Affected facilities would have three years to comply with the final action level requirements. The amendments included provisions for technical and economic considerations for extending the three-year risk reduction period to five years in some cases. Amendments to Rule 1402 also included additional inventory requirements for any facility above thresholds (based on an MICR of 100 in one million or HI of 5.0) for key toxic compounds, additional public notification requirements, as well as other requirements to improve the effectiveness of the rule.

Final Environmental Assessment for Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants and proposed amended Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II (SCAQMD No. 990520MK, August 13, 1999): The EA analyzed the environmental effects of amendments to Rule 1401 added to Table I of Rule 1401 nine compounds for which the Scientific Review Panel (SRP) and OEHHA had recently established new acute REL values. The amendments analyzed 47 chemicals with acute health impacts that were previously listed in Table I of Rule 1401 and which became effective on the date of Board approval. Reference exposure level risk values were included in the risk assessment guideline document. In addition, an administrative change to the Rule 1401 applicability section and the preamble of Rule 219 required a permit for Rule 219 exempt equipment only if the equipment exceeds the risk threshold requirements of Rule 1401.

Addendum to the June 1998 Final Environmental Assessment (EA) for Rule 1401 –New Source Review of Toxic Air Contaminants (certified at the July 10, 1998 Board meeting (SCAQMD No. 981030MK, March 12, 1999): Amendments to Rule 1401 changed the effective date for some TACs with noncancer effects in Table I of Rule 1401, and added nickel and nickel compounds to Table I of Rule 1401 to be regulated as a carcinogen. Unit risk factors for nickel and nickel compounds, assigned and approved by the OEHHA were included in the risk assessment guideline document. An addendum was prepared because no significant adverse impacts were identified and no significant adverse impacts were made substantially worse. Further, only minor changes are necessary to make the previously prepared CEQA document adequate for the modified project.

Final Supplemental Environmental Assessment for Proposed Amended Rule 1401 –New Source Review of Toxic Air Contaminants SCAQMD No. 81030MK, January 8, 1999): Amendments to Rule 1401 added 41 carcinogens previously listed in Rule 1401's Table II – TACs with Proposed Risk Values, to Table I – TACs. Unit risk factors, assigned and approved by OEHHA, were included in the risk assessment guideline document.

Addendum to the June 1998 Final Environmental Assessment (EA) for Rule 1401 – New Source Review of Toxic Air Contaminants (certified at the July 1998 Governing Board meeting), the May 1990 Final EA for Rule 1401 (certified at the June 1990 Governing Board meeting) and the November 1990 Final Supplemental EA for Rule 1401 (certified at the December 1990 Governing Board Meeting) (SCAQMD No. 980130MK, October 9, 1998): Amendments updated and assigned new unit risk factors to 58 compounds in the list of regulated compounds contained in the risk assessment guidance document, entitled Risk Assessment Procedure for Rules 1401 and 212, for existing Rule 1401. The amendments were being undertaken to provide consistency with the recent modifications approved by OEHHA at that time. An addendum was prepared because no significant adverse impacts were identified and no significant adverse impacts were made substantially worse. Further, only minor changes are necessary to make the previously prepared CEQA document adequate for the modified project.

Final Environmental Assessment for Proposed Amended Rule 1401 - New Source Review of Toxic Air Contaminants (SCAQMD No. 980130MK, July 10, 1998): Amendments to Rule 1401 added 117 TACs to the list of compounds regulated by the rule, added requirements for the protection of public health from the non-cancer health effects from exposure to TACs, and provide specific limited exemptions. In addition, the amended rule implemented section 112(g) of the Federal Clean Air Act.

PROJECT LOCATION

PAR 1401, impact assessment for facilities subject to Rule 1402, and PR 1472 would apply to the SCAQMD's entire jurisdiction. The SCAQMD has jurisdiction over an area of 10,473 square miles (referred to hereafter as the district), consisting of the four-county South Coast Air Basin (Basin) and the Riverside County portions of the Salton Sea Air Basin (SSAB) and the Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of the SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The 6,745 square-mile Basin includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB and MDAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal

nonattainment area (known as the Coachella Valley Planning Area) is a subregion of both Riverside County and the SSAB and is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (Figure 1-1).

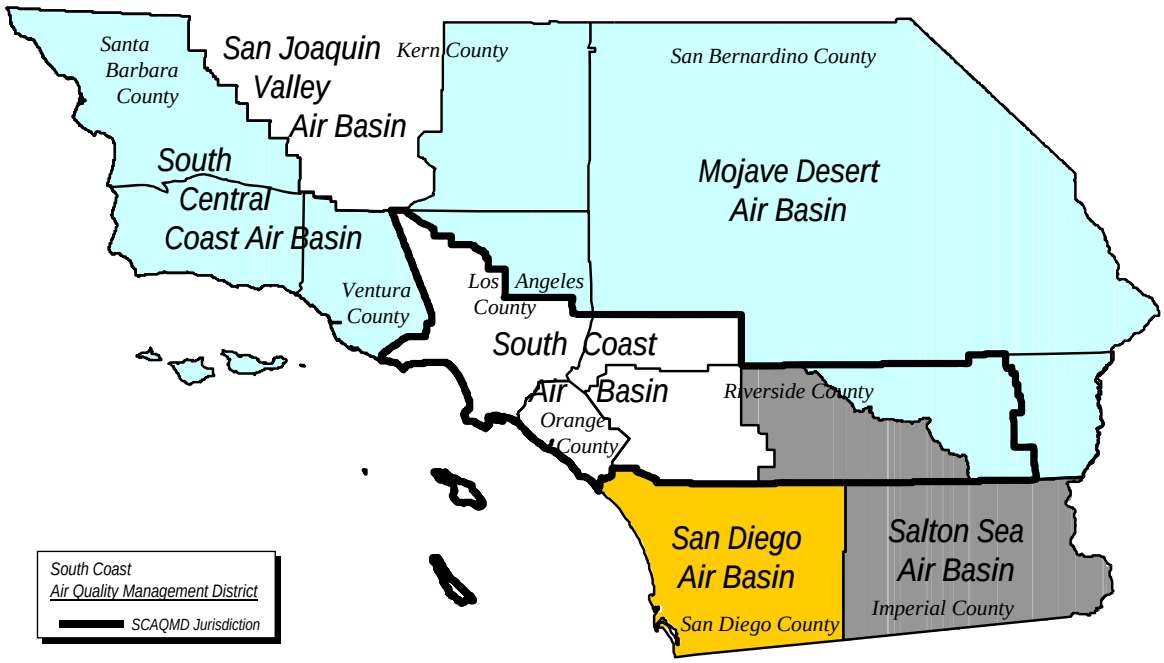

FIGURE 1-1

South Coast Air Quality Management District

PROJECT BACKGROUND

Rule 1401 and Rule 1402

Rule 1401 was originally adopted by the SCAQMD Governing Board in June 1990 and has been amended several times to add new compounds to the list of TACs as they have been identified and OEHHA-approved cancer potency (CP) values and chronic REL are finalized or amended. Rule 1401 establishes permitting requirements for new, modified, or relocated diesel-fueled non-emergency engines. Emergency engines are exempt from Rule 1401.

Rule 1402 was adopted in April 1994 and establishes risk reduction requirements for existing facilities that emit TACs. Depending on the facility and its potential toxic risk, Rule 1402 may require toxic emissions inventories, health risk assessments (HRA), public notification, and/or risk reduction as required under AB 2588 Air Toxics Hot Spots Program. Rule 1402 was amended on March 17, 2000 to incorporate a new action risk level and a list of industry types for which source-specific rules would be written if warranted. Because Rule 1402 regulates TACs listed in Table I in Rule 1401, any amendments that affect the TACs listed in Table I of 1401 could potentially affect facilities subject to Rule 1402.

Rule 1470 and Proposed Rule 1472

Diesel PM is produced when ICEs burn diesel fuel. Diesel exhaust is a complex mixture of gases and fine particles, including many known or suspected cancer-causing substances such as arsenic, benzene, formaldehyde, nickel, and polycyclic aromatic hydrocarbons. Diesel PM emissions are small enough to be inhaled deep into the lungs and there is a scientific link between these emissions and non-cancer damage to the lungs. Diesel fueled engines are widely used throughout the district for emergency power as well as some non-emergency applications where electricity is not available from the local utility.

In 1998, after 10 years of an exhaustive scientific assessment process, CARB designated diesel PM as a TAC. Rule 1470 – Requirements for Stationary Diesel-fueled Internal Combustion and Other Compression Ignition Engines, was adopted in 2004 to implement the state air toxic control measure (ATCM) and establishes requirements which will substantially reduce diesel PM emissions from affected engines. Rule 1470 requires the use of ultra low sulfur diesel fuel and establishes operating hour restrictions depending on the emission rate of the engine. Subsequent to adopting and implementing Rule 1470 requirements, staff identified facilities with multiple diesel-fueled emergency standby engines that can pose a substantial health risk. Most facility operators have limited their routine testing and maintenance to 30 hours or less to comply with Rule 1470. However, even after limiting the duration of testing the emergency engines, due to the potency of diesel PM, the engine size, and proximity to residences and sensitive receptors, some facilities with multiple engines still may pose a significant cancer risk. The new rule, PR1472 – Requirements for Facilities with Multiple Stationary Emergency Standby Diesel Fueled Internal Combustion Engines, will address facilities with high risk from diesel-fueled emergency standby engines. The reason a new rule was created is to provide affected facilities more compliance flexibility for reducing diesel PM emissions than if subject to the requirements of Rule 1402.

PROJECT OBJECTIVES

The objectives of PAR 1401 and the impact assessment for facilities subject to Rule 1402 are to:

1. Add diesel PM to Table I in Rule 1401 to be regulated as a carcinogen and a noncarcinogen with chronic health effects to:

    i. Limit cancer risk and noncancer chronic health risks from exposure to diesel PM at new, modified, and relocated facilities pursuant to Rule 1401; and

    ii. Add diesel PM to the TACs that contribute to an existing facility's overall risk, which may require further risk reduction measures to reduce cancer risk and noncancer chronic health risks at existing facilities pursuant to Rule 1402.

The objectives of PR 1472 are to:

1. Establish a source-specific rule to reduce diesel PM exposure from facilities with multiple stationary emergency standby diesel-fueled internal combustion engines;

2. Establish methodology in calculating facility index based on diesel PM emissions and distance to the sensitive receptor, which determines rule compliance and tiered compliance schedule; and

3. Allow flexible compliance options to reduce diesel PM emissions.

PROJECT DESCRIPTION

Proposed Amended Rule 1401

The only modification proposed for Rule 1401 includes adding diesel PM to Table I as explained below.

Purpose (subdivision a)

No modifications proposed.

Applicability (subdivision b)

No modifications proposed.

Definitions (subdivision c)

No modifications proposed.

Requirements (subdivision d)

No modifications proposed.

Risk Assessment Procedures (subdivision e)

No modifications proposed.

Emissions Calculations (subdivision f)

No modifications proposed.

Exemptions (subdivision g)

No modifications proposed.

Table I

Diesel PM from internal combustion engines (ICEs) would be added to Rule 1401's Table I list of TACs. The OEHHA-approved cancer risk (i.e., inhalation potency factor) and chronic health risk value (i.e., REL) for diesel PM would be added to the SCAQMD's "Risk Assessment Procedures for Rules 1401 and 212" as shown in Table 1-1.

TABLE 1-1

Diesel PM Risk Values

	CAS* Number	**Inhalation Potency Factor** $(mg/kg\text{-}day)^{-1}$	**Chronic REL** $(\mu g/m^3)$
Diesel PM (PM from diesel-fueled ICE exhaust)	None	1.1E+00	5.0E+00

*CAS stands for Chemical Abstracts Service, who produce a "CAS registry number" which are unique numerical identifiers for chemical compounds, polymers, biological sequences, mixtures and alloys.

Table II

No modifications proposed.

Please refer to Appendix A for the detailed version of PAR 1401.

Impact Assessment for Facilities Subject to Rule 1402

Because Rule 1402 regulates TACs listed in Table I in Rule 1401 at existing facilities, adding diesel PM to Table I in Rule 1401 means that this TAC would also be included in a facility's overall risk, which may trigger additional risk reduction requirements in Rule 1402 if a facility operator opts to comply with Rule 1402 rather than comply with the requirements of PR 1472 or has non-emergency diesel engines. If the facility operator opts to comply with Rule 1402, adding diesel PM from ICEs is expected to impact those existing facilities if the cancer risk from the facility exceeds the action risk level of 25-in-one-million. Facility operators will be required to do public notification if estimated cancer risk exceeds 10 in one million. Facility operators who opt to comply with Rule 1402 and who have diesel-fueled emergency and non-emergency diesel engines, will be required to reduce their facility-wide cancer risk if it exceeds 25-in-one-million.

Adding diesel PM to Table I in Rule 1401 also affects facilities subject to Rule 1402 because Rule 1402 regulates the same TACs listed in Table I in Rule 1401. As a result, although no modifications are currently being proposed for Rule 1402, operators at facilities subject to Rule 1402 may have to implement risk reduction measures for diesel PM if they choose to continue to be regulated by Rule 1402 rather than comply with PR 1472. It is anticipated that regardless of whether or not a facility operator complies with Rule 1402 or PR 1472, the same emergency engines will be affected and the same compliance options will be implemented. As a result, the analysis of the environmental effects of PR 1472 is also considered to be an impact assessment for facilities subject to Rule 1402.

Proposed Rule 1472

PR 1472 will address diesel PM emissions from facilities with three or more emergency diesel-fueled internal combustion engines that produce the greatest diesel PM exposure to nearby receptors. The proposed rule requires all facilities with three or more diesel-fueled emergency engines to submit a compliance plan giving facility information for all diesel-fueled emergency engines at the facility. Facilities are also required to calculate an Engine Group Index for all groups of engines within 150 meters of one another. If all Engine Group Indices at the facility are less than or equal to 1.0, nothing further is required. For facilities where any Engine Group Index exceeds 1.0, diesel PM emissions reductions are required and the facility shall include a description of how it will comply with the emission requirements in its plan. The facility is allowed flexibility to choose one of the compliance options and determine how it will meet the emission requirements. Emission reduction strategies may include reduction of testing and maintenance hours of operation, add-on controls, engine replacement with an alternative-fueled engine or cleaner diesel-fueled engine. A more detailed discussion of the requirements are provided below.

Dates for submittal of compliance plans are staggered and are based on the number of diesel-fueled emergency engines at the facility. Compliance dates allow at least two years for planning, budgeting, permitting, and installation of controls or new engines. Final compliance deadlines for diesel PM emission reductions are also staggered based on the highest Engine Group Index at the facility. Facilities with the highest indices are required to comply earliest.

Operators of facilities that would be subject to PR 1472 could opt to be regulated by Rule 1402. Alternatively, facilities operators who choose to comply with PR 1472 would be exempt from the risk reduction requirements of Rule 1402. Facilities subject to Rule 1472 will be required to reduce diesel PM emissions. The following paragraphs summarize the main provisions of PR 1472.

Purpose (subdivision a)

The purpose of PR 1472 is to reduce diesel PM emissions from facilities with three or more stationary emergency standby diesel-fueled ICEs.

Applicability (subdivision b)

PR 1472 shall apply to facilities with three or more stationary diesel-fueled emergency standby ICEs with each engine having a rated brake horsepower greater then 50.

Definitions (subdivision c)

- Definition for "Compression Ignition (CI) Engine" [paragraph (c)(1)] has been included to assist in determining applicability with the proposed rule.
- Other new proposed definitions added to PR 1472 include:
  - "Diesel Fuel" [paragraph (c)(2)];
  - "Diesel Particulate Filter (DPF)" [paragraph (c)(3)];
  - "Diesel Particulate Matter (PM)" [paragraph (c)(4)];
  - "Direct Drive Fire Pump Engine" [paragraph (c)(5)];
  - "Emergency Standby Engine" [paragraph (c)(6)];
  - "Emission Control Strategy" [paragraph (c)(7)];
  - "Engine Group" [paragraph (c)(8)];
  - "Executive Officer" [paragraph (c)(9)];
  - "Facility" [paragraph (c)(10)];

- "Health Facility" [paragraph (c)(11)];
- "Location" [paragraph (c)(12)];
- "Maintenance and Testing" [paragraph (c)(13)];
- "Off-Site Worker Receptor" [paragraph (c)(14)];
- "Rated Brake Horsepower (BHP)" [paragraph (c)(15)];
- "Receptor Location" [paragraph (c)(16)];
- "Residential/Sensitive Receptor Distance" [subparagraph (c)(16)(A)];
- "Off-Site Worker Receptor Distance" [subparagraph (c)(16)(B)];
- "Residential Receptor" [paragraph (c)(17)];
- "School or School Grounds" [paragraph (c)(18)];
- "Significant Risk Level" [paragraph (c)(19)];
- "Sensitive Receptor" [paragraph (c)(20)];
- "Stationary Emergency Diesel Engine" [paragraph (c)(21)];

Initial Notification of Exemption from Filing a Compliance Plan and Compliance Plan (subdivision d)

- The compliance plan requirements do not apply to facilities if each emergency standby diesel-fueled engine at the facility is greater than 150 meters from the nearest receptor or emits diesel PM at less than or equal to 0.15 g/bhp-hr.

- The compliance plan requirements do not apply to engine groups that are not within 150 meters of each other or to direct-drive emergency standby fire pump engines, which is an engine directly coupled to a pump exclusively used in a water-based fire protection system. Direct-drive fire pump engines are unique and must be modified to include additional redundant systems and electronics for safety and to guarantee the engine will start and perform as required in an emergency. Once these engines are modified, they must have Underwriters Laboratories (UL) and FM Global safety certifications. UL and FM Global listings are an industry standard and certify that the engines comply with National Fire Protection Association (NFPA) guidelines. Adding controls would nullify their UL and FM Global listings. Further limiting hours of operation for testing and maintenance purposes is not feasible for direct-drive fire pump engines since they are already limited in Rule 1470 to the number of hours needed to comply with NFPA guidelines.

- A compliance plan shall be submitted by facility operators with three or more stationary emergency diesel engines and the plan must include a list of information such as company name, address, number of engines and specific data regarding the engines and their location. Operators of affected facilities must calculate an engine group index for each engine that is 150 meters from each other at the facility and include in the compliance plan submitted to the SCAQMD. A discussion of the Engine Group Index is provided below.

- If the engine group index is greater than 1.0, proposed methods to comply with the rule requirements (subdivision f) should be described in the plan.

- If unable to comply with the requirements, the facility owner/operator shall demonstrate that no fuel replacement is feasible, emission limits cannot be achieved with add-on controls, and there is insufficient space in the area where the engine is located such that engine replacement or addition of controls would require extensive demolition or the removal of one or more walls or the ceiling.

Engine Group Index Calculation (subdivision e)

The Engine Group Index is a calculation that accounts for the diesel PM exposure from multiple engines. The Engine Group Index accounts for the engine size, emission rate, hours of operation, and distance to the nearest receptor. A higher Engine Group Index represents a higher exposure to diesel PM.

- This subdivision identifies what constitutes and "engine group" and lists engines that may be excluded from the engine group based on the size of the engine and the distance to the nearest receptor.

- This subdivision also provides the formula to be used in calculating the engine group index. In addition, guidance in compiling the parameters used in the formula is provided. For example, in order to calculate the engine group index, the nearest residential/sensitive and the nearest off-site worker receptor location from the exhaust stack of any engine in the engine group must be identified.

Requirements (subdivision f)

- If an "engine group index" is calculated to exceed 1.0, the following three compliance options are provided:

1. reduce the engine group index to less than or equal to 1.0;

2. emit diesel PM at a rate less than or equal to 0.15 gram/bhp-hour for each engine in the engine group; or

3. emit diesel PM at a weighted average rate less than or equal to 0.15 gram/bhp-hour for all applicable engines within an engine group. The formula, which takes into account the engine horsepower rating, operating hours, and the diesel PM emission rate, is provided in the rule.

Compliance Schedule and Permit Application Dates (subdivision g)

- Date to submit the compliance plan is based on the number of engines at the affected facility and in accordance with the existing requirements of Rule 306 – Plan Fees.

- All permit applications necessary to achieve compliance with the requirements need to be submitted no later than six months prior to the applicable final compliance date.

- Date to comply with the requirements to reduce the diesel PM if the engine group index exceeds 1.0 is dependent on the value of the engine group index, whereby the higher the engine group index the sooner compliance is required. Facilities with more than one engine group will be required to comply on the date dictated by the highest engine group index.

- Health care facilities shall comply with a specified compliance schedule regardless of the number of engines at the facility.

- Facilities with engine changes shall comply with a compliance schedule based on the date of engine installation, submittal of the required compliance plan and engine group index value.

~~Recordkeeping, Reporting and Monitoring Requirements (subdivision h)~~

~~In addition to the reporting requirements in Rule 1470, facilities with multiple stationary emergency diesel engines shall report any addition or change of location that would cause a change in the engine group index.~~

Emissions Data (subdivision h ~~i~~)

- Emissions data should be obtained from certain sources such as off-road certification test data, engine manufacturer test data, test data from a similar

engine and emissions test data used in meeting the requirements of the Verification Procedure for the emission control strategy implemented.

- Emission testing should be done in accordance with the established and required test methods (subdivision j).

- The test method shall be the same when testing for both baseline and control strategy.

- Testing to demonstrate compliance shall be performed with the control strategy fully implemented.

Test Methods (subdivision ij)

- Diesel PM emission testing shall be done in accordance with approved established test methods such as CARB Method 5 *Determination of Particulate Matter Emissions from Stationary Sources*, International Organization for Standardization (ISO) 8178 test procedures, or Title 13, California Code of Regulations (section 2423) *Exhaust Emission Standards and Test Procedures – Off-Road Compression Ignition Engines*.

- Use of alternative test methods may be approved if demonstrated to be acceptable to the Executive Officer.

Exemptions (subdivision jk)

- PR 1472 shall not apply to facilities in compliance with all applicable requirements in Rule 1402.

- ~~Certain rule provisions, such as plot plan submittal, engine group identification, method of compliance, engine index calculation, requirements, emissions data and test methods do not apply to facilities if each emergency standby diesel fueled engine at the facility is greater than 150 meters from the nearest receptor.~~

- ~~Direct drive emergency standby fire pump engines, which is an engine directly coupled to a pump exclusively used in a water based fire protection system are exempt from PR 1472. Direct drive fire pump engines are unique and must be modified to include additional redundant systems and electronics for safety and to guarantee the engine will start and perform as required in an emergency. Once these engines are modified, they must have Underwriters Laboratories (UL) and FM Global safety certifications. UL and FM Global listings are an industry standard and certify that the~~

~~engines comply with National Fire Protection Association (NFPA) guidelines. Adding controls would nullify their UL and FM Global listings. Further limiting hours of operation for testing and maintenance purposes is not feasible for direct-drive fire pump engines since they are already limited in Rule 1470 to the number of hours needed to comply with NFPA guidelines.~~

- ~~Facilities that have an engine group index exceeding 1.0 must either comply with the requirements of subdivision (f) or demonstrate why they cannot comply because of the reasons listed in subdivision (d).~~

Rule 1402 Risk Requirements (subdivision k~~l~~)

- Any facility in compliance with Rule 1472 requirements shall not be required to comply with risk reduction requirements for emergency diesel engines in Rule 1402, however, if the risk at that facility exceeds the significant risk level of 100-in-one-million, the facility shall comply with all applicable requirements of Rule 1402.

Please refer to Appendix A for the detailed version of PR 1472.

AFFECTED FACILITIES AND ENGINES

A wide variety of private and public entities owning and operating stationary and portable diesel-fueled internal combustion engines in the district may be affected by the addition of diesel PM from internal combustion engines to the list of TACs in Table I in Rule 1401. It should be noted that jet-fueled engines are also included since jet fuel is very similar to diesel. Industries and other entities affected by the proposed project include, but are not limited to, manufacturing, food processing and production, power generation, building management, hospitals, refineries, water treatment facilities, telecommunications and broadcasting facilities, quarries, military installations, prisons, schools, construction and portable equipment rental companies.

SCAQMD staff estimates there are approximately 10,000 permitted diesel-fueled internal combustion engines operated at approximately 6,000 facilities in the district. About 90 percent of the engines are stationary and ten percent are portable engines. Stationary compression ignition engines are those that remain in one location for 12 months or longer. Engines that remain at a single facility and are moved around the facility are treated as a stationary engine for SCAQMD permitting purposes. Portable engines are designed to be moved from place to place and do not remain at the same facility for more than 12 months. Diesel-fueled engines are also typically categorized as either prime (non-emergency) engines or emergency standby engines. Approximately ten percent of the 10,000 permitted diesel-fueled internal combustion

engines are considered prime engines. The remaining 90 percent are emergency back-up engines.

Prime engines are used in a wide variety of applications to provide mechanical power to equipment such as generators, compressors, irrigation equipment, cranes, rock crushers, and agricultural irrigation pumps. Less than one percent of all permitted diesel-fueled engines are stationary prime engines and many of those are in remote locations, such as offshore oil drilling platforms.

.

Emergency standby engines are used for emergency back-up electric power generation or pumping of water during emergencies such as power failures or rolling blackouts or flooding. They provide emergency power for a variety of situations, including those which are critical to human life (e.g., hospital and convalescent facility, medical support systems, and fire suppression) and those which are less critical to human life and safety (e.g., heating and air conditioning systems, communication systems, ventilation and smoke removal systems, sewage disposal, lighting and industrial processes). Emergency generators and fire pumps are regularly operated for testing and maintenance to ensure that they will operate during an emergency. The allowable operating hours for testing and maintenance are limited by Rule 1470 depending on the emission rate of the engine. The limits are based on the PM emissions from the engine such that cleaner engines are allowed to operate more hours.

Proposed Amended Rule 1401

SCAQMD staff estimates that a limited number of engines are expected to be affected by PAR 1401 due to the following:

- emergency engines are currently exempt from Rule 1401 and will continue to be exempt;
- because new, modified and relocated engines are already subject to Rule 1401, which requires installation of best available control technology for toxics (T-BACT), and compliance with maximum individual cancer risk (MICR) and hazard index (HI) requirements, diesel PM is largely regulated because of speciated list of TACs found in diesel exhaust;
- because new, modified and relocated engines are subject to other requirements imposed on them (e.g., Rule 1303 best available control technology (BACT) requirements) diesel PM is largely regulated through compliance with PM BACT requirements, which would reduce the number of new applications subject to more stringent requirements under Rule 1401;

- Rule 1470 establishes strict emission requirements for new prime engines at 0.01 gram/bhp-hour;
- only 20 portable engines were permitted in 2006, however operators of portable engines will likely opt to register their portable engines under the statewide registration program instead of permitting their portable engines with the SCAQMD for the following reasons:
    - the state registration program allows the portable engine to be operated throughout the state;
    - the costs are lower when permitting through the statewide registration program; and
    - portable engines are not subject to Rule 1401 under the statewide registration program.
- three non-emergency stationary engines were permitted in 2006, however the strict requirements under Rule 1470 would require the installation of a DPF already, so the amendment to Rule 1401 would likely not impose additional action to be taken for non-emergency stationary engines in the future.

Impact Assessment for Facilities Subject to Rule 1402

To determine the affect of adding diesel PM to Table I in 1401 on Rule 1402 facilities, the following factors were taken into consideration:

- There are 545 facilities with 3 or more emergency engines (greater than 50 HP) onsite, with a total of 2,788 affected engines. Operators of these engines could comply with PR 1472 and be exempt from the risk reduction requirements in Rule 1402 provided the facility-wide risk is less than 100-in-one-million. Since the control options to comply with either Rule 1402 or PR 1472 are the same, this universe of sources will be included it the environmental analysis for PR 1472.

- Single, smaller emergency engines (e.g., less than 50 HP) are not expected to have high annual emission levels (due to the limits on the permit) that would trigger the risk reduction requirements and are excluded from further analysis;
- Operators of non-emergency engines (not subject to PR 1472) are subject to the requirements of Rule 1402 and could potentially be affected by amending Rule 1401. Affected non-emergency engines are expected to be located at the following 152 facilities:

- Approximately 34 facilities are currently subject to AB 2588 and operators would need to do the following:
  - update inventory at the next regularly scheduled quadrennial update to include affected engines;
  - update Health Risk Assessment (HRA) to include affected engines;
  - distribute a public notice if HRA shows cancer risk from engines are greater than 10 in one million; and
  - if HRA shows cancer risk is greater than 25-in-one-million, submit a risk reduction plan and subsequently reduce risk through action taken (e.g., install DPF or replace engine).
- Operators of approximately 118 facilities not currently subject to AB2588 procedures would need to do the following:
  - submit inventory;
  - perform a HRA;
  - distribute a public notice if HRA shows cancer risk from engines are greater than 10 in one million; and
  - if HRA shows cancer risk is greater than 25-in-one-million, submit a risk reduction plan and subsequently reduce risk through action taken (e.g., install DPF or replace engine).

The above inventory and HRA requirements for facilities with non-emergency engines under Rule 1402 and AB2588 follow legal deadlines and procedures to file and be approved that can last up to three years from the date of initial notification, which would take place sometime after the adoption of the Rule 1401 amendments. It is estimated it would take at least one year from the adoption of Rule 1401 amendments to prepare and distribute the initial notifications. Table 1-2 outlines the procedures and legal deadlines for each required action. Not all facilities will be required to conduct all the required actions listed. For example, operators of facilities with a facility-wide risk less than the action risk level of 25-in-one-million will not be required to prepare a risk reduction plan or take risk reduction action. Because the impact assessment for facilities subject to Rule 1402 analysis assumes that all affected facilities will be required to take risk reduction action, it is a "worst-case" scenario.

TABLE 1-2

Rule 1402/AB2588 Requirement Deadlines

Required Action	Taken By	Deadline
Prepare Air Toxics Inventory Report (ATIR) and submit to SCAQMD	Affected Facility	180 days from initial notification from the SCAQMD
Review/Approval of ATIR; Notify to prepare an HRA	SCAQMD	90 days
Prepare HRA and submit to SCAQMD	Affected Facility	150 days
Review/Approval of HRA; Notify to prepare Risk Reduction Plan (RRP)	SCAQMD	365 days (includes 180 days for OEHHA to review)
Prepare RRP and submit to SCAQMD	Affected Facility	180 days
Review/Approval of RRP	SCAQMD	90 days
Implement RRP	Affected Facility	3 years from submittal of RRP
Time extension request to SCAQMD	Affected Facility	Once approved by SCAQMD, up to 2 additional years to comply

Due to the number of potentially affected facilities and the limited number of resources to review and approve the Air Toxics Inventory Reports (ATIR) and HRAs, the initial notification will be staggered over three years. Therefore, out of the 152 facilities, 51 facilities will be notified in the first year, 51 facilities in the second year, etc. If rule amendments to Rule 1401, which affects facilities regulated by Rule 1402, takes place in 2008, initial notification to submit ATIRs could begin as early as 2009. As noted in Table 1-2, facility operators have three years to implement the risk reduction action outlined in their Risk Reduction Plans (RRP). The risk reduction action for non-emergency engines at Rule 1402 facilities is expected to be the same compliance option as for emergency engines (i.e., DPF installation or engine replacement). Since a DPF installation or engine replacement is anticipated to be constructed/installed in less than one week and there is a cost and potential disruption to business to construct/install, it is likely the affected facility operators would wait until the last year of the three-year deadline to comply. Regardless, as noted in Table 1-3, operators of the first group of affected facilities could begin to take early action to comply (i.e., begin construction to install a DPF or replace an engine) approximately late 2012/early 2013, although as noted above based on costs and disruption to business, it is more likely that installation would occur in the year 2015. The final compliance date (if an engine group index is greater than 4.0) is July 1, 2012, which is the "worst-case" date used in analyzing compliance from the facilities affected by PR 1472 (see Table 1-5 under the "Compliance Options and Schedule" section). Therefore, the compliance action from facilities with non-emergency engines is expected to occur after the facilities with emergency engines comply and, thus, potential environment impacts from installing a DPF or replacing an engine would not be expected to overlap. Table 1-3 outlines a likely schedule for the 152 facilities with non-emergency engines

staggered throughout the future years to comply with notification and risk reduction requirements pursuant to Rule 1402 and AB2588.

TABLE 1-3

Anticipated Compliance Schedule for 152 Facilities with Non-Emergency Engines

Year	First Group of 51 Facilities	Second Group of 51 Facilities	Last Group of 50 Facilities	Year
2009	Initial notification to conduct all required actions (see Table 1-2) leading up to submittal of RRP.	---	---	2009
2010		Initial notification to conduct all required actions (see Table 1-2) leading up to submittal of RRP.	---	2010
2011			Initial notification to conduct all required actions (see Table 1-2) leading up to submittal of RRP.	2011
2012				2012
2013	3-year period provided to comply with RRP (i.e., install DPF/replace engine).			2013
2014		3-year period provided to comply with RRP (i.e., install DPF/replace engine).		2014
2015			3-year period provided to comply with RRP (i.e., install DPF/replace engine).	2015
2016	---			2016
2017	---	---		2017

The annual DPF installation/engine replacement at 51 facilities would mean an average of one installation/replacement per week. See Chapter 2 for the analysis of the environmental impacts from a DPF installation/engine replacement. As noted in Table 1-5 under the "Compliance Options and Schedule" section, there could be up to three installations/replacements per week at facilities with emergency engines subject to PR 1472, so the environmental impact analysis in Chapter 2 provides more of a "worst-case" analysis than the analysis of impacts from 152 facilities affected by Rule 1402/AB2588 requirements. Based on the anticipated compliance schedule for facilities with emergency and non-emergency engines, it was concluded that the installations/replacements at facilities with non-emergency engines would not overlap with activity at facilities with emergency engines. Therefore, impacts from compliance activities for emergency engines would not be additive with compliance activities for non-emergency engines.

Proposed Rule 1472

There are approximately 545 facilities with three or more emergency diesel engines that would be subject to PR 1472 for a total estimate of over 2,788 affected single emergency diesel engines rated greater than 50 bhp. The affected facilities include all sectors such as aerospace, business offices, hotels, hospitals, communications, transportation, entertainment, amusement, education, health services, government, and public utilities facilities. Expected options to comply with the risk and emission reduction requirements may include reducing testing and maintenance hours, installation of add-on controls, emission averaging, and early replacement of older

high emitting engines with new engines. Emission control technologies that may be used to reduce diesel PM emissions include particulate filters, diesel oxidation catalysts, fuel additives used in combination with particulate filters, alternative diesel fuels and any combination of the above. Since the DPF is the most cost-effective add-on control, it is assumed to be the add-on control of choice.

All 545 facilities would be subject to compliance plan submittal requirements. However, the total universe of potentially affected facilities with three or more engines does not take into consideration factors that may affect whether or not the facility will actually be subject to risk reduction such as the following parameters:

1. the engines may not be within 150 meters of each other qualifying them as an "engine group";
2. the engine group index is less than 1.0;
3. each engine already complies with the 0.15 gram/bhp-hr limit;
4. the annual testing hours could voluntarily be reduced to comply; or
5. the engine group is located further than 150 meters from the nearest sensitive receptor.

In order to determine facilities likely to have an engine group index greater than 1.0, survey results of affected facilities subject to Rule 1470 were evaluated. Based on those survey results, 191 facilities are expected to exceed the engine group index of 1.0. Based on the survey data and excluding the fire pumps, which are exempt from the rule requirements, the number of affected facilities where risk reduction actions would need to be implemented is reduced to 148. To estimate the number of facilities with engine groups ranging in size from three to seven engines per engine group the raw survey data were used to derive the percentages of facilities that have engine groups ranging in size from three to seven engines. Those same percentages are applied to the projected affected 148 facilities that is estimated will have an engine group index greater than 1.0 and, thus, be subject to risk reduction action. Those values are presented in Table 1-4.

TABLE 1-4

Engine Groupings at Facilities with Three or More Engines and at the Affected 148 Facilities

# of Engines at Facility	**# of Facilities** (3 or more engines)	**% of Total Facilities for each Engine Grouping**	**# of Facilities** (with engine group index >1.0)
7 or more	77	14	21
5 or 6	141	26	38
4 or more	246	45	67
3 or more	81	15	22
	545	100 percent	**148**

Facilities likely to comply with the requirements of PR 1472 by installing a DPF or replacing the engine have the potential to generate adverse air quality impacts, particularly during the construction/installation phase of the project and, thus, are further evaluated in the Air Quality section in Chapter 2 of the PEA.

It should be noted that the number of affected facilities that are estimated to have an engine group index greater than 1.0 is a conservative estimate for the following reasons. Since some PR 1472 engines are already subject to the requirements of Rule 1470, there may not be a need for additional action under PR 1472 for these engines. Further, some facilities with multiple engines might be able to comply through a single emission reduction action on one engine such as installing a DPF on one large engine and, thus, not requiring further action on other engines at the facility subject to PR 1472.

Compliance Options and Schedule

Expected compliance with the risk reduction requirements includes reducing testing and maintenance hours, installing add-on controls, averaging emissions, and early replacement of older, high emitting engines with new engines. Reducing testing and maintenance hours would be a critical business decision. In some cases, emergency standby engines are required by law to operate for testing and maintenance purposes for a minimum number of hours per year (i.e., facilities such as hospitals) and, thus, reducing testing and maintenance hours is not likely to be an option.

The most cost effective add-on control option is the installation of DPFs. Typically, a DPF's substrate (core) is comprised of ceramic material that consists of channels that run the full length of the filter casing, and are blocked off at alternate ends to force the exhaust through porous walls. These devices are positioned in the exhaust stream of the diesel engine. As the exhaust gases pass through the system, particulate emissions are collected and stored. The channels are coated with

platinum washcoat material, which acts as a catalyst, enhancing the oxidation process. The porous walls also collect the particulates. When the exhaust temperature reaches high levels (approximately 500 degrees F), oxidation of PM starts to occur, at which point, passive cleaning ("regeneration") of the filter takes place. Passive refers to the soot in the DPF spontaneously combusts (burns off) during the normal work cycle because the exhaust temperatures are sufficiently hot and, thus, no active involvement of a person or mechanism is necessary to accomplish the DPF regeneration.

Successful regeneration is a function of high exhaust temperature for an extended period of time. Without adequate exhaust temperature over an extended time, the filter will continue to trap particulates and eventually plug. Installation is a relatively basic process involving mounting the filter in the exhaust stream of the engine. Typically, minor construction equipment or activity is necessary. There is a need to periodically remove accumulated ash, derived from engine lube oil, from the filter. This ash does not oxidize in the filter during the normal regeneration process. The cleaning of retrofitted filters is generally needed once every 12 months. There are also active DPFs for emergency ICEs which use a genset (i.e., generators) as a heat source for a required temperature. The exhaust bypasses one part of the system while regeneration (i.e., the process of removing the combustible portion of the collected soot) takes place. One stack of filters is isolated and regenerated while the other continues to operate. Thus, there is no need to change the filter because no ash is built up.

Other control options include diesel oxidation catalysts, and fuel additives used in combination with particulate filters and alternative diesel fuels. Some of these options, however, will not be ideal control for certain applications. For example, engines being tested or needed on an emergency basis will not be provided the time required for diesel oxidation catalysts to warm up in order to properly operate. Thus, for emergency standby engines, diesel oxidation catalysts are not a viable option.

The emission averaging option in PR 1472 would require compliance with a fixed diesel PM emission limit by calculating the annual weighted average diesel PM emissions of all the facility's emergency engines taking into account the engine horsepower rating, operating hours, and the diesel PM emission rate. Averaging would allow individual engines in a group to exceed the 0.15 gram/bhp-hr if there are engines rated less than 0.15 gram/bhp-hr in the group.

With regard to replacing the existing engine with a newer engine, this option is likely to be required for older engines. Useful life of emergency engines is 30 years or longer according to representatives at Cummins and Caterpillar. The useful life of non-emergency engine is 15 to 20 years. It is possible that one compliance option is early replacement of older engines.

Based on the data presented in Table 1-4, the number of DPF installations or engine replacements will vary for each engine grouping. The compliance schedule in PR 1472 is also based on engine grouping, as well as the value of the engine group index of those engines. Table 1-5 examines the compliance plan and risk reduction action schedule as required in PR 1472 and the estimated period of time to comply with a DPF installation and/or engine replacement at the affected 148 facilities. Because the exact value of the engine group index will be unknown until the submittal of the compliance plan, it is uncertain the number of DPFs or new engines at a given facility would be necessary to comply with the PR 1472. It is expected, however, that a facility operator who chooses to install a DPF on one or more engines or replace one or more engines will likely conduct the construction activity at the same time. For example, the site preparation for installing one DPF will take place at the same time as the site preparation for installing two DPFs. The equipment needed for the site preparation will be the same but would be needed for a longer period of time on that given day. The same logic would hold true for the delivery of the DPFs. In addition, if a facility operator decides to install one or more DPFs, they are expected to be delivered at the same time, thus, making only one mobile source truck trip. The emissions from that truck trip will be the same whether there is one or two DPFs being delivered. The installation of one or more DPFs or engine replacements at a given facility should take place in less than one week given the minor nature of necessary construction activities. Details of the construction schedule can be found under the Air Quality section in Chapter 2.

TABLE 1-5

Compliance Schedule at Estimated 148 Affected Facilities

# of Engines	**# of Affected Facilities**	**# of Estimated Affected Engines**	**Compliance Plan Submittal**	**Worst Case Final Compliance Date** (if Index >= 4)	**Worst Case Period of Time to Comply***	**Average Construction Schedule** (# of facility installs/week)
7 or more	21	147	Jan 1, 2009	Jan 1, 2011	26 weeks	<1
5 or 6	38	209	July 1, 2009	July 1, 2011	26 weeks	1-2
4	67	268	Jan 1, 2010	Jan 1, 2012	26 weeks	2-3
3	22	66	July 1, 2010	July 1, 2012	26 weeks	<1
	148	**690**				

* The incremental period of time between the submittal of the compliance plans between each engine grouping although each group is provided at least two years to comply. In addition, there is no overlapping of construction activity in any given time period.

Table 1-5 outlines an extreme "worst case" scenario since the period of time to comply is based on facilities with an engine group index greater than or equal to 4.0. As noted in Table 1-5, facilities with an index between 1.0 and 1.5 have a longer

period of time to comply so, theoretically, the average construction schedule is an overestimation. However, since engine group index values will not be known until the compliance plan is submitted, this evaluation in the PEA will examine the impacts if facilities were provided the shortest compliance period. In addition, because the compliance period accounts only for the incremental time between the first compliance date is reached and the next compliance date is due, there is no overlapping between each affected engine grouping. This approach produces the most conservative analysis because more construction projects would be occurring concurrently within a compliance phase than would occur during overlapping compliance phases.

CHAPTER 2 - ENVIRONMENTAL CHECKLIST

Introduction

General Information

Environmental Factors Potentially Affected

Determination

Environmental Checklist and Discussion

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 PAR 1401, impact assessment for facilities subject to Rule 1402, and PR 1472.

GENERAL INFORMATION

Project Title:	Proposed Amended Rule 1401– New Source Review of Toxic Air Contaminants; Impact Assessment for Facilities Subject to Rule 1402 – Control of Toxic Air Contaminants from Existing Sources; and Proposed Rule 1472 - Requirements for Facilities with Multiple Stationary Emergency Standby Diesel-Fueled Internal Combustion Engines
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Michael A. Krause (909) 396-2706
Rule Contact Person:	Cheryl Marshall (909) 396-2567
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	The proposed project consists of adding particulate matter emissions from diesel-fueled internal combustion engines (diesel PM) to the Rule 1401 Table I list of toxic air contaminants (TACs), which would affect new, modified, or relocated diesel-fueled non-emergency engines. Rule 1402 regulates the same TACs that are listed in Table I in 1401 at existing facilities. Because adding diesel PM to Table I in 1401 affects facilities subject to Rule 1402, it is necessary to perform an impact assessment for facilities subject to Rule 1402. Operators of facilities with three or more stationary emergency standby diesel-fueled internal combustion engines will be required under proposed Rule (PR) 1472 to submit a compliance plan and possibly reduce diesel PM emissions using strategies such as reducing

	testing and maintenance hours, installing add-on controls, averaging emissions and/or replacing older, high emitting engines with new engines. Compliance with PR 1472 would also exempt diesel-fueled internal combustion engines located at affected facilities from risk reduction requirements of Rule 1402.
Surrounding Land Uses and Setting:	Not applicable
Other Public Agencies Whose Approval is Required:	Not applicable

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. None of the environmental topics are expected to 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	☐	Geology and Soils	☐	Population/ Housing
☐	Agricultural Resources	☐	Hazards and Hazardous Materials	☐	Public Services
☐	Air Quality	☐	Hydrology and Water Resources	☐	Recreation
☐	Biological Resources	☐	Land Use and Planning	☐	Solid/Hazardous Waste
☐	Cultural Resources	☐	Mineral Resources	☐	Transportation/Circulation.
☐	Energy	☐	Noise	☐	Mandatory Findings

DETERMINATION

On the basis of this initial evaluation:

☑ I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline §15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts 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. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.

☐ I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.

☐ I find that the proposed project MAY have a "potentially significant 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 ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date December 20, 2007 **Signature:** Steve Smith

Steve Smith, Ph.D.
Program Supervisor
Planning, Rule Development & Area Sources

ENVIRONMENTAL CHECKLIST AND DISCUSSION

		Potentially Significant Impact	Less Than Significant Impact	No Impact
I.	**AESTHETICS.** Would the project:			
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☑
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state 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 which would adversely affect day or nighttime views in the area?	☐	☐	☑

Significance Criteria

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

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

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

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

Discussion

I. a), b) & c): The primary effect of amending Rule 1401 by adding diesel PM to Table I, which is the same list of TACs regulated by Rule 1402, and adopting PR 1472 is expected to be reductions in PM emissions from emergency and non-emergency engines. PM is the primary element that adversely affects visibility. By reducing PM emissions visibility throughout the district is expected to improve. Better visibility will improve existing scenic vistas and the existing visual character or quality of areas in the vicinity of affected sites and its surroundings. While some

facility operators may choose to install DPFs to comply or replace the engine, the associated construction activities are not expected to be major and, thus, physical changes to existing facilities where the engines are operating are not expected to be substantial or a result of complying with from the proposed project. Many of the affected emergency engines are located in areas of the building where modifications would not be visible and, thus, not affect aesthetics. Further, construction equipment and materials might be needed, but since DPF installations are typically not major construction efforts, no scenic resources will be damage and scenic resources will not be obstructed and the existing visual character of any site in the vicinity of affected facilities will not be degraded.

I. d). There are no components in PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 that would require construction activities at night. Therefore, no additional lighting at the facility would be required. Similarly, the proposed project has no provisions that would require affected equipment to operate at night. Therefore, the proposed project is not expected to create a new source of substantial light or glare at an affected facility that would adversely affect day or nighttime views in the area. Therefore, the proposed project is not expected to create significant adverse aesthetic impacts.

Based on the above consideration, significant adverse impacts to aesthetics are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
II.	**AGRICULTURE RESOURCES.** 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 a Williamson Act contract?	☐	☐	☑
c)	Involve other changes in the existing environment which, due to their location or	☐	☐	☑

nature, could result in conversion of Farmland, to non-agricultural use?

Significance Criteria

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

The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.

The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.

The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural uses.

Discussion

II. a) - c): Minor modification of existing structures from the installation of a DPF or new engine will not require converting farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract. Since the proposed project would not substantially change the facility or process for which the engines are utilized, there are no provisions in the proposed rule that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements relative to agricultural resources will be altered by the proposed project.

Based on the above consideration, significant adverse impacts to agriculture resources are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
III. AIR QUALITY. 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 non-attainment under 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?	☐	☐	☑
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	☐	☐	☑

Significance Criteria

Impacts will be evaluated and compared to the significance criteria in Table 2-1. If impacts equal or exceed any of the following criteria, they will be considered significant.

TABLE 2-1

Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	*Construction*	*Operation*
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
TAC, AHM, and Odor Thresholds		
Toxic Air Contaminants (TACs, including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk $\geq$ 10 in 1 million Hazard Index $\geq$ 1.0 (project increment) Hazard Index $\geq$ 3.0 (facility-wide)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality for Criteria Pollutants [(a)]		
NO2 1-hour average annual average	In attainment; significant if project causes or contributes to an exceedance of any standard: 0.25 ppm (state) 0.053 ppm (federal)	
PM10 24-hour average annual geometric average annual arithmetic mean	 10.4 $\mu g/m^3$ (recommended for construction) [(b)] 2.5 $\mu g/m^3$ (operation) 1.0 $\mu g/m^3$ 20 $\mu g/m^3$	
PM2.5 24-hour average	10.4 $\mu g/m^3$ (recommended for construction) [(b)] 2.5 $\mu g/m^3$ (operation)	
Sulfate 24-hour average	 1 $\mu g/m^3$	
CO 1-hour average 8-hour average	In attainment; significant if project causes or contributes to an exceedance of any standard: 20 ppm (state) 9.0 ppm (state/federal)	

(a) Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

(b) Ambient air quality threshold based on SCAQMD Rule 403.

PM10 = particulate matter less than 10 microns in size, ug/m3 = microgram per cubic meter; pphm = parts per hundred million; mg/m3 = milligram per cubic meter; ppm = parts per million; TAC = toxic air contaminant; AHM = Acutely Hazardous Material. NO_2 = Nitrogen Oxide, CO = Carbon Monoxide, VOC = Volatile Organic Compounds, SOx = Sulfur Oxide.

Discussion

PAR 1401 will add diesel PM to the Rule 1401's Table I list of TACs, which would also affect facilities subject to Rule 1402. Risk from facilities with large and/or multiple emergency diesel internal combustion engines that exceed the engine group index of 1.0 would be subject to PR 1472 which will require a reduction in diesel PM emissions. Expected compliance with the risk and emission reduction requirements includes reductions to operating hours, installation of add-on controls, emissions averaging, and early replacement of older, high emitting engines with new engines. The evaluation of affected facilities in Chapter 1 concluded operators at 148 facilities would likely to choose to install add-on controls or replace the engine to comply with PR 1472. As shown in Table 1-6, the maximum "worst case" number of installations of either a DPF or a new engine would be three within the same week as a result of complying with the proposed project.

III. a): PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 would not conflict with or obstruct the applicable air quality plan implementation. The primary purpose of the SCAQMD's AQMP is to control emissions to attain and maintain all federal and state ambient air quality standards for the district. The 2007 AQMP concluded that major reductions in emissions of VOC, NO_x and PM are necessary to attain the air quality standards for ozone and PM2.5.

PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 would reduce cancer and non-cancer health effects from engines by controlling the PM emissions from diesel engines. Criteria pollutants and toxic emission reductions will contribute to the SCAQMD's progress in attaining the ambient air quality standards for ozone and PM2.5 as well as reducing toxic risk. As a result, implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not conflict or obstruct AQMP implementation.

As discussed in Chapter 1, the SCAQMD Governing Board approved an air toxics planning document in March 2000 called "Final Draft ATCP for the Next Ten Years." PAR 1401, which affects facilities subject to Rule 1402, and PR 1472 satisfy the following two programmatic measures as outlined in the ATCP: AT-PRG-01 – New Source Review of Toxic Air Contaminants (Amend Rule 1401); and AT-PRG-02 – Control of Toxic Air Contaminants from Existing Sources (Rule 1402). Specifically, AT-PRG-01 is a strategy that recommends continuing efforts to update Rule 1401, which would indirectly update Rule 1402 since it regulates the TACs listed in Rule 1401, by incorporating current TACs with risk values finalized by OEHHA and approved by the state SRP. Feasible after-treatment technologies for regulating diesel PM, for example, diesel particulate filters. The effectiveness of Rules 1401 and 1402 is enhanced when more chemicals, such as diesel PM, are regulated. PAR 1401, which affects facilities subject to Rule 1402 and PR 1472

provides emission reductions/risk reductions so the proposed project is consistent with the ATCP.

III. b) & d): Implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 could result in the installation of one or more DPFs or engines at affected facilities. Because the exact number of facilities where operators may choose to install a DPF or replace an engine is not known, construction scenarios for each compliance option have been evaluated.

Installation of DPF

The installation of a DPF (or any other similar add-on control device) would likely take place in two phases: site preparation and transport delivery/installation. These phases are likely to occur on different days because of the different nature of the activities and the fact that each construction phase will require a full eight hours. Off-road equipment needed would include a forklift, welder, and a generator set Since the number of DPFs to be installed at one given site is not known, it is assumed the equipment will be utilized for the whole eight-hour day to complete the task if more than one DPF needs to be installed to comply with proposed project. In addition, the construction process requires the use of haul trucks (i.e., trucks that deliver material or haul material off-site, which are on-road vehicles). Finally, there are workers needed to perform the construction tasks and mobile source emissions are generated from the vehicles driven by the construction workers to and from the site. The construction area for each installation or replacement is not expected to exceed one acre. Table 2-2 summarizes the emissions from installing an add-on control device (e.g., a DPF), which would include site preparation, transport delivery and/or installation on a given day. The detailed calculations, along with the off-road and on-road emission factors, can be found in Appendix B.

TABLE 2-2

Construction Emissions from Installing Add-On Control

Source	**CO** (lbs/day)	**NOx** (lbs/day)	**PM10** (lbs/day)	**PM2.5** (lbs/day)	**VOC** (lbs/day)	**SOx** (lbs/day)
On-site Construction Equipment	6.71	13.50	0.87	0.8	2.33	0.013
On-road Vehicle Emissions	3.70	7.70	0.38	0.37	0.74	0.01
TOTAL Daily Construction Emissions	**10.4**	**21.2**	**1.3**	**1.2**	**3.1**	**0.02**

TABLE 2-2 (CONCLUDED)

Construction Emissions from Installing Add-On Control

Source	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	VOC (lbs/day)	SOx (lbs/day)
TOTAL Daily Construction Emissions for Three Installations	**31.2**	**63.6**	**3.9**	**3.6**	**9.3**	**0.06**
SCAQMD Daily Significance Thresholds	550	100	150	55	75	150
Significant?	No	No	No	No	No	No

Engine Replacement

The replacement of an engine would likely take place in three phases: removal of old equipment, site preparation, and transport delivery/installation. These phases are likely to occur on different days because of the different nature of the activities. In order to prepare the site, two major tasks would need to take place: the removal of the old equipment along with possible demolition of existing foundation, and the paving of a new foundation. The first task involves the use of a crane to remove the old equipment, forklift, concrete saws, backhoe/loader, and haul truck. Since the demolition process does not require critical installation steps, this practice is typically not meticulous in nature and, thus, is not expected to take all day to complete. The paving process will involve a paver, paving equipment, a roller and cement/mortar mixes. The final task of installing the new engine would include a crane, forklift, welder, and a generator set. Since the number of engines to be installed at one given site is not known, it is assumed the installation equipment will be utilized for the whole eight-hour day to complete the task, except the crane, which would be needed for half the day. This is assumed since crane rentals are expensive and the job task is limited to putting the equipment into the proper location, thus, a contractor would likely utilize the crane in a most efficient manner. Similar to the installation of an add-on control device, haul trucks and worker's vehicles will also generate emissions and thus were included in the calculations. Tables 2-3 to 2-5 summarize the emissions that would result from each task per construction phase that would need to take place during the process of replacing an engine, as well as the same task taking place at three different facilities on a given day. None of the construction phases is expected to take place on the same day so the construction emissions by phase are not added. The detailed calculations, along with the off-road and on-road emission factors, can be found in Appendix B.

TABLE 2-3

Construction Emissions from Replacing an Engine – Removal and Demolition Phase

Source	**CO** (lbs/day)	**NOx** (lbs/day)	**PM10** (lbs/day)	**PM2.5** (lbs/day)	**VOC** (lbs/day)	**SOx** (lbs/day)
On-site Construction Equipment	5.72	12.34	0.80	0.7	1.87	0.01
On-road Vehicle Emissions	2.54	3.92	0.19	0.19	0.44	0.00
TOTAL Daily Construction Emissions	**8.3**	**16.3**	**1.0**	**0.9**	**2.3**	**0.016**
TOTAL Daily Construction Emissions for Three Removals	**24.9**	**48.9**	**3.0**	**2.7**	**6.9**	**0.48**
SCAQMD Daily Significance Thresholds	550	100	150	55	75	150
Significant?	No	No	No	No	No	No

TABLE 2-4

Construction Emissions from Replacing an Engine – Paving a New Foundation Phase

Source	**CO** (lbs/day)	**NOx** (lbs/day)	**PM10** (lbs/day)	**PM2.5** (lbs/day)	**VOC** (lbs/day)	**SOx** (lbs/day)
On-site Construction Equipment	5.30	10.67	0.74	0.7	1.77	0.01
On-road Vehicle Emissions	2.54	3.92	0.2	0.19	0.44	0.00
TOTAL Daily Construction Emissions	**7.8**	**14.6**	**0.9**	**0.9**	**2.2**	**0.013**
TOTAL Daily Construction Emissions for Three Pavings	**23.4**	**43.8**	**2.7**	**2.7**	**6.6**	**0.04**
SCAQMD Daily Significance Thresholds	550	100	150	55	75	150
Significant?	No	No	No	No	No	No

TABLE 2-5

Construction Emissions from Replacing an Engine – Installation Phase

Source	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	VOC (lbs/day)	SOx (lbs/day)
On-site Construction Equipment	9.25	20.27	1.17	1.1	3.08	0.018
On-road Vehicle Emissions	3.70	7.70	0.38	0.37	0.74	0.01
TOTAL Daily Construction Emissions	**13.0**	**28.0**	**1.6**	**1.4**	**3.8**	**0.026**
TOTAL Daily Construction Emissions for Three Installations	**39**	**84**	**4.8**	**4.2**	**11.4**	**0.08**
SCAQMD Daily Significance Thresholds	550	100	150	55	75	150
Significant?	No	No	No	No	No	No

As noted in the affected facilities analysis in Chapter 1, the maximum "worst case" scenario is that three installations/replacements take place in the same week and, thus, any given day of that week. As demonstrated in Tables 2-2 thru 2-5, the potential significant air quality impacts generated during the construction phase of either installing the DPF or replacing the engine (peak daily emissions from the installation phase) would not exceed the SCAQMD's daily air quality significance thresholds during the construction phase. In addition, it would take five installations of a DPF or four replacements of engines on the same day within the same week in order to exceed the SCAQMD's daily NOx air quality significance threshold during the construction phase. Thus, implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not have a significant air quality impact from construction.

The operation of the affected engines is not expected to change from existing operations unless an affected facility operator decides to reduce hours of operation, which will not worsen current operational air quality impacts. No additional employees are expected to be needed if the engine is replaced with a new model. The DPF will be periodically cleaned and possibly replaced, however, such action would not warrant the need for a new employee generating additional emissions from vehicle trips. The proposed project would not violate any ambient air quality standards, but would assist in reducing emissions which will assist the district in attaining PM standards. Thus, ambient air quality standards are not anticipated to be violated. Diesel PM is considered a toxic air contaminant, so regulating diesel PM

will result in a reduction of the toxic effect on the local community near the affected engines during the 70-year exposure for which cancer risk is based.

III. c): Since PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 are not expected to potentially generate significant adverse project-specific construction or operational air quality impacts, the proposed project's contribution to a potentially significant cumulative impact during operation is rendered less than cumulatively considerable and, thus, is not significant (CEQA Guidelines §15064(h)(2)).

Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs), comparable to the effects of heating a greenhouse. GHGs are emitted by natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the earth's temperature. Global warming is the observed increase in average temperature of the earth's surface and atmosphere. The primary cause of global warming is an increase of GHGs in the atmosphere. The six major GHGs identified in the Kyoto Protocol are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), and perfluorocarbon (PFCs).

The analysis of GHGs is a much different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants significance thresholds are based on daily emissions because attainment or non-attainment is based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health, e.g., one-hour and eight-hour. Since the half-life of CO2 is approximately 100 years, for example, the effects of GHGs are longer-term, affecting global climate over a relatively long time frame. As a result, the SCAQMD's current position is to evaluate GHG effects over a longer timeframe than a single day. GHG emissions in the form of CO2 will be generated by the off-road equipment and on-road vehicles during the construction phase of the project. CO2 emissions were estimated using emission factors from CARB's EMFAC2007 and OFFROAD2007 models and EPA's AP-42. The CO2 emission factors and calculations can be found in the emission calculation spreadsheets in Appendix B.

The construction phase for both compliance options that generate CO2 emissions from mobile source construction equipment and vehicles is expected to take place in less than a week period of time per facility. The installation of one DPF would generate a total of approximately 3,873 pounds of CO2. The engine replacement, however, would require three different phases of construction: the removal of the old engine and demolition, paving of a new foundation, and installation of the new engine. The removal of the old engine and demolition of an existing foundation would generate approximately 1,447 pounds of CO2; the paving of a new foundation for a new engine would generate approximately 1,192 pounds of CO2; and the installation of the new engine would generate approximately 2,451 pounds of CO2.

Therefore, the total CO2 emissions from replacing one engine would be 5,090 pounds over the total period of construction.

Table 2-6 shows total CO2 emissions of both compliance options for all facilities affected by PR 1472 during the construction phase of the project, which will take place during various times of compliance depending on the final compliance date. In addition, since the half life of CO2 is so long, the total CO2 emissions from the proposed project as a whole are also calculated and presented in Table 2-6. Regardless of the compliance option, total CO2 emissions shown in Table 2-6 would occur over a period of 3.5 years.

TABLE 2-6

Total CO2 Emissions During Various Construction Phases From Compliance Options (PR 1472)

Compliance Plan Submittal	**Worst Case Final Compliance Date** (if Index >= 4)	**Worst Case Period of Time to Comply***	**# of Affected Facilities**	**TOTAL CO2 Emissions from DPF Installation** (pounds)	**TOTAL CO2 Emissions from Engine Replacement** (pounds)
Jan 1, 2009	Jan 1, 2011	26 weeks	21	81,333	106,890
July 1, 2009	July 1, 2011	26 weeks	38	147,174	193,420
Jan 1, 2010	Jan 1, 2012	26 weeks	67	259,491	341,030
July 1, 2010	July 1, 2012	26 weeks	22	85,206	111,980
			TOTAL CO2 Emissions (pounds)	**573,204**	**753,320**
			TOTAL CO2 Emissions (metric tons)	**260**	**342**

* The incremental period of time between the submittal of the compliance plans between each engine grouping although each group is provided at least two years to comply. In addition, there is no overlapping of construction activity in any given time period in order to provide a "worst-case" analysis.

As discussed in Chapter 1, operators at facilities with non-emergency engines subject to Rule 1402 will be affected by PAR 1401 and potentially will be required to reduce risk at their facilities through risk reduction actions, such as installing a DPF or replacing engines. Therefore, construction activities at those affected facilities would also result in CO2 emissions. While the number of potentially affected facility operators needing to submit inventories is known, the number of facilities that would eventually be subject to risk reduction actions is not known. As a "worst-case" scenario, all 152 facilities submitting inventory data are assumed to eventually implement risk reduction actions. The CO2 emissions resulting from the construction activity from both compliance options, i.e., installing DPFs or replacing engines, are shown in Table 2-7.

TABLE 2-7

Total CO2 Emissions During Various Construction Phases From Compliance Options (Rule 1402)

Estimated Inventory, HRA and RRP Compliance Period (years)	**Estimated RRP Compliance Period** (years)	**# of Affected Facilities**	**TOTAL CO2 Emissions from DPF Installation** (pounds)	**TOTAL CO2 Emissions from Engine Replacement** (pounds)
2009 - 2012	2013 - 2015	51	197,523	259,590
2010 - 2013	2014 - 2016	51	197,523	259,590
2011 - 2014	2015 - 2017	50	193,650	254,500
	TOTAL CO2 Emissions (pounds)		**588,696**	**773,680**
	TOTAL CO2 Emissions (metric tons)		**268**	**352**

The operational phase of implementing the proposed project would result in a lowering of CO2 emissions if the engine is replaced with a newer, more efficient engine or if the facility operator opts to reduce hours of operation. The CO2 emissions would remain relatively the same if a DPF is installed or if the facility is not subject to any risk reduction actions. The current published CO2 emission factor for diesel-fueled industrial ICEs is 1.15 g/bhp-hr (AP 42, *Compilation of Air Pollutant Emission Factors*, Volume 1: Stationary Point and Area Sources, Fifth Edition, Chapter 3 - *Stationary Internal Combustion Sources*, October, 1996), but there is no published CO2 emission factor for newer engines. USEPA is currently collecting information for developing a new emission standard for new stationary source diesel engines. However, according to U.S. EPA, CO2 emissions from engines are directly proportional to fuel consumption, so any changes in fuel economy will have a linear relationship with CO2 emissions (personal communication, Peter Westlin, e-mail received December 17, 2007). Thus, decreases in CO2 emissions can be directly credited from the proportion of fuel saved from newer engines with higher fuel efficiency over that of older existing engines. Newer engines will achieve efficiencies on the order of 40 percent while older engines are approximately 36 percent efficient on average. Thus, a four percent increase in fuel efficiency should generate a CO2 emission factor that is 96 percent of the older CO2 emission factor, or 1.10 g/bhp-hr. It should be noted that while there is an increase in fuel efficiency of approximately four percent for Tier 2 and Tier 3 engines, there is a slight reduction in fuel efficiency of 0.1 percent for Tier 4 engines compared to Tier 2 and 3 engines[1]. The average impact of additional pumping work required to force the exhaust through the DPF was estimated to be equivalent to an increase in fuel consumption. This estimate takes into account the range of exhaust flow conditions that might be encountered with different engine operating conditions.

[1] CARB. 2007. Technical Support Document: Proposed Regulation for In-Use Off-Road Diesel vehicles

Therefore, there are relatively small CO2 increases of 0.2 percent and 0.74 percent for the fuel economy penalty for PM retrofits and accelerated Tier 4 turnover, respectively, compared to Tier 2 and 3 equipment.

When comparing the difference in CO2 emissions if facility operators at all 148 facilities decide to replace one engine, it is assumed the emergency engine rating, on the average, is 595 bhp operating annually for 22 hours for testing and maintenance. The non-emergency engines are, on the average, rated at 200 bhp and typically operate approximately 350 hours per year. However, one facility is known to operate its five non-emergency engines (rated at 2,000 bhp) all year round (8,760 hours), so CO2 emissions were calculated separately to note the high value. Similar to the assumption for emergency engines, it is assumed that one engine will be replaced at each facility with non-emergency engines. The conversion from grams to pounds is 454 grams per pound.

Table 2-8 provides the emission factors for older engines and newer engines to show the potential CO2 emission reductions that would be achieved if a facility operator chooses to replace one engine as a result of implementing the proposed project.

TABLE 2-8

CO2 Emissions from the Operation of Older Engines Compared to Newer Engines

CO2 Emission Factor from Older Engine* (g/bhp-hr)	**CO2 Emission Factor from Newer Engine**** (g/bhp-hr)	**Diesel Engine Type**	**# of Affected Sources**	**TOTAL CO2 Emissions from Older Engine** (pounds)	**TOTAL CO2 Emissions from Newer Engine** (pounds)	**CO2 Emission Difference** (pounds)	**Over the Life of the New Engines** (30 yrs for emerg. and 20 yrs for non-emerg.)
1.15	1.10	Emergency	148	4,907	4,694	213	6,401
1.15	1.10	Non-emergency	147	26,952	25,780	1,172	23,436
1.15	1.10	Non-emergency	5	221,894	212,247	9,648	192,952
					TOTAL CO2 Emissions (pounds)		**222,789**
					TOTAL CO2 Emissions (metric tons)		**101**

* Average emission factor, U.S.EPA AP42, 1996

** Assumes new engines have a higher fuel efficiency of four percent, on average compared to old engines.

Table 2-9 provides the net CO2 emissions effect from the proposed project by adding the CO2 emissions from facilities affected by PR 1472 and Rule 1402 as a result of PAR 1401. While the construction activities generating the CO2 emissions are not expected to take place at the same time, the emissions are additive because, as

discussed earlier, the half-life of CO2 is approximately 100 years. The benefit from installing and operating a newer more efficient engine is credited only to those facilities replacing one engine.

TABLE 2-9

Total Overall CO2 Emissions from the Proposed Project

	TOTAL CO2 Emissions from DPF Installation (metric tons)	**TOTAL CO2 Emissions from Engine Replacement** (metric tons)
PR 1472 Affected Facilities	260	342
Rule 1402 Affected Facilities	268	352
TOTAL CO2 Emissions from Construction Phase	**528**	**694**
CO2 Emissions Benefit from Installing and Operating New Engines	--	-101
TOTAL Net CO2 Emissions Increase from the Proposed Project	**528**	**593**

As shown in Table 2-9, the overall CO2 emissions from the proposed project are relatively small, especially when compared to the current California GHG inventory,[2] which lists the total CO2 equivalent emissions in 2004 at approximately 480 millions of metric tons. Thus, the net CO2 emissions increase from the proposed project is approximately 0.0011 percent or 0.0012 percent of California's current CO2 inventory if facilities install a DPF or replace an engine, respectively.

It should be noted that the SCAQMD is currently in the process of amending Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Internal Combustion Engines, to further reduce NOx, VOC and CO emissions from non-emergency gaseous- and liquid-fueled ICEs with a rating over 50 bhp. In the CEQA document[3] analyzing the CO2 emission effects from amending Rule 1110.2, it was concluded that it would be more cost effective for approximately 169 of the affected ICEs to be replaced with electric motors than comply with PAR 1110.2 requirement. The reduction in CO2 emissions from the electrification of the 169 ICEs over the ten-year life span of the electric motor is calculated to be 104,035 metric tons. This benefit takes into consideration CO2 emissions from increased electricity generation to run the electric motors. Because it is not known for certain whether or not all 169 ICEs would be replaced by electric motors rather than be retrofitted to comply with Rule 1110.2, the SCAQMD only took credit for replacing 15 ICEs with electric motors and concluded

[2] http://www.arb.ca.gov/cc/ccei/inventory/tables/rpt_inventory_ipcc_sum_2007-11-19.pdf

[3] Draft Environmental Assessment for Proposed Amended Rule 1110.2 - Emissions from Gaseous- and Liquid-Fueled Internal Combustion Engines (Page 4-44, SCAQMD No. 280307JK, SCAQMD, November 2007)

that PAR 1110.2 would be carbon neutral. While the potential CO2 emissions reduction benefit from PAR 1110.2 will affect non-emergency ICEs during the same time frame as the implementation of PAR 1401, which affects facilities subject to Rule 1402, and PR 1472, the CO2 emissions reduction was not credited in this GHG analysis because PAR 1110.2 has not yet been adopted and the SCAQMD only took credit for CO2 emissions reductions from replacing 15 ICEs with electric motors, which does not provide surplus CO2 emission reductions. Thus, the overall CO2 emissions from the proposed project listed in Table 2-9 is an overestimation considering the benefit resulting from PAR 1110.2.

Finally, although the proposed project does not require replacing old emergency and non-emergency engines with new engines, it is expected that replacing older high emitting engines will be one likely compliance strategy because it may be a more cost effective approach, retrofitting older engines may not necessarily reduce diesel PM emission sufficiently , etc. As a result, replacing older high emitting engines with newer more efficient engines indirectly supports CEC and CPUC strategies to reduce GHG emissions through energy efficiency programs.

Therefore, implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 is expected to generate relatively small adverse cumulative GHG air quality impacts. Because the overall CO2 emissions from the proposed project are relatively small compared to the total GHG inventory for California, the proposed project is not expected to contribute appreciably to climate change. Thus, potential GHG emission impacts from the proposed project will not be a significant contributor to the current global warming or climate change setting.

III. e): Objectionable odors are often associated with diesel exhaust emissions. To the extent that PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will reduce diesel PM emissions for certain engines, odors are expected to be reduced or, at least, not worsen from current conditions. Since the affected engines are for emergency use only, the hours of operation of the affected engines are uncertain, however, Rule 1470 currently limits the operation of the affected engines. It is expected that implementing PAR 1401, which also affects for facilities subject to Rule 1402, and PR 1472 will provide a benefit by reducing population exposures from odors associated with diesel combustion. Therefore, no significant adverse odor impacts are expected from implementing the proposed project. There also odors that will be generated by the construction equipment. These odors, however, will not be significant because the construction activities are short-term, few pieces of construction equipment are needed, and, as shown in Tables 2-2 through 2-6, daily diesel PM emissions, the primary source of potential odor impacts, are relatively low.

III. f): The proposed project will establish new rule requirements and limitation, and, thus, will not diminish an existing air quality rule or future compliance requirement.

Based on the above consideration, significant adverse impacts to air quality are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

		Potentially Significant Impact	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 Game 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 §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, 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?	☐	☐	☑

Significance Criteria

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

The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.

The project interferes substantially with the movement of any resident or migratory wildlife species.

The project adversely affects aquatic communities through construction or operation of the project.

Discussion

IV. a), b), d): The proposed project is not expected to require any major construction activities from the installation of DPFs or new engines since they are typically basic drop-in equipment. Similarly, the proposed project will not require the construction of new structures on property not already established with a foundation. Therefore, PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely in the SCAQMD's jurisdiction. PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will primarily affect the operation of engines at existing facilities and will not worsen the current operation or worsen present conditions of plant and animal life. Further, PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 do not require acquisition of additional land or further conversions of riparian habitats or sensitive natural communities where endangered or sensitive species may be found. Any changes to the existing physical environment would occur for business reasons, not as a result of implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472.

IV. c): Acquisition of protected wetlands is not expected to be necessary to control the emissions from diesel stationary emergency and non-emergency engines. Operators of affected engines would install control equipment, reduce hours of operation, or replace the existing engine. DPFs are typically basic drop-in equipment so no new property is required for installation and operation. If the affected facility operator decides to install a replacement engine, the new engine is expected to be installed in the same location as the existing engine, although some demolition and construction would be necessary. Thus, none of the compliance options is expected to require removing, filling or interrupting any hydrological system or have an adverse effect on federally protected wetlands.

IV. e), f): There are no provisions in the proposed project that would adversely affect land use plans, local policies or ordinances, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by the proposed project. PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 would not affect in any way habitat conservation or natural community conservation plans, agricultural resources or operations, and would not create divisions in any existing communities.

Based on the above consideration, significant adverse impacts to biological resources are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

		Potentially Significant Impact	**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 as defined in §15064.5?	☐	☐	☑
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☑

d)	Disturb any human remains, including those interred outside a formal cemeteries?	☐	☐	☑

Significance Criteria

Impacts to cultural resources will be considered significant if:

The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.

Unique paleontological resources are present that could be disturbed by construction of the proposed project.

The project would disturb human remains.

Discussion

V. a) - d): There are existing laws in place that are designed to protect and mitigate potential impacts to cultural resources. Operators of existing facilities with affected engines are not expected to perform major construction activities such as grading, trenching, etc., to comply with the proposed project because DPFs are typically basic drop-in equipment and installation for replacement engines is expected to be installed in the same location as the existing engine. So, no new property is required for DPF installation and operation, or for new engine containment construction. Therefore, cultural resources are not expected be disturbed in any way. As a result, the proposed project has no potential to cause a substantial adverse change to a historical or archaeological resource, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside a formal cemeteries.

Based on the above consideration, significant adverse impacts to cultural resources are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

		Potentially Significant Impact	**Less Than Significant Impact**	**No Impact**
VI.	**ENERGY.** Would the project:			
a)	Conflict with adopted energy conservation plans?	☐	☐	☑

b)	Result in the need for new or substantially altered power or natural gas utility systems?	☐	☐	☑
c)	Create any significant effects on local or regional energy supplies and on requirements for additional energy?	☐	☐	☑
d)	Create any significant effects on peak and base period demands for electricity and other forms of energy?	☐	☐	☑
e)	Comply with existing energy standards?	☐	☐	☑

Significance Criteria

Impacts to energy and mineral resources will be considered significant if any of the following criteria are met:

The project conflicts with adopted energy conservation plans or standards.

The project results in substantial depletion of existing energy resource supplies.

An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.

The project uses non-renewable resources in a wasteful and/or inefficient manner.

Discussion

VI. a), e): DPFs do not require electricity to operate and the operation of a replacement engine is not expected to change current energy needs since the operation of emergency engines are currently limited by Rule 1470. Therefore, PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not conflict with adopted energy conservation plans. In addition, installing new, more efficient engines will slightly reduce the demand for diesel. Affected facilities would still be expected to comply with any existing energy conservation standards, to the extent that affected engines are subject to energy conservation standards.

VI. b), c), d): Implementation of PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not result in the need for new or substantially altered power or natural gas utility systems. Effects of the proposed project on the electricity capacity are not expected to occur because affected engines use diesel as a combustion fuel and are typically operated in emergency situations or for limited

testing and maintenance. Affected engines will not be allowed to increase their operations and, since they do not require electricity or natural gas to operate, no significant adverse impacts on peak or base demands for electricity are anticipated.

Based on the above consideration, significant adverse impacts to energy are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

		Potentially Significant Impact	**Less Than Significant Impact**	**No Impact**
VII.	**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:	☐	☐	☑
	• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☑
	• Strong seismic ground shaking?	☐	☐	☑
	• Seismic–related ground failure, including liquefaction?	☐	☐	☑
	• 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 on- or off-site 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 waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☑

Significance Criteria

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

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

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

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

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

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

Discussion

VII. a): Stationary emergency and non-emergency engine operations affected by the proposed project typically take place at existing affected facilities so PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not expose people to substantial geological effects greater than what they are exposed to already. Since the proposed project will not require acquisition of new property that has not already been developed, PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not expose people or structures to new risks of loss, injury, or death involving: rupture of an earthquake fault, seismic ground shaking, ground failure or landslides.

VII. b): The proposed project will not require major construction activities (e.g., grading, trenching, or refilling) on property that has not already been developed, so no potential impacts to existing geophysical conditions are anticipated. Because affected engines are primarily located at existing facilities on established foundations or minor foundation work may be necessary, little or no soil will be disrupted. Therefore, no substantial soil erosion or loss of topsoil is expected from the existing affected facilities as a result of controlling diesel PM emissions and toxic risk from

diesel-fueled engines. Any soil disturbance that does occur will be subject to the dust control requirements of SCAQMD Rule 403, which would minimize any wind erosion.

VII. c) & d): Affected engines are primarily located at existing affected facilities and, therefore, will not involve locating any structures on soil that is unstable or expansive. However, as already noted, little or no new soil disturbance is anticipated from the proposed project, therefore, no further destabilization of unstable soils would be expected that could cause on- or off-site landslides, lateral spreading, subsidence, liquefaction or collapse.

VII. e): The proposed project does not involve the installation of septic tanks or alternative waste water disposal systems. Therefore, this type of soil impact will not occur.

Based on the above consideration, significant adverse impacts to geology and soils are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

		Potentially Significant Impact	**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, and 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 handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑
d)	Be located on a site which is included on a list	☐	☐	☑

	of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would 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, within two miles of a public airport or public use airport, would the project 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, would the project 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?	☐	☐	☑
i)	Significantly increased fire hazard in areas with flammable materials?	☐	☐	☑

Significance Criteria

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

Non-compliance with any applicable design code or regulation.

Non-conformance to National Fire Protection Association standards.

Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.

Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Discussion

VIII. a), b), & c): Engine operations are not expected to change at the affected facilities except if the operator of a facility decides to reduce the number of engine operational hours, in which case the amount of diesel-fuel burned will be reduced. Therefore, no additional transport of diesel fuel is expected. If a facility operator decides to install a DPF to comply with the proposed project, the filter will need to be periodically cleaned of the accumulated ash derived from the engine lube oil as noted in Chapter 1. Such waste would need to be transported and disposed of. The frequency of the cleaning and the amount of waste generated is not known because testing and maintenance behavior could vary by engine use and emergency use is unknown. However, due to the minimal operational hours from each engine, it is anticipated that the proposed project will not create a significant new hazard to the public or create a reasonably foreseeable upset conditions involving the release of hazardous materials greater than existing conditions.

VIII. d): Government code §65962.5 refers to hazardous waste handling practices at facilities subject to the Resources Conservation and Recovery Act (RCRA). If any affected facilities are identified on such a list, compliance with the proposed project is not expected to affect in any way any facility's hazardous waste handling practices.

VIII. e) & f): Regardless of whether or not affected facilities are located near airports or private airstrips, the proposed project will not create new safety hazards because the proposed project will only affect equipment profile (height) or the operating characteristics of affected engines and may, in some cases, result in a reduction in the annual hours of operation. No new hazards will be introduced at affected facilities that could create safety hazards at local airports or private airstrips.

VIII. g): The proposed project is expected to require minor modifications to the operating characteristics of affected engines, such as the operation of a DPF or reduction in operating hours. Such activities do not impose any new emergency conditions at the facility that would warrant amendments to adopted emergency response plans and emergency evacuation plans, nor would the proposed project be expected to physically interfere with implementing an adopted emergency response plans and emergency evacuation plans.

VIII. h,) & i): Because the affected engines are primarily located in existing facilities on established foundations, PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 are not expected to 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 to a greater extent than is currently the case. Because engine operations are not expected

to change substantially, except for possibly a reduction in the annual hours of operation, there will be no significant increase of fire hazards in areas with flammable materials greater than whatever currently exists already.

Based on the above consideration, significant adverse hazards and hazardous materials impacts are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

		Potentially Significant Impact	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 which 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 on- or off-site?	☐	☐	☑
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 on- or off-site?	☐	☐	☑

e)	Create or contribute runoff water which 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 which would impede or redirect flood flaws?	☐	☐	☑
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?	☐	☐	☑
k)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☑
l)	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?	☐	☐	☑
m)	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?	☐	☐	☑
n)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☑

o)	Require 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?	☐	☐	☑

Significance Criteria

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

Water Quality:

The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.

The project will cause the degradation of surface water substantially affecting current or future uses.

The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.

The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.

The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.

The project results in alterations to the course or flow of floodwaters.

Water Demand:

The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use a substantial amount of potable water.

The project increases demand for water by more than five million gallons per day.

Discussion

IX. a), b), f), n), & o): PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will have no direct or indirect impact on hydrology and water quality

because operators at affected facilities are not expected to use water to a greater extent than they currently use for cleaning, etc., because air pollution control equipment (e.g., DPFs) and operation of affected emergency engines typically do not involve the use of water. Therefore, PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not adversely affect water resources, water quality standards, groundwater supplies, water quality degradation, existing water supplies or wastewater treatment facilities.

IX. c), d), e): The proposed project would primarily affect stationary source diesel-fueled engines at existing facilities. Consequently, no major construction activities will be necessary to comply with PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472, so the proposed project will not alter any existing drainage patterns, increase the rate or amount of surface runoff water that would exceed the capacity of existing or planned stormwater drainage systems.

IX. g) & h): PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 does not involve construction of housing so it will not result in placing housing in 100-year flood hazard areas that could create new flood hazards. The proposed project would primarily affect engines located at existing facilities with stationary diesel-fueled engines so any flood hazards would be part of the existing setting.

IX. i), j): Since PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 primarily controls emissions or hours of operation of diesel engines located at existing facilities and does not require construction of new facilities, it will not create new flood risks or risks from seiches, tsunamis or mudflow conditions. Any risks from seiches, tsunamis, or mudflows would be part of the existing setting.

IX. k): Because controlling emissions from affected engines does not require water or generate wastewater, no changes to any existing wastewater treatment permits would be necessary. As a result, the proposed project is not expected to alter any affected facility's ability to comply with existing wastewater treatment requirements or conditions from any applicable Regional Water Quality Control Board or local sanitation district.

IX. l) & m): Because controlling emissions from affected engines does not require water or generate wastewater as part of the control equipment or control process, no increase in wastewater from complying with the proposed project that could exceed the capacity of existing stormwater drainage systems or require the construction of new wastewater or stormwater drainage facilities is anticipated.

Based on the above consideration, significant adverse impacts to hydrology and water quality are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

		Potentially Significant Impact	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 the 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 or natural community conservation plan?	☐	☐	☑

Significance Criteria

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

Discussion

X. a.): PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not create divisions in any existing communities because the proposed project to reduce emissions and toxic risk would primarily affect equipment at existing facilities that must comply with any land use policies or local zoning regulations. Similarly, the compliance options to install a DPF, reduce operating hours or install new engines will affect operations at existing facilities and would not require construction of facilities, such as freeways, that would not physically divide an established community. Any new engines are expected be installed in the same location as the replaced engine.

X. b), c): Operations at facilities with stationary diesel-fueled engines would still be expected to comply, and not interfere, with any applicable land use plans, zoning ordinances, habitat conservation or natural community conservation plans. There are no provisions of the proposed project that would directly affect these plans, policies, or regulations. Land use and other planning considerations are determined

by local governments and no present or planned land uses in the region or planning requirements will be altered by the proposed project.

Based on the above consideration, significant adverse impacts to land use and planning are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

		Potentially Significant Impact	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?	☐	☐	☑

Significance Criteria

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

The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Discussion

XI. a), b): There are no provisions of the proposed rule that would directly result in the loss of availability of a known mineral resource, such as aggregate, coal, shale, etc., 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. PAR 1401, which also affects facilities subject to Rule 1402, and

PR 1472 could result in reducing operating hours which would reduce the use of fossil fuel (e.g., diesel). Further, replacing the existing engine or requiring additional control (e.g., DPFs) would not change an existing uses of the mineral resources by facilities that must comply with the proposed project.

Based on the above consideration, significant adverse impacts to mineral resources are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
XII. NOISE. Would the project result in:				
a)	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☑
b)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑
c)	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, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☑

f)	For a project within the vicinity of a private airship, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☑

Significance Criteria

Impacts on noise will be considered significant if:

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

The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

Discussion

XII. a), b), c) & d): Operation of diesel engines typically results in the generation of a certain amount of noise. PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not change the annual operational limit on the affected sources. Therefore, implementation of PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not generate additional or new noise, excessive groundborne vibration, or substantially increase ambient noise levels beyond existing levels. Operators of affected engines who do choose to operate equipment fewer hours per year, will reduce the number of hours an engine will produce noise or any vibration, which is considered to be a benefit. If a facility operator chooses to install control equipment for affected equipment, noise level are not expected to change since control equipment and control processes for affected engines are not typically noise intensive. Construction equipment, however, does generate noise. These noise levels are not expected to be significant because construction activities will be short term, few pieces of construction equipment are needed, and contractors are expected to comply with local noise ordinances and allowable operating hours during the construction phase.

As a result, the proposed project is not expected to generate new or additional noise impacts, but may produce beneficial effects relative to noise produced by affected engines.

XII. e) & f): As indicated in the preceding discussion, noise levels will either not change or will decline as a result of the proposed project and, therefore, will have a neutral effect on noise levels from affected engines at facilities that may be located within two miles of an airport or private airstrip.

Based on the above consideration, significant adverse impacts to noise are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
XIII.	**POPULATION AND HOUSING.** Would the project:			
a)	Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	☐	☐	☑
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☑
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☑

Significance Criteria

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

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

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

Discussion

XIII. a), b), c): Human population in the SCAQMD's jurisdiction is anticipated to grow regardless of implementing the proposed project. The proposal would control emissions from existing diesel-fueled engines, which will require minimal employees for construction since DPFs are pre-constructed and installation is not labor intensive. More construction workers would be needed if a high emitting engine is being replaced. However, the number of workers needed would be temporary and expected to come from the existing labor force in the region. Additional permanent employees would not be required during operation because the proposed project will have little effect on the current operation of affected equipment. District population will not be affected directly or indirectly as a result of adopting and implementing the proposed project. Further, controlling engine emissions will not directly or indirectly induce growth in the area of facilities with affected engines. The construction of single- or multiple-family housing units would not be required as a result of implementing the proposed project since no new employees will be required at affected facilities. The proposed project will not require relocation of affected engines or facilities, so existing housing or populations in the district are not anticipated to be displaced necessitating the construction of replacement housing elsewhere.

Based on the above consideration, significant adverse impacts to population and housing are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

	Potentially Significant Impact	**Less Than Significant Impact**	**No Impact**
XIV. PUBLIC SERVICES. Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:			
a) Fire protection?	☐	☐	☑
b) Police protection?	☐	☐	☑

c) Schools?	☐	☐	☑
d) Parks?	☐	☐	☑
e) Other public facilities?	☐	☐	☑

Significance Criteria

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

Discussion

XIV. a) & b): PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not involve the use of acutely hazardous materials. As a result, no new fire hazards or increased use of hazardous materials would be introduced at existing affected facilities. Thus, no new demands for fire or police protection are expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 since the proposed project will not require installations of emission control devices that use or generate hazardous materials that will require additional public services in the event of an emergency.

XIV. c), d): As noted in the "Population and Housing" discussion, implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not require new employees for construction because no major construction is necessary to comply with the proposed project. Similarly, no new employees will be required to maintain operation of affected engines. As a result, PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will have no direct or indirect effects on population growth in the district. Consequently, no new impacts to schools, parks or other recreational facilities are foreseen as a result of implementing the PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472.

XIV. e): Because the future installation of control equipment only requires minor modifications to affected engines, the proposal would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times or other performance objectives.

Based on the above consideration, significant adverse impacts to public services are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XV. RECREATION.			
a) Would the project 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) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☑

Significance Criteria

Impacts to recreation will be considered significant if:

The project results in an increased demand for neighborhood or regional parks or other recreational facilities.

The project adversely effects existing recreational opportunities.

Discussion

XV. a) & b): As discussed under "Land Use and Planning" above, there are no provisions in the proposed project that would affect land use plans, policies or ordinances, or regulations. Land use and other planning considerations are determined by local governments; no land use or planning requirements will be altered by the proposal. As already noted in item XII, Population and Housing, the proposed project is not expected to increase population growth in the district because no additional permanent employees would be required for the operation of affected facilities, so no additional demand for recreation facilities is anticipated. As noted earlier, the additional construction workers needed would be temporary and expected to come from the existing labor force in the region, which 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.

Based on the above consideration, significant adverse impacts to recreation are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XVI. SOLID/HAZARDOUS WASTE. Would the project:			
a) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☑
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	☐	☐	☑

Significance Criteria

The proposed project impacts on solid/hazardous waste will be considered significant if the following occur:

The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

Discussion

XVI. a): The proposed project could result in additional installations of emission control devices that result in potential solid waste from the used filters so PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 could change a facility's current solid waste disposal needs. The filter replacement schedule will depend on the individual facility's operation, maintenance and cleaning behavior, which affects the life of the filter. Construction-related waste would likely be disposed of at a Class II (industrial) or Class III (municipal) landfill. There are 48 Class II/Class III landfills within the SCAQMD's jurisdiction. Based on a search of the California Integrated Waste Management Board's Solid Waste Information System (SWIS) on May 16, 2007, there landfills that accept construction waste in Los Angeles, Orange, Riverside and San Bernardino counties have a combined

remaining disposal capacity of approximately 750,846,000 cubic yards (1,250,367,507 tons).

Because the affected emergency engines only operate during minimal allowable testing hours per year, the life of the filter is expected to exceed the normal life and, thus, replacement will be infrequent resulting in a non-significant solid waste impact. In addition, it would be in the best fiscal interest for the affected business to maintain a clean filter to extend the life of the filter further reducing any potential solid waste impacts. A majority of replaced engines are built with metals that can be recycled. Possible demolition of engine enclosures and supporting structures could occur during the removal and replacement of older engines.

Solid or hazardous wastes could also be generated from the disposal of the old engines or, at least, parts of the old engine unable to be sold for parts or metal value. Assuming that replacing an average engine would generate seven tons of waste, approximately 2,100 tons of waste could be generated from replacing all 300 emergency and non-emergency engines. The 2,100 tons of solid waste would be less than one percent (1.7 x 10-4 percent) of the remaining capacity limit, if it is conservatively assumed that one cubic yard of solid waste weighs one ton. Solid waste that is 0.00017 percent of the total landfill disposal capacity of the district is well within the disposal capacity of district landfills. Further, even assuming that all 291 engines are removed, some engines may have relatively long useful lives remaining and would likely be resold outside of the district. Those engines not resold outside of the district contain a large percentage of useful metals and, therefore, would more likely be dismantled and sold as scrap metal. Consequently, the actual amount of material disposed of in local district landfills would be substantially less than estimated here. As a result, solid waste impacts from removing and disposing of existing engines to comply with the proposed project are not anticipated to be significant.

XVI. b): It is expected that PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will have no effect on an operator's ability to comply with relevant statutes and regulations related to solid and hazardous wastes. Consequently, it is anticipated that operators of affected facilities would continue to comply with federal, state, and local statutes and regulations related to solid and hazardous waste handling and disposal. Therefore, potential solid waste impacts are considered not significant.

Based on the above consideration, significant adverse solid/hazardous waste impacts are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
XVII.	**TRANSPORTATION/CIRCULATION** Would the project:			
a)	Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☑
b)	Exceed, either individually or cumulatively, a level of service standard established by 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 due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☑
e)	Result in inadequate emergency access?	☐	☐	☑
f)	Result in inadequate parking capacity?	☐	☐	☑
g)	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	☐	☐	☑

Significance Criteria

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

Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.

An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.

A major roadway is closed to all through traffic, and no alternate route is available.

There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

The demand for parking facilities is substantially increased.

Water borne, rail car or air traffic is substantially altered.

Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.

The need for more than 350 employees

An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day

Increase customer traffic by more than 700 visits per day.

Discussion

XVII. a), b), f): As noted in the "Discussion" sections of other environmental topics compliance with PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 is not expected to require major construction to install control equipment, either to the equipment or at the site, e.g., site preparation, construction, etc. PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 could result in delivery of control equipment or additional transport for workers to install control equipment if a facility operators chooses to install a DPF. Additional construction workers and delivery trips would also be expected if an engine is replaced. For each phase of the construction project, four one-way haul trucks trips and six one-way worker vehicle trips are expected to occur for a total of ten temporary trips for each project. This increase would not exceed the significant thresholds of 350 employees per project or 350 truck round trips per day for any individual facility.

Because the affected facilities are located throughout the district and the construction schedule will vary over several years because of different compliance dates, and the magnitude of construction activities will differ at each affected facility, no intersections or major arterials are expected to experience a substantial change in

traffic that would significantly effect levels of service or congestion. Continuing operation of affected engines will add no new trips because no new permanent employees are expected to be required to operate the emergency engine.

Thus, impact to existing traffic, level of service and parking capacity is not expected to substantially worsen by the proposed project.

XVII. c): Air traffic patterns are not expected to be directly or indirectly affected by the proposed project because control requirements for affected engines do not involve transport of control equipment by air nor will operation of existing engines interfere with air traffic. All applicable local, state and federal requirements would continue to be complied with so no increase in any safety risks is expected.

XVII. d), e): PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 does not have direct or indirect impacts on specific construction design features because the proposed project does not require or induce the construction of any roadways or other transportation design features. In addition, PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 would not substantially change current engine operation unless a facility chooses to reduce operating hours, which would also not affect roadway design.

XVII. g): Affected facilities would still be expected to comply with, and not interfere with adopted policies, plans, or programs supporting alternative transportation. Since no new additional permanent employees are needed to operate in compliance, PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will not hinder compliance with any applicable alternative transportation plans or policies.

Based on the above consideration, significant adverse impacts to transportation/circulation are not expected from implementing PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472. Since there are no significant adverse impacts, no mitigation measures are required.

	Potentially Significant Impact	**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

XVIII. a): As discussed in items I through XVII above, the PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 are expected to reduce PM emissions and diesel PM toxic risk. Therefore, the proposed project is beneficial to air quality and the environment, and not expected 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. Similarly, PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 would not eliminate important examples of the major periods of California history or prehistory or otherwise degrade cultural resources because the proposed project is expected to affect existing facilities with established foundations.

XVIII.b) Since PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 are not expected to potentially generate significant adverse project-specific construction or operational impacts to any environmental topic areas evaluated in this checklist, the proposed project's contribution to potentially significant cumulative impacts during construction or operation is rendered less than cumulatively considerable and, thus, is not cumulatively significant (CEQA Guidelines §15064(h)(2)).

XVIII.c) Based on the foregoing analyses, PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 are not expected to cause significant permanent adverse effects on human beings, either directly, or indirectly. There is a potential

for temporary adverse air quality impacts during construction activities to install DPFs or new engines. However, these impacts were concluded to be less than significant.

APPENDIX A

PROPOSED AMENDED RULE 1401 AND PROPOSED RULE 1472

In order to save space and avoid repetition, please refer to the latest versions of the PAR 1401 and PR 1472 located elsewhere in the final rule package. The PAR 1401a and PR 1472i versions circulated with the Draft PEA released on December 20, 2007 for a 30-day public review and comment period ending January 18, 2008 has been updated but, as noted in the preface, the changes do not require the PEA to be recirculated.

Original hard copies of the Draft PEA, which include PAR 1401a and PR 1472i versions circulated with the Draft PEA, can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by calling (909) 396-2039.

APPENDIX B

CONSTRUCTION EMISSION CALCULATIONS

Construction Activity - DPF Installation

Construction Activity
Add-on Control (e.g., DPF) Installation

Construction Schedule 2 days

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	6
Welder	1	8.0	
Generator Sets	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NOx lb/hr	PM10 lb/hr	VOC lb/hr	SOx lb/hr	CO2 lb/hr
Forklifts	0.250	0.643	0.035	0.086	0.001	54.4
Welder	0.234	0.319	0.030	0.092	0.000	25.6
Generator Sets	0.355	0.725	0.045	0.113	0.001	61.0

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NOx lb/mile	PM10 lb/mile	VOC lb/mile	SOx lb/mile	CO2 lb/mile
Heavy-Duty Truck[d]	0.01446237	0.04718166	0.00230900	0.00372949	0.00003962	4.221844935
Passenger Vehicle	0.01155158	0.00121328	0.00008447	0.00118234	0.00001078	1.106722361

Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One Way Trip Length (miles)
Haul Trucks[e]	4	20
Worker Vehicles	6	10

Construction Activity - DPF Installation

Incremental Increase from On-Site Equipment

Equation: Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Onsite Construction Emissions (lb/day)

	CO	NOx	PM10	VOC	SOx	CO2
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Forklifts	2.00	5.14	0.28	0.69	0.005	435
Welder	1.87	2.55	0.24	0.73	0.002	205
Generator Sets	2.84	5.80	0.36	0.90	0.006	488
Total	**6.71**	**13.50**	**0.87**	**2.33**	**0.013**	**1,128**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

	CO	NOx	PM10	VOC	SOx	CO2
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Trucks	2.314	7.549	0.3694	0.5967	0.0063	675
Worker Vehicles	1.386	0.146	0.0101	0.1419	0.0013	133
Total	**3.70**	**7.70**	**0.38**	**0.74**	**0.01**	**808**

Total Incremental Combustion Emissions from Construction Activities

	CO	NOx	PM10	VOC	SOx	CO2
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Daily Emissions	**10.4**	**21.2**	**1.3**	**3.1**	**0.020**	**1,936**
Annual Emissions	**20.8**	**42**	**2.5**	**6**	**0.041**	**3,873**

Combustion and Fugitive Summary	**PM2.5 Fraction[h]**	**PM10**	**PM2.5**
		lb/day	lb/day
Combustion, Offroad	0.92	0.9	0.8
Combustion, Onroad	0.964	0.4	0.37
Total, lb/project		**1.3**	**1.2**
		2.5	**2.3**

Construction Activity - DPF Installation

Notes:

a) SCAQMD, staff estimation

b) Equipment name must match CARB Off-Road Model (see Off-Road Model EF worksheet) equipment name for sheet to look up EFs automatically.

c) SCAB values provided by the ARB, Aug 2004. Assumed equipment is diesel fueled.

d) CARB, EMFAC2002 as summarized on SCAQMD website at http://www.aqmd.gov/ceqa/handbook/onroad/onroadHHDT05_25.xls

e) Assumed haul truck travels 20 miles one-way

g) SCAQMD Regional Construction Significance Thresholds

h) ARB's CEIDARS database PM2.5 fractions - contruction dust category for offroad and onroad diesel vehicle exhaust category for combustion.

Construction Activity - DPF Installation

Construction Activity

Removal of Old Equipment and Demolition - Site Preparation to Install New Engine

Construction Schedule 1 day

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Cranes	1	2.0	6
Tractors/Loaders/Backhoes	1	4.0	
Concrete/Industrial Saws	1	4.0	
Forklifts	1	4.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NOx lb/hr	PM10 lb/hr	VOC lb/hr	SOx lb/hr	CO2 lb/hr
Cranes	0.637	1.695	0.075	0.188	0.001	128.7
Tractors/Loaders/Backhoes	0.414	0.830	0.064	0.131	0.001	66.8
Concrete/Industrial Saws	0.449	0.764	0.064	0.156	0.001	58.5
Forklifts	0.250	0.643	0.035	0.086	0.001	54.4

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NOx lb/mile	PM10 lb/mile	VOC lb/mile	SOx lb/mile	CO2 lb/mile
Heavy-Duty Truck[d]	0.01446237	0.04718166	0.00230900	0.00372949	0.00003962	4.221844935
Passenger Vehicle	0.01155158	0.00121328	0.00008447	0.00118234	0.00001078	1.106722361

Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One Way Trip Length (miles)
Haul Trucks[e]	2	20
Worker Vehicles	6	10

Construction Activity - DPF Installation

Incremental Increase from On-Site Equipment

Equation: Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Onsite Construction Emissions (lb/day)

	CO	NOx	PM10	VOC	SOx	CO2
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Cranes	1.27	3.39	0.15	0.38	0.00	257
Tractors/Loaders/Backhoes	1.66	3.32	0.26	0.52	0.00	267
Concrete/Industrial Saws	1.79	3.06	0.26	0.62	0.00	234
Forklifts	1.00	2.57	0.14	0.34	0.00	218
Total	**5.72**	**12.34**	**0.80**	**1.87**	**0.01**	**976**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

	CO	NOx	PM10	VOC	SOx	CO2
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Haul Trucks	1.157	3.775	0.1847	0.2984	0.0032	338
Worker Vehicles	1.386	0.146	0.0101	0.1419	0.0013	133
Total	**2.54**	**3.92**	**0.19**	**0.44**	**0.00**	**471**

Total Incremental Combustion Emissions from Construction Activities

	CO	NOx	PM10	VOC	SOx	CO2
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Daily Emissions	**8.3**	**16.3**	**1.0**	**2.3**	**0.016**	**1,447**
Annual Emissions	**8.3**	**16**	**1.0**	**2**	**0.016**	**1,447**

Combustion and Fugitive Summary	**PM2.5 Fraction[h]**	**PM10**	**PM2.5**
		lb/day	lb/day
Combustion, Offroad	0.92	0.8	0.7
Combustion, Onroad	0.964	0.2	0.19
Total, lb/project		**1.0**	**0.9**
		1.0	**0.9**

Construction Activity - DPF Installation

Notes:

a) SCAQMD, staff estimation

b) Equipment name must match CARB Off-Road Model (see Off-Road Model EF worksheet) equipment name for sheet to look up EFs automatically.

c) SCAB values provided by the ARB, Aug 2004. Assumed equipment is diesel fueled.

d) CARB, EMFAC2002 as summarized on SCAQMD website at http://www.aqmd.gov/ceqa/handbook/onroad/onroadHHDT05_25.xls

e) Assumed haul truck travels 20 miles one-way

g) SCAQMD Regional Construction Significance Thresholds

h) ARB's CEIDARS database PM2.5 fractions - contruction dust category for offroad and onroad diesel vehicle exhaust category for combustion.

Construction Activity - DPF Installation

Construction Activity
Paving Activity - Site Preparation to Install New Engine

Construction Schedule 1 day

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Pavers	1	4.0	6
Paving Equipment	1	4.0	
Rollers	1	2.0	
Cement And Mortar Mixers	1	3.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NOx lb/hr	PM10 lb/hr	VOC lb/hr	SOx lb/hr	CO2 lb/hr
Pavers	0.600	1.129	0.080	0.206	0.001	77.9
Paving Equipment	0.469	1.033	0.071	0.156	0.001	69.0
Rollers	0.442	0.907	0.063	0.141	0.001	67.1
Cement And Mortar Mixers	0.046	0.069	0.005	0.012	0.000	7.2

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NOx lb/mile	PM10 lb/mile	VOC lb/mile	SOx lb/mile	CO2 lb/mile
Heavy-Duty Truck[d]	0.01446237	0.04718166	0.00230900	0.00372949	0.00003962	4.221844935
Passenger Vehicle	0.01155158	0.00121328	0.00008447	0.00118234	0.00001078	1.106722361

Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One Way Trip Length (miles)
Haul Trucks[e]	2	20
Worker Vehicles	6	10

Incremental Increase from On-Site Equipment

Equation: Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Onsite Construction Emissions (lb/day)

Construction Activity - DPF Installation

Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day	VOC lb/day	SOx lb/day	CO2 lb/day
Pavers	2.40	4.52	0.32	0.82	0.00	312
Paving Equipment	1.88	4.13	0.28	0.62	0.00	276
Rollers	0.88	1.81	0.13	0.28	0.00	134
Cement And Mortar Mixers	0.14	0.21	0.01	0.04	0.00	22
Total	**5.30**	**10.67**	**0.74**	**1.77**	**0.01**	**722**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NOx lb/day	PM10 lb/day	VOC lb/day	SOx lb/day	CO2 lb/day
Flatbed Trucks	1.157	3.775	0.1847	0.2984	0.0032	338
Worker Vehicles	1.386	0.146	0.0101	0.1419	0.0013	133
Total	**2.54**	**3.92**	**0.19**	**0.44**	**0.00**	**471**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NOx lb/day	PM10 lb/day	VOC lb/day	SOx lb/day	CO2 lb/day
Daily Emissions	**7.8**	**14.6**	**0.9**	**2.2**	**0.013**	**1,192**
Annual Emissions	**7.8**	**15**	**0.9**	**2**	**0.013**	**1,192**

Combustion and Fugitive Summary	PM2.5 Fraction[h]	PM10 lb/day	PM2.5 lb/day
Combustion, Offroad	0.92	0.7	0.7
Combustion, Onroad	0.964	0.2	0.19
Total, lb/project		**0.9**	**0.9**
		0.9	**0.9**

Notes:

a) SCAQMD, staff estimation

b) Equipment name must match CARB Off-Road Model (see Off-Road Model EF worksheet) equipment name for sheet to look up EFs automatically.

c) SCAB values provided by the ARB, Aug 2004. Assumed equipment is diesel fueled.

d) CARB, EMFAC2002 as summarized on SCAQMD website at http://www.aqmd.gov/ceqa/handbook/onroad/onroadHHDT05_25.xls

Construction Activity - DPF Installation

e) Assumed haul truck travels 20 miles one-way

g) SCAQMD Regional Construction Significance Thresholds

h) ARB's CEIDARS database PM2.5 fractions - contruction dust category for offroad and onroad diesel vehicle exhaust category for combustion.

Construction Activity - DPF Installation

Construction Activity
Internal Combustion Engine and Equipment Installation

Construction Schedule 1 day

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Cranes	1	4.0	6
Forklifts	1	8.0	
Welder	1	8.0	
Generator Sets	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO	NOx	PM10	VOC	SOx	CO2
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Cranes	0.637	1.695	0.075	0.188	0.001	128.7
Forklifts	0.250	0.643	0.035	0.086	0.001	54.4
Welder	0.234	0.319	0.030	0.092	0.000	25.6
Generator Sets	0.355	0.725	0.045	0.113	0.001	61.0

Construction Vehicle (Mobile Source) Emission Factors

	CO	NOx	PM10	VOC	SOx	CO2
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.01446237	0.04718166	0.00230900	0.00372949	0.00003962	4.221844935
Passenger Vehicle	0.01155158	0.00121328	0.00008447	0.00118234	0.00001078	1.106722361

Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	ne Way Trip Length (miles)
Haul Trucks[e]	4	20
Worker Vehicles	6	10

Construction Activity - DPF Installation

Incremental Increase from On-Site Equipment

Equation: Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Onsite Construction Emissions (lb/day)

	CO	NOx	PM10	VOC	SOx	CO2
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Cranes	2.55	6.78	0.30	0.75	0.006	515
Forklifts	2.00	5.14	0.28	0.69	0.005	435
Welder	1.87	2.55	0.24	0.73	0.002	205
Generator Sets	2.84	5.80	0.36	0.90	0.006	488
Total	**9.25**	**20.27**	**1.17**	**3.08**	**0.018**	**1,643**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

	CO	NOx	PM10	VOC	SOx	CO2
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Trucks	2.314	7.549	0.3694	0.5967	0.0063	675
Worker Vehicles	1.386	0.146	0.0101	0.1419	0.0013	133
Total	**3.70**	**7.70**	**0.38**	**0.74**	**0.01**	**808**

Total Incremental Combustion Emissions from Construction Activities

	CO	NOx	PM10	VOC	SOx	CO2
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Daily Emissions	**13.0**	**28.0**	**1.6**	**3.8**	**0.026**	**2,451**
Annual Emissions	**13.0**	**28**	**1.6**	**4**	**0.026**	**2,451**

Combustion and Fugitive Summary	**PM2.5 Fraction[h]**	**PM10**	**PM2.5**
		lb/day	lb/day
Combustion, Offroad	0.92	1.2	1.1
Combustion, Onroad	0.964	0.4	0.37
Total, lb/project		**1.6**	**1.4**
		1.6	**1.4**

Construction Activity - DPF Installation

Notes:

a) SCAQMD, staff estimation

b) Equipment name must match CARB Off-Road Model (see Off-Road Model EF worksheet) equipment name for sheet to look up EFs automatically.

c) SCAB values provided by the ARB, Aug 2004. Assumed equipment is diesel fueled.

d) CARB, EMFAC2002 as summarized on SCAQMD website at http://www.aqmd.gov/ceqa/handbook/onroad/onroadHHDT05_25.xls

e) Assumed haul truck travels 20 miles one-way

g) SCAQMD Regional Construction Significance Thresholds

h) ARB's CEIDARS database PM2.5 fractions - contruction dust category for offroad and onroad diesel vehicle exhaust category for combustion.

Construction Activity - DPF Installation

Equipment	CO lb/hr	NOX lb/hr	PM lb/hr	ROG lb/hr	SOX lb/hr	CO2 lb/hr	Fuel Use, gal/hr
Aerial Lifts	0.2253	0.4026	0.0279	0.0781	0.0004	34.7	
Air Compressors	0.3872	0.8302	0.0579	0.1285	0.0007	63.6	
Bore/Drill Rigs	0.5388	1.4734	0.0648	0.1457	0.0017	165.0	
Cement and Mortar Mixers	0.0455	0.0693	0.0050	0.0120	0.0001	7.2	0.33
Concrete/Industrial Saws	0.4487	0.7639	0.0640	0.1561	0.0007	58.5	
Cranes	0.6365	1.6948	0.0755	0.1882	0.0014	128.7	9.82
Crawler Tractors	0.7090	1.6218	0.0988	0.2180	0.0013	114.0	
Crushing/Proc. Equipment	0.7817	1.6553	0.1048	0.2499	0.0015	132.3	
Dumpers/Tenders	0.0383	0.0709	0.0049	0.0137	0.0001	7.6	
Excavators	0.5977	1.4225	0.0776	0.1816	0.0013	119.6	
Forklifts	0.2495	0.6430	0.0346	0.0861	0.0006	54.4	2.48
Generator Sets	0.3549	0.7249	0.0446	0.1130	0.0007	61.0	2.79
Graders	0.6712	1.7198	0.0886	0.2055	0.0015	132.7	6.06
Off-Highway Tractors	0.9270	2.2742	0.1107	0.2692	0.0017	151.5	
Off-Highway Trucks	0.9133	2.9144	0.1056	0.2881	0.0027	260.1	
Other Construction Equipment	0.4749	1.2411	0.0539	0.1311	0.0013	122.8	
Other General Industrial Equipmen	0.6987	1.9012	0.0850	0.2111	0.0016	152.2	
Other Material Handling Equipment	0.6298	1.8362	0.0819	0.2038	0.0015	141.2	
Pavers	0.6000	1.1291	0.0799	0.2062	0.0009	77.9	3.59
Paving Equipment	0.4693	1.0333	0.0708	0.1556	0.0008	69.0	3.16
Plate Compactors	0.0263	0.0351	0.0025	0.0054	0.0001	4.3	
Pressure Washers	0.0705	0.1079	0.0081	0.0235	0.0001	9.4	
Pumps	0.3243	0.6224	0.0439	0.1090	0.0006	49.6	
Rollers	0.4419	0.9073	0.0629	0.1410	0.0008	67.1	3.07
Rough Terrain Forklifts	0.4928	0.9631	0.0800	0.1576	0.0008	70.3	
Rubber Tired Dozers	1.6950	3.4143	0.1474	0.3789	0.0025	239.1	
Rubber Tired Loaders	0.5552	1.3821	0.0768	0.1730	0.0012	108.6	5.06
Scrapers	1.5249	3.3991	0.1465	0.3677	0.0027	262.5	10.74
Signal Boards	0.0972	0.1806	0.0115	0.0254	0.0002	16.7	
Skid Steer Loaders	0.2735	0.3375	0.0326	0.0981	0.0004	30.3	
Surfacing Equipment	0.7654	1.8498	0.0712	0.1864	0.0017	166.0	
Sweepers/Scrubbers	0.5672	1.0277	0.0819	0.1963	0.0009	78.5	
Tractors/Loaders/Backhoes	0.4142	0.8303	0.0639	0.1307	0.0008	66.8	3.41
Trenchers	0.5171	0.8578	0.0714	0.1942	0.0007	58.7	
Welders	0.2336	0.3191	0.0297	0.0917	0.0003	25.6	

Equipment	gal/hr
Pavers	3.59
Rollers	3.07
Scrapers	10.74
Paving Equi	3.16
Cement and	0.33
Cranes	9.82
Graders	6.06
Rubber Tire	5.06
Tractors/Loa	3.41
Forklifts	2.48
Generator S	2.79

APPENDIX C

COMMENTS ON THE DRAFT PEA AND RESPONSES TO THE COMMENTS

STATE OF CALIFORNIA — Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

January 8, 2008

Mr. Michael Krause, Air Quality Specialist
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Drive
Diamond Bar, CA 91765-4182

Re: SCH#2007121101; CEQA Notice of Completion of a Draft Program Environmental Assessment (PEA) proposed Amendment Rule 1401 – New Source Review of Toxic Air Contaminants Impact Assessment for Facilities Subject to Rule 1402 – Control of Toxic Air Contaminants from Existing Sources; and Proposed Rule 1472 – Requirements for Facilities with Multiple Contaminants from Existing Sources,; and Proposed Rule 1472 – Requirements for Facilities with Multiple Stationary Emergency Standby Diesel-Fueled Internal Combustion Engines; Impacting Los Angeles, Riverside San Bernardino, Orange , Portions of Salton Sea and Mojave Desert Air Basins, California

Dear Mr. Krause:

1-1 The Native American Heritage Commission (NAHC) is the state agency designated to protect California's Native American Cultural Resources. The California Environmental Quality Act (CEQA) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the California Code of Regulations §15064.5(b)(c (CEQA guidelines). Section 15382 of the 2007 CEQA Guidelines defines a significant impact on the environment as "a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance."

1-2 While the proposed project impacts on the air quality of the South Coast Air Basin that may not impact directly on 'archaeological' or 'historical' resources, the proposed rule changes may increase the levels of toxic contaminants in areas Native Americans use to gather plant material sources in order to meet their cultural and religious traditions. More than fifty California federally and nonfederally recognized Tribes rely on the availability of plant materials (a 'physical impact on environmental conditions on environmental conditions' as defined by the CEQA Guidelines), to sustain their traditions.

1-3 It is the hope of the Native American Heritage Commission that public agencies such as yours acknowledge that traditional native gathering and management practices in areas of open space are sustainable for the benefit of the health of the plant life and that of both native and non-native people in the South Coast Air Basin region. Increased toxic contaminants to the air quality of the region would, in our opinion, have an adverse impact on the plan and fungal materials used by the Native American population. We acknowledge the reason for exempting emergency operations such hospitals and public safety entities and about those we have no objection. We do object to other, non emergency exemptions that would add toxic contaminants to the air of the region. We recommend also that you contact Native American Tribal Contacts on the attached list to get their input on potential project impact (APE).

Please feel free to contact me at (916) 653-6251 if you have any questions.

Sincerely,

Dave Singleton
Program Analyst

Attachment: List of Native American Contacts

Cc: State Clearinghouse

Responses to Draft PEA Comment Letter #1

Native American Heritage Commission
Dave Singleton

January 8, 2008

Response 1-1

The SCAQMD is aware of the requirements of CEQA Guidelines §15064.5 as well as all other relevant CEQA requirements. As stated on page 2-23 in the Draft Program Environmental Assessment (PEA), operators of existing facilities with affected engines are not expected to perform major construction activities such as grading, trenching, etc., to comply with the proposed project because diesel particulate filter (DPFs) are typically basic drop-in equipment for existing affected equipment. New replacement engines are expected to be installed in the same location as the existing engine that is being replaced. No new property is required for DPF installation and operation, or for new engine replacement and containment construction. Therefore, cultural or aesthetic resources are not expected be disturbed in any way. As a result, the proposed project has no potential to cause a substantial adverse change to a historical or archaeological resource, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside a formal cemeteries.

Response 1-2

Contrary to the comment regarding an increase in the level of toxic contaminants, the proposed project will establish requirements which will substantially reduce diesel particulate matter (PM) from affected engines. Diesel PM, which is produced when internal combustion engines burn diesel fuel, has been identified by the California Air Resource Board (CARB) as a toxic air contaminant (TAC). PAR 1401 specifies limits on maximum individual cancer risk and noncancer hazard index from diesel PM for new, modified or relocated diesel-fueled non-emergency engines. Further, by adding diesel PM to the Rule 1401 Table I list of TACs, existing facilities will be affected because Rule 1402, which regulates TACs at existing facilities, regulates the same TACs that are listed in Table I in 1401. In addition, PR 1472 will further reduce diesel PM emissions from facilities with three or more stationary emergency standby diesel-fueled internal combustion engines that may pose substantial cancer and noncancer health risks at nearby sensitive receptors. In the absence of PR 1472, facilities with three or more emergency standby diesel engines would continue to pose substantial health risks to nearby receptors. While the SCAQMD recognizes the Tribes rely on the availability of plant materials to sustain their traditions, the proposed project will not subject existing cultural or biological (see the following paragraph) resources to adverse TAC impacts. On the contrary, the proposed project aims to reduce cancer risk and noncancer chronic hazard index from diesel PM, which may also benefit biological and cultural resources.

Similarly, the proposed project will not require the construction of new structures on property not already established with a foundation. Therefore, proposed amended Rule (PAR) 1401, which also affects facilities subject to Rule 1402, and proposed Rule (PR) 1472 will have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely in the SCAQMD's jurisdiction. PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 will primarily affect the operation of engines at existing facilities and will not worsen the current operations at affected facilities and, therefore, are not expected to adversely affect plant and animal life. Further, PAR 1401, which also affects facilities subject to Rule 1402, and PR 1472 do not require acquisition of additional land or further conversions of riparian habitats or sensitive natural communities where endangered or sensitive species may be found.

Response 1-3

See Response 1-2 with regard to toxic air contaminants impacts from the proposed project. The following three exemptions can be found in PR 1472: 1) those facilities complying with Rule 1402; 2) engines greater than 150 meters from the nearest receptor; and 3) direct-drive emergency standby fire pump engines. Such exemptions from the PR 1472 will not "add toxic contaminants to the air of the region" beyond what is already being emitted. The first exemption will still regulate the diesel PM, but under the requirements of Rule 1402. The second exemption is based on a toxics study that concluded dispersion of diesel PM emissions would not have an adverse effect on sources beyond a distance of 150 meters. The third exemption is necessary to avoid interfering with fire fighting activities.

With regard to contacting the attached list of Native American Tribal Contacts for their input on potential project impact, SCAQMD staff is notifying each person on the list to let them know that you have requested their names to be added to the SCAQMD's CEQA mailing list. Once each individual's permission is obtained, their names will be added to the SCAQMD's CEQA mailing list so whenever a CEQA document is released for public review and comment, everyone on the mailing list will receive notification.