SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Environmental Assessment for:

PROPOSED AMENDED RULES TO IMPLEMENT OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT (OEHHA) REVISIONS TO THE AIR TOXICS HOT SPOTS PROGRAM RISK ASSESSMENT GUIDELINES

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PREFACE

This document constitutes the Final Environmental Assessment (EA) for Proposed Amended Rule (PAR) 212 – Standards for Approving Permits and Issuing Public Notice, PAR 1401 – New Source Review of Toxic Air Contaminants, PAR 1401.1 Requirements for New and Relocated Facilities Near Schools, and PAR 1402 – Control of Toxic Air Contaminants from Existing Sources. The Draft EA was released for a 30-day public review and comment period from March 24 to April 22, 2015. No comment letters were received from the public relative to the environmental analysis in the Draft EA. The environmental analysis in the Draft EA concluded that the proposed project would not generate adverse significant environmental impacts.

Subsequent to the release of the Draft EA, minor additions and modifications were made to the PARs for clarification purposes. The latest versions of the PARs can be found in the Governing Board's final rule package. To facilitate identifying the modifications in the document, changes are included as underlined text and text removed from the document are indicated by ~~strikethrough~~. None of the modifications alter any conclusions reached in the Draft EA. As a result, these minor revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5. Therefore, this document now constitutes the Final EA for the PARs.

CHAPTER 1

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INTRODUCTION

On March 6, 2015, the California Office of Environmental Health Hazard Assessment (OEHHA) approved revisions to their Risk Assessment Guidelines (Revised OEHHA Guidelines). The Revised OEHHA Guidelines were triggered by the passage of the Children's Health Protection Act of 1999 (SB 25, Escutia) requiring OEHHA to ensure infants and children are explicitly addressed in assessing risk. Over the past decade, advances in science have shown that early-life exposures to air toxics contribute to an increased lifetime risk of developing cancer, or other adverse health effects, compared to exposures that occur in adulthood[1]. The new risk assessment methodology addresses this greater sensitivity and incorporates the most recent data on infants and childhood and adult exposure to air toxics. The Revised OEHHA Guidelines incorporates age sensitivity factors which will increase cancer risk estimates to residential and sensitive receptors by approximately 3 times, and more than 3 times in some cases depending on whether the toxic air contaminant has multiple pathways of exposure in addition to inhalation. Health risks for off-site worker receptors are similar between the existing and revised methodology because the methodology for adulthood exposures remains relatively unchanged.

PROPOSED AMENDMENTS TO RULES 212, 1401, 1401.1, AND 1402

The SCAQMD relies on OEHHA's health risk assessment guidelines in various aspects of its toxics regulatory program including the permitting program, AB2588 Hot Spots Program, and existing regulatory program. Amendments to the following rules are being proposed to incorporate provisions found in the Revised OEHHA Guidelines for estimation of health risks:

- Rule 212 – Standards for Approving Permits and Issuing Public Notice
- Rule 1401 – New Source Review of Toxic Air Contaminants
- Rule 1401.1 – Requirements for New and Relocated Facilities Near Schools
- Rule 1402 – Control of Toxic Air Contaminants from Existing Sources

The proposed amended rules will revise definitions and risk assessment procedures to be consistent with the Revised OEHHA Guidelines. Proposed amendments are to ensure SCAQMD staff can implement the Revised OEHHA Guidelines regarding how health risks are calculated. Staff is not recommending revisions to the health risk *thresholds* in Rules 1401, 1401.1 or 1402. Staff is preparing Risk Assessment Procedures for Rules 1401, 1401.1, and 212, Version 8.0 and Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588). For two specific industries, gas stations and spray booths, staff requires additional time to evaluate the impacts of the revised OEHHA Guidelines or believes that additional controls will be required that may not be feasible. For these source categories, staff proposes to continue using the existing risk assessment guidelines until staff can perform the required analysis and develop a source-specific risk reduction rule if needed. Both documents will incorporate the Revised OEHHA Guidelines and will be used to implement Rules 212, 1401, 1401.1, and 1402.

[1] A toxic substance released to the air is called a "toxic air contaminant" (TAC) or an "air toxic." A substance is considered toxic if it has the potential to cause adverse health effects. Exposure to a toxic substance can increase the risk of contracting cancer or produce other adverse health effects such as birth defects and other reproductive damage, neurological and respiratory health effects.

The California Air Resources Board (CARB) and the California Air Pollution Control Officers Association's (CAPCOA) are finalizing Risk Management Guidelines for Permitting and AB2588 to be consistent with the Revised OEHHA Guidelines that are expected to recommend the using the 95th percentile breathing rate for children under two years of age to the last trimester of pregnancy and the 80th percentile breathing rate for all other ages. CARB and CAPCOAs Risk Management Guidelines are expected to be considered by the CARB Board in May 2015. The SCAQMD's Risk Assessment Procedures for Rules 212, 1401, and 1401.1 the Supplemental Guidelines for Preparing Risk Assessments for AB2588 will also incorporate these modified breathing rates.

LEGISLATIVE AUTHORITY

The California Legislature created the SCAQMD in 1977 (Lewis-Presley Air Quality Management Act, California Health and Safety Code §§ 40400 et seq.) as the agency responsible for developing and enforcing air pollution control rules and regulations in the Basin and portions of the Salton Sea Air Basin and Mojave Desert Air Basin. By statute, SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all state and federal ambient air quality standards for the District [California Health and Safety Code §40460(a)]. Furthermore, SCAQMD must adopt rules and regulations that carry out the AQMP [California Health and Safety Code, §40440(a)].

In addition to regulating criteria pollutants, state law specifies that air districts may regulate TACs. Specifically, Health and Safety Code §39656, California legislature has delegated the air districts, including the SCAQMD, to establish and implement a program to regulate TACs. Similarly, SCAQMD implements the Air Toxics Hot Spots Act (Health and Safety Code §44330) through Rule 1402.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

PAR 212, 1401, 1401.1, and 1402 affect new and modified permitted equipment and existing facilities and taken as a whole, a discretionary action, which has the potential to result in direct or indirect changes to the environment and, therefore, is considered a "project" (hereinafter referred to as "*The PARs*") as defined by the California Environmental Quality Act (CEQA). There are no expected environmental impacts from Proposed Amended Rules 212 or 1401.1 as a result of the revised OEHHA guidelines because changes to these rules are administrative in nature and do not require or cause a physical damage to the environment. SCAQMD is the lead agency for the proposed project and has prepared this Draft Environmental Assessment (EA) pursuant to its Certified Regulatory Program (CEQA Guidelines § 15251). This Draft EA is a comprehensive environmental document that analyzes potential adverse environmental impacts from the currently proposed amendments to Rules 1401 and 1402. 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 or negative declaration once the Secretary of the Resources Agency has certified the regulatory program. SCAQMD's regulatory program was certified by the Secretary of the Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110.

CEQA and SCAQMD Rule 110 require that potential adverse 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, this Draft EA addresses the potential adverse environmental impacts associated with the proposed project according to CEQA Guidelines § 15252. It states that the lead agency has an obligation to identify and evaluate the environmental effects of the project. The Draft EA is an informational document intended to: (a) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental effects of the proposed project; and, (b) identify possible ways to minimize the significant effects.

SCAQMD's review of the proposed project shows that the proposed project is not expected to generate significant adverse affects on the environment. Pursuant to CEQA Guidelines §§ 15126.4 (a)(3), and 15126.6, mitigation measures and alternatives are not required for effects which are not found to be significant, thus, no mitigation measures or alternatives to the project are included in the draft SEA. In addition, because SCAQMD has a certified regulatory program, the Environmental Assessment is an appropriate substitute for an EIR or Negative Declaration. Pursuant to CEQA Guidelines § 15252(a)(2)(B) and supported by the environmental checklist (in Chapter 2), if the project would not have any significant or potentially significant effect on the environment, "no alternatives or mitigation measures are proposed to avoid or reduce any significant effects on the environment." ~~Comments received on the Draft EA during the 30-day public review period will be addressed and included in the Final EA.~~ The Draft EA was released for a 30-day public review and comment period from March 24, 2015 to April 22, 2015. No comment letters were received on the Draft EA during the comment period.

PROJECT LOCATION

The proposed amendments would apply to equipment and processes operated at toxic emitting facilities located throughout the entire SCAQMD 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 (see Figure 1-1).

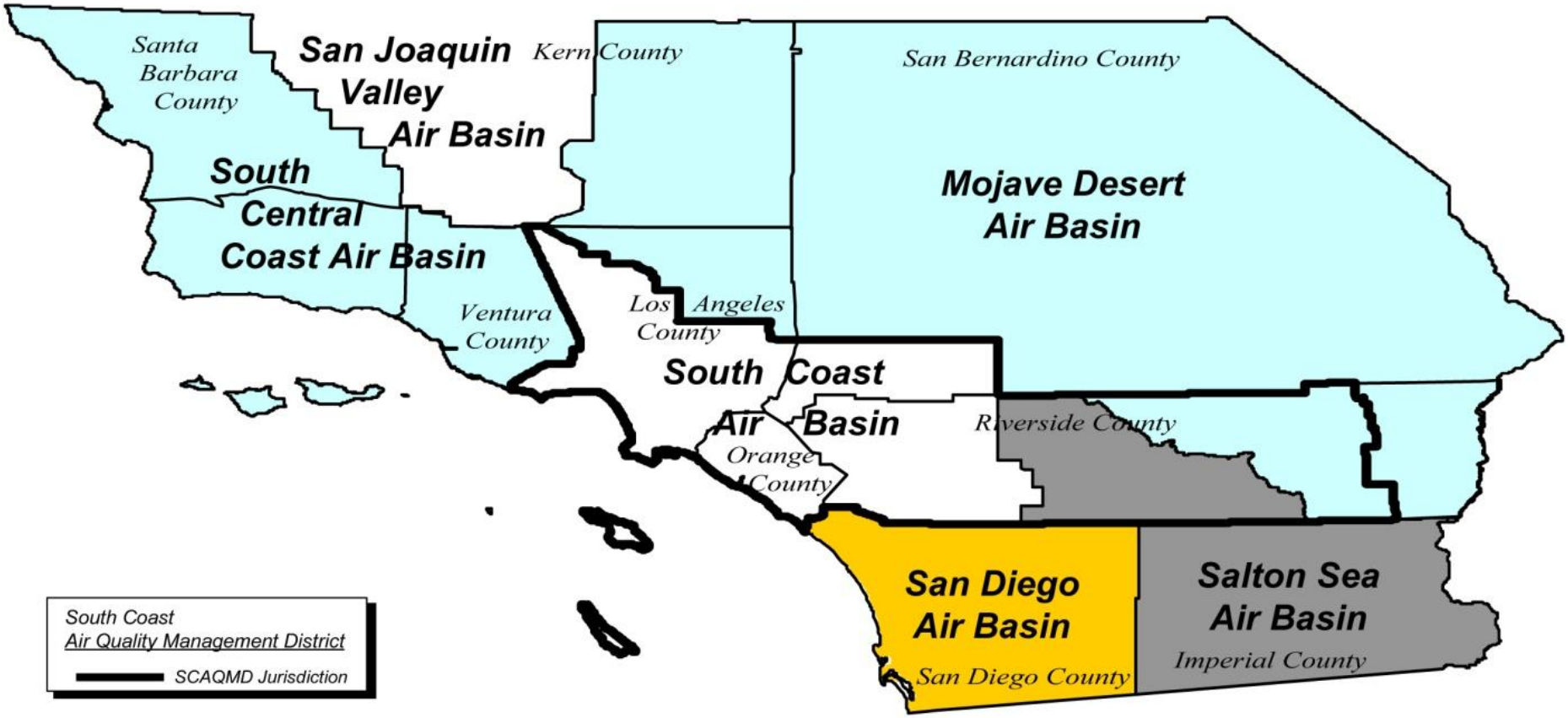

Figure 1-1 Boundaries of the South Coast Air Quality Management District

PROJECT OBJECTIVES

The primary purpose of amending Rules 212, 1401, 1401.1, and 1402 is to update rule language relating to cancer risk calculation methodologies so that is consistent with the Revised OEHHA Guidelines approved by OEHHA on March 6, 2015.

PROJECT BACKGROUND

The SCAQMD has a robust and comprehensive air toxics regulatory program that consists of rules to address new and modified toxic sources, AB2588 facilities (existing toxic sources), and source-specific toxic rules. Rules 1401, 1401.1, and 1402 are referred to as the "umbrella" rules that specify requirements for all new and modified permitted sources (Rules 1401 and 1401.1 for sources near schools) and requirements for the existing sources under the Air Toxics Hot Spots program (Rule 1402). In addition to these umbrella toxics rules, the SCAQMD's regulatory program includes over fifteen source-specific toxic rules regulating specific equipment or industry categories such as chrome plating, asbestos remediation, lead emission reductions, percholoroethylene dry cleaners, diesel internal combustion engines to name a few. Implementation of these programs has resulted in significant reductions in toxic emissions. Since the development of SCAQMD's Air Toxics Program in 1990, non-diesel cancer risks have been reduced between 75 to 87 percent, depending on the location within the Basin.

SUMMARY OF SCAQMD RULES 212, 1401, 1401.1, AND 1402

RULE 212

Rule 212 – Standards for Approving Permits and Issuing Public Notice was initially adopted in January 1976 and contains public notification requirements for new, modified, or relocated sources of air contaminants based on proximity to schools, increases to emissions above rule-specified daily maximums, and increases in toxic air contaminant emissions resulting in a MICR of greater than or equal to 10 in one million for single permitted source facilities, or 1 in one million for facilities with more than one permitted source, unless the applicant demonstrates to the satisfaction of the Executive Officer that the total facility-wide cancer risk is below 10 in one million.

RULE 1401

Rule 1401 – New Source Review for Toxic Air Contaminants was adopted by the SCAQMD Governing Board in June 1990. The rule establishes cancer and non-cancer health risk requirements for new, relocated, or modified permitted sources of toxic air pollutants. Under Rule 1401, new and modified permitted sources cannot exceed an MICR of 1 in one million, if the source is not equipped with best available control technology for toxics (T-BACT). If T-BACT is installed, the MICR cannot exceed 10 in one million. The MICR is the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants. Rule 1401 also has requirements for cancer burden which represents the estimated increase in the occurrence of cancer cases in a given population due to exposure to TACs. The rule also includes non-cancer chronic and acute hazard thresholds. Rule 1401 has been amended several times to add or modify new compounds or risk values to the list of TACs as they are identified and risk values are finalized or amended by the state.

RULE 1401.1

Rule 1401.1 – Requirements for New and Relocated Facilities Near Schools was adopted by the SCAQMD Governing Board in November 2005. The rule is designed to be more health protective for school children by establishing more stringent risk requirements related to facility-wide cancer risk and non-cancer acute and chronic HI for new and relocated facilities emitting toxic air contaminants located near schools, thereby reducing the exposure of toxic emissions to school children. For new facilities, the rule requires the facility-wide cancer risk to be less than 1 in one million at any school or school under construction within 500 feet of the facility. If there are no schools within 500 feet, the same risk levels must be met at any school or school under construction within 500 to 1,000 feet unless there is a residential or sensitive receptor within 150 feet of the facility. For relocated facilities, if a facility is relocating, the facility must demonstrate, for each school or school under construction within 500 feet of the facility, that either: 1) the risk at the school from the facility in its new location is no greater than the risk at that same school when the facility was a its previous location, or 2) the facility-wide cancer risk at the school do not exceed 1 in one million. Unlike other SCAQMD risk-based rules, the required risk thresholds of Rule 1401.1 do not change based on whether or not the source is equipped with T-BACT.

RULE 1402

Rule 1402 – Control of Toxic Air Contaminants from Existing Sources was adopted in April 1994. Rule 1402 establishes facility-wide risk requirements for existing facilities that emit TACs and implements the state AB2588 Air Toxics "Hot Spots" program. It contains requirements for toxic emissions inventories, health risk assessments, public notification and risk reduction. A maximum individual cancer risk exceeding 10 in one million, as demonstrated by an approved HRA, triggers the need for public notice. A maximum individual cancer risk of 25 in one million, as demonstrated by an approved HRA, triggers the need for the facility to reduce their facility-wide risk. Any facility whose facility-wide emissions of TACs exceed the significant risk level of 100 in one million is required to achieve risk reductions to achieve a level below 100 in a million within three years from initial risk reduction plan submittal.

PROJECT DESCRIPTION

The SCAQMD relies on OEHHA's health risk assessment guidelines in various aspects of its toxics regulatory program including the permitting program, AB2588 Hot Spots Program, and existing regulatory program. Amendments to the following rules are being proposed to reference the Revised OEHHA Guidelines for estimation health risks:

- Rule 212 – Standards for Approving Permits and Issuing Public Notice
- Rule 1401 – New Source Review of Toxic Air Contaminants;
- Rule 1401.1 – Requirements for New and Relocated Facilities Near Schools;
- Rule 1402 – Control of Toxic Air Contaminants from Existing Sources; and

The proposed amended rules will revise definitions and risk assessment procedures to be consistent with the Revised OEHHA Guidelines. Proposed amendments are to ensure SCAQMD staff can implement the Revised OEHHA Guidelines regarding how health risks are calculated, and staff is not recommending revisions to the health risk thresholds in Rules 1401, 1401.1 or 1402. The SCAQMD staff is preparing Risk Assessment Procedures for Rules 1401, 1401.1, and 212, Version 8.0 and the 2015 Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588). Both documents will incorporate the Revised OEHHA Guidelines and will be used to implement Rules 1401, 1401.1, 1402, and 212.

The California Air Resources Board (CARB) and the California Air Pollution Control Officers Association's (CAPCOA) are finalizing Risk Management Guidelines for Permitting and AB2588 to be consistent with the Revised OEHHA Guidelines that are expected to maintain the breathing rate using the 95th percentile breathing rate for children under two years of age and the 80th percentile breathing rate for all other ages. CARB and CAPCOAs Risk Management Guidelines are expected to be approved in May 2015. The SCAQMD's Risk Assessment Procedures for Rules 1401, 1401.1, and 212 and the Supplemental Guidelines for Preparing Risk Assessments for AB2588 will also incorporate these modified breathing rates. These modified breathing rates are consistent with CARB's 2003 Interim Risk Management Policy for Residential-Based Cancer Risk that was applied for Health Risk Assessments (HRAs) prepared using OEHHA's 2003 version of its HRA Guidance Manual. This policy recommended that HRAs utilize an 80th percentile breathing rate for inhalation residential cancer risks instead of the 95th percentile recommended in OEHHA's 2003 HRA Guidance Manual. This approach has been used in risk assessments state-wide since that time.

Proposed Amendments to Rule 212

Rule 212 requires public notification if any new or modified permit unit results in increases in emission of toxic air contaminants, for which the Executive Officer has made a determination that a person may be exposed to a MICR greater than or equal to 1 in a million for facilities with more than one permitted unit, or greater than or equal to 10 in a million for facilities with a single permitted unit "during a lifetime exposure period of 70 years". The assumption for lifetime exposure relating to a residential receptor in the Revised OEHHA Guidelines has been changed from 70 years to 30 years. In order for consistency with the Revised OEHHA Guidelines, clause (c)(3)(A)(i) and (c)(3)(A)(ii) has omitted the "during a lifetime (70 years)" language from the rule and replaced with a reference to Rule 1401 requirements.

Proposed Amendments to Rule 1401

Considerations for SCAQMD's permitting approach to implement the Revised OEHHA Guidelines included maintaining public health protection and avoiding backsliding of emission reductions that result in toxic exposure. SCAQMD staff considered if implementation of the guidelines would not unduly impede business activities, and identified approaches to streamline the process to minimize business impacts and SCAQMD resources consistent with principles of transparency and public participation. The proposed amendments to implement the Revised OEHHA Guidelines will be forward-looking. The SCAQMD staff will not retroactively review previously issued permits relative to the Revised OEHHA Guidelines only permits that are new and modified that have been deemed complete after Rule 1401 has been adopted. Public notification pursuant to Rule 212 will not be applied retroactively but will apply to new and modified sources.

Proposed Amended Rule 1401 includes a provision to allow spray booths and retail gasoline transfer and dispensing facilities to continue to use the previous OEHHA risk guidelines which are used in SCAQMD Risk Assessment Procedures for Rules 1401 and 212 (Version 7.0, July 1, 2005) to calculate the cancer risk until the SCAQMD staff returns to the Board with specific proposals for these industries. The SCAQMD staff evaluated permits received between October 1, 2009 and October 1, 2014 and found that some spray booths may have difficulties meeting the Rule 1401 risk thresholds using the Revised OEHHA Guidelines. Over the five year permitting period, the SCAQMD received issued approximately 1,400 permits to operate or permits to construct for spray booths. Because of the large number of permits issued and consideration that this particular source category tends to be associated with smaller businesses such as wood coating operations and autobody facilities, SCAQMD staff is recommending that spray booths continue to use the previous health risk guidelines for permitting under Rules 1401. The SCAQMD staff will begin rulemaking to identify approaches by which industries using spray booths can reduce their toxic emissions and/or toxic exposure.

The SCAQMD staff is also recommending that retail gasoline transfer and dispensing facilities continue to use the previous OEHHA risk guidelines. Based on permitted data, there are approximately 3,300 retail gasoline stations in the district. The SCAQMD receives approximately 15 permit applications annually for new gas stations and 18 permit applications annually for modifications to increase throughput at a gasoline dispensing facilities. The SCAQMD staff just received new emissions data from CARB this month that could potentially change the emission estimates from gasoline dispensing facilities. Additional time is needed to better assess and understand the impacts from gasoline dispensing facilities before use of the Revised OEHHA Guidelines. All new gasoline stations are permitted with toxics best available controls and are required to comply with SCAQMD Rule 461 – Gasoline Transfer and Dispensing. PAR 1402 includes a commitment from the Executive Officer to return to the Governing Board as quickly as practicable with Staff's analysis of emissions data from gasoline dispensing activities.

The definition for "MAXIMUM INDIVIDUAL CANCER RISK (MICR)" in existing Rule 1401 is defined as the estimated probability of a potentially maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants over "a period of 70 years" for residential receptor locations. The assumption for lifetime exposure relating to a residential receptor in the Revised OEHHA Guidelines has been changed from 70 years to 30 years. In order for consistency with the Revised OEHHA Guidelines, paragraph (c)(8) has been amended to omit

the assumption of "70 years" and add language that MICR at residential receptor locations be "calculated pursuant to the Risk Assessment Procedures referenced in subdivision (e)" which will be reflected in SCAQMD's Risk Assessment Procedures for Rules 1401, 1401.1, and 212, Version 8.0 and Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588).

Rule 1401 currently states that Executive Officer shall deny a permit to construct a new, relocated or modified permit unit if emissions of any listed toxic air contaminant occur, unless the applicant substantiates to the satisfaction of the Executive Officer that among other criterion, the "Risk Per Year" does not exceed "1/70 of the maximum allowable risk specified in the rule. The calculation for "Risk Per Year" is based on the 2003 OEHHA Guidelines relating to a residential exposure period of 70 years. For consistency with the 30 year exposure period of the Revised OEHHA Guidelines, paragraph (d)(4) has been amended to require that the risk per year shall not exceed the maximum allowable risk specified in the rule divided by the applicable exposure period referenced SCAQMD's Risk Assessment Procedures for Rules 1401, 1401.1, and 212, Version 8.0 and Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588) at any receptor locations in residential areas.

PAR 1401 also adds paragraph (g)(5) to allow the equipment category of "spray booths" and the industry category of "retail gasoline transfer and dispensing facilities" to continue using the current SCAQMD Risk Assessment Procedures for Rules 1401 and 212 (Version 7.0, July 1, 2005) in order to calculate the cumulative increase in MICR pursuant to paragraph (d)(1).

Proposed Amendments to Rule 1401.1

The definition for "CANCER RISK" in paragraph (c)(1) is defined as the estimated probability of an exposed individual contracting cancer as a result of exposure to toxic air contaminants at a school or school under construction assuming "an exposure duration of 70 years". The assumption for lifetime exposure relating to a residential receptor in the Revised OEHHA Guidelines has been changed from 70 years to 30 years. In order for consistency with the Revised OEHHA Guidelines, paragraph (c)(1) has been amended to omit the assumption of "70 years" and replaced with a reference to Rule 1401 requirements.

Proposed Amendments to Rule 1402

The definition for "MAXIMUM INDIVIDUAL CANCER RISK (MICR)" in paragraph (c)(9) is defined as the estimated probability of a potentially maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants over "a period of 70 years" for residential receptor locations. The assumption for lifetime exposure relating to a residential receptor in the Revised OEHHA Guidelines has been changed from 70 years to 30 years. In order for consistency with the Revised OEHHA Guidelines, paragraph (c)(8) has been amended to omit the assumption of "70 years" and add language that MICR at residential receptor locations be "calculated pursuant to the Risk Assessment Procedures referenced in subdivision (j)" which will be reflected in SCAQMD's Risk Assessment Procedures for Rules 1401, 1401.1, and 212, Version 8.0 and Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588). Amendments have also been made to subparagraphs (j)(1)(C) and (j)(1)(D) to omit references to the "70 year exposure". Other amendments include revisions to Tables I and II to revise emission reporting thresholds for

specific TACs and industries for consistency with calculations and methodologies of the Revised OEHHA Guidelines.

EMISSIONS CONTROL TECHNOLOGIES FOR TOXICS

To comply with the risk limits, certain existing sources, using the new OEHHA Guidelines which have been identified as potentially exceeding the significant risk levels in Rule 1401 and Rule 1402, may need to implement risk reduction measures that include the following:

- Product reformulation and substitution
- Production system modifications, operational standards or practices modifications
- System enclosure and emission capture, exhaust, control or conversion
- Alternative technologies

Several of these risk reduction measures are facility specific (i.e., operational standards and reduction in operating hours).

The use of the most appropriate control technologies is dependent on:

- the physical characteristics and chemical properties of the regulated substances;
- the concentration of the regulated substance;
- design parameters such as the exhaust flow rate, temperature, and pressure of the air to be controlled; and
- the removal and destruction efficiency of the collection and control equipment needed to comply with the requirements of the appropriate rule.

In order to determine which control technology will be used to control a specific TAC, the regulated TACs were categorized by physical and/or chemical properties. Generally, the TACs comprise the following general categories and sub-categories.

- Toxic inorganic aerosols and particulate matter (T-PM)
  - ✓ Metal particles
  - ✓ Mineral/fiber particles
  - ✓ Inorganic acid aerosols
- Toxic volatile organic compounds (VOC)
  - ✓ High boiling point (>150^{o}C)
  - ✓ Medium boiling point (100 - 150^{o}C)

- ✓ Low boiling point (<100^{o}C)
- ✓ Polar organic compounds
- ✓ Nonpolar organic compounds
- ✓ Aromatic compounds
- ✓ Carbonyls

- Toxic halogenated organic compounds (T-HOC)
  - ✓ Fluorinated compounds
  - ✓ Chlorinated compounds
  - ✓ Brominated compounds
  - ✓ Dioxins and furans

Control technologies that can be applied to control TACs generally are categorized into the following groups:

- Filtration for toxic aerosols and particulate matter (T-PM)
- Wet scrubbing for inorganic compounds
- Thermal and catalytic oxidation
- Refrigerated condensation
- Carbon adsorption and combined adsorption-oxidation systems
- Chemical absorption for toxic volatile organic compounds (VOC)
- Special combination systems for the control of toxic halogenated organic compounds (T-HOC).

A description of available control technologies expected to be used by affected facilities to comply with proposed amended Rule 1401 and/or1402 is provided in the following section.

Control Technology for Toxic Aerosols and Particulate Matter (T-PM)

Table 1-1 identifies typical filtration control equipment for T-PM. Filtration control techniques are characterized by high removal efficiency and moderate- to high-energy requirements in most applications. In order to achieve high removal efficiencies, dry filters must be made of extremely low porosity materials which impose a high resistance to the flow of gas, or pressure drop (expressed in inches of water column where one inch of water column equals 0.43 pounds per square inch absolute) through the filter media. The higher the pressure drop across a control device, the higher the electrical energy requirement to operate larger fan motors needed to

overcome the flow resistance. Therefore, high-efficiency controls are also high-energy controls with correspondingly high operating costs.

Table 1-1 Filtration Controls for T-Particulate Matter and T-Aerosols

CONTROL TECHNOLOGY	SUBSTANCE GROUP	CONTROL EFFICIENCY
Diesel Particulate Filters	Dry particulate	85%
PTFE membrane baghouse	Dry particulate	99-99.9 %
HEPA filter and prefilter	Dry particulate	99.9-99.99 %
Wet packed scrubber	Aerosols	90-98 %

Diesel Particulate Filters (DPFs)

DPFs allow exhaust gases to pass through the filter medium, but trap diesel PM. Depending on engine baseline emissions, fuel sulfur content, and emission test method or duty cycle, DPF's can achieve a PM emission reduction of greater than 85 percent. In addition, DPFs can reduce HC emissions by 95 percent and CO emissions by 90 percent. Limited test data indicate that DPFs can also reduce NOx emissions by six to ten percent. Most DPFs require periodic regeneration, most commonly achieved by burning off accumulated diesel PM. There are both active DPFs and passive DPFs. Active DPFs use heat generated by means other than exhaust gases (e.g., electricity, fuel burners, microwaves, and additional fuel injection to increase exhaust gas temperatures) to assist in the regeneration process. Passive DPFs, which do not require an external heat source to regenerate, incorporate a catalytic material, typically a platinum group metal, to assist in oxidizing trapped diesel PM. Although there is a slight increase in directly emitted NO_2 during the regeneration of passive DPFs, overall there is ultimately a net reduction in NO_2 emissions.

Polytetrafluoroethylene Membrane Baghouse

Baghouses remove particulate matter from gas streams in the same manner as a household vacuum cleaner bag, using the principle of aerodynamic capture by fibers. In lieu of conventional natural or synthetic bag fabrics such as cotton or Nomex, polytetrafluoroethylene (PTFE, trade name Gore-Tex) fabric consists of a very thin laminate of microporous Teflon on a suitable substrate. PTFE bags are capable of a particulate collection efficiency of 99 to 99.9 percent for particle sizes down to 1.0 micron (μm) when properly operated and maintained. Because of the microporous nature of PTFE, air-to-cloth ratios for these applications are lower than with conventional fabrics, requiring more collector area for a given volume flow rate of gas at a higher relative pressure drop. PTFE can tolerate moderately high temperatures (400^{o}F) at the expense of shortened bag life. The current trend in bag cleaning is the pulsejet technology, where tubular bags are supported from the inside by metal wire frames. Gas flows across the fabric from the outside inward, exiting at the top of the bags. Periodically, a blast of compressed air from a fixed nozzle located inside the wire frame causes the bag to inflate outward, thus knocking the accumulated toxics-bearing dust off the bag exterior and into the baghouse hopper, ready for collection and disposal as dry potentially hazardous solid waste.

High-efficiency Particulate Arrestors(HEPA) Filters

Used in conjunction with a baghouse or cartridge filter as a prefilter, high-efficiency particulate arrestors (HEPA) filters can trap toxic particles as small as 0.1 μm at an efficiency of 99.99 percent or greater. Like cartridge filters, HEPA filter elements are of pleated construction. Air-to-cloth ratios for HEPA filters are low due to high media density, low porosity, and resulting high-pressure drop. HEPA filters are generally limited to ambient temperature (100^{O}F), though special applications for higher temperatures are available. Unlike bags or cartridge filters, HEPA filters are not automatically cleaned. When a HEPA filter element becomes loaded with particulate matter, the element is changed out and disposed of as dry solid waste (possibly hazardous).

Wet Packed Scrubber

The standard air pollution control system for electroplating and anodizing, these devices consist of a vertical column made of fiberglass or other non-corrosive material loosely filled with specially shaped plastic packing material which maximizes gas-to-liquid contact and minimizes pressure drop across the column. Exhaust air from a plating or anodizing tank line enters at the bottom of the scrubber and exits at the top. The scrubbing solution is pumped from a reservoir at the base of the scrubber and sprayed down into the packing from the top. This flow scheme is called counter-current scrubbing and is the dominant method in use today due to its high pollutant removal efficiency, ranging from 90 to 98 percent, depending on residence (contact) time and solution freshness.

Wet packed scrubbers typically use a caustic solution (dilute sodium hydroxide) for absorbing acid mists. For absorbing caustic mists, acid solutions (dilute sulfuric acid) are typically employed. Scrubber solutions are maintained at the proper pH by automatic addition of concentrated sodium hydroxide or sulfuric acid solutions to scrubber make-up water, whichever is applicable. Usually, just slightly acidic or basic conditions are maintained with pH in the 5 to 6 range for acid solutions or 8 to 9 range for caustic solutions. As the scrubber solution becomes loaded with absorbed air contaminants, including trace metals and salts resulting from neutralization reactions, scrubber efficiency is diminished and the risk of clogging the packing increases. Therefore, scrubber solutions must be refreshed by either continuously draining off a small flow of solution and replacing it with fresh water and reagent (the engineering term for this is "blowdown") or by periodically replacing the entire contents of the scrubber solution reservoir. In either case, a liquid/sludge waste stream containing metals and salts is generated. With continuous blowdown, the liquid effluent may need on-site pretreatment prior to discharge into municipal sewers to remove heavy metals. With periodic change out, the spent solutions may need to be disposed of as liquid hazardous waste.

Control Technology for Toxic Volatile Organic Compounds (T-VOC) and Combined Controls for Toxic Halogenated Organic Compounds (T-HOC)

Table 1-2 summarizes feasible air pollution control technologies for T-VOC and T-HOC. These control techniques are characterized by moderate to high-energy requirements in most applications. Pressure drops can range from very low (afterburners) to very high (carbon adsorption), with corresponding energy requirements. In general, high DRE controls are also high-energy controls with correspondingly high operating costs.

Table 1-2 Controls for T-VOC and Halogenated T-VOC

CONTROL TECHNOLOGY	SUBSTANCE GROUP	CONTROL EFFICIENCY
Combined Controls:		
Regenerative thermal oxidizer with dry scrubber and PTFE membrane baghouse	Halogenated T-VOC (high concentration)	99.9 - 99.99 %
Moving bed carbon adsorption concentrator with regenerative thermal oxidizer, dry scrubber and PTFE membrane baghouse	Halogenated T-VOC (high concentration)	90 - 99 %
Carbon Absorption Controls:		
Fixed bed with regenerative solvent reclaimer	T-VOC Halogenated T-VOC	50-99 %
Moving bed with regenerative solvent reclaimer	T-VOC Halogenated T-VOC	50-99 %
Moving bed with regenerative thermal oxidizer	T-VOC	50-99 %
Fluidized bed with regenerative thermal oxidizer	T-VOC	50-99 %
Fixed bed disposable	T-VOC Halogenated T-VOC	50-99 %

Oxidation

Oxidation is the process of converting VOC gases to carbon dioxide and water through combustion. Of the various types of oxidizers available, the two basic types of equipment used most often are thermal oxidizers and catalytic oxidizers (Table 1-3). Thermal oxidizers rely on direct contact between toxic gases and high-temperature flames to disassociate and destroy toxic substances. Catalytic oxidizers rely on an active catalyst bed at moderate temperatures to break intramolecular bonds, also causing disassociation and destruction of toxic substances.

Table 1-3 Thermal and Catalytic Controls for T-VOC

CONTROL TECHNOLOGY	SUBSTANCE GROUP	CONTROL EFFICIENCY
Direct flame afterburner 1,200 - 1,400 ^{O}F, t> 0.3 sec*	T-VOC EtO	95-98 %
Recuperative heat exchanger oxidizer 1,400 - 1,600 ^{O}F, t > 0.5 sec	T-VOC	98-99 %
Regenerative heat exchanger oxidizer 1,800 - 2,000 ^{O}F, t > 0.8 sec	T-VOC	99-99.9 %
Catalytic oxidizer 700 - 800 ^{O}F, t > 0.1 sec	T-VOC EtO	90-95 %

Thermal Oxidizers

There are three main categories of thermal oxidizers that could be used to control VOCs: afterburners with no heat recovery, thermal oxidizers with recuperative heat recovery and highly efficient regenerative heat recovery oxidizers. When thermal oxidizers are used to destroy halogenated organic compounds, special materials or construction are often required, such as fiber-reinforced plastic (FRP) or stainless steel. In addition, a downstream scrubber is frequently needed to minimize releases of halogenated acid gases. The extent and type of these additional items depend upon the level of the halogenated compounds in the inlet stream and applicable regulatory requirements. The following paragraphs briefly describe the three types of thermal oxidizers.

Afterburners: Afterburners are most commonly used to control intermittent and emergency releases of VOCs. Due to factors such as noise and the lack of heat recovery, (which results in high energy consumption and high NO_X, CO, and CO_2 emissions) their use for steady-state control of VOCs is not widespread. They are most often used for controlling intermittent releases of ethylene oxide from medical or food product sterilizers. Afterburners operate in the 1,200 ^{O}F to 1,400 ^{O}F range with a residence time of at least 0.3 seconds and destruction removal efficiency of 95 to 98 percent.

Both recuperative and/or regenerative thermal oxidation systems generally consist of a refractory-lined chamber, one or more burners, a temperature-control system and heat-recovery equipment. Contaminated gases are collected by an industrial ventilation system and delivered to the preheater inlet, where they are heated by indirect contact with the hot oxidizer exhaust. Gases are then mixed thoroughly with the burner flame in the upstream portion of the unit, and then pass through the combustion zone where the combustion process is completed. The VOC concentrations in most industrial process vent-streams are too low for self-sustaining combustion. Therefore, a supplemental fuel (natural gas) is required. Depending on the heat recovery efficiency, this supplemental fuel requirement may or may not translate into significant annual operating costs.

Recuperative thermal oxidizers: Recuperative thermal oxidizers recover 60 to 80 percent of the system's energy demands with a shell and tube type heat exchanger. Recuperative units operate in the 1,400^{O}F to 1,600^{O}F range with a residence time of at least 0.5 seconds and DREs of 98 to 99 percent. Thermal oxidizers with recuperative heat exchangers can recover 80 to 95 percent of the energy requirement. These recuperative thermal oxidizers use a ceramic medium for heat transfer, which is stored in three or more dedicated beds that feed a central combustion chamber. Valves control which bed is being preheated by exhaust gases and which bed is transferring its heat to incoming VOC contaminated air.

Regenerative thermal oxidizers: Regenerative units operate in the 1,800 ^{O}F to 2,000 ^{O}F range with a residence time of at least 0.8 seconds and DREs of 99 to 99.9 percent. Regenerative oxidizers cost more than recuperative designs of equal capacity. However, their life-cycle costs are less because annual fuel costs are less than for recuperative units.

Catalytic oxidizers

Catalytic oxidation is similar to thermal oxidation in that heat is used to convert the VOC contaminants to carbon dioxide and water. However, a catalyst is used to lower the oxidation activation energy, allowing combustion to occur at 600^{o}F to 800^{o}F, significantly lower temperatures than those of thermal units. In catalytic oxidation, the preheated gas stream is passed through a catalyst bed, where the catalyst initiates and promotes the oxidation of the VOC without being permanently altered itself. Catalyst units have a residence time of at least 0.1 seconds and DREs of 90 to 95 percent. The primary advantage of catalytic oxidation over thermal oxidation is lower fuel cost, depending on the efficiency of the air preheater. Disadvantages include higher capital costs, periodic catalyst replacement, and the inability to handle halogenated organics.

The most common catalyst configuration is the plate-and-frame arrangement, in which blocks of catalyst material are held in place within the oxidizer body by a metal frame. The catalyst consists of a reactive material (such as platinum, platinum alloys, copper chromite, copper oxide, chromium, manganese or nickel) on an inert substrate (such as honeycomb-shaped ceramic). For the catalyst to be effective, the reactive sites upon which the VOC gas molecules react must be accessible. The build-up of polymerized material or reaction with certain metal particulates will prevent contact between reactive sites and the exhaust gas. A catalyst can be reactivated by removing such a coating. Cleaning methods vary with the type of catalyst and include air blowing, steam blowing and operating at elevated temperatures (100^{o}F above the operating temperature) in a clean air stream. As with other catalytic processes, oxidation catalyst material can be lost by erosion, attrition, and vaporization at high temperatures.

Carbon Adsorption

Adsorption is a process by which VOCs are retained on the surface of granular solids. The solid adsorbent particles are highly porous and have very large surface-to-volume ratios. Gas molecules penetrate the pores of the adsorbent and contact the large surface area available for adsorption.

Materials such as activated carbon, silica gel, or alumina may be used as adsorbents. Activated carbon is the most common adsorbent for VOC removal. Carbon may also be used to remove other compounds such as sulfur-bearing or odorous materials. Advantages of carbon adsorption include the recovery of a relatively pure product for recycle and reuse and a high removal efficiency with low inlet concentrations. In addition, if a process stream is already available onsite, additional fuel costs are low, the main energy requirement being electrical power to run fan motors. Disadvantages are the potential generation of a hazardous organic waste if the recovered product cannot be reused, the generation of potentially contaminated wastewater that must be treated (when regeneration is by steam), and potentially higher operating and maintenance costs for the disposal of these two waste streams.

Fixed, moving, or fluidized-bed regenerative carbon adsorption systems operate in two modes, adsorption and desorption. Adsorption is rapid and removes from 50 to 99 percent of VOCs in the air stream, depending on their composition, concentration, temperature, and bed characteristics. Well-designed and operated systems, however, can usually achieve removal efficiencies in the 90 to 99 percent range. Eventually, the adsorbent becomes

saturated with the vapors and system efficiency drops. At this point (called "breakthrough," since the contaminants "break through" the saturated bed), the VOC contaminated stream is directed to another bed containing regenerated adsorbent, and the saturated bed is then regenerated. Although it is possible to operate a nonregenerative adsorption system (i.e., the saturated carbon is disposed of and fresh carbon is placed into the bed), most applications, especially those with high VOC loadings, are regenerative.

The adsorption/regeneration cycle can last from a few hours to many days, depending on the inlet VOC concentration, the variability of VOC loading and the design parameters of the carbon bed (e.g., the amount of carbon and the bed's depth). Saturated carbon beds can be regenerated with steam, hot air, or a combination of vacuum and hot gas. Although the bed can be regenerated, complete desorption is not possible, and a small amount of VOC (called a "heel") will remain on the bed after each regeneration. After time, the bed can no longer be used and must be replenished with fresh carbon. Carbon life of five years is typical. The concentrated VOCs in the regeneration stream must be reclaimed (decanted or distilled), destroyed (oxidized), or otherwise disposed of in an environmentally sound manner.

An important consideration in the design of a carbon adsorption system is the temperature of the gas stream. Adsorption capacity of the carbon, and thus the performance of the adsorber, are directly related to this temperature -- adsorption capacity decreases with increasing temperature. Operating temperature must be less than 100^{o}F. Otherwise, the gas will have to be cooled in a heat exchanger prior to being passed through the absorber. Also, the relative humidity of the gas stream can affect the operating capacity of the carbon, and should not exceed 50 percent. Entrained liquid and particulate matter can also cause operating problems, such as plugging, and should be removed by mist eliminators or a packed filter upstream of the absorber. In addition, VOCs with boiling points above 300^{o}F (such as phenol) will be collected by the carbon, but will not be removed during regeneration of the bed. These compounds should be removed upstream of the absorber inlet or captured on a sacrificial bed in the absorber.

Equipment has been developed that combines moving-bed activated carbon adsorption with thermal or catalytic oxidation. VOCs are collected by rotating-wheel carbon beds and subsequently desorbed with hot air. The concentrated exhaust stream is then sent to a thermal or catalytic oxidizer, where the VOC is combusted. The benefit of this configuration is that the volume of the desorption air stream is as much as fifteen times less than the original VOC stream, which translates into a smaller and less expensive oxidizer. Fuel costs are also lower than for a full-sized oxidizer for the same application. This approach is particularly useful for VOC streams with low concentrations and high volumes [concentrations less than 100 ppm and flow rates over 10,000 cubic feet per meter (CFM)], such as paint spray booths. Combination systems provide the inherent advantages of the individual techniques - the high destruction efficiency and no generation of liquid or solid waste of oxidation, and the low fuel consumption and good control efficiency of adsorption - without many of the disadvantages of each system. The ability of combination units to concentrate the VOC emission stream and thus lower the flow rate requiring oxidation not only minimizes the capital costs associated with the oxidizer, but also maximizes the energy input derived by combusting the VOC. In addition, by eliminating the steam for regeneration (and the subsequent condensate), the system does not generate contaminated wastewater.

Chemical Absorption or Wet Scrubbing

Absorption is the mass transfer of selected components from a gas stream into a nonvolatile liquid. Such systems are typically classified by the absorbent used (water or organic liquid, such as mineral oil or low-volatility hydrocarbon solvent). The choice of absorbent depends on the solubility of the gaseous VOC compounds and the cost of the absorbent. Absorption will occur when the concentration of the organic species in the liquid phase is less than the equilibrium concentration of the gaseous component. The gradient between the actual and the equilibrium concentrations is the driving force. Absorption is a function of both the physical properties of the system and the operating parameters of the absorber. The best absorption systems are characterized by low operating temperatures, large contacting surface areas, high liquid-to-gas (L/G) ratios and high VOC concentrations in the gas stream. Removal efficiencies in the 90 to 98 percent range may be achieved for well-designed and operated systems. Absorption is also efficient for dilute streams provided the VOC is highly soluble in the absorbent. Packed columns and plate columns are commonly used for high-efficiency pollution control applications.

The efficiency of absorption as a VOC control technique depends on several factors: the solubility of the VOC in the solvent; the concentration of the VOC in the gas stream; temperature; the L/G ratio; and the contact surface area. Higher gas solubilities and inlet concentrations provide a larger driving force for more efficient absorption. Since lower temperatures correspond to higher gas solubilities, absorption is also enhanced at reduced temperatures. The solvent flow rate is determined from the minimum L/G ratio, which can be found from material balances and equilibrium data. Generally, the most economical absorption factor is 1.25 to 2 times the minimum L/G. Absorption efficiency increases with contact surface area. Increasing the surface area, however, also raises the pressure drop through the packed bed. Thus, while a larger contact surface area may increase the overall removal efficiency, the higher energy consumption (fan power) may make it uneconomical.

Two modes of operation are typical for absorption systems: simple absorption and complex absorption. Simple absorption uses a single liquid pass system, where the VOC contaminated liquid is disposed of directly after exiting the absorber. In complex absorption, the VOC contaminant is recovered via stripping or other desorption techniques and the cleaned absorbent is recycled to the absorber. This option is generally feasible for organic-based systems employing expensive absorbents. In either case, waste streams are generated. In simple absorption systems where the absorbent is water, dilute acids, or dilute caustics, the spent solution, called "blowdown," is continuously bled off and replenished with fresh reagent. Typical blowdown rates are one to 10 percent of the solution recirculation rate, depending on the concentration of VOC air contaminants being absorbed. In complex absorption systems, a concentrated VOC stream is generated and must be reclaimed, destroyed, or otherwise disposed of in an environmentally sound manner.

CHAPTER 2

Introduction

General Information

Environmental Factors Potentially Affected

Determination

Discussion and Evaluation of Environmental Checklist

INTRODUCTION

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

GENERAL INFORMATION

Project Title:	Proposed Amended Rules to Implement Office of Environmental Health Hazard Assessment (OEHHA) Revisions to the Air Toxics Hot Spots Program Risk Assessment Guidelines
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive, Diamond Bar, CA 91765
Rule Contact Person:	Eugene Kang, (909) 396-3524
CEQA Contact Person:	Cynthia Carter, (909) 396-2431
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:	Not applicable
Surrounding Land Uses and Setting:	Not applicable
Other Public Agencies Whose Approval is Required:	Not applicable

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

☑	Aesthetics	☐	Geology and Soils	☐	Population and Housing
☐	Agricultural Resources	☑	Hazards and Hazardous Materials	☑	Public Services
☑	Air Quality	☑	Hydrology and Water Quality	☐	Recreation
☐	Biological Resources	☐	Land Use and Planning	☑	Solid/Hazardous Waste
☐	Cultural Resources	☐	Mineral Resources	☑	Transportation/Traffic
☑	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 has been 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: March 23, 2015

Signature: 

Michael Krause
Program Supervisor, CEQA Section
Planning, Rules, and Area Sources

DISCUSSION AND EVALUATION OF ENVIRONMENTAL IMPACTS

As previously discussed, implementation of the Revised OEHHA Guidelines is expected to increase the estimated health risk by about 3 times. This Draft EA evaluated potential adverse environmental impacts that could potentially occur from additional air pollution control equipment needed as a result of implementing the Revised OEHHA Guidelines for permitting new and modified sources (Rules 1401 and 1401.1) and facilities under the AB2588 Hot Spots program (Rule 1402). There are no expected environmental impacts resulting from amendments to Rule 212 as a result of the revised OEHHA guidelines because changes to this rule are administrative in nature and do not require or cause a physical change to the environment. This analysis assumes that there would be 112 new or modified permit applications and about six AB2588 facilities that could potentially be affected annually and require additional pollution control equipment. Potential adverse environmental impacts can occur from the construction and operation of air pollution control equipment. A discussion of the assumptions and basis for the number of facilities that could potentially require additional pollution control devices (APCDs) for each rule is discussed below.

Rule 212 Analysis

Rule 212 establishes standards for approving permits and issuing public notice. Under Rule 212, public notification is required for installation of new or modified equipment that increases risk by one in one million. This provision does not apply to facilities that have a facility-wide risk of less than ten in one million. The requirements in Rule 212 are administrative and informational in nature, and will not have any direct or indirect physical environmental impact.

Rule 1401 and 1401.1 Analysis

To identify new and modified permitted equipment source categories that under Rule 1401 and 1401.1 could potentially need new or additional air pollution controls as a result of using the Revised OEHHA Guidelines, the SCAQMD staff evaluated permits that were issued over a five year period from October 2009 to October 2014. Based on this evaluation, the SCAQMD staff identified three general groups of equipment source categories based on the need for new or additional pollution controls using the Revised OEHHA Guidelines:

1) No new or additional air pollution controls needed:
2) New or additional pollution controls likely needed and/or additional time needed to evaluate potential impacts; and
3) Potential for new or additional air pollution controls could be required for some permits within an equipment source category.

Under the first group, no new or additional pollution controls are expected using the Revised OEHHA Guidelines because either the cancer risk was well below the Rule 1401 risk thresholds of 1 in one million without T-BACT, and 10 in one million with T-BACT, or there were no toxic emissions associated with the permitted source. For the first group, no further environmental analysis was needed. Under the second group, SCAQMD staff identified two equipment source categories (1) coating and solvents used in spray booths, and (2) retail gasoline dispensing facilities. For coating and solvents used in spray booths, for a percentage of permits reviewed it is likely that new or additional pollution controls would be needed to meet the Rule 1401 cancer risk threshold using the Revised OEHHA Guidelines. For retail gas stations, the SCAQMD staff has received new information from CARB staff regarding the latest speciation of emissions from gasoline dispensing. The SCAQMD staff needs additional time to assess the effects of this information and how it could affect new and modified gasoline dispensing facilities combined

with the Revised OEHHA Guidelines. Therefore, Rule 1401 includes a provision to allow these two source categories to continue to use the existing OEHHA Guidelines. The SCAQMD staff will develop source-specific requirements for these source categories to reduce toxic emissions and to address potential permitting issues. For gasoline dispensing facilities, the SCAQMD staff will expedite review of emissions data for gasoline dispensing to better understand potential impacts from gasoline dispensing facilities before using the Revised OEHHA Guidelines. Since these two equipment and industry categories will continue to use the previous SCAQMD permitting guidelines (Version 7.0, July 2005), there are no additional adverse environmental impacts associated with the Revised OEHHA Guidelines of implementation of PAR 1401 and 1401.1.

Lastly under the third group, based on review of five years of permitted data there were five equipment source categories that the estimated cancer risk with the Revised OEHHA Guidelines could require additional controls: metal plating facilities, crematories, plasma arc and laser cutting, wet gate printing and film cleaning, and asphalt and concrete batch blending. Table 2-1 provides a summary of the affected toxic air contaminants and the possible air pollution control technology for these each of the identified source categories. For plasma arc and laser cutting, most permits are currently close to 1 in one million so it is reasonable to expect for this source category nearly all permits for plasma arc and laser cutting will need additional air pollution controls in order to satisfy T-BACT requirements in Rule 1401, for sources exceeding 1 in a million cancer risk. The SCAQMD staff is working on a rule for metal grinding and cutting that will address emissions from plasma arc and laser cutting. Based on the permitted data, staff estimates that approximately 24 plasma arc and laser cutting permits annually could have estimated health risks greater than 1 in a million requiring pollution additional controls such as a bag house to capture metal particulates. For the remaining equipment or industry categories in Table 2-1, based on the five years of permitted data approximately one permit per year could potentially require additional air pollution controls.

Table 2-1 PAR 1401 New or Modified Permits that Potentially Could Require Additional Pollution Controls Using the Revised OEHHA Guidelines

Equipment Category	Toxic Air Contaminants	Typical Control Device
Metal Plating Facilities – Plating Tanks	Metal – nickel, hexavalent chromium, cadmium	HEPA filter for nickel plating tank
Crematory – Furnace	Combustion emissions – PAHs	Oxidation catalysts
Plasma Arc and Laser Cutting	Nickel and hexavalent chromium emissions	Baghouse for metal particulates
Wet Gate Printing and Film Cleaning (Perc)	Perchloroethylene emissions from film cleaning	Carbon adsorber
Asphalt Blending and Concrete Batch (Diesel ICEs)	Diesel particulate	Diesel particulate filter on diesel engine

[1] Based on SCAQMD analysis of permits issued between 2009 and 2014.

SCAQMD staff did not include equipment or industry categories that are exempt from Rule 1401 such as emergency internal combustion engines and wood product stripping. SCAQMD staff also did not analyze impacts for permits related to change of ownerships, alterations, or modifications that did not result in an increase in toxic emissions. District Rule 1421 – Control of Perchloroethylene Emissions from Dry Cleaning Systems contain requirements for the phase out of perchloroethylene dry cleaning equipment by 2020 and the state ATCM does not allow purchase of new perchloroethylene dry cleaning equipment. SCAQMD staff did not include the permitting of this equipment category into the impact analysis for this rule development since permitting data shows no permits issued for new perchloroethylene dry cleaning machines over the past five years.

AB2588 Air Toxics Hot Spots Program (Core Facilities) – Rule 1402 Analysis

Since Rule 1402 adoption in 1994, the SCAQMD staff has approved approximately 300 facility HRAs. Based on the most recent approved HRAs for each facility, the SCAQMD staff estimates that about 22 facilities could potentially have a cancer risk greater than or equal to 25 in a million when using the Revised OEHHA Guidelines. Under Rule 1402, if the facility-wide health risk is greater than or equal to the action risk level the operator is required to implement risk reduction measures specified in a risk reduction plan to reduce the impact of total facility emissions below the action risk level as quickly as feasible, but by no later than three years. Regarding facilities that are in the AB2588 program, but have not been required to submit an HRA, the SCAQMD staff found that although more facilities will likely be required to submit an HRA, it is not expected that their cancer risk will be over the action risk threshold of 25 in one million. Therefore, no additional pollution controls are assumed for those facilities.

SCAQMD staff evaluated the main toxic driver(s) for a total of 22 AB2588 affected facilities that could potentially be required to implement risk reduction measures to make an estimate of the types of additional pollution controls that could potentially be implemented. Rule 1402 establishes a "facility-wide" risk threshold, so there are a variety of options which can be implemented such as process changes, material changes, additional air pollution controls, and reduced throughput. Table 2-2 summarizes the types of the 22 facilities, key toxic air contaminants that are contributing to the cancer risk, and the type of air pollution controls that could be implemented to reduce the cancer risk.

Table 2-2 PAR 1402 Potential Air Pollution Control Device(s) For Use to Reduce Cancer Risk by AB2588 Facilities

Facility Type	Key Toxic Driver	Air Pollution Control Device(s)
Aerospace	hexavalent chromium, perchloroethylene, tetrachloroethylene	Scrubber, Carbon Adsorber
Aerospace	hexavalent chromium, cadmium	HEPA, Scrubber
Aerospace	perchloroethylene, tetracholorethylene, hexavalent chromium	Carbon Adsorber, HEPA, Scrubber
Aerospace	hexavalent chromium	HEPA, Scrubber
Aerospace	hexavalent chromium	HEPA, Scrubber
Aerospace	lead	HEPA, Scrubber
Asphalt Manufacturer	PAHs, formaldehyde	Scrubber, Carbon Adsorber

Facility Type	Key Toxic Driver	Air Pollution Control Device(s)
Hospital	formaldehyde, PAHs	Thermal oxidizer, Oxidation catalysts
Metal Forging and Heat Treating	nickel	HEPA, Scrubber
Metal Melting	cadmium, lead	HEPA, Scrubber
Metal Melting	cadmium, lead	HEPA, Scrubber
Metal Melting	arsenic, cadmium	Scrubber
Metal Plating and Finishing	hexavalent chromium, nickel, cadmium	HEPA, Scrubber
Metal Plating and Finishing	hexavalent chromium	HEPA, Scrubber
Metal Plating and Finishing	hexavalent chromium	HEPA, Scrubber
Petroleum Refining	1,3-butadiene, hexavalent chromium	Thermal oxidizer, HEPA
Petroleum Refining	diesel particulate matter, 1,3-butadiene (engines)	Diesel particulate filters, Thermal Oxidizer
Petroleum Refining	benzene, PAHs	Thermal oxidizer, Oxidation catalyst
Petroleum Refining	diesel particulate matter (engines), arsenic	Diesel particulate filters, Scrubber
Waste Management	dioxins, furans	Thermal oxidizer
Waste Management	formaldehyde	Carbon Adsorber
Waste Management	formaldehyde	Carbon Adsorber

It is assumed that 22 facilities could potentially need to install additional air pollution controls due to the Revised OEHHA Guidelines. This is based on review of approved HRAs that have been received through implementation of the AB2588 program. This is likely a conservative estimate (meaning there are not likely to be more such facilities) where staff estimated based on previously approved HRAs. It is possible that some facilities could have implemented emission reduction projects that have reduced air toxic emissions and health risks since the HRA was approved.

AB2588 is the state-required Air Toxics Hot Spots Program required by Health and Safety Code §44360(b)(2) which is implemented here in the SCAQMD through Rule 1402. Under the AB2588 program, facilities are divided into four implementation groups. During the "quadrennial" review, AB2588 facilities are required to submit a more detailed emissions inventory for 177 toxic air contaminants. (During the three years between the quadrennial review AB2588 facilities submit a toxics inventory for 23 toxic air contaminants.) Based on the quadrennial toxics emissions inventory, SCAQMD staff prioritizes facilities and sends a letter to those facilities with a high Priority Score to submit an even more detailed emissions inventory and HRA. Implementing the AB2588 program using the quadrennial review approach provides a more even workflow and reduces the impact on affected facilities to provide a detailed inventory. Implementation of the Revised OEHHA Guidelines will follow the existing quadrennial review process. Thus staff analysis examined actions and operations over a four year period to estimate future impacts. It is speculative to assume beyond these proposed requirements that will be well established by then and the nature of business operations, need and usage of TACs, and cleaner technologies are expected to change the impacts beyond four years.

The review and approval process for the AB2588 program is staggered, even for facilities within the same quadrennial review cycle. SCAQMD staff is estimating that of the 22 identified

AB2588 facilities, one-fourth of the 22 facilities which is approximately six AB2588 facilities could potentially install air pollution control equipment annually. In analyzing the potential impacts of the Revised OEHHA Guidelines, for worst case analysis it is assumed that 2 facilities would be installing equipment on a given day.

A total of 134 facilities are estimated to be installing and operating 152 pieces of control equipment. A summary of the types of pollution controls from Rules 1401 and 1402 are provided in Table 2-3 below.

Table 2-3 Summary of Types of APCD's to be Installed at Estimated Affected Facilities and Analyzed for Impacts

	Types of APCDs							
	HEPA Filters	**Oxidation Catalysts**	**Baghouses**	**Carbon Adsorber**	**Diesel Particulate Filter**	**Wet Scrubbers**	**Thermal Oxidizers**	**Total**
PAR 1401 Impacts (# of APCDs)	4	4	96	4	4	0	0	112
PAR 1402 Impacts (# of APCDs)	12	3	0	4	2	14	5	40
Total	16	7	96	8	6	14	5	**152**
Environmental Topics to be Analyzed	• Aesthetics • AQ • Solidwaste	• Aesthetics • AQ • Solidwaste	• Aesthetics • AQ • Energy	• AQ • Energy	• AQ • Energy	• Aesthetics • AQ • Energy • Hydrology • Solidwaste	• Aesthetics • AQ • Energy	

ENVIRONMENTAL CHECKLIST AND DISCUSSION

I. AESTHETICS.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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), d) In general, the proposed amended rules have no potential to affect scenic vistas because installation of add-on control equipment (i.e. HEPA filters, Thermal Oxidizers, Oxidation Catalysts, DPFs, Wet Scrubbers, Baghouses, and Carbon Adsobers) will occur at commercial, industrial, or institutional facilities. Likewise, additional light or glare would not be created since no additional light generating equipment would be required for the amended rule's implementation. Equipment used to control TAC emissions is typically located inside buildings which are located in industrial/commercial areas.

I. c) There will be additional pieces of industrial control equipment (i.e. HEPA filters, Thermal Oxidizers, Oxidation Catalysts, DPFs, Wet Scrubbers, Baghouses, and Carbon Adsobers), but the facilities will be installing in an existing commercial, industrial setting with commercial, industrial and institutional equipment so not likely to change the usual character or quality of the site and its surrondings. Therefore, there will be no significant impact to substantially degrade the existing visual character.

II. AGRICULTURE AND FOREST RESOURCES.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104 (g))?	☐	☐	☐	☑
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑

Significance Criteria

Project-related impacts on agriculture and forest 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 conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined in Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code § 51104 (g)).

- 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 use or conversion of forest land to non-forest use.

DISCUSSION

II. a), b), c), & d) No Impact. Land use, including agriculture- and forest-related uses, and other planning considerations are determined by local governments. While implementation of the proposed project may cause air pollution control equipment to be installed and operated on existing equipment to control toxic emissions, these activities will occur at established toxic emitting facilities which are located on previously developed land in primarily industrial areas and are not located in the vicinity of agricultural or forest areas.

Further, no new construction of buildings or other structures is expected that would require conversion of farmland to non-agricultural use or conflict with zoning for agricultural uses or a Williamson Act contract. Further, because the proposed project does not require construction or operation activities within an area designated as forest land, implementation of the proposed project is not expected to conflict with any forest land zoning codes or convert forest land to non-forest uses. Similarly, there is nothing in the proposed project that would affect or conflict with existing land use plans, policies, or regulations or require conversion of farmland to non-agricultural uses or forest land to non-forest uses. Thus, no agricultural land use or planning requirements will be altered by the proposed project.

Finally, in the event the proposed project is implemented, the installation of toxic control equipment will ensure that projected toxic emission reductions will occur and that air quality in the region will improve. Thus, assuring that these air quality improvements occur could provide benefits to agricultural and forest land resources by reducing the adverse oxidation impacts of ozone on plants and animals located in the Basin. Accordingly, these impact issues will not be further analyzed in the Draft EA.

Based upon these considerations, significant agricultural and forest resources impacts are not expected from implementing the proposed project, and thus, this topic will not be further analyzed in the Draft EA. Since no significant agriculture and forest resources impacts were identified for any of the issues, no mitigation measures are necessary or required.

III. AIR QUALITY AND GREENHOUSE GAS EMISSIONS

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

Significance Criteria

To determine whether or not air quality impacts from the proposed project may be significant, impacts will be evaluated and compared to the criteria in Table 2-4.

Table 2-4 SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds [a]		
Pollutant	**Construction** [b]	***Operation*** [c]
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
Toxic Air Contaminants (TACs), Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO2eq for industrial facilities	
Ambient Air Quality Standards for Criteria Pollutants [d]		
NO2 1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM10 24-hour average annual average	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation) 1.0 μg/m^3	
PM2.5 24-hour average	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation)	
SO2 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 μg/m^3 (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day Average Rolling 3-month average	1.5 μg/m^3 (state) 0.15 μg/m^3 (federal)	

[a] Source: SCAQMD CEQA Handbook (SCAQMD, 1993)
[b] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).
[c] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.
[d] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[e] Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day ppm = parts per million μg/m^3 = microgram per cubic meter ≥ = greater than or equal to
MT/yr CO2eq = metric tons per year of CO2 equivalents > = greater than

DISCUSSION

As discussed earlier under the "Environmental Checklist and Discussion", there are no expected impacts from Rule 212 as a result of the revised OEHHA guidelines. A discussion of the assumptions and basis for the number of facilities that could potentially require additional pollution controls under Rules 1401, 1401.1 or 1402 is discussed below. A summary of the type of pollution controls to be installed is provided in Table 2-3.

III. a) The SCAQMD is required by law to prepare a comprehensive district-wide Air Quality Management Plan (AQMP) which includes strategies (e.g., control measures) to reduce emission levels to achieve and maintain state and federal ambient air quality standards, and to ensure that new sources of emissions are planned and operated to be consistent with the SCAQMD's air quality goals. The AQMP's air pollution reduction strategies include control measures which target stationary, area, mobile and indirect sources. These control measures are based on feasible methods of attaining ambient air quality standards. Pursuant to the provisions of both the state and federal Clean Air Acts (CAA)s, the SCAQMD is required to attain the state and federal ambient air quality standards for all criteria pollutants.

Toxic Air Contaminants: General Identification and Control Measures (AB 2728)

AB 2728 was enacted in 1992 and amends the Tanner process (AB 1807) to reflect the shift of certain duties from the DHS to the California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessments (OEHHA). This law requires the ARB to identify all 188 hazardous air pollutants (HAPs) listed under Title III of the 1990 CAA Amendments as TACs under the AB 1807 process. It encourages local air districts to adopt TAC programs to enable local enforcement of Title III - Air Toxics of the federal CAA. AB 2728 further provides that districts may adopt more stringent requirements than those provided under AB 1807. Health & Safety Code 44300 et. Seq. sets forth the state's Air Toxics "Hot Spots" Program, which requires districts to use OEHHA for risk assessment. H&S 44360(b)(2)

Therefore, implementing the proposed rule amendments do not conflict or obstruct implementation of the AQMP or federal CAA.

III. b) and f) ***Criteria Pollutants***

Construction Impacts

Affected Facilities

SCAQMD staff is not certain as to the number of new and modified facilities planned to be constructed in the future. In order to reasonably foresee the number of future facilities affected by the proposed amendments, as previously discussed at the beginning of this Chapter, SCAQMD staff evaluated permitted data over a five year period from October 2009 to October 2014 to determine how those new and modified permits could potentially be affected by the Revised OEHHA Guidelines. The number of affected facilities and corresponding impacts to those facilities or operational activity of new or existing facilities were used as a surrogate to reasonably foresee and analyze possible impacts. SCAQMD staff is estimating permitting impacts over a four year period. Construction of new facilities beyond the four years scope is considered speculative according to CEQA Guidelines §15145 and will not be evaluated further in this analysis.

Construction emissions were estimated for the various construction phases for the installation of APC equipment. The phases are: grading/site preparation, paving, and equipment installation[2]. In addition, criteria pollutant emissions were calculated for all on-road vehicles transporting workers, vendors, and material removal and delivery. Since all phases must be entirely completed before the next phase can commence, there would be no overlap of construction phases for the construction of the new APCDs.

Any process substitutions or product reformulations are not expected to require installation of new equipment. Activities during construction that could potentially adversely affect air quality are those activities associated with the installation of control equipment.

PROJECT-SPECIFIC IMPACTS: The primary source of construction air quality impacts would be from those facilities installing add-on controls (thermal oxidizers, scrubbers, etc.). The type of construction-related activities attributable to facilities that would be installing control equipment would consist predominantly of cutting, welding, etc. These construction activities would not involve large-scale grading, slab pouring, or paving activities, that would be undertaken at typical land use projects such as housing developments, shopping centers, new industrial facilities, etc. Consequently NOx, SOx, and PM10 emissions from these types of construction activities would not occur as a result of implementing the proposed project. For the purposes of this analysis, construction activities undertaken at affected facilities are anticipated to entail the use of portable equipment (e.g., generators and compressors) and hand held equipment by small construction crews to weld, cut, and grind metal structures.

Construction emission estimates included construction equipment used during the phase (e.g., paver during paving) and on-road vehicles transporting workers, vendors, and material removal and delivery (see Appendix B). Hence, all of the proposed project elements were considered in the daily construction emissions. Because the construction phases do not overlap, the daily emissions are not additive.

To analyze the "worst-case" emissions from construction activities associated with the implementation of proposed amendments, the SCAQMD staff assumed that 2 facilities would be installing APCDs at any given time at affected facilities complying with the new risk thresholds.

The SCAQMD staff assumed that the maximum daily emissions from construction-related activities for each phase would all occur on the same day. Table 2-5 presents the results of the SCAQMD's construction air quality analysis. Appendix B contains the spreadsheets with the results and assumptions used for this analysis.

It should be noted that the analysis of construction air quality impacts was a "worst-case" analysis because it assumes that the peak construction would occur from the facilities that had the most APCDs to install. There are a number of factors that would preclude concurrent construction activities including: availability of construction crews, type and size of control equipment to be constructed, engineering time necessary to plan and design the

[2] *In general, no or limited construction emissions from grading are anticipated because modifications or installation of new equipment would occur at existing industrial/commercial facilities and, therefore, would not be expected to require digging, earthmoving, grading, etc.*

control equipment, permitting constraints, etc. Furthermore, as a "worst-case," the SCAQMD's air quality impacts analysis assumes that construction could take up to two months to complete. Depending on the type and size of the control equipment to be constructed, actual construction time could be substantially less than two months. Further, some affected facilities could reduce emissions through methods other than installing control equipment, thus, eliminating construction impacts at those facilities. Construction emissions at any one facility would not exceed any of the significance thresholds identified in Table 2-5. Finally, once construction is complete, construction air quality impacts would cease.

The peak daily emissions vary for each pollutant depending on the construction phase, which do not overlap in time as a site would need to be graded before pacing and paved before installing. The significance determination for the construction is based on the peak daily emissions during any construction phase. Therefore, all of the construction impacts from the project are not significant for criteria pollutant emissions.

Table 2-5 PARs Daily Peak Construction Emissions in SCAQMD for Two Facilities

Construction Phase	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOx, lb/day
Grading/Site Preparation	22.9	50.4	**8.0**	**3.2**	5.4	0.1
Paving	15.0	24.0	1.5	1.3	0.5	0.0
Equipment Installation	**29.9**	**59.2**	2.9	2.6	**6.9**	**0.1**
Significance Threshold, lb/day	550	100	150	55	75	150
Exceed Significance?	No	No	No	No	No	No

Localized Significance Thresholds for Construction

The localized significance threshold (LST) methodology was developed to be used as a tool to assist lead agencies to analyze localized impacts associated with proposed projects.

Because the proposed project affects facilities located across the region and it is unknown where future construction would be located, a LST analysis is not possible. The reason is the analysis to determine if construction or operation of the facility would have adverse localized impacts requires knowledge of the location (i.e. source receptor).

Operation Impacts

PROJECT-SPECIFIC IMPACT: Seven different types of add-on control equipment were identified to reduce toxic risk at the affected facilities. Two of the control devices, thermal oxidizers and carbon adsorbers, have the potential to generate adverse secondary air quality impacts during operation. To analyze maximum air quality impacts, it was assumed that for each operation needing to incinerate, the add-on control equipment would be a thermal oxidizer because they generate the highest emissions compared to other types of oxidizers. Thermal oxidizers destroy VOC emissions, but the process produces secondary criteria pollutant emissions such as CO, NO_x, VOC, SO_X, and PM10. Carbon adsorbers possess a carbon bed that requires regeneration for reuse. Emissions are produced when the spent carbon is regenerated.

The operation of the control equipment will reduce toxic exposure and will assist in meeting the risk threshold. The direct and indirect criteria emissions for each control equipment are totaled, in Table 2-8 and are less than the SCAQMD's mass daily operational significance thresholds; therefore, the proposed amendments are not expected to result in significant adverse operational criteria pollutant emission impacts.

Air Quality Assumptions

1. Affected facilities were assumed to operate the control equipment for eight hours per day, six days per week, and 52 weeks per year. These parameters represent a "worst-case" scenario, especially for the thermal oxidizer users because it overestimates the typical hours of high-fired load operation. For example, during some hours of operation incinerators operate on low-fired load when VOC emissions are not being vented to the combustion chamber, which results in lower combustion emissions from the thermal oxidizer. Additionally, not taken into consideration is the fact that hybrid technology has emerged that allows more efficient use of thermal oxidizers.

2. The exhaust emission flowrate (in cubic feet per minute, cfm) was estimated to be at 10,000 cfm.

Thermal Oxidizers

To estimate criteria pollutant emissions from thermal oxidizers, the SCAQMD used general default emission factors. Currently, SCAQMD permitting staff requires thermal oxidizers less than two million British thermal units (MMbtu) per hour to comply with a NOx concentration of 30 parts per million as BACT. This translates to an emission factor of 36 pounds per million cubic feet (MMcf) of natural gas used as the combustion fuel. The actual emission factors were derived from the Annual Emissions Reporting (AER) default emission factor of 130 pounds per MMcf (SCAQMD 2015 AER Program). For CO, VOC, PM10, and SOx, the SCAQMD permitting staff uses the general AER default emission factors for all sizes of thermal oxidizers.

As shown in Table 2-3, five thermal oxidizers were identified as likely to be needed for reducing risks to comply with the Revised OEHHA Guidelines. To calculate the daily emissions, the number of devices is multiplied by the assumed operating schedule and the amount of natural gas consumed, and then divided by the heating value of natural gas. The result is multiplied by the criteria pollutant emission factor to determine the pounds per day of emissions. At 10,000 cfm, the amount of natural gas consumed by a thermal oxidizer is 0.488 MMBTU per hour. The heating value of natural gas is 1050 MMBTU/MMcf.

(5 Thermal Oxidizers x 8 hrs/day x 0.488 MMBTU/hr)/(1050 MMBTU/MMcf) = 0.019 MMcf/day

Table 2-6 shows total criteria pollutant emissions generated by the facilities anticipated to install thermal oxidizers to reduce TAC emissions. Table 2-6 shows criteria pollutant emissions from the thermal oxidizers.

Table 2-6 Estimated Operational Emissions from Thermal Oxidizers

Criteria Pollutant	Emission Factor (lb/MMcf)	MMcf/day	Total Emissions (lb/day)
NO_x	130	0.019	2.47
VOC	7	0.019	0.13
CO	35	0.019	0.67
PM10	7.5	0.019	0.14
SOx	0.83	0.019	0.02

Carbon Adsorbers

As set forth in Table 2-3, approximately seven carbon adsorbers were identified as needed to comply with the proposed amendments instead of thermal oxidizers. For these facilities, thermal oxidizers were not considered to be applicable as a method of controlling TAC emissions. As described in Chapter 1, the initial control efficiency of carbon adsorption equipment is extremely high. As the activated carbon becomes saturated with organic material over time, control efficiency drops until breakthrough occurs. When breakthrough occurs, the saturated carbon must be removed and either disposed of or regenerated and the solvent recovered, or removed and destroyed.

Typically, the carbon is regenerated by raising the temperature of the carbon, evacuating the bed, or both. A regenerant, either steam or a noncondensible gas, is heated and injected into the carbon bed to desorb the organic materials. This procedure is usually performed daily, but may be done more or less frequently, depending on the capacity of the control unit and the concentration of the VOC being collected. The resulting heated organic mixture is vented to a condenser where the organic material is separated from the regenerant by gravity or distillation, and recycled or disposed of properly.

Regenerating carbon typically requires a combustion source using natural gas as the combustion fuel for boilers or steam generators used to heat the regenerant and/or to heat the carbon beds. Only 15 percent of the carbon bed volume collects toxic VOC emissions and a typical carbon bed is sized to reduce 55 pounds of VOC per day. Based on these two characteristics, a typical carbon bed size is approximately 400 pounds (55/0.15 = 400). According to the Standard Handbook of Environmental Engineering (Corbitt, 1990), the projected natural gas fuel use is 5.5 scf per pound of carbon and the carbon bed is assumed to be regenerated four times per day. The amount of natural gas required per day is 0.062 MMcf.

(400 lbs C) x (5.5 scf/lb C per regen) x (4 regen/day) x (8 Carbon Adsorbers) = 0.062 MMcf/day

Using emission factors from the SCAQMD's AER Program, the projected criteria pollutant emissions from the combustion equipment used to regenerate spent carbon are listed in Table 2-7.

Table 2-7 Estimated Operational Emissions from Regenerating Spent Carbon

Criteria Pollutant	AER Emission Factor (lb/MMcf)	Amount of Natural Gas Consumed (MMcf/day)	Total Emissions (lb/day)
NO_x	130	0.062	8.1
VOC	7.0	0.062	0.43
CO	35	0.062	2.2

Operation-related Mobile Source Emissions

PROJECT-SPECIFIC IMPACT: Some types of control equipment generate waste products that will need to be disposed of properly. The wastes and controls include: spent carbon generated from the carbon adsorption process; solids and sludge from wet scrubbers; and dry solids from filtration controls. Although thermal oxidizers produce little or no waste products, this part of the air quality analysis assumed that catalytic oxidizers could be used instead of thermal oxidizers. The catalysts in catalytic oxidizers need to be replaced every few years so this potential waste product was considered to contribute to the waste transport impacts.

Any wastes generated will require delivery and transport to disposal or recycling facilities. It is assumed here that enough waste could be generated as a result of proposed project to require a "worst-case" scenario of 2 truck trips per day of the 134 affected facilities[3] installing a control device to comply with PARs. To calculate transport truck trip emissions, it is assumed that two start-ups would be required, medium-duty trucks (5,000-8,500 pounds) transport wastes, and trucks would travel 20 miles each way.

TOTAL OPERATIONAL EMISSIONS

Total operational emissions from both stationary sources (control equipment) and mobile sources (waste disposal trucks) are shown in Table 2-8. As indicated in Table 2-8, operational emissions anticipated from implementing PARs do not exceed any significance threshold and therefore, are considered insignificant.

Table 2-8 SCAQMD Operational Criteria Pollutant Emissions

Description	CO	NOx	PM10	PM2.5	VOC	SOx
	(lb/day)					
Emissions from Thermal Oxidizers	0.67	2.47	0.14	0.07	0.5	0.05
Emissions from Regenerating Spent Carbon	2.1	8.1	--	--	0.43	--
Emissions from Mobile Sources[4]	0.3	1.4	0	0	0.1	0
Total Operational Emissions	**3.07**	**11.97**	**0.14**	**0.07**	**1.03**	**0.05**
Significance Threshold	550	55	150	55	75	150
Exceed Significance?	No	No	No	No	No	No

[3] *See Section XVII for a further discussion.*

[4] *No new permanent employees are expected for operation of the control equipment as a result of the proposed project; therefore no worker vehicles' emissions are calculated. However, delivery and disposal of new carbon or removal of spent catalysts is expected to generate mobile source emissions.*

Indirect Criteria Pollutant Emissions from Electricity Consumption

Indirect criteria pollutant and GHG emissions are expected from the generation of electricity to operate new equipment that occurs off-site at electricity generating facilities (EGFs). Emissions from electricity generating facilities are already evaluated in the CEQA documents for those projects when they are built or modified. The analysis in Section VI. Energy b), c) and d)) demonstrates that there is sufficient capacity from power providers for the increased electricity consumption from the PARs.

Under the SCAQMD Regional Clean Air Incentives Market (RECLAIM) program (that regulates NOx and SOx emissions), EGFs were provided annual allocations of NOx and SOx emissions that typically decline annually. However, the proposed project does require an increase energy and that increase in emissions from generating the additional energy (See Section VI Energy for impacts) from the EGFs would be required to offset any potential NOx and SOx emission increases under the RECLAIM program and other pollutants under the New Source Review Project. Thus, impacts from energy generation are anticipated to be to less than significant impacts.

III. c) *Cumulatively Considerable Impacts*

Based on the foregoing analysis, criteria pollutant project-specific air quality impacts from implementing PARs would not exceed air quality significance thresholds (Table 2-4), cumulative impacts are not expected to be significant for air quality. SCAQMD cumulative significance thresholds are the same as project-specific significance thresholds. Therefore, potential adverse impacts from implementing PARs would not be "cumulatively considerable" as defined by CEQA Guidelines §15064(h)(1) for air quality impacts. Per CEQA Guidelines §15064(h)(4), the mere existing of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulative considerable.

The SCAQMD guidance on addressing cumulative impacts for air quality is as follows: "As Lead Agency, the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR." "Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."[5]

This approach was upheld by the Court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that where it can be found that a project did not exceed the South Coast Air Quality Management District's established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines §15064.7, stating, "The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental

[5] SCAQMD Cumulative Impacts Working Group White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution, August 2003, Appendix D, Cumulative Impact Analysis Requirements Pursuant to CEQA, at D-3, http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf?sfvrsn=4.

effect." The court found that, "Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria…" "Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact." As in *Chula Vista*, here the District has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established South Coast Air Quality Management District significance thresholds. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. Here again the court upheld the South Coast Air Quality Management District's approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. Thus, it may be concluded that the Project will not cause a significant unavoidable cumulative contribution to an air quality impact.

III. d) ***Toxic Air Contaminants (TAC)***

Construction

Construction TAC emissions may be generated from diesel exhaust emissions (i.e. heavy-duty trucks and construction equipment).

Diesel exhaust particulate is considered a carcinogenic and chronic TAC. Since construction is expected to last less than three months and carcinogenic health risk is estimated over a 25 year exposure period for off-site occupational receptors and a 30 year exposure period for sensitive receptors, diesel exhaust particulate from construction is not expected to generate significant adverse health risk impacts.

Therefore, the PARs are not expected to generate significant adverse TAC impacts from construction.

Operation

Direct Health Risk Reductions from the PARs

The PARs would be expected to reduce overall TAC emissions. Therefore, the PARs are expected to have the benefit of reducing adverse health risk impacts from the facilities to nearby sensitive receptors.

Secondary Health Risk Impacts from the PARs

The operation of non-combustion APCDs, that may be needed to comply with the PARs, are not expected to generate any TAC emissions. These APCDs are expected to be powered by electricity, so no new combustion emissions would be generated.

The Thermal Oxidizers would generate TAC emissions (i.e. benzene, formaldehyde, and polycyclic aromatic hydrocarbons**)** from the combustion of natural gas. These Thermal Oxidizers will be subject to SCAQMD Air Permits and toxic rules. The Thermal Oxidizers will be evaluated on a case by case basis for their appropriate toxic risk screening levels (i.e. sensitive receptor distances). These toxic risk levels are the same as the CEQA thresholds and these Thermal Oxidizers are expected to comply with the PARs.

Based on the above discussion, the PARs are not expected be significant for exposing sensitive receptors to substantial concentrations.

III. e) ***Odor Impacts***

The operation of new APC equipment is not expected to generate any new odors as APC equipment are not typically odor generating equipment. The new APC equipment would be designed to reduce TAC emissions from facilities, which may potentially further reduce odors.

Therefore, the PARs are not expected to generate significant adverse odor impacts.

III. g) and h) ***Greenhouse Gas Impacts***

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 greenhouse gas (GHG) emissions in the atmosphere. The six major types of GHG emissions are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). The GHG emissions absorb longwave radiant energy emitted by the earth, which warms the atmosphere. The GHGs also emit longwave radiation both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation emitted by the atmosphere is known as the "greenhouse effect."

The current scientific consensus is that the majority of the observed warming over the last 50 years can be attributable to increased concentration of GHG emissions in the atmosphere due to human activities. Events and activities, such as the industrial revolution and the increased consumption of fossil fuels (e.g., combustion of gasoline, diesel, coal, etc.), have heavily contributed to the increase in atmospheric levels of GHG emissions. As reported by the California Energy Commission (CEC), California contributes 1.4 percent of the global and 6.2 percent of the national GHG emissions (CEC, 2004). Further, approximately 80 percent of GHG emissions in California are from fossil fuel combustion (e.g., gasoline, diesel, coal, etc.).

GHGs are typically reported as CO2 equivalent emissions (CO2e). CO2e is the amount of CO2 that would have the same global warming potential (relative measure of how much heat a greenhouse gas traps in the atmosphere) as a given mixture and amount of greenhouse gas. CO2e is estimated by the summation of mass of each GHG multiplied by its global warming potential (global warming potentials: CO2 = 1, CH4 = 21, N2O = 310, etc.).[6]

Construction

Based on the same assumptions made for the criteria pollutant estimates, approximately 430 metric tons of CO2e per facility would be generated from all construction activity including: grading, site preparation, paving, equipment installation, and construction and worker vehicles. Thus, since there are 134 facilities, there will be approximately 57,597 CO2e from the proposed project. Amortized over 30 years as prescribed by the SCAQMD Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans adopted by the SCAQMD Governing Board in December 2008, approximately 1,920 metric tons of CO2e emissions per year (see Appendix B for calculations) would be generated from construction activities over the life of the project.

[6] California Air Resource Board Conversion Table: http://www.arb.ca.gov/cc/facts/conversiontable.pdf

Operation

The operation of the HEPA filters, oxidation catalysts, Baghouses, DPFs, and wet scrubbers are not expected to generate greenhouse gases as the equipment control emissions with no secondary emissions impacts. However, the operation of the Thermal Oxidizers, Carbon Adsorbers, and delivery/disposal trucks are equal to 4,538.56 metric tons of CO2e per year.

Total GHG Emissions

The PARs may result in the generation of 1,920 amortized metric tons of CO2e construction emissions per year and 4538.56 metric tons of CO2e operational emissions per year. The addition of 6,458.56 metric tons of CO2e emissions is less than the SCAQMD significance threshold of 10,000 metric tons per year for CO2e from industrial projects.

Conclusion

Based upon these considerations, the proposed project would not generate significant adverse construction or operational air quality impacts and, therefore, no further analysis is required or necessary and no mitigation measures are necessary or required.

IV. BIOLOGICAL RESOURCES.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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) Conflict 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), c), & d) No Impact. All of the affected units operating at existing facilities are located primarily in developed industrial areas, which have already been greatly disturbed and paved. These areas currently do not support riparian habitat, federally protected wetlands, or migratory corridors. Additionally, special status plants, animals, or natural communities are not expected to be found within close proximity to the affected facilities. Therefore, the proposed project would 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. While some of the APCDs may be located at new facilities, the rule amendment does not cause the new facilities to be build. Construction of the required APCDs in itself would not have any impact on plants or animals beyond the impact of construction and operating a new source itself. The current and expected future land use development to accommodate population growth is primarily due to economic considerations or local government planning decisions. A conclusion in the Final Program EIR for the 2012 AQMP was that population growth in the region would have greater adverse effects on plant species and wildlife dispersal or migration corridors in the basin than SCAQMD regulatory activities, (e.g., air quality control measures or regulations). In addition, by reducing air pollutants, biological resources will benefit. Accordingly, these impact are considered insignificant.

IV. e) & f) No Impact. The proposed project is not envisioned to conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans. 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. Additionally, the proposed project will not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan, and would not create divisions in any existing communities because all activities associated with complying with the proposed project will occur at existing industrial facilities. Accordingly, these impact issues are considered insignificant.

Based upon these considerations, significant biological resources impacts are not expected from implementing the proposed project, and thus, this topic will not be further analyzed in the Draft EA. Since no significant biological resources impacts were identified for any of the issues, no mitigation measures are necessary or required.

V. CULTURAL RESOURCES.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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, site, or feature?	☐	☐	☐	☑
d) Disturb any human remains, including those interred outside 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) No Impact. There are existing laws in place that are designed to protect and mitigate potential impacts to cultural resources. Since construction-related activities associated with the implementation of the proposed project are expected to be confined within the existing footprint of the affected facilities that either have been fully developed and paved, or will be developed regardless of whether the project is approved, no impacts to historical resources are expected to occur as a result of implementing the proposed project. Accordingly, this impact issue is not significant.

V. b), c), & d) Installing or modifying add-on controls and other associated equipment to comply with the proposed project may require disturbance of previously disturbed areas at the affected existing industrial facilities. However, since construction-related activities are expected to be confined within the existing footprint of the affected facilities that have been fully developed and paved, or will be regardless of whether the project is approved, the proposed project is not expected to require physical changes to the environment, which may disturb paleontological or archaeological resources. Furthermore, it is envisioned that these areas are already either devoid of significant cultural resources or whose cultural resources have been previously disturbed. As noted in Section IV, the project does not cause new source construction, regardless, this will occur whether or not the project is approved. Therefore, 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. The proposed project

is, therefore, not anticipated to result in any activities or promote any programs that could have a significant adverse impact on cultural resources in the District. Accordingly, these impacts are not significant.

Based upon these considerations, significant cultural resources impacts are not expected from implementing the proposed project. Since no significant cultural resources impacts were identified for any of the issues, no mitigation measures are necessary or required.

VI. ENERGY.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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) The PARs do not require any action which would result in any conflict with an adopted energy conservation plan or violation of any energy conservation standard. The PARs are not expected to conflict with adopted energy conservation plans because existing facilities would be expected to continue implementing any existing energy conservation plans.

The PARs are not expected to cause new development. The local jurisdiction or energy utility sets standards (including energy conservation) and zoning guidelines regarding new development and will approve or deny applications for building new equipment at the affected facility. During the local land use permit process, the project proponent may be required by the local jurisdiction or energy utility to undertake a site-specific CEQA analysis to determine the impacts, if any, associated with the siting and construction of new development.

As a result, the PARs would not conflict with energy conservation plans, use non-renewable resources in a wasteful manner, or result in the need for new or substantially altered power or natural gas systems.

VI. b), c) & d.

There may be an increase in electricity consumption associated with the new APC equipment. Diesel fuel would be consumed by construction equipment. Gasoline fuel would be consumed by the construction workers vehicles. Natural gas fuel would be consumed by the new Thermal Oxidizers. The following sections evaluate the various forms of energy sources affected by the proposed project.

Construction-Related Impacts

PROJECT-SPECIFIC IMPACT: During the construction phases, diesel and gasoline fuel will be consumed in construction equipment portable equipment (e.g., generators and compressors) used to weld, cut, and grind metal structures and by construction workers' vehicles traveling to and from construction sites. To estimate "worst-case" energy impacts associated with the construction phases of the proposed project, the SCAQMD assumed that portable equipment used to weld, cut, and grind metal structures would be operated up to 500 hours in a year (8 hours per day for 60 days). The reader is referred to Appendix B for the assumptions used by the SCAQMD to estimate fuel usage associated with the implementation of the proposed amendments.

To estimate construction workers' fuel usage per commute round trip, the SCAQMD assumed that workers' vehicles would get 20 miles to the gallon and would travel 40 miles round trip to and from the construction site in one day. Table 2-9 lists the projected energy impacts associated with the construction and installation at the two affected facilities at any given time.

Table 2-9 Total Projected Fuel Usage for Construction Activities

Fuel Type	Year 2012 Projected Basin Fuel Demand[a] (mmgal/yr)	Fuel Usage[b] (mmgal/yr)	Total % Above Baseline	Exceed Significance?
Diesel	524	0.0014	3.0E-10	No
Gasoline	5,589	0.012	2.1E-12	No

[a] Figures taken from Table 3.3-3 of the 2012 AQMP Final EIR

[b] Estimated peak fuel usage from the implementation of the proposed amendments. Diesel usage estimates are based on portable construction equipment operation. Gasoline usage estimates are derived from workers' vehicle daily trips to and from work.

Operational Energy Impacts

PROJECT-SPECIFIC IMPACT: Any operational natural gas impacts associated with implementing the proposed amendments are attributable to fuel consumed in thermal oxidizers used by affected facilities to reduce toxic risk. According to Table 2-3, approximately five thermal oxidizers could use some type of oxidation device to comply with the risk reduction requirements in the PARs. To estimate natural gas fuel usage from thermal oxidizer operation, the SCAQMD assumed that the five units (one unit per facility) would operate eight hours per day, six days per week, 52 weeks per year and fire natural gas only. At an exhaust emission flow rate of 10,000 cfm, the amount of natural gas consumed is 0.488 MMBTU/hr and 28 kW of instantaneous power.

(5 Thermal Oxidizers x 8 hrs/day x 6 days/wk x 52 wks/yr x 0.488 MMBTU/hr)/(1050 MMBTU/MMcf) = 5.8 MMcf per year or 0.11 MMcf/day

Table 2-10 lists the projected natural gas impacts associated with the operational phase of the proposed amendments. The natural gas usage from the proposed project is negligible to the demand of natural gas available in the district.

Table 2-10 Total Projected Natural Gas Usage for Thermal Oxidizer Operations

Year	Projected Regional Natural Gas Demand[a] (mmcf/day)	Project Total Natural Gas Usage[b] (mmcf/day)	Total Impact % of Capacity	Significant?
2010	493	0.11	0.022	No

[a] Figures taken from Table 3.3-6 of the 2012 AQMP Final EIR-Commercial Sector
[b] Estimated natural gas usage from the implementation of the proposed project.

Electricity Impacts

SCAQMD staff estimates there will be additional electricity usage for the new APC equipment. Electrical energy impacts associated with ancillary equipment (e.g., fans, motors, etc.) used in conjunction with the 5 thermal oxidizers, 16 HEPA filters, 96 baghouses, 8 carbon adsorbers, and 14 wet scrubbers will need 139 blowers and are not considered significant as shown in Table 2-11.

Table 2-11 PARs Additional Electricity Consumption

Energy	Consumption (GW-h)
Blower (100 bhp@ 0.001788 GW-h) x 139	0.25
SCAQMD District Electrical Demand[1]	113,109
Total Impact % of Capacity	**2.2E-4**
Significant?	**No**

[1]AQMP 2012 TABLE 3.3-1 2011 Electricity Use GWh (Aggregated, includes self generation and renewables)

Therefore, based on the foregoing analysis, the SCAQMD has determined that operational-related activities associated with the implementation of the proposed amendments is necessary and will not use energy in a wasteful manner; will not result in substantial depletion of existing energy resource supplies; nor will significant amounts of fuel be needed when compared to existing supplies. Thus, there are no significant adverse energy/mineral resources impacts associated with the implementation of the PARs.

Based upon these considerations, significant adverse energy impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

VII. GEOLOGY AND SOILS.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑
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 wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑

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) Since the proposed project would result in construction activities at existing facilities located in developed industrial settings to install or modify control equipment, little site preparation is anticipated that could adversely affect geophysical conditions in the jurisdiction of the SCAQMD. While some APCDs may be installed at new facilities, the project does not cause the new facility construction. Southern California is an area of known seismic activity. Accordingly, the installation of add-on controls at existing or new affected facilities to comply with the proposed project is expected to conform to the Uniform Building Code and all other applicable state and local building codes. As part of the issuance of building permits, local jurisdictions are responsible for assuring that the Uniform Building Code is adhered to and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represents the foundation condition at the site. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction. Thus, the proposed project would not alter the exposure of people or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. As a result, substantial exposure of people or structures to the risk of loss, injury, or death involving the rupture of an earthquake fault, seismic ground shaking, ground failure or landslides is not anticipated.

VII. b) Since add-on controls will likely be installed at existing developed facilities, during construction of the proposed project, a slight possibility exists for temporary erosion resulting from grading activities, if required (controls included as part of new facilities are not expected to cause erosion or excavating beyond that otherwise resulting from constructing the new facility). These activities are expected to be minor since the existing facilities are generally flat and have previously been graded and paved. Further, wind erosion is not expected to occur to any appreciable extent, because operators at dust generating sites would be required to comply with the best available control measure (BACM) requirements of SCAQMD Rule 403 – Fugitive Dust. In general, operators must control fugitive dust through a number of soil stabilizing measures such as watering the site, using chemical soil stabilizers, revegetating inactive sites, etc. The proposed project involves the installation or modification of add-on control equipment at existing facilities, so that grading could be required to provide stable foundations. Potential air quality impacts related to grading are addressed elsewhere in this EA (as part of construction air quality impacts). No unstable earth conditions or changes in geologic substructures are expected to result from implementing the proposed project. Accordingly, this impact is not considered significant.

VII. c) Since the proposed project will affect existing facilities, it is expected that the soil types present at the affected facilities will not be made further susceptible to expansion or liquefaction. Furthermore, subsidence is not anticipated to be a problem since only minor excavation, grading,

or filling activities are expected occur at affected facilities. Additionally, the affected areas are not envisioned to be prone to new landslide impacts or have unique geologic features since the affected equipment units are located at existing facilities in industrial areas. Controls installed at new facilities would not increase these risks beyond those resulting from the new facility itself. Accordingly, this impact is not considered significant.

VII. d) & e) Since the proposed project will affect equipment units at existing facilities located in industrial zones, it is expected that people or property will not be exposed to new impacts related to expansive soils or soils incapable of supporting water disposal. Further, typically each affected facility has some degree of existing wastewater treatment systems that will continue to be used and are expected to be unaffected by the proposed project. Sewer systems are available to handle wastewater produced and treated by each affected facility. Each existing facility affected by the proposed project does not require installation of septic tanks or alternative wastewater disposal systems. As a result, the proposed project will not require facility operators to utilize septic systems or alternative wastewater disposal systems. Thus, implementation of the proposed project will not adversely affect soils associated with a septic system or alternative wastewater disposal system. Accordingly, these impacts are not considered significant.

Based upon these considerations, significant geology and soils impacts are not expected from the implementation of the proposed project. Since no significant geology and soils impacts were identified for any of the issues, no mitigation measures are necessary or required.

VIII. HAZARDS AND HAZARDOUS MATERIALS.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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 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 use airport or a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☑	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
g) 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?	☐	☐	☐	☑
h) 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) The PARs may increase the amount of captured toxic emissions. The additional captured toxic emissions through additional air pollution control equipment would reduce the toxic emissions that are currently emitted into the air. Thus, the capture of these emissions would reduce toxic exposure to the public and the environment.

Oxidation systems can be susceptible to compressor failure and flame flashbacks, particularly during startup and shutdown. As a result, oxidation systems could pose potential hazard risks primarily to workers or to a lesser extent the public in the event of explosions or fires. Oxidation systems historically have a good safety record when operated properly according to the manufacturers' instruction. Proper tune-up and maintenance is also important and necessary to avoid failures or explosions. When installed, operated, and maintained properly, oxidation systems are not expected to create fire or explosion hazards to workers or the public in general.

Operation of a carbon adsorption control system has potential hazard risks, primarily during the desorption cycle when there is a slight risk of explosion or release of VOC into the atmosphere. Carbon adsorption systems may also represent a fire risk during operation when carbon particles are saturated with solvent. Although most halogenated hydrocarbons have low flammability potential, use of such solvents is expected to decrease due to implementation of regulations to prevent global warming and stratospheric ozone depletion. Therefore, fire risks associated with carbon adsorption systems could differ depending upon the solvents used in place of halogenated compounds. Further, hazard risks would depend on the flammability of the material, concentration of VOC adsorbed into the activated carbon, ambient oxygen levels, characteristics of the specific system, and the operating conditions. Additionally, use of carbon adsorption units may concentrate hazardous organic compounds into the spent carbon, requiring recycling or disposal. This practice may generate environmental hazards during handling and disposal.

The risk of explosion or release of VOC from carbon adsorption systems is not expected to be significant. The engineering specifications for a carbon adsorption unit are typically designed to guard against risks by including an energy balance, which is an acceptable range of temperatures for the carbon bed. Good engineering practice means this range of temperatures should not exceed the lower explosive limit (LEL) of the compound(s) being adsorbed. There is little risk of fire if the LEL is not exceeded.

In addition to following good engineering practice for both thermal oxidizers and carbon adsorption systems, Health and Safety Code §25506 specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local

administering agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

* Identification of individuals who are responsible for various actions, including reporting, assisting emergency response personnel and establishing an emergency response team;

* Procedures to notify the administering agency, the appropriate local emergency rescue personnel, and the California Office of Emergency Services;

* Procedures to mitigate a release or threatened release to minimize any potential harm or damage to persons, property or the environment;

* Procedures to notify the necessary persons who can respond to an emergency within the facility;

* Details of evacuation plans and procedures;

* Descriptions of the emergency equipment available in the facility;

* Identification of local emergency medical assistance; and

* Training (initial and refresher) programs for employees in:

    1. The safe handling of hazardous materials used by the business;

    2. Methods of working with the local public emergency response agencies;

    3. The use of emergency response resources under control of the handler;

    4. Other procedures and resources that will increase public safety and prevent or mitigate a release of hazardous materials.

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

Further, all hazardous materials are expected to be used in compliance with established OSHA or Cal/OSHA regulations and procedures, including providing adequate ventilation, using recommended personal protective equipment and clothing, posting appropriate signs and warnings, and providing adequate worker health and safety training.

When taken together, the above regulations provide comprehensive measures to reduce hazards of explosive or otherwise hazardous materials. Compliance with these and other federal, state and local regulations and proper operation and maintenance of equipment should ensure the potential for explosions or accidental releases of hazardous materials is not significant.

Therefore, the PARs are not expected to create a significant hazard to the public or environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment.

VIII. c) It is not known if schools are located within a quarter mile of the affected facilities. However, it is expected that these facilities near schools are taking the appropriate and required actions to ensure proper handling of hazardous or acutely hazardous materials, substances or wastes within one-quarter mile of an existing or proposed school.

VIII. d) Government Code §65962.5 refers to hazardous waste handling practices at facilities subject to the Resources Conservation and Recovery Act (RCRA). It is not known if the affected facilities are subject to RCRA. However, it is expected that these facilities are taking the appropriate and required actions to ensure proper handling of hazardous or acutely hazardous materials, substances or wastes.

VIII. e) The PARs would result in the reduction of toxic emissions. It is not known if some of the facilities affected by the proposed project are located at sites within an airport land use plan, or within two miles of a public airport. However, the addition of new or modification of existing toxic control equipment would not expose people residing or working in the project area to the same degree of the existing settings associated with airplanes. Therefore, the PARs are not expected to result in a safety hazard for people residing or working in the project area even within the vicinity of an airport.

VIII. f) Emergency response plans are typically prepared in coordination with the local city or county emergency plans to ensure the safety of the public (surrounding local communities), and the facility employees as well. The proposed project would not impair implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan. It is expected that the existing affected facilities already have an emergency response plan in place, where required. The addition of air pollution control equipment is not expected to require modification of the existing emergency response plan at the affected facilities. Thus, the PARs are not expected to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

VIII. g) It is not known if the affected facilities are adjacent to wildland. However, it is expected that these facilities are taking the appropriate and required actions to ensure proper handling of hazardous or acutely hazardous materials, substances or wastes, so potential for a wildland fire from the proposed project does not exist.

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

adequate permit conditions are in place to protect against potential risk of upset. The proposed project would not change the existing requirements and permit conditions.

The proposed project would also not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees. No substantial or native vegetation typically exists on or near the affected facilities (specifically because such areas could allow the accumulation of fugitive lead dust), the existing rule requires the encapsulating (paving or asphalting) of all facility grounds. So the proposed project is not expected to expose people or structures to wild fires. Therefore, no significant increase in fire hazards is expected at the affected facilities associated with the proposed project.

Based upon these considerations, significant adverse hazards and hazardous materials impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

IX. HYDROLOGY AND WATER QUALITY.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality?	☐	☐	☑	☐
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, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site or flooding on- or off-site?	☐	☐	☑	☐
d) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☑	☐
e) Place housing or other structures 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, which would impede or redirect flood flows?	☐	☐	☐	☑
f) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding	☐	☐	☐	☑

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow?				
g) Require or result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
h) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☑	☐
i) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☑	☐

Significance Criteria

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

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 262,820 gallons per day of potable water.
- The project increases demand for total water by more than five million gallons per day.

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.

DISCUSSION

As identified in Table 2-3, the two groups of controls that have the potential to increase water demand in the district are carbon adsorption and wet scrubbers. The removal of organic material from spent carbon from carbon adsorbers may involve the use of a steam stripping application. The steam/organic mixture is vented to a condenser where the mixture is cooled. The mixture can either be disposed of or the water can be separated from the organic mixture by decanting or distillation.

The absorption process involves the transfer of components from a gas stream into a liquid form. The choice of absorbent is dependent on the physical properties of the pollutants to be controlled. Water can be used as an absorbent media for soluble gases. There are typically two modes of operation for an absorption process: simple and reclaiming/recycling. The simple process uses a single-liquid-pass system, where the water containing the toxic emission is disposed of directly after exiting the absorber. The water absorbent would need to be replaced periodically. In the complex process, the toxic component is removed or stripped from the water, and the water is recirculated into the system. In order for an absorption process to function efficiently, a certain volume of the water/toxic solution must be removed at a steady rate. The portion that is removed, which is termed the wet scrubber blowdown, constitutes the wastewater component of the process. The water that is removed must also be replaced.

Staff has identified 22 new wet scrubbers or carbon adsorption systems to comply with the proposed amendments. For the purposes of this analysis, an average emission exhaust flowrates was evaluated to estimate potential water demand generated by the proposed amendments. The flowrate evaluated are 10,000 CFM (Table 2-12).

If all of the 22 APCDs are assumed to have operations that require control equipment to handle a flowrate of 10,000 CFM, as much as 226,000 gallons per day [0.22 million gallons per day (MMgal/day)] would be needed for all 22 APCDs. This incremental daily increase in water demand anticipated for the PARs is negligible (7.1E-7%) compared to the total district supply of 9.8 million acre-feet (MAF) or 3,193,344 million gallons for 2012. Further, this incremental increase in water demand does not exceed the SCAQMD's significance threshold of potable water 262,820 gallons per day and total water of 5,000,000 gallons per day and, therefore, is not considered to be significant.

Table 2-12 Wastewater Discharge Volumes/Freshwater Demand From Carbon Adsorption and Wet Scrubbing

	AVERAGE SYSTEM FLOWRATE
WASTEWATER STREAM TYPE	**10,000 CFM**
Wet Scrubber blowdown (MMgal/day)[a]	0.039 - 0.214
Wet Scrubber sludge dewatering (MMgal/day)[b]	0.005
Carbon Adsorption stream stripping condense (MMgal/day)[c]	0.0004 – 0.0006
Total Wastewater discharge (MMgal/day)[d]	0.044 – 0.220

a Assumes 0.75 - 3.7 gal min per 1,000 CFM recirculation rate, 10 percent blowdown, fourteen units.

b Assumes wet scrubber dewatered sludge 20 percent solids, 90-98 percent control efficiency.

c Assumes 3/8 - 1/2 gal water per pound VOC collected, eight units

d Equal to additional freshwater demand.

IX. a) The PARs are not expected to alter any existing wastewater treatment requirements or otherwise substantially degrade water quality that the requirements are meant to protect because the small volume expected through the APCDs should not warrant a modification to their existing permit.

IX. b) The PARs would not require the use of groundwater. The facilities use potable water that is treated in their respective on-site wastewater treatment, reused, and then directed to the sanitary sewer. Therefore, it would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

IX. c) & d) The PARs is a proposed project that is not expected to have significant adverse effects on any existing drainage patterns, or cause an increase rate or amount of surface runoff water that would exceed the capacity of the facilities' existing or planned storm water drainage systems.

IX. e) & f) The PARs do not include or require any new or additional construction activities to build additional housing that could be located in 100-year flood hazard areas. Similarly, the sources affected by the proposed project are located at existing commercial or industrial facilities. Hence, the PARs are not expected to result in placing housing in 100-year flood hazard areas that could create new flood hazards. Therefore, the PARs are not expected to generate significance impacts regarding placing housing in a 100-year flood zone.

For the same reasons as those identified in the preceding paragraph, PARs are not expected to create significant adverse risk impacts from flooding as a result of failure of a levee or dam or inundation by seiches, tsunamis, or mudflows because the proposed project does not require levee or dam construction, and the affected facilities are located on flat land far from the ocean.

IX. g) The potential increase in wastewater volume generated by the proposed amendments is well within the existing and projected overall capacity of POTWs in the district. Therefore, wastewater impacts associated with the disposal of waterborne clean-up waste material generated from implementing the proposed amendments are not expected to significantly adversely affect POTW operations.

IX. h) SCAQMD staff estimates the additional water usage from the affected facilities would be negligible (see the above Discussion). Therefore, the PARs new APCDs water demand can be met.

IX. i) Carbon adsorbers and wet scrubbers are control technologies that can generate a hazardous liquid that could be identified as a hazardous waste depending upon the concentrations of its chemical components. If these liquids were to be discharged as a result of an equipment failure or accidental release, the hazardous material could migrate into groundwater supplies or travel into surface waters. If it is assumed that all of the water demand estimated in the proceeding water demand subsection ended up as wastewater, then a maximum volume of 0.426 MMgal of waste water could be generated on a daily basis. It is anticipated that facilities would not need to change their waste water permits due to the proposed project. Thus, no significant adverse impacts from wastewater.

It is not anticipated that the estimated amount of wastewater would create significant adverse groundwater or surface water quality impacts for a number of reasons. First, as explained in the "Geophysical Impacts" section, there are a number of state and federal laws regulating USTs and above-ground storage tanks that eliminate or minimize the possibility of accidental leaks from wastewater-containing storage vessels.

Activated carbon is often used as a method of removing organics from wastewater streams, with the organic waste either recovered and reused, or destroyed by oxidation (Fu, 1993). If regenerative carbon adsorption equipment is used, the solvent is normally recovered rather than requiring disposal. In the case of adsorption-incineration processes, the solvent is destroyed and never enters the waste stream.

In the case of once-through adsorption, spent canisters are typically returned to the supplier for regeneration by a treatment, storage and disposal facility (TSDF). These facilities are subject to strict regulatory limits for contaminated wastewater treatment. The regulatory wastewater discharge limit for wastewater from carbon regeneration by TSDFs is 1 mg/liter of total toxic organics. To ensure compliance with the 1.0 mg/liter limit, local sanitation districts monitor wastewater discharges using EPA Test Methods 601 or 602 (Lum, 1989).

Based upon these considerations, significant adverse hydrology and water quality impacts are not anticipated from the proposed project. Further, since no significant impacts were identified for any of these issues, no mitigation measures are necessary or required.

X. LAND USE AND PLANNING.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑

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) No Impact. The proposed project does not require the construction of new facilities, but any physical effects that will result from the proposed project, will occur at existing facilities located in commercial/industrial areas and would not be expected to go beyond existing boundaries. Thus, implementing the proposed project will not result in physically dividing any established communities.

X. b) No Impact. There are no provisions in the proposed project that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by the proposed project. Further, the proposed project would be consistent with the typical industrial zoning of the affected facilities. Typically, all proposed construction activities are expected to occur within the confines of the existing facilities. The proposed project 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. Further, no new development or alterations to existing land designations will occur as a result of the implementation of the proposed project. Therefore, present or planned land uses in the region will not be affected as a result of implementing the proposed project.

Based upon these considerations, significant land use planning impacts are not expected from the implementation of the proposed project. Further, since no significant impacts were identified for any of these issues, no mitigation measures are necessary or required.

XI. MINERAL RESOURCES.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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) No Impact. There are no provisions in the proposed project that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state such as aggregate, coal, clay, shale, et cetera, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Based upon these considerations, significant mineral resource impacts are not expected from the implementation of the proposed project. Since no significant mineral resource impacts were identified for any of these issues, no mitigation measures are necessary or required.

XII. NOISE.

Would the project result in:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of permanent 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 temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐
d) 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 use airport or private airstrip, 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) Less Than Significant Impact. The existing noise environment at each of the affected facilities is typically dominated by noise from existing equipment onsite, vehicular traffic around the facilities, and trucks entering and exiting facility premises. Construction activities associated with implementing the proposed project may generate some noise associated with the use of construction equipment and construction-related traffic temporary and minor construction so not expected to take a long period of time. However, noise from the proposed project is not expected to produce noise in excess of current operations at each of the existing facilities. If toxic control devices are installed or existing devices are modified, the operations phase of the proposed project may add new sources of noise to each affected facility. However, control devices are not typically equipment that generate substantial amounts of noise.

Nonetheless, for any noise that may be generated by the control devices, it is expected that each facility affected will comply with all existing noise control laws or ordinances. Further, Occupational Safety and Health Administration (OSHA) and California-OSHA (Cal/OSHA) have established noise standards to protect worker health. These potential noise increases are expected within the allowable noise levels established by the local noise ordinances for industrial areas, and thus are expected to be less than significant. Therefore, less than significant noise impacts are expected to result from the operation of the proposed project.

XII. d) Less Than Significant Impact. It is not known where the future affected facilities will be located, although some of the existing affected facilities could be located at sites within an airport land use plan, or within two miles of a public airport. However, the addition of new or modification of existing toxic control equipment would not expose people residing or working in the project area to the same degree of excessive noise levels associated with airplanes because APCDs are not typically noise generating equipment. All noise producing equipment must comply with local noise ordinances and applicable OSHA or Cal/OSHA workplace noise reduction requirements. Therefore, less than significant noise impacts are expected to occur at sites located within an airport land use plan, or within two miles of a public airport.

Based upon these considerations, significant noise impacts are not expected from the implementation of the proposed project. Further, since no significant impacts were identified for any of these issues, no mitigation measures are necessary or required.

XIII. POPULATION AND HOUSING.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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 people or existing housing, 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) and b) The construction activities associated with the proposed project at each affected facility are not expected to involve the relocation of individuals, require new housing or commercial facilities, or change the distribution of the population. The reason for this conclusion is that operators of affected facilities who need to perform any construction activities to comply with the proposed project can draw from the large existing labor pool in the local southern California area. Further, it is not expected that the installation of new or the modification of existing toxic control equipment will require new employees during operation of the equipment. In the event that new employees are hired, it is expected that the number of new employees at any one facility would be small. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing the proposed project. As a result, the proposed project is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth or displace people in the district or population distribution.

Based upon these considerations, significant population and housing impacts are not expected from the implementation of the proposed project. Since no significant population and housing impacts were identified for any of these issues, no mitigation measures are necessary or required.

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:	**Potentially Significant Impact**	**Less Than Significant With Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Fire protection?	☐	☐	☑	☐
b) Police protection?	☐	☐	☑	☐
c) Schools?	☐	☐	☐	☑
d) 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) Less Than Significant Impact. Implementation of the proposed project is expected to cause facility operators to install new or modify existing toxic emissions control devices, all the while continuing current operations at existing affected facilities. The proposed project may result in a greater demand for catalyst, scrubbing agents and other chemicals, which will need to be transported to the affected facilities to support the function of toxic emissions control equipment and stored onsite prior to use. As first responders to emergency situations, police and fire departments may assist local hazmat teams with containing hazardous materials, putting out fires, and controlling crowds to reduce public exposure to releases of hazardous materials. In addition, emergency or rescue vehicles operated by local, state, and federal law enforcement agencies, police and sheriff departments, fire departments, hospitals, medical or paramedic facilities, that are used for responding to situations where potential threats to life or property exist, including, but not limited to fire, ambulance calls, or life-saving calls, may be needed in the event of an accidental release or other emergency. While the specific nature or degree of such impacts is currently unknown, the affected facilities have existing emergency response plans so any changes to those plans would not be expected to dramatically alter how emergency personnel would respond to an accidental release or other emergency. In addition, due the low probability and unpredictable nature of accidental releases, the proposed project is not expected to increase the need or demand for additional public services (e.g., fire and police departments and related emergency services, et cetera) above current levels.

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

XIV. d) No Impact. The proposed project is expected to result in the use of new or modified add-on control equipment for toxic control. Besides permitting the equipment or altering permit conditions by the SCAQMD, there is no need for other types of government services. The proposed project would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives. There will be no increase in population and, therefore, no need for physically altered government facilities.

Based upon these considerations, significant public services impacts are not expected from the implementation of the proposed project. Since no significant public services impacts were identified for any of these issues, no mitigation measures are necessary or required.

XV. RECREATION.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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 or recreational services?	☐	☐	☐	☑

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 affects existing recreational opportunities.

DISCUSSION

XV. a) & b) No Impact. As discussed earlier under the topic of "Population and Housing," there are no provisions in the proposed project that would affect or increase the demand for or use of existing neighborhood and regional parks or other recreational facilities or require the construction of new or the expansion of existing recreational facilities that might have an adverse physical effects on the environment because the proposed project will not directly or indirectly increase or redistribute population. Based upon these considerations, including the conclusion of "no impact" for the topic of "Population and Housing," significant recreation impacts are not expected from implementing the proposed project. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

XVI. SOLID/HAZARDOUS WASTE.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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 occurs:

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

DISCUSSION

XVI.a) Landfills are permitted by the local enforcement agencies with concurrence from the California Department of Resources Recycling and Recovery (CalRecycle). Local agencies establish the maximum amount of solid waste which can be received by a landfill each day and the operational life of a landfill. The PARs would generate additional waste from the disposal of contaminated concrete and soils that is discussed in further detail in the following paragraphs.

One way to evaluate sold/hazardous waste impacts is to determine if the proposed project or any components therein will result in a need for new landfill capacity. Because affected facilities may install control equipment or implement process changes that could increase the waste products in the form of liquid or solids, implementing the proposed amendment may have solid hazardous waste impacts. As noted in Table 2-3, operation of control equipment such as filters, carbon adsorption, and wet scrubbers could have solid waste impacts.

Assumptions Used in The Solid Waste Analysis

This analysis of solid waste impacts assumes that safety and disposal procedures required by various agencies in the state of California will provide reasonable precautions against the improper disposal of hazardous wastes in a municipal waste landfill. Because of state and federal requirements, some facilities are attempting to reduce or minimize the generation of solid and hazardous wastes by incorporating source reduction technologies to reduce the volume or toxicity of wastes generated, including improving operating procedures, using less hazardous or nonhazardous substitute materials, and upgrading or replacing inefficient processes.

Carbon Adsorption

The amount of solid waste that may be generated by the carbon adsorption process would depend on the number of carbon adsorber installed, the operating characteristics, and frequency of carbon replacement. Disposal of spent carbon could adversely affect solid waste disposal facilities because increased quantities of waste may be generated. In addition, spent carbon may be considered hazardous waste depending on the constituents present and their concentrations, which may require disposal in a Class I landfill.

Only eight carbon adsorbers may be installed to comply with the PARs. Table 2-13 outlines the annual solid waste estimates from the disposal of spent carbon from those facilities installing carbon adsorbers to comply with the proposed amendments. It should be noted that the amounts of solid waste generated (Table 2-13) substantially overestimates solid waste impacts because most carbon is regenerated in a rotary kiln and reused. The rotary kiln typically consumes five percent of the carbon in the process, which has to be replaced. Therefore, no significant adverse solid waste impact is anticipated from the disposal of spent carbon.

Table 2-13 Estimates of Solid Waste from Carbon Adsorption

Process Exhaust Rate	5,000 CFM	10,000 CFM	20,000 CFM
Solid Waste Quantity:			
Carbon adsorption (spent carbon) (tons/yr)[a]	1,136	1,136	1,136

a Based on total emissions of 71 ton/yr for low and medium boiling point VOC and carbon replacement rate 2-lb carbon/lb VOC per year, assuming 5-year bed life, eight permit units.

Wet Scrubbing

It is estimated that fourteen wet scrubbers may be installed as a control option to comply with the proposed amendments. Assuming a 98 percent control efficiency, wet scrubbing of all metal compounds would be expected to generate a maximum volume of 128.8 tons per year (9.2 tons per year per wet scrubber x 14 facilities) of hazardous solids and dewatered sludge. Based on the types of facilities that would install wet scrubbers, it is likely that this waste would be concentrated with metals and would most likely need to be disposed of as a hazardous waste in a Class I landfill.

Filtration

Filtration includes usage of baghouse, HEPA filters and DPFs. All mixed metal compounds could be generated with the use of filtration controls at a 99.9 percent control rate. It is likely that the majority of the approximately 224.2 tons per year of minerals and silica (118 filtration systems x 1.9 tons per year per filter) that could potentially be generated by filtration devices would be used as land cover at a solid waste, Class II landfill. Otherwise, if traces of asbestos, etc. are found, the filter would need to be disposed in a Class I landfill.

Depending upon what type of control equipment is used, the total quantity of waste requiring disposal in a Class I landfill that may be generated from the disposal of spent carbon, minerals and metal compounds is 1.9 tons per day (or 410.5 tons per year). Currently, there are three Class I landfills in California: Laidlaw Environmental in Westmoreland, Imperial County; Chemical Waste Management Corporation in Kettleman Hills, Kings County; and Laidlaw Environmental, in Buttonwillow, Kern County. According to SCAQMD's 2012 AQMP, the

total available capacity of each of these landfills ranges from 83,425 cubic yards (or 116,796 tons per day). With an annual disposal of 1,489 tons of carbon beds, filters, etc., the total solid/hazardous waste impact from the proposed amendments ranges from 0.0035 percent of the available Class I landfill capacity. The amount of hazardous waste generated by the proposed project will not require new Class I landfills and is not considered to be a substantial impact to existing landfill capacity. Therefore, potential hazardous waste impacts are not considered significant.

Table 2-14 Total Solid Waste Generation

Control Type	Potential # APC Devices	Annual Waste per Control Device (tons/year)	Total Waste Generated (tons/year)
Carbon adsorption	8	142	1,136
Wet Scrubbing	14	9.2	128.8
Filtration	118	1.9	224.2
TOTAL WASTE GENERATED FROM PROPOSED PROJECT			**1,489 tons/yr or 4.08 tons/day**

XVI.b) It is assumed that facility operators at the affected facilities comply with all applicable local, state, or federal waste disposal regulations.

Implementing the PARs is not expected to interfere with any affected facility's ability to comply with applicable local, state, or federal waste disposal regulations. Since no solid/hazardous waste impacts were identified, no mitigation measures are required or necessary.

Based upon these considerations, significant adverse solid/hazardous waste impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

XVII. TRANSPORTATION/TRAFFIC.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☑
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established 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) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☑

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.
- The project conflicts with applicable policies, plans or programs establishing measures of effectiveness, thereby decreasing the performance or safety of any mode of transportation.
- 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)

Construction

As noted in the "Discussion" sections of the other environmental topics, compliance with the PARs are expected to require construction activities for control equipment. It has been estimated to need 8 delivery and/or disposal trucks and 8 construction worker trips on a peak construction day (during the fill phases). Construction onsite is not expected to affect on-site traffic or parking. The additional 16 construction trips are less than the significance threshold of 350 round trips, therefore construction activities are not expected to cause a significance adverse impact to traffic or transportation.

Operation

Waste products may be generated from the use of several types of control technologies. Wastes could include: spent carbon generated from the carbon adsorption process; spent metal catalysts from the catalytic oxidation process; solids and sludge from wet scrubbers; and dry solids from filtration controls. The majority of wastes will likely need to be transported to disposal or recycling facilities. The catalysts in catalytic oxidizers need to be replaced every few years so this potential waste product was considered to contribute to the waste transport impacts.

For a "worst case" analysis, SCAQMD staff assumed that for the 134 facilities required to install a control device to comply with the PARs, these facilities at any given day would generate an additional 2 truck trips per day in the entire district additional for delivery and disposal. These potential truck trips are not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities. In addition, this volume of additional daily truck traffic is negligible over the entire area of the district. Finally, the number waste disposal transport trips substantially overestimates the number of anticipated trips because owners/operators at affected facilities may use other types of add-on control equipment

that do not generate wastes and the actual volume of wastes is expected to much less than estimated here, resulting in fewer truck trips per day.

Table 2-15 Estimation of Vehicle Trips

Phase	Worker Vehicles	Delivery/Disposal Trucks
Construction	4/day	3 per day[a]
Operation	N/A	2 per day[b]

[a] A maximum of 4 worker vehicles and 3 delivery/disposal trucks per day were estimated from two affected facilities peak construction

[b] A maximum of 2 delivery/disposal trucks can travel in the District for the 134 Affected Facilities

XVII. c) It is not known whether the location of existing or future affected facilities could be located at sites within an airport land use plan, or within two miles of a public airport. However, the addition of new or modification of existing toxic control equipment at ground level facilities is not expected to change the air traffic patterns or change in location that results in substantial safety risks.

XVII. d) & e) The proposed project does not involve construction of any roadways or other transportation design features, so there would be no change to current roadway designs that could increase traffic hazards. Thus, the proposed project is not expected to substantially increase traffic hazards or create incompatible uses at or adjacent to the affected facilities. Emergency access at the affected facilities is not expected to be impacted by the proposed project. Further, each affected facility is expected to continue to maintain their existing emergency access. Since the PARs involves short-term construction activities and operational of control equipment is not expected to increase vehicle trips, the proposed project is not expected to alter the existing long-term circulation patterns. The proposed project is not expected to require a modification to circulation, thus, no long-term impacts on the traffic circulation system are expected to occur.

XVII. f) The affected facilities would still be expected to comply with, and not interfere with adopted policies, plans, or programs supporting alternative transportation (e.g. bicycles or buses). Since all of the PARs' compliance activities would occur on-site, the PARs would not hinder compliance with any applicable alternative transportation plans or policies.

Based upon these considerations, significant adverse transportation/traffic impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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 the "Biological Resources" section, the PARs are not expected to significantly adversely affect plant or animal species or the habitat on which they rely because any construction and operational activities associated with affected sources are expected to occur entirely within the boundaries of existing developed facilities in areas that have been greatly disturbed and that currently do not support any species of concern or the habitat on which they rely. The PARs are not expected to reduce or eliminate any plant or animal species or destroy prehistoric records of the past.

XVIII. b) Based on the foregoing analyses, the PARs would not result in significant adverse project-specific environmental impacts. Potential adverse impacts from implementing the PARs would not be "cumulatively considerable" as defined by CEQA Guidelines §15064(h)(1) for any environmental topic because there are no, or only minor incremental project-specific impacts that were concluded to be less than significant. Per CEQA Guidelines §15064(h)(4), the mere existing of significant cumulative impacts caused by other projects alone shall not constitute

substantial evidence that the proposed project's incremental effects are cumulative considerable. SCAQMD cumulative significant thresholds are the same as project-specific significance thresholds.

This approach was upheld by the Court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that where it can be found that a project did not exceed the South Coast Air Quality Management District's established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines §15064.7, stating, "The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect." The court found that, "Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria…" "Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact." As in *Chula Vista*, here the District has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established South Coast Air Quality Management District significance thresholds. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. Here again the court upheld the South Coast Air Quality Management District's approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. Thus, it may be concluded that the Project will not cause a significant unavoidable cumulative contribution to an air quality impact.

Therefore, there is no potential for significant adverse cumulative or cumulatively considerable impacts to be generated by the proposed project for any environmental topic.

XVIII. c) Based on the foregoing analyses, the proposed project is not expected to cause adverse effects on human beings for any environmental topic because the air quality impacts were determined to be less than the significance thresholds (See Section III-AQ), the energy demand, water demand and solid waste disposal can be met utilizing existing services (See Section VI-Energy, Section IX-Hydrology and Section XVI-Solid/Hazardous Waste) and the aesthetics, noise, hazards and public services will not be significantly impacted (See Section I-Aesthetics, Section VII-Hazards, Section XII-Noise, and Section XIV-Public Services).

As previously discussed in environmental topics I through XVIII, the proposed project has no potential to cause significant adverse environmental effects. Therefore, no further analysis or mitigation measures are required or necessary.

APPENDICES

APPENDIX A

PROPOSED AMENDED RULES

Please find the final rule language in the Governing Board Package.

APPENDIX B

ASSUMPTIONS AND CALCULATIONS

Table B-1 Summary

Total On-Site for one Facility

	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOx, lb/day	CO2e, ton/year	Total GHG Amortized over 30 years for 134 facilities (CO2e/yr)
Grading/Site Preparation	11	25	4.0	1.6	2.7	0.0	13	
Paving	8	12	0.7	0.7	0.2	0.01	2	
Equipment Installation	15	30	1.4	1.3	3.4	0.0	414	
								1917

Total Daily at Two Facilities (maximum "worst case")

	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOx, lb/day	CO2e, ton/year
Grading/Site Preparation	22.9	50.4	**8.0**	**3.2**	5.4	0.1	25.2
Paving	15.0	24.0	1.5	1.3	0.5	0.0	4.6
Equipment Installation	**29.9**	**59.2**	2.9	2.6	**6.9**	**0.1**	**828.8**
Significance Threshold	550	100	150	55	75	150	100,000
Exceed Significance?	NO	NO	NO	NO	NO	NO	NO

Table B-2 Grade/Site Summary

Grading/Site Preparation - 8 days[a]

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	7.0	4
Tractors/Loaders/Backhoes	1	7.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO	NOx	PM10	PM2.5	VOC	SOx	CO2	CH4	NO2
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Rubber Tired Dozers	1.101	2.381	0.099	0.091	0.284	0.002	238	0.026	0.099
Tractors/Loaders/Backhoes	0.374	0.498	0.034	0.031	0.073	0.001	67	0.007	0.021

Fugitive Dust Bulldozer Parameters

Vehicle Speed (mph)[d]	Vehicle Miles Traveled[e]
3	21

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[f]	Mean Wind Speed[g]	Moisture Content[h]	Dirt Handled[i]		Dirt Handled[j]
	mph		cy		lb/day
0.35	10	7.9	3,413	170641	8,532,031

Construction Vehicle (Mobile Source) Emission Factors[k]

	CO	NOx	PM10	PM2.5	VOC	SOx	CO2	CH4	NO2
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Automobile	4.12E-03	3.41E-04	1.04E-04	4.41E-05	4.50E-04	8.22E-06	0.73	2.01E-05	4.83E-06
Medium-Duty Truck	3.98E-03	1.81E-02	5.40E-04	3.85E-04	7.84E-04	3.64E-05	3.76	3.64E-05	2.56E-04

Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One-Way Trip Length (miles)
Automobile	4	20
Medium-duty Truck[l]	3	20

Incremental Increase in Combustion Emissions from Construction Equipment

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

Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day	PM2.5 lb/day	VOC lb/day	SOx lb/day	CO2 lb/day	CH4 lb/day	NO2 lb/day
Rubber Tired Dozers	7.71	16.67	0.69	0.64	1.99	0.02	1,665	0.18	0.69
Tractors/Loaders/Backhoes	2.62	3.48	0.24	0.22	0.51	0.01	467	0.05	0.14
Total	**10.3**	**20.2**	**0.9**	**0.9**	**2.5**	**0.0**	**2,132**	**0.2**	**0.8**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Grading[m]: PM10 Emissions (lb/day) = 0.60 x 0.051 x mean vehicle speed$^{2.0}$ x VMTx (1 - control efficiency)

Material Handling[n] PM10 Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	Unmitigated PM10[o] lb/day	Unmitigated PM2.5[o] lb/day
Earthmoving	61	2.3	0.475
Material Handling	61	0.67	0.141
Total		**2.9**	**0.615**

Incremental Increase in 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	PM2.5	VOC	SOx	CO2	CH4	NO2
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Automobiles	0.6371	2.8971	0.0865	0.0615	0.1255	0.0058	601	0.0058	0.0410
Medium Duty Trucks	0.4779	2.1728	0.0648	0.0462	0.0941	0.0044	451	0.0044	0.0308
	1.115	**5.070**	**0.151**	**0.108**	**0.220**	**0.010**	**1,051**	**0.010**	**0.072**

Total Incremental Emissions from Construction Activities

	CO	NOx	PM10	PM2.5	VOC	SOx	CO2
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	metric ton/year
Emissions	**11**	**25**	**4.0**	**1.6**	**2.7**	**0.033**	**13**
Significance Threshold[p]	***550***	***100***	***150***	***55***	***75***	***150***	
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	

Notes:

Project specific data may be entered into shaded cells. Changing the values in the shaded cells will not affect the integrity of the worksheets. Verify that units of values entered match units for cell.

Adding lines or entering values with units different than those associated with the shaded cells may alter the integrity of the sheets or produce incorrect results.

a) Based on assumption that each bulldozer can move 35 cubic yards of soil per hour and one acre of area with a depth of 20 feet.

b) Estimated construction equipment assumed to operate one eight-hour shift per day.

c) Emission factors estimated using OFFROAD2011

d) Caterpillar Performance Handbook, Edition 33, October 2003 Operating Speeds, p 2-3.

e) Two bulldozers traveling three miles per hour for seven hours per day.

f) USEPA, AP-42, Jan 1995, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 μm

g) Mean wind speed - maximum of daily average wind speeds reported in 1981 meteorological data.

i) Assuming 3412.8125 cubic yards of dirt handled (4840 ft2 x 20 ft) x yd3/27 ft3)/ days)

j) Dirt handled, lb/day = (3412.8125 yd3 x 2,500 lb/yd3)
k) Emission factors estimated using EMFAC2011 for the 2014 fleet year.
l) Assumed 30 cubic yd truck capacity for 3412.8125 cy of dirt [(3412.8125 cy x truck/30 cy) = 3 one-way truck trips/day].
m) USEPA, AP-42, July 1998, Table 11.9-1, Equation for Site Grading ≤ 10 μm
n) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
o) Includes watering at least three times a day per Rule 403 (61% control efficiency)
p) SCAQMD CEQA significance thresholds

Table B-3 Paving Summary

Asphalt Paving of Foundation

Construction Schedule	**8**	**days**[a]

Equipment Type[a]	**No. of Equipment**	**hr/day**	**Crew Size**
Pavers	1	7.0	4
Cement and Mortar Mixers	1	6.0	
Rollers	1	7.0	

Construction Equipment Combustion Emission Factors

	CO	**NOx**	**PM10**	**PM2.5**	**VOC**	**SOx**	**CO2**	**CH4**	**NO2**
Equipment Type[b]	lb/hr	lb/hr	lb/hr		lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Pavers	0.526	0.810	0.056	0.052	0.143	0.001	78	0.013	0.000
Cement and Mortar Mixers	0.042	0.055	0.002	0.002	0.009	0.000	7	0.001	0.000
Rollers	0.401	0.616	0.042	0.039	0.091	0.001	67	0.008	0.000

Construction Vehicle (Mobile Source) Emission Factors[c]

	CO lb/mile	**NOx** lb/mile	**PM10** lb/mile	**PM2.5** lb/mile	**VOC** lb/mile	**SOx** lb/mile	**CO2** lb/mile	**CH4** lb/mile	**NO2** lb/mile
Automobile	4.12E-03	3.41E-04	1.04E-04	4.41E-05	4.50E-04	8.22E-06	0.73	2.01E-05	4.83E-06
Medium-Duty Truck	3.98E-03	1.81E-02	5.40E-04	3.85E-04	7.84E-04	3.64E-05	3.76	3.64E-05	2.56E-04

Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One-Way Trip Length (miles)**
Worker	4	20
Delivery/Disposal Truck[d]	3	20

Incremental Increase in Combustion Emissions from Construction Equipment

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

	CO	NOx	PM10	PM2.5	VOC	SOx	CO2	CH4	NO2
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Pavers	3.68	5.67	0.39	0.36	0.1	0.00	51	0.01	0.00
Cement and Mortar Mixers	2.41	3.70	0.25	0.23	0.0	0.00	0	0.00	0.00
Rollers	0.29	0.39	0.02	0.02	0.0	0.00	0	0.00	0.00
Total	**6**	**10**	**0.66**	**0.61**	**0.06**	**0.00**	**51**	**0.01**	**0.00**

Incremental Increase in 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	PM2.5	VOC	SOx	CO2	CH4	NO2
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Worker	0.659	0.055	0.0166	0.0071	0.0720	0.0013	116.5368	0.0032	0.0008
Delivery	0.478	2.173	0.0648	0.0462	0.0941	0.0044	450.6386	0.0044	0.0308
Total	**1.137**	**2.227**	**0.0814**	**0.0532**	**0.1661**	**0.0057**	**567.1755**	**0.0076**	**0.0315**

Total Incremental Combustion Emissions from Construction Activities

	CO	NOx	PM10	PM2.5	VOC	SOx	CO2eq
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	metric ton/year
Emissions	**8**	**12**	**0.7**	**0.7**	**0.2**	**0.0**	**2.3**
Significance Threshold[e]	***550***	***100***	***150***	***55***	***75***	***150***	
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	

Notes:
Project specific data may be entered into shaded cells. Changing the values in the shaded cells will not affect the integrity of the worksheets. Verify that units of values entered match units

for cell. Adding lines or entering values with units different than those associated with the shaded cells may alter the integrity of the sheets or produce incorrect results.
a) Estimated construction equipment assumed to operate one eight-hour shift per day.
b) Emission factors estimated using OFFROAD2011
c) Emission factors estimated using EMFAC2011 for the 2014 fleet year.
d) Assumed three deliver truck trips per day.
e) SCAQMD CEQA significance thresholds

Table B-4 Operational Summary

Operational

	CO	NOx	PM10	PM2.5	VOC	SOx	CO2	CH4	NO2
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Automobile	4.12E-03	3.41E-04	1.04E-04	4.41E-05	4.50E-04	8.22E-06	0.73	2.01E-05	4.83E-06
Medium-Duty Truck[a]	3.98E-03	1.81E-02	5.40E-04	3.85E-04	7.84E-04	3.64E-05	3.76	3.64E-05	2.56E-04

Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day[i]**	**One-Way Trip Length[j] (miles)**
Worker	0	20
Medium-Duty Truck	8	20

Incremental Increase in 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	PM2.5	VOC	SOx	CO2	CH4	NO2
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Automobile	0.00	0.000	0.0000	0.0000	0.000	0.00000	0	0.0000	4.83E-06
Medium-Duty Truck	1.3	5.8	0.173	0.123	0.25	0.0116	1,202	0.0117	0.082

Total Incremental Emissions from Operational Activities

	CO	NOx	PM10	PM2.5	VOC	SOx	CO2
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	metric ton/year
Emissions	**1.3**	**5.8**	**0.2**	**0.1**	**0.3**	**0.01**	**0.56**
Significance Threshold[b]	***550***	***55***	***150***	***55***	***75***	***150***	***10,000***

Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Notes:
a) Emission factors estimated using EMFAC2011 for the 2015 fleet year.

b) SCAQMD significance thresholds

Table B-5 Thermal Oxidizer Summary

Annual Emission Reporting Default Emission Factors for External Combustion Equipment

Fuel Type (fuel unit)	Organic Gases, lb/mmscf	Rule 1147 Nitrogen Oxides, lb/mmbtu	Sulfur Oxides, lb/mmscf	Carbon Monoxide, lb/mmscf	Particulate Matter, lb/mmscf	CO2, lb/mmscf	N2O, lb/mmscf	CH4, lb/mmscf
Natural Gas/ Other Equipment	7	0.073	0.6	35	7.5	120,000	0.64000	2.3

Annual Emission Reporting (AER) defaulting emission factors from B1 external combustion equipment for all criteria pollutants exempt NOx.
BACT= Rule 1147 NOx emissions limit was used.
CO2, N2O and CH4 emission factors from AP-42 Table 1.4-2, July 1998

Thermal Oxidizer Criteria Pollutant Emissions

Natural Gas Rating, mmbtu/hr	Conversion, btu/scf	Natural Gas Usage, mmscf/hr	Op Time, hr/day	ROG, lb/day	NOx, lb/day	SOx, lb/day	CO, lb/day	PM, lb/day
2.44	1,050	0.00232	8	0.1	1.4	0.01	0.7	0.1

Natural gas rating based on engineering estimate.

Thermal Oxidizer Greenhouse Gas Emisisons

Natural Gas Usage, mmscf/yr	CO2, metric ton/year	N2O, metric ton/year	CH4, metric ton/year	CO2e, metric ton/year
20.3	1,105	0.01	0.02	1,107

Table B-6
Construction Equipment Fuel Use

Grading/Site Preparation

Equipment Type	No. of Equipment	Op Time, hr/day	Fuel Economy, gal/hr	Fuel Used, gal/day
Rubber Tired Dozers	2	7.0	5.2	72.8
Tractors/Loaders/Backhoes	2	7.0	1.9	26.6
				99.4

Paving

Equipment Type	No. of Equipment	Op Time, hr/day	Fuel Economy, gal/hr	Fuel Used, gal/day
Cranes	3	4.0	3.52	42.24
Forklifts	2	6.0	0.96	11.52
Tractors/Loaders/Backhoes	2	8.0	1.9	30.4
				84.16

Equipment Installation

Equipment Type	No. of Equipment	Op Time, hr/day	Fuel Economy, gal/hr	Fuel Used, gal/day
Pavers	1	7.0	2.8	19.6
Cement and Mortar Mixers	4	6.0		
Rollers	1	7.0	1.6	11.2
Tractors/Loaders/Backhoes	1	7.0	1.9	13.3
				44.1

Table B-7
Vehicle Fuel Use

Grading/Site Preparation

Vehicle	No. of One-Way, Trips/Day	One-Way Trip Length, miles	Fuel Economy, mpg	Fuel Used, gal/day
Automobile	4	20	10	16
Medium-duty Truck	3	20	40	3
	7			

Paving

Vehicle	No. of One-Way, Trips/Day	One-Way Trip Length, miles	Fuel Economy, mpg	Fuel Used, gal/day
Automobile	4	20	10	16
Medium-duty Truck	3	20	40	3

Equipment Installation

Vehicle	No. of One-Way, Trips/Day	One-Way Trip Length, miles	Fuel Economy, mpg	Fuel Used, gal/day
Automobile	4	20	10	16
Medium-duty Truck	3	20	40	3

Operational

Vehicle	No. of One-Way, Trips/Day	One-Way Trip Length, miles	Fuel Economy, mpg	Fuel Used, gal/day
Medium-duty Truck	3	21	40	3

Vehicle	**No. of One-Way, Trips/Day**	**One-Way Trip Length, miles**	**Fuel Economy, mpg**	**Fuel Used, gal/day**
Automobile	32	20	10	128