

# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

## **Final Environmental Assessment for:**

### **Proposed Rule 1155 – Particulate Matter (PM) Control Devices**

November 17, 2009

SCAQMD No. 090918MK

State Clearinghouse No. 2009091077

#### **Executive Officer**

Barry R. Wallerstein, D.Env.

#### **Deputy Executive Officer**

##### **Planning, Rule Development and Area Sources**

Elaine Chang, DrPH

#### **Assistant Deputy Executive Officer**

##### **Planning, Rule Development and Area Sources**

Laki Tisopulos, Ph.D., P.E.

#### **Planning and Rules Manager**

Susan Nakamura

---

<b>Author:</b>	Michael Krause	Air Quality Specialist
<b>Technical Assistance:</b>	Jong Hoon Lee, Ph.D.	Air Quality Specialist
<b>Reviewed By:</b>	Steve Smith, Ph.D.	Program Supervisor
	William Wong	Principal Deputy District Counsel
	Ruby Fernandez	Deputy District Counsel II
	Tracy A. Goss, P.E.	Program Supervisor
	Jill Whynot	Director, Strategic Initiatives

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
GOVERNING BOARD**

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

Vice Chairman: DENNIS YATES  
Mayor, City of Chino  
Cities of San Bernardino County

**MEMBERS**

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

**MARION ASHLEY**  
Supervisor, Fifth District  
County of Riverside

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

**BILL CAMPBELL**  
Supervisor, Third District  
County of Orange

**JANE W. CARNEY**  
Senate Rules Committee Appointee

**JOSIE GONZALES**  
Supervisor, Fifth District  
San Bernardino County Representative

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

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

**JAN PERRY**  
Councilmember, Ninth District  
City of Los Angeles Representative

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

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

**EXECUTIVE OFFICER: BARRY WALLERSTEIN, D. Env.**

## **PREFACE**

The Draft Environmental Assessment (EA) for the Proposed Rule 1155 – *Particulate Matter (PM) Control Devices* was circulated for a 30-day public review and comment period from September 18, 2009 to October 20, 2009. No public comment letters were received and minor modifications were made to the Draft EA so it is now a Final EA. Deletions and additions to the text of the EA are denoted using ~~striethrough~~ and underlined, respectively. Although the requirements under the proposed project have been modified from what was originally analyzed in the Draft EA, no changes to the proposed project were made since the release of the Draft EA that would alter the conclusions made in the Draft EA or significantly worsen the environmental impact analyzed in the Draft EA. Therefore, pursuant to CEQA Guidelines §15073.5, recirculation is not necessary since the information provided does not result in new avoidable significant effects.

## TABLE OF CONTENTS

### CHAPTER 1 - PROJECT DESCRIPTION

Introduction .....	1-1
California Environmental Quality Act.....	1-2
Project Location .....	1-3
Project Background.....	1-4
Health Effects from Particulate Emissions .....	1-4
Current PM Air Quality .....	1-5
Project Objectives .....	1-6
Project Description.....	1-6
Affected Facilities .....	1-13
PM Control Methods.....	1-15

### CHAPTER 2 - ENVIRONMENTAL CHECKLIST

Introduction .....	2-1
General Information.....	2-1
Environmental Factors Potentially Affected.....	2-2
Determination .....	2-2
Impact Analysis Overview.....	2-3
Environmental Checklist and Discussion .....	2-6

### APPENDIX A - Proposed Rule 1155

### APPENDIX B – Construction Emission Calculations

#### List of Figures

Figure 1-1: South Coast Air Quality Management District .....	1-3
---	-----

#### List of Tables

Table 1-1: Particulate Matter Concentrations .....	1-5
Table 1-2: Summary of Key Requirements .....	1-7
Table 1-3: Affected Universe of Sources.....	1-14
Table 1-4: Existing Baghouse Units Under PR1155 .....	1-14
Table 1-5: New Baghouse Units Under PR1155 .....	1-15

Table 2-1: Impact Analysis Overview .....	2-4
Table 2-2: Air Quality Significance Thresholds.....	2-10
Table 2-3: Construction Emissions from Manual Shaker Replacement .....	2-12
Table 2-4: Construction Emissions from BLDS Delivery and Installation .....	2-14
Table 2-5: Construction Emissions from Overlapping Requirements and Compliance Deadlines .....	2-14
Table 2-6: California GHG Emissions and Sinks Summary .....	2-17
Table 2-7: GHG Emissions from Construction Phases.....	2-19
Table 2-8: Additional Traffic Impacts During Construction Phase.....	2-46

## **CHAPTER 1 - PROJECT DESCRIPTION**

---

**Introduction**

**California Environmental Quality Act**

**Project Location**

**Project Background**

**Health Effects from Particulate Emissions**

**Current PM Air Quality**

**Project Objectives**

**Project Description**

**Affected Facilities**

**PM Control Methods**

## **INTRODUCTION**

Particulate matter (PM) is a term used to describe a mixture of ambient solid particles and liquid droplets. PM measuring less than 10 microns in diameter is classified as PM10 or “coarse” particles. Those measuring less than 2.5 microns in diameter are classified as PM2.5 or “fine” particles. PM emissions are generated directly from a variety of industrial sources such as the mining operations of sand and gravel, and manufacturing of cement, concrete, asphalt paving, iron and steel, chemical products, aircraft parts, lumber, grain mill products, paper, glassware, and beverages. PM emissions from these sources are typically controlled by air pollution control equipment that filters out small particles. Examples of PM control devices include baghouses, bin vents, cyclones, wet scrubbers, and electrostatic precipitators. The most commonly used PM control device is the baghouse, which filters out particles on the surface of fabric bags in a contained unit.

PM emission sources contribute to the region’s overall air quality, which is not in attainment of the state 24-hour PM10 or federal 24-hour PM2.5 standard. Of great concern to public health are the particles small enough to be inhaled into the deepest parts of the lung. PM can accumulate in the respiratory system and aggravate health problems such as asthma, bronchitis and other lung diseases. Children, the elderly, exercising adults, and those suffering from asthma are especially vulnerable to adverse health effects of PM.

South Coast Air Quality Management District’s (SCAQMD) 2007 Air Quality Management Plan (AQMP) included a control measure (BCM-01) designed to strengthen existing regulatory requirements for baghouses to improve overall control efficiency by establishing stricter emission standards, automatic monitoring systems to ensure proper operation, and standard operating and maintenance procedures.

The purpose of proposed Rule (PR) 1155 – Particulate Matter (PM) Control Devices, is to implement the 2007 AQMP control measure BCM-01 by establishing performance and maintenance requirements for permitted PM control devices, including, but not limited to, baghouses, high efficiency particulate air (HEPA) systems, bin vents, dust collectors using high efficiency air filters, cyclones, electrostatic precipitators and wet scrubbers. The new requirements involve restricting visible emissions, limiting PM concentration, replacing and upgrading old equipment, operation and maintenance (O&M) requirements, installing monitoring systems, and conducting associated recordkeeping. PR 1155 would apply to operators of permitted PM control devices venting processes that have direct (non-combustion) PM emissions. These control devices may already be subject to other SCAQMD source specific rules (e.g., Rules 1156, 1157, etc.) and PR 1155 would not override or relieve an operator of those other rule requirements.

This Draft EA concludes that the proposed project could potentially generate adverse air quality impacts during construction from the removal of old equipment, and delivery and installation of new control equipment. The impacts, however, were determined to be not significant. In addition, there is an operational air quality benefit, minor energy impact, and a potential for an aesthetics and solid waste benefit. The Draft EA also concludes that no other environmental topic areas would be significantly adversely affected by the proposed project.

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

PR 1155 is a “project” as defined by CEQA Guidelines §15378. California Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report once the Secretary of the Resources Agency has certified the regulatory program. The SCAQMD regulatory program was certified by the Secretary of the Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110.

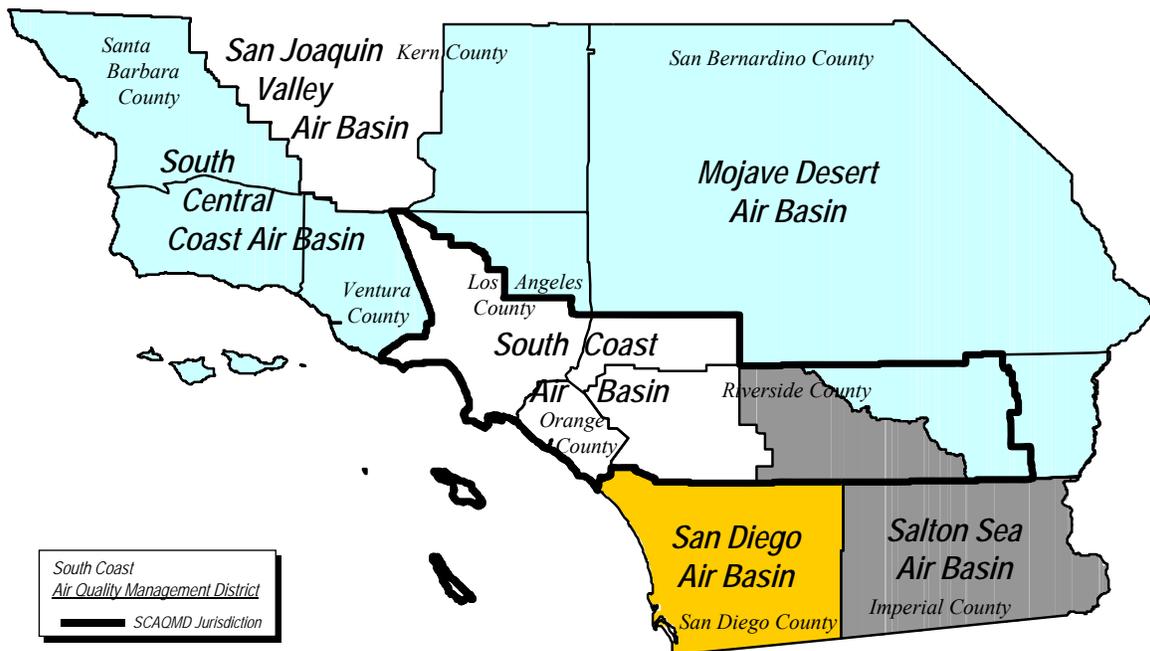
This CEQA document has been prepared pursuant to CEQA Guidelines §15252 and is a substitute document for a Negative Declaration. Therefore, pursuant to CEQA Guidelines §15252(a)(2)(B), alternatives to the proposed project are not required because review of the proposed project showed that the proposed project would not have any significant effects on the environment. As a result, alternatives are not required or proposed to avoid or reduce any effects on the environment that are already demonstrated to be less than significant. This conclusion is supported by the environmental checklist in Chapter 2 showing the possible effects examined in reaching this conclusion.

CEQA requires that the potential environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA, the SCAQMD has prepared this EA to address the potential environmental impacts associated a broad policy program that includes PR 1155. This Draft EA is intended to: (a) provide the lead agency, responsible agencies, decision makers and the general public with detailed information on the environmental effects of the proposed project; and, (b) to be used as a tool by decision makers to facilitate decision making on the proposed project.

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

## PROJECT LOCATION

PR 1155 will apply to the SCAQMD's entire jurisdiction. The SCAQMD has jurisdiction over an area of 10,473 square miles (referred to hereafter as the district), consisting of the four-county South Coast Air Basin (Basin) and the Riverside County portions of the Salton Sea Air Basin (SSAB) and the Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of the SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The 6,745 square-mile Basin includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB and MDAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of both Riverside County and the SSAB and is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (Figure 1-1).



**FIGURE 1-1**

South Coast Air Quality Management District

## PROJECT BACKGROUND

Historically, for almost 20 years, baghouses have been designated Best Available Control Technology (BACT) for controlling PM emissions from many processes. Retrofit technology has advanced, making high control efficiency possible. These improved retrofit requirements have begun to be implemented in SCAQMD rules. BACT is the baghouse itself, without a specific performance requirement, although a baghouse is considered to have 99 percent control efficiency with total capture for reductions from a point source.

In June 2007, the SCAQMD Governing Board adopted the Final 2007 AQMP, which included control measure BCM-01 PM Control Devices (Baghouses, Wet Scrubbers, Electrostatic Precipitators, and Other Devices). This control measure describes further reductions of emissions from PM control devices, and is scheduled for adoption in 2009, with full implementation by 2012.

Current SCAQMD rules establish particulate matter emission limits and visible opacity standards that may be achieved with baghouse control equipment. Other control devices, including, but not limited to, high efficiency particulate air (HEPA) systems, bin vents, dust collectors using high efficiency air filters, cyclones, electrostatic precipitators (ESPs), and wet scrubbers, may also be employed to reduce PM emissions from various operations.

Bag Leak Detection Systems (BLDS) can assist equipment operators in predicting and detecting bag failure before it occurs. Operation and maintenance procedures for baghouses can help ensure the continued performance of baghouses. Currently, two SCAQMD rules require baghouses to be equipped with automatic BLDS: Rules 1156 – Further Reductions of Particulate Emissions from Cement Manufacturing Facilities, and 1407 – Control of Emissions of Arsenic, Cadmium, and Nickel and Non-ferrous Metal Melting Operations. SCAQMD Rule 1157 – PM10 Emission Reductions from Aggregate and Related Operations, requires baghouses for particulate control, but does not contain any baghouse performance criteria. This proposed rule would require BLDS on larger baghouses regardless of the PM source from which the baghouse is controlling.

## HEALTH EFFECTS FROM PARTICULATE EMISSIONS

Of great concern to public health are the particles small enough to be inhaled into the deepest parts of the lung. Respirable particles (particulate matter less than about 10 micrometers in diameter) can accumulate in the respiratory system and aggravate health problems such as asthma, bronchitis and other lung diseases. Children, the elderly, exercising adults, and those suffering from asthma are especially vulnerable to adverse health effects of PM10 and PM2.5.

A consistent correlation between elevated ambient fine particulate matter (PM10 and PM2.5) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. Studies have reported an association between long-term exposure to air pollution dominated by fine particles (PM2.5) and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in fine particulate matter concentration levels have also been related to hospital admissions for acute respiratory conditions, to school and kindergarten absences, to a decrease in respiratory function in normal children and to increased medication use in children and adults with asthma. Studies have also shown lung function growth in children is reduced with long-term exposure to particulate matter.

The elderly, people with pre-existing respiratory and/or cardiovascular disease and children appear to be more susceptible to the effects of PM10 and PM2.5.

For more detailed health information from PM emissions, please refer to Chapter 2 – Air Quality and Health Effects, and Appendix I – Health Effects, of the 2007 AQMP, which can be accessed on the SCAQMD website at: <http://www.aqmd.gov/aqmp/07aqmp/index.html>

## CURRENT PM AIR QUALITY

The SCAQMD monitors ambient air quality for criteria pollutants (ozone, carbon monoxide, particulate matter, nitrogen dioxide, lead, sulfur dioxide and sulfate) at 32 locations within the Basin. Table 1-1 presents a summary of the federal National Ambient Air Quality Standards (NAAQS) and State of California Air Quality Standards (CAAQS) for particulate matter. These air quality standards are set to protect public health.

**TABLE 1-1**  
Particulate Matter Concentrations ( $\mu\text{g}/\text{m}^3$ )

Jurisdiction	PM <sub>10</sub>		PM <sub>2.5</sub>	
	Annual	24-Hour	Annual	24-Hour
Federal	--	150	15	35
California	20	50	12	--

The SCAQMD monitored PM10 concentrations at 21 locations in 2007. The federal 24-hour PM10 standard (150  $\mu\text{g}/\text{m}^3$ ) was not exceeded at any of the locations monitored in 2007. The highest PM10 concentrations were recorded in and around the Coachella Valley (146  $\mu\text{g}/\text{m}^3$ ), Mira Loma (142  $\mu\text{g}/\text{m}^3$ ) and Central San Bernardino Valley (136  $\mu\text{g}/\text{m}^3$ ). The much more stringent state 24-hour PM10 standard (50  $\mu\text{g}/\text{m}^3$ ) was exceeded in most areas.

In 2007, PM2.5 concentrations were monitored at 20 locations throughout the district. USEPA revised the federal 24-hour PM2.5 standard from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ , effective December 17, 2006. In 2007, the maximum PM2.5 concentrations in the Basin exceeded the new federal 24-hour PM2.5 standards by wide margins. The attainment year for the federal 24-hour PM2.5 standard is 2015, with the demonstration year for attainment being 2014.

Similar to PM10 concentrations, PM2.5 concentrations were higher in the inland valley areas of San Bernardino and Metropolitan Riverside counties. However, PM2.5 concentrations were also high in Central Los Angeles County. The high PM2.5 concentrations in Los Angeles County are mainly due to the secondary formation of smaller particulates resulting from mobile and stationary source activities. In contrast to PM10, PM2.5 concentrations were low in the Coachella Valley area of SSAB. PM10 concentrations are normally higher in the desert areas due to windblown and fugitive dust emissions.

## **PROJECT OBJECTIVES**

The objectives of PR 1155 are to:

1. Limit visible PM emissions;
2. Limit PM concentration levels;
3. Replace and upgrade old, less efficient PM control devices; and
4. Ensure proper operation of the PM control devices.

## **PROJECT DESCRIPTION**

### ***Proposed Rule 1155***

The key elements of PR 1155 are explained below.

Purpose (subdivision a)

The purpose of this rule is to establish requirements for permitted particulate matter (PM) control devices, including, but not limited to, baghouses, high efficiency particulate air (HEPA) systems, bin vents, dust collectors using high efficiency air filters, cyclones, electrostatic precipitators, and wet scrubbers.

Applicability (subdivision b)

This rule would apply to the operator of permitted PM control devices venting processes that have direct (non-combustion) PM emissions. For a more detailed discussion of those affected sources, refer to the next section of this chapter called “Affected Facilities.” A summary of key rule elements based on filtration type is provided in Table 1-2 and in Table 1 of the proposed rule.

**TABLE 1-2**  
Summary of Key Requirements

<b>Fabric Filtration Control Equipment</b> (baghouses)*			<b>Non-Fabric Filtration Control Equipment</b> (cyclones, ESPs, scrubbers)*
<i>Tier 1</i> ≤ 500 square feet	<i>Tier 2</i> > 500 – 7,500 square feet	<i>Tier 3</i> > 7,500 square feet	n/a
Once/week visible emissions monitoring and recordkeeping (new, existing)	Once/week visible emissions monitoring and recordkeeping (new, existing)	<u>Until BLDS is installed, once/week visible emissions monitoring and recordkeeping.</u>	Once/week visible emissions monitoring and recordkeeping (new, existing)
--	--	BLDS installation (new, existing)	--
--	<u>Emission limit (0.01 gr/dscf)</u>	Emission limit (0.01 gr/dscf)	--
--	--	<u>Title V facilities conduct initial source test and test every five years relative to compliance with the emission limit.</u>	--

\* Except as provided in subdivision (g) Exemptions

Definitions (subdivision c)

Proposed definitions are included for the following terms:

- “Best Available Control Technology (BACT)” [paragraph (c)(1)];
- “Baghouse” [paragraph (c)(2)];

- “Bag Leak Detection System (BLDS)” [paragraph (c)(3)];
- “Bin Vent” [paragraph (c)(4)];
- “Continuous Opacity Monitoring System (COMS)” [paragraph (c)(5)] deleted;
- “Cyclone” [paragraph (c)(6)];
- “Electrostatic Precipitator” [paragraph (c)(7)];
- “Existing PM Control Device” [paragraph (c)(8)];
- “Facility” [paragraph (c)(9)];
- “New PM Control Device” [paragraph (c)(10)];
- “Non-Continuous Process” [paragraph (c)(11)];
- “Verified Filtration Product” [paragraph (c)(12)]; and
- “Wet Scrubber” [paragraph (c)(13)]

#### General Requirements (subdivision d)

##### **Requirements For Both Filtration and Non-Filtration Equipment**

- Beginning April 1, 2010, ~~T~~the operator of a facility shall not cause or allow any visible emissions from any PM control device [paragraph (d)(1)].
- No later than April 1, 2010, ~~A~~all PM control devices shall be operated and maintained in accordance with manufacturer’s specifications or other specifications as describe in the rule [paragraph (d)(3)].
- Material collected in a permitted PM control device for disposal or return back to the process shall be discharged through a controlled material transfer system that prevents fugitive emissions [paragraph (d)(~~98~~)].
- All existing PM control devices shall be operated and maintained in accordance with existing SCAQMD permit conditions [paragraph (d)(~~109~~)].
- The more stringent BACT level established for the PM control device shall be met for new or modified devices subject to BACT [paragraph (d)(~~114~~)].

### **For Baghouse Filtration Equipment Only**

- No later than January 1, 2011, Tier 2 or Tier 3 baghouse shall meet an outlet PM concentration of less than or equal to 0.01 grains per dry standard cubic foot (gr/dscf) [paragraph (d)(2)].
- No later than January 1, 2013, operator of hot mix asphalt production equipment shall comply with the PM limit, unless new fabric filters have been installed the equipment whereby the operator shall comply by January 1, 2014 or at the end of the filter useful life, whichever occurs sooner [subparagraph (d)(2)(A)].
- Manual shaker units shall be upgraded or replaced, at a minimum, with an automated shaker unit after the end of the useful life or no later than January 1, 2012, whichever occurs sooner [paragraph (d)(4)].
- New baghouses shall not be a manual shaker design [paragraph (d)(5)].
- If a Tier 2 or Tier 3 baghouse exceeds an outlet PM concentration of 0.01 gr/dscf, the operator shall file a permit application to use a verified filtration product or other technologies or methods demonstrated through a source test to comply with 0.01 gr/dscf approved by the Executive Officer, shall be used [paragraph (d)(6)].
- The Tier 3 baghouse operator would not be subject to the requirements in paragraph (d)(6) if the operator resolves the problem that led to an exceedance of the PM limit within 24 hours of discovery [paragraph (d)(7)].
- A new hood and ventilation system is required to meet the velocity requirements in the latest US Industrial Ventilation Handbook when a process is vented through a new baghouse [paragraph (d)(8)].

### **Monitoring Requirements (subdivision e)**

- Beginning April 1, 2010, Aa weekly five-minute visible emissions observation shall be conducted of any Tier 1 or 2 baghouse or other PM control device by a trained person [paragraph (e)(1)].

- All corrective actions to eliminate the visible emissions shall be implemented within 24 hours of the observation of the visible emissions exiting from the PM control device [subparagraph (e)(1)(A)].
- To ensure corrective actions were effective, an operator must restart the operations and complete a new Method 22 test [subparagraph (e)(1)(B)].
- If visible emissions are observed after all corrective action is taken, the equipment that vents into the control device shall be shut down until necessary steps are taken to prevent visible emissions [subparagraph (e)(1)(CB)].
- If the activity being observed is consistently a duration of less than five minutes, then the Method 22 observation shall be for the period in which the activity takes place [subparagraph (e)(1)(D)].
- An operator may observe multiple sources contemporaneously at a single time as long as all of the sources are located in the field of view [subparagraph (e)(1)(F)].
- Baghouses outfitted with verified filtration products shall only be required to conduct visible emissions observations once per month [paragraph (e)(2)].
- A BLDS shall be installed, operated, calibrated and maintained pursuant to the manufacturer's recommendations on any Tier 3 baghouse [paragraph (e)(3)].
- New Tier 3 baghouses are subject to the requirements in paragraph (e)(3) upon rule adoption and operators of existing Tier 3 baghouses shall file a permit application for a BLDS by May 1, 2010 and shall install the BLDS three months after issuance of permit ~~are subject to same requirement one year from the date of rule adoption~~ [subparagraph (e)(3)(A)].
- The BLDS system shall have a PM sensor and an alarm that will activate automatically when it detects significant increase in relative PM emissions [subparagraph (e)(3)(B)].
- Maintenance and inspections of BLDS shall be performed and records maintained [subparagraph (e)(3)(DB)].

- The BLDS shall to be certified to be capable of alarming automatically before visible emissions can be seen in the exhaust of a baghouse [subparagraph (e)(3)(C)].
- If an alarm is received, the baghouse and BLDS shall be investigated and all necessary corrective action taken to eliminate the cause of the alarm [subparagraph (e)(3)(~~E~~)].
- Baghouse filters shall be maintained and operated so the BLDS alarm activation is minimized and cumulative hours of alarm activation should not exceed five percent of the total operating hours within any continuous six-month rolling period [subparagraph (e)(3)(~~F~~)].
- Alarm activation is the time the alarm is activated and the time taken by the operator to eliminate the cause of the alarm. The time equipment is shutdown does not count toward alarm activation time. Similarly, if the alarm is determined to be a mistake, the false alarm time is not considered alarm activation time. If inspection of the baghouse demonstrates no corrective action is necessary, no alarm activation will be counted in the cumulative hour requirement in subparagraph (e)(3)(~~F~~). If cumulative hours are exceeded, the equipment that vents into the baghouse shall be shut down until necessary actions are taken to eliminate the elevated emissions [subparagraph (e)(3)(~~G~~)].
- Operators of hot mix asphalt production equipment may conduct daily visible emissions monitoring in lieu of BLDS installation, provided the Executive Officer is notified in writing no later than May 1, 2010, a permit application for a BLDS is filed no later than June 1, 2011, and the BLDS is installed within three months of issuance of the permit [paragraph (e)(4)].
- A COMS installed at an existing Tier 3 baghouse shall be changed to a BLDS after the end of the useful life or no later than January 1, 2012, whichever occurs sooner [paragraph (e)(~~5~~4)].
- Source tests shall be conducted by an approved lab to demonstrate compliance for a baghouse located at a Title V facility no later than January 1, 2011 and subsequently every five years thereafter [paragraph (e)(6)].

Recordkeeping (subdivision f)

- All records and information shall be maintained and available at the facility for a minimum of five years [~~subdivision paragraph (f)(5)~~].

Exemptions (subdivision g)

- Any baghouse with a filter surface area less than or equal to 100 square feet is exempt from the provisions of the rule except for visible emissions requirements in paragraph (d)(1) ~~and subparagraph (e)(1)(A)~~ [paragraph (g)(1)].
- A PM control device venting to a non-continuous process is exempt from visible emissions monitoring requirements in paragraph (e)(1) provided no visible emissions occur when the process activity takes place [paragraph (g)(2)].
- Any equipment with an active permit to operate that is not in operation is exempt from the provisions of the rule until the equipment is operated [paragraph (g)(3)].
- Operations subject to SCAQMD Rules 1105.1 – Reduction of PM10 and Ammonia Emissions from Fluid Catalytic Cracking Units, and 1156 – Further Reductions of Particulate Emissions from Cement Manufacturing Facilities are exempt from all the provisions of the rule [paragraph (g)(4)].
- Tier 1 or 2 baghouses with BLDS are exempt from visible emissions monitoring requirements in paragraph (e)(1) [paragraph (g)(5)].
- ~~One year extension of the outlet PM concentration requirement of paragraph (d)(2) granted if technical infeasibility of meeting the limit is demonstrated [paragraph (g)(6)].~~
- Bin vents are exempt from visible emissions monitoring provisions of paragraph (e)(1) [paragraph (g)(6)].
- The provisions of the visible emissions requirements in paragraph (d)(1), PM concentration limits in (d)(2) and (d)(6), and visible emissions monitoring requirements in (e)(1), and subparagraphs (e)(3)(E) through (e)(3)(G) shall not apply during the one-half hour of initial start-up of the equipment or process venting to the PM control device ~~and the first 15~~

~~minutes of including~~ start-up after a repair to fix an equipment breakdown or after a scheduled maintenance activity [paragraph (g)(78)].

- For PM control devices connected in series, the provisions of PM concentration limits in (d)(2) and (d)(6), and visible emissions monitoring requirements in (e)(1) shall only apply to the PM air pollution control device exhausting to the atmosphere. In the event a Tier 3 baghouse is not the last in the series to vent to the atmosphere, the provisions of paragraph (e)(3) shall not apply [paragraph (g)(89)].
- Any paint spray booth or powder spray booth is exempt from the provisions of this rule [paragraph (f)(9)].
- Air pollution control equipment exclusively venting organic gases from hot mix asphalt load-out operations and directly related equipment, including storage silos, conveyors, mills, and batching towers, are exempt from the provisions of this rule [paragraph (f)(10)].
- With the exception of paragraph (d)(1), the following are exempt from the provisions of this rule: portable PM control equipment with a maximum rated capacity of less than or equal to 3,000 cfm; Rule 1469 facility operations; and HEPA equipment [paragraphs (f)(11)-(13)].

Please refer to Appendix A for the text of PR 1155.

## **AFFECTED FACILITIES**

Facilities that have permits to operate stationary sources with control devices for directly emitted, non-combustion PM are potentially affected by PR 1155. Based on the District's permit database, there are approximately 1,530 facilities with about 4,770 PM control devices. The types of industries include aggregate and related operations, cement and asphalt plants, food products, metallurgical, pharmaceutical, textile and wood products, as well as chemical product manufacturing. Among the total numbers of PM control equipment, 3,630 units (at 1,170 facilities) are PM control devices by fabric filtration, such as baghouses, cartridge filter dust collectors, and bin vents. They account for 76 percent of the total equipment units. The remaining 1,140 units (at 520 facilities) are other PM control devices, including cyclones, electrostatic precipitators, and wet scrubbers. They account for the remaining 24 percent. Table 1-3 outlines the affected universe of sources.

**TABLE 1-3**  
Affected Universe of Sources

	<b>Facilities<sup>1</sup></b>	<b>Units</b>
All PM Control Equipment	1,530	4,770
Filtration Control	1,170	3,630
Non-Filtration Control	520	1,140

1. Total facility count is not additive because some facilities have both filtration and non-filtration control equipment.

Staff initiated an analysis of facilities that reported any PM emissions to the SCAQMD’s Annual Emission Reporting (AER) system in fiscal year 2005 and 2006. By cross-matching these AER facilities with the permit database, a total of 89 facilities with 570 permits to operate fabric filtration devices were scrutinized. Out of 570 applications, staff found 457 permits that had information on filter surface area. Review of the data led to the separation of the baghouse universe into three tiers based on surface area. Tier 1 ( $\leq 500 \text{ ft}^2$ ) accounts for approximately 43 percent, Tier 2 ( $>500 - 7,500 \text{ ft}^2$ ) accounts for approximately 50 percent, and Tier 3 ( $>7,500 \text{ ft}^2$ ) for the remaining 7 percent of the units. Certain requirements are based on these filtration sizes. The percentages were then applied to the entire universe of fabric filtration devices in the permit database to predict the number of baghouses in each Tier. Table 1-4 provides a snapshot of existing baghouse units with an active permit to operate since 1977 through 2007.

**TABLE 1-4**  
Existing Baghouse Units under PR 1155

	<b>Tier 1</b>	<b>Tier 2</b>	<b>Tier 3</b>	<b>Total</b>
Filter area (ft <sup>2</sup> )	$\leq 500$	$> 500 - 7,500$	$> 7,500$	--
Percent in tier	42.9%	50.5%	6.6%	100%
# Units	1,557	1,833	240	3,630

To predict the number of new baghouse units anticipated to be permitted each year, a recent six year (2003–2008) permit history was examined. For the 1,086 baghouse units permitted during the six years, an average of 181 new units were permitted per year. At 181 new baghouses per year, on average, is less than four per week or less than one per day. Table 1-5 provides the breakdown of the 181 new units.

**TABLE 1-5**

New Baghouse Units under PR 1155

	<b>Tier 1</b>	<b>Tier 2</b>	<b>Tier 3</b>	<b>Total</b>
Filter area (ft <sup>2</sup> )	≤ 500	> 500 – 7,500	> 7,500	--
Percent in tier	42.9%	50.5%	6.6%	100%
# Units/year	~78	~91	~12	~181

## PM CONTROL METHODS

Baghouses, bin vents, cyclones, electrostatic precipitators and wet scrubbers are technologies typically used to control PM emissions from processes. A BLDS monitors the performance of baghouse functions by detecting early bag leak or malfunction, while a COMS monitors opacity.

### Baghouses

Baghouse is an air filtration control device designed to remove PM from an exhaust gas stream using filter bags, cartridge-type filters, or envelope-type filters. A baghouse consists of the following components: filter medium and support, filter cleaning device, collection hopper, shell, and fan. Most U.S. baghouse designs employ long cylindrical tubes (bags) that contain fabric as the filtering medium. When dusty air flows to the inlet of a baghouse, particulates are filtered through the filter bags inside the baghouse and filtered air flows from the outlet of the baghouse. Dust layers (dust cakes) deposited on the surface of the bags need to be cleaned periodically to prevent excessive increase of pressure drops across the baghouse, which may lead to bag leak resulting in failure of proper baghouse function.

Baghouses may be further defined by the type of bag cleaning method. There is a shaker, reverse air, or pulse jet-type baghouse. Shaker-type baghouses are further separated into a manual shaker and an automated mechanical shaker. A manual shaker baghouse is cleaned by hand-shaking motions to clean off the dust cake, while an automated mechanical shaker uses mechanical shaking motions with an automatic timer equipped to clean the bags. While bags are cleaned, the filtering operation needs to stop and resume after cleaning is done.

A reverse air-type baghouse uses a low pressure flow of air to break the dust cake and clean the bags of material build-up. This is a popular fabric filter cleaning method that has been extensively used. Cleaning air is supplied by a separate fan which is normally smaller than the main stream fan, since only one compartment is cleaned at a time.

A pulse jet-type baghouse uses a high pressure jet of compressed air to back-flush the bags. This is the most common cleaning system that accounts for approximately 50 percent of the current new baghouses installed in the U.S. Cleaning is performed while the baghouse remains in operation.

Cartridge (cylindrical) type filters have pleated, non-woven filter media supported on a perforated metal cartridge. Due to its pleated design, total filtering area is greater than in a conventional bag of the same diameter, resulting in reduced air-to-cloth ratio, pressure drop, and overall collector size. Too heavily loaded cartridges can be either cleaned by a pulse jet compressed air or replaced with new, clean cartridges. Cartridge type filters have high particle collection efficiency of, at a minimum, 99.9 percent, and are usually used for industrial processes handling exhaust gas flow rates less than 50,000 cubic feet per minute (cfm).

### **Bin Vents**

A bin vent is a dust collector that is typically non-powered. It removes particulates from displaced air filling storage silos and bins. A bin vent is installed on top of silos and dust cakes return to the silos when filters are cleaned.

### **Cyclones**

A cyclone, typically used as a pre-cleaner, does not have a blower mounted or connected to induce the particle-laden exhaust gas stream. Particles in the gas stream are forced to move toward the cyclone walls by the centrifugal force of the spinning gas. Large particles are removed from the gas stream by inertia and small particles may travel along the gas stream out of the cyclone.

### **Electrostatic Precipitators (ESPs)**

ESP is a control device designed to remove PM from an exhaust gas stream by imparting a high voltage direct current (DC) charge to the particles, while simultaneously ionizing the carrier gas, producing an electric corona. The particles, either negatively or positively charged, are attracted to the ESP collecting electrode of the opposite charge and are cleaned from the electrode by a manufacturer specified method.

### **Wet Scrubbers**

Wet scrubber is a control device designed to remove PM emissions from an exhaust gas stream using a finely atomized stream of liquid to capture particulate and gaseous pollutants. Heat and mass transfer are accomplished by direct contact of the exhaust gas with finely atomized droplets of the scrubbing liquid. The gas stream is cooled

and moistened as the scrubbing liquid evaporates. After the exhaust gases leave the scrubber, they flow through an after-filter to remove entrained liquid particles.

### **Bag Leak Detection System (BLDS)**

A BLDS is a system that continuously monitors bag leakage and failure. A BLDS consists of a stainless steel probe that is energized with a DC electrical voltage. When the particles flow near the probe placed in the particle-laden exhaust gas stream, the small current changes (called triboelectric current) of its electric field are measured.

### **Continuous Opacity Monitoring System (COMS)**

COMS is a system that continuously monitors opacity. COMS is typically installed at the stack opening and opacity is measured as the amount of the light lost associated with passage of a light through an exhaust plume. The measurement of opacity is a qualitative surrogate of the quantity of particulate mass present in the exhaust gas stream emitted from the baghouse.

## **CHAPTER 2 - ENVIRONMENTAL CHECKLIST**

---

**Introduction**

**General Information**

**Environmental Factors Potentially Affected**

**Determination**

**Impact Analysis Overview**

**Environmental Checklist and Discussion**

## INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the PR 1155.

## GENERAL INFORMATION

Project Title:	Proposed Rule 1155– Particulate Matter (PM) Control Devices
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Michael A. Krause (909) 396-2706
Rule Contact Person:	Jong Hoon Lee (909) 396-3903
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	The purpose of proposed Rule (PR) 1155 – Particulate Matter (PM) Control Devices, is to implement the 2007 AQMP control measure BCM-01 by establishing performance and maintenance requirements for permitted PM control devices, including, but not limited to, baghouses, <u>high efficiency particulate air (HEPA) systems</u> , bin vents, <u>dust collectors using high efficiency air filters</u> , cyclones, electrostatic precipitators and wet scrubbers. The new requirements involve restricting visible emissions, limiting PM concentration, replacing and upgrading old equipment, operation and maintenance (O&M) requirements, installing monitoring systems, and conducting associated recordkeeping.
Surrounding Land Uses and Setting:	Not applicable
Other Public Agencies Whose Approval is Required:	Not applicable

## ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. None of the environmental topics are expected to be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Aesthetics             | <input type="checkbox"/> Geology and Soils               | <input type="checkbox"/> Population/Housing          |
| <input type="checkbox"/> Agricultural Resources | <input type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Public Services             |
| <input type="checkbox"/> Air Quality            | <input type="checkbox"/> Hydrology and Water Resources   | <input type="checkbox"/> Recreation                  |
| <input type="checkbox"/> Biological Resources   | <input type="checkbox"/> Land Use and Planning           | <input type="checkbox"/> Solid/Hazardous Waste       |
| <input type="checkbox"/> Cultural Resources     | <input type="checkbox"/> Mineral Resources               | <input type="checkbox"/> Transportation/Circulation. |
| <input type="checkbox"/> Energy                 | <input type="checkbox"/> Noise                           | <input type="checkbox"/> Mandatory Findings          |

## DETERMINATION

On the basis of this initial evaluation:

- I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline §15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.
- I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.

- I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.
  
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date September 17, 2009

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

## IMPACT ANALYSIS OVERVIEW

Adopting PR 1155 is necessary to ensure proper equipment function, to contribute to improved air quality of the Basin, and to protect public health from exposures to particulates. PR 1155 would strengthen existing regulatory requirements for baghouses and non-baghouse type PM control devices by establishing no visible emissions, an emission limit, requiring upgrades of manual shakers to automated baghouses, proper O&M procedures, and BLDS for the larger baghouses for early warning. The activities undertaken to comply with the proposed rule will ultimately reduce existing air pollution but might result in secondary adverse environmental impacts, some for a temporary period of time, due to construction and installation of new equipment. The new equipment may be located at new facilities or replacements at existing facilities. Table 2-1 provides an overview of the key proposed rule requirements, estimated affected sources, compliance dates, and a brief analysis of the expected impacts from the proposed project. This was used as a guide to providing the detailed impact analysis for each environmental topic found in this chapter. Those requirements that result in no adverse environmental impact or no

change in environmental impact, such as complying with permit conditions and BACT, monitoring, and recordkeeping, will not be further analyzed.

**TABLE 2-1**  
Impact Analysis Overview

Proposed Rule Requirements	Affected Sources	Compliance Date	Impact Analysis
Facility shall not cause or allow any visible emissions	All 1,530 facilities with PM control	<del>April 1, 2010</del> <del>Date of rule adoption</del>	Requires no visible emissions, which may result in quicker repairs resulting in potential aesthetic benefit.
PM concentration emission limit (<=0.01 gr/dry scf)	<del>Tier 2 (1,833) baghouses;</del> Tier 3 (240) baghouses	<del>January 1, 2011</del> <del>Date of rule adoption</del>	Reducing PM concentration level result in aesthetic and air quality benefit. According to source testing data collected, almost all affected facilities currently comply with this limit except a few asphalt batch plants. It should be noted that some asphalt batch plants do comply with the new limit. Modifications to achieve compliance include filter bag replacement and air-to-cloth ratio adjustments, which affects the existing blower. Potential additional energy necessary.
All PM control devices shall be operated and maintained in accordance with manufacturer specifications	All 1,530 facilities with PM control	<del>April 1, 2010</del> <del>Date of rule adoption</del>	No adverse environmental impacts; if implemented properly could result in air quality benefit.
Existing manual shaker units shall be upgraded or replaced with an automated shaker unit	66 manual shakers	January 1, 2012	Construction emissions from installing and operating new equipment. Because operation of the equipment is more efficient, there is a potential air quality, energy and solid waste benefit from less wear on filters bags.
New baghouse shall not be manual shaker	Historically, 181 new baghouses per year	Date of rule adoption	No change in environmental impacts occurring from installing baghouses in the future. Operational air quality benefit from more efficient equipment.
PM concentration exceedance <del>as a result of modification</del> of any baghouse will require use of verified filtration products	<del>Tier 3 (240) baghouses</del> All 3,630 fabric filtration equipment	Date of rule adoption	No change in environmental impacts occurring during modifications in the future. Operational air quality benefit from verified equipment.
If process is vented to new baghouse, install and maintain its new hood and ventilation system that meets minimum capture velocity requirements according to the latest US Industrial Ventilation Handbook	Historically, 181 new baghouses per year	Date of rule adoption	The new requirement is compliance with the minimum capture velocity standard in the US Industrial Ventilation Handbook. No new hood and ventilation system is expected to be installed that does not meet the new velocity requirement so no new environmental impact would result.

**TABLE 2-1 (CONCLUDED)**

## Impact Analysis Overview

Proposed Rule Requirements	Affected Sources	Compliance Date	Impact Analysis
Discharge PM through <u>controlled enclosed</u> material transfer systems	<u>All 1,530 facilities with PM control</u> <del>All 3,630 fabric filtration equipment</del>	Date of rule adoption	Process change for those with a material transfer system not <u>controlled enclosed</u> . <u>Controlled systems Enclosure</u> might include a “shroud” whose installation and operation would not generate any adverse environmental impacts.
Operate and maintain existing baghouses complying with permit conditions	All 1,170 facilities with filtration control	Date of rule adoption	No change in existing environmental impacts.
New or modified equipment subject to the requirements of BACT	Historically, 181 new baghouses per year	Date of rule adoption	No change in environmental impacts.
Monitoring visible emissions	<u>All 1,530 facilities with PM control</u> <del>Tier 2 (1,833) baghouses; Tier 3 (240) baghouses</del>	<u>April 1, 2010</u> <del>Date of rule adoption</del>	No adverse environmental impacts; if monitored properly and corrective action taken could result in air quality benefit.
Install, operate, calibrate and maintain bag leak detection system (BLDS)	Tier 3 (240) baghouses	<u>File for permit May 1, 2010 (existing);</u> <del>One year from</del> date of rule adoption ( <u>new</u> )	Potential construction emissions from delivering and installing BLDS. Operational air quality benefit from leak detection.
Recordkeeping	All 1,170 facilities with filtration control	Date of rule adoption	No adverse environmental impacts.
Exemptions	Unknown at this time	Date of rule adoption	No new environmental impacts generated because it is a new rule so the exemptions are not more stringent or a relaxation of existing setting.

## ENVIRONMENTAL CHECKLIST AND DISCUSSION

	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>I. AESTHETICS.</b> Would the project:			
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Significance Criteria

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

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

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

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

### Discussion

I. a), b) & c): PR 1155 will further reduce PM from existing PM control devices and maximize PM reduction from new PM control devices. This is done with replacement of older, less efficient equipment with newer, cleaner, more efficient control equipment. In addition, the proposed rule imposes limits on PM concentration levels and strengthens existing visible emission requirements. To that extent, PM emission reductions are achieved through PR 1155 and, thus, improvements in visibility would also be expected. Better visibility will improve

existing scenic vistas and the existing visual character or quality of areas in the vicinity of affected sites. Construction equipment and materials will be needed to remove old equipment and install new equipment, but because the replacements are not expected to take place over a period longer than one or two days, the potential adverse aesthetic impact is expected to be temporary. The BLDS consists of probes placed within the baghouse system so they are expected to blend in with the existing processing equipment. Therefore, any potential construction and operation of new and modified existing equipment as a result of the proposed project would not damage or obstruct scenic resources and the existing visual character of any site in the vicinity of affected industrial facilities will not be degraded.

I. d). There are no components in PR 1155 that would require construction activities at night. Therefore, no additional lighting at the facility would be required beyond what currently may exist. Similarly, the proposed project has no provisions that would require affected equipment to operate at night. Some affected facilities are already lighted at night and any changes with PM control devices would not require additional lighting. Therefore, the proposed project is not expected to create a new source of substantial light or glare at an affected facility that would adversely affect day or nighttime views in the area. Therefore, the proposed project is not expected to create significant adverse aesthetic impacts.

Based on the above considerations, significant adverse impacts to aesthetics resources are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>II. AGRICULTURE RESOURCES.</b> Would the project:			
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

### Significance Criteria

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

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

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

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

### Discussion

II. a) - c): Minor construction from the replacement of manual shakers and installation of BLDS will not require converting farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract. Since the proposed project would not substantially change the facility or process, there are no provisions in the proposed rule that would affect land use plans, policies, or regulations. Further, additional land would not need to be purchased to replace the existing baghouse or install the BLDS. Land use and other planning considerations are determined by local governments and no land use or planning requirements relative to agricultural resources will be altered by the proposed project.

Based on the above considerations, significant adverse impacts to agriculture resources are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

---

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>III. AIR QUALITY.</b> Would the project:			
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- |  |                          |                                     |                                     |
|--|--------------------------|-------------------------------------|-------------------------------------|
| b) Violate any air quality standard or contribute to an existing or projected air quality violation?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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)? | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| d) Expose sensitive receptors to substantial pollutant concentrations?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| e) Create objectionable odors affecting a substantial number of people?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| g) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on applicable threshold of significance?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| h) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

### Significance Criteria

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

**TABLE 2-2**  
Air Quality Significance Thresholds

<b>Mass Daily Thresholds <sup>a</sup></b>		
<b>Pollutant</b>	<b>Construction <sup>b</sup></b>	<b>Operation <sup>c</sup></b>
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
<b>Toxic Air Contaminants (TACs) and Odor Thresholds</b>		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk $\geq$ 10 in 1 million Hazard Index $\geq$ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
<b>Ambient Air Quality for Criteria Pollutants <sup>d</sup></b>		
NO2  1-hour average annual average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.25 ppm (state) 0.053 ppm (federal)	
PM10 24-hour average annual geometric average annual arithmetic mean	10.4 $\mu\text{g}/\text{m}^3$ (construction) <sup>e</sup> & 2.5 $\mu\text{g}/\text{m}^3$ (operation) 1.0 $\mu\text{g}/\text{m}^3$ 20 $\mu\text{g}/\text{m}^3$	
PM2.5 24-hour average	10.4 $\mu\text{g}/\text{m}^3$ (construction) <sup>e</sup> & 2.5 $\mu\text{g}/\text{m}^3$ (operation)	
Sulfate 24-hour average	1 $\mu\text{g}/\text{m}^3$	
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) 9.0 ppm (state/federal)	

<sup>a</sup> Source: SCAQMD CEQA Handbook (SCAQMD, 1993)

<sup>b</sup> Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).

<sup>c</sup> For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.

<sup>d</sup> Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

<sup>e</sup> Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day      ppm = parts per million       $\mu\text{g}/\text{m}^3$  = microgram per cubic meter       $\geq$  greater than or equal to

## Discussion

PR 1155 will further reduce PM from existing PM control devices and maximize PM reduction from new PM control devices. This is done with replacement of older, less efficient equipment with newer, cleaner, more efficient control equipment. In addition, the proposed rule imposes limits on PM concentration levels and strengthens existing visible emission requirements. As discussed in Chapter 1 and outlined in Table 2-1, existing manual shakers shall be upgraded or replaced by January 1, 2012 with, at a minimum, an automated shaker unit. The BLDS installations would be required of 240 Tier 3 baghouses over the year following the rule adoption. The replacement of old equipment and installation of BLDS could generate potential air quality impacts. The impacts would be temporary occurring during construction. The operation of the new equipment and monitoring systems are expected to result in reductions in PM emissions and, thus, be an air quality benefit.

III. a): PR 1155 would not conflict with or obstruct the applicable air quality plan implementation. The primary purpose of the SCAQMD's AQMP is to control emissions and to attain and maintain all federal and state ambient air quality standards for the district. The 2007 AQMP concluded that major reductions in emissions of VOC, NO<sub>x</sub> and PM are necessary to attain the air quality standards for ozone and PM2.5. The proposed requirements in PR 1155 would ensure proper operating and maintenance of equipment by establishing minimal performance standards.

III. b) & d): There are an estimated 66 manual shakers that are required to be upgraded or replaced by January 1, 2012 with, at a minimum, an automated shaker unit. The replacement units are not expected to change in size from the existing equipment so a new foundation is not warranted. However, individual affected facilities may see the need to upgrade their foundation to accommodate the new equipment and decide to pave a new foundation.

The new requirement to install BLDS would be required of 240 existing Tier 3 baghouses over the year following the rule adoption.

### ***Construction Impacts***

The replacement of old equipment and installation of BLDS could generate potential air quality impacts. The impacts would be temporary occurring during construction.

#### **Manual Shaker Replacement**

The replacement of 66 manual shakers was analyzed in three phases that are not expected to overlap due to the nature of the construction activity. The three phases are as followed: 1) demolition and removal of manual shaker equipment; 2) paving

new foundation for new baghouse equipment; and 3) delivery and installation of new baghouse equipment. Each phase is expected to take place in one day. The construction emission calculations can be found in excel spreadsheets located in Appendix B of this document. The operators of the manual shakers are given until January 1, 2012, to replace or upgrade their equipment. It is speculative when each operator will decide to take action. While it is expected that some operators will replace early, others later and closer to the deadline, it can be assumed the construction activity would take place within the last 18 months of the compliance date. With that schedule, less than four manual shakers, on average will be replaced per month or less than one per week. With a three-day construction period, it is unlikely there will be an overlap of emissions.

Because the size of the manual shaker to be removed is not known, the analysis assumed a “worse case” scenario that the manual shaker was large (>7,500 ft<sup>2</sup>). Therefore, a crane would be needed along with one backhoe/loader to assist in the removal of the manual shaker equipment and any minor demolition required. Four workers would be needed to perform the removal process and one removal haul truck. Mobile source emissions will be generated from the vehicles driven by these construction workers to and from the site. Paving a new foundation for the new equipment would require pavers, paving equipment, forklifts, rollers, and cement and mortar mixers. Six workers are assumed to be needed. Finally, the delivery and installation warrants a forklift, crane, welder and generator set. Four construction workers will be needed along with one equipment delivery vehicle.

Table 2-3 summarizes the emissions from each of the construction phases on a given day. As noted in Table 2-3, the peak emissions are experienced from different activities for each of the criteria pollutants. The peak emission from each criteria pollutant was used to compare to the SCAQMD daily construction significance thresholds and determine significance. The detailed calculations, along with the off-road and on-road emission factors, can be found in Appendix B.

**TABLE 2-3**  
Construction Emissions from Manual Shaker Replacement

<b>Activity</b>	<b>CO</b> (lbs/day)	<b>NOx</b> (lbs/day)	<b>PM10</b> (lbs/day)	<b>PM2.5</b> (lbs/day)	<b>VOC</b> (lbs/day)	<b>SOx</b> (lbs/day)
Demolition and Removal of Manual Shaker Equipment	5.1	8.4	0.5	0.5	1.2	0.01
Paving New Foundation	7.0	11.5	0.8	0.7	1.9	0.011

**TABLE 2-3 (CONCLUDED)****Construction Emissions from Manual Shaker Replacement**

<b>Activity</b>	<b>CO</b> (lbs/day)	<b>NO<sub>x</sub></b> (lbs/day)	<b>PM<sub>10</sub></b> (lbs/day)	<b>PM<sub>2.5</sub></b> (lbs/day)	<b>VOC</b> (lbs/day)	<b>SO<sub>x</sub></b> (lbs/day)
Delivery and Installation of New Replacement Equipment	5.2	9.5	0.6	0.5	1.5	0.01
<b>PEAK</b> Daily Construction Emissions	<b>7.0</b>	<b>11.5</b>	<b>0.8</b>	<b>0.7</b>	<b>1.9</b>	<b>0.011</b>
SCAQMD Daily Construction Significance Thresholds	550	100	150	55	75	150
Significant?	No	No	No	No	No	No

As noted in Table 2-3, the peak daily emissions from the different construction activities as a result of replacing one manual shaker would not exceed the SCAQMD's daily air quality significance thresholds during the construction phase. In addition, according to the peak daily construction emissions from one manual shaker replacement in Table 2-3, up to eight replacements could occur before the construction significance threshold for NO<sub>x</sub> is exceeded. As discussed previously, because the 66 affected pieces of equipment are given up to two years to comply, it is highly unlikely eight phases of construction would occur on a given day. The average replacement on an 18 months of construction activity would be less than four per month or one per week.

**BLDS Delivery and Installation**

Finally, 240 existing Tier 3 baghouses would be required to install the BLDS within one year from adoption of the rule. On average, less than five installations per week would need to take place in order to ensure rule compliance. As described in Chapter 1, the BLDS are probes placed within the baghouse system. Installation would not require major off-road equipment. The analysis assumes a welder might be necessary and a delivery vehicle to bring the equipment to the location. The work would require one worker to complete the task in one day. Table 2-4 provides the peak daily construction emissions from the delivery and installation of one BLDS. The peak emission from each criteria pollutant was used to compare to the SCAQMD daily construction significance thresholds and determine significance. The detailed calculations, along with the off-road and on-road emission factors, can be found in Appendix B.

**TABLE 2-4**

Construction Emissions from BLDS Delivery and Installation

<b>Activity</b>	<b>CO</b> (lbs/day)	<b>NOx</b> (lbs/day)	<b>PM10</b> (lbs/day)	<b>PM2.5</b> (lbs/day)	<b>VOC</b> (lbs/day)	<b>SOx</b> (lbs/day)
<b>PEAK</b> Daily Construction Emissions from BLDS Delivery and Installation	<b>1.5</b>	<b>1.8</b>	<b>0.1</b>	<b>0.1</b>	<b>0.4</b>	<b>0.002</b>
SCAQMD Daily Construction Significance Thresholds	550	100	150	55	75	150
Significant?	No	No	No	No	No	No

As noted in Table 2-4, the peak daily emissions from the construction activities as a result of the installing one BLDS in the year following rule adoption would not exceed the SCAQMD’s daily air quality significance thresholds during the construction phase. According to the peak daily construction emissions from one BLDS delivery and installation in Table 2-4, up to 55 installations on a given day could occur before the construction significance threshold for NOx is exceeded. As discussed previously, on average, five installations could occur per week or less than one per day. Therefore, it is highly unlikely more than 55 installations out of 240 total installations anticipated would occur on a given day.

Because the manual shaker replacements and the installation of BLDS could arguably overlap before January 1, 2012, Table 2-5 examines the additive impacts from construction activities taking place on the same day. However, if a manual shaker is being replaced with a Tier 3 baghouse, subject to the BLDS requirement, no BLDS installation activity is expected because the new equipment should have a BLDS already installed. In the case of the manual shaker replacement, the construction phase with the peak emissions was used.

**TABLE 2-5**

Construction Emissions from Overlapping Requirements and Compliance Deadlines

<b>Activity</b>	<b>CO</b> (lbs/day)	<b>NOx</b> (lbs/day)	<b>PM10</b> (lbs/day)	<b>PM2.5</b> (lbs/day)	<b>VOC</b> (lbs/day)	<b>SOx</b> (lbs/day)
Manual Shaker Equipment Replacement	7.0	11.5	0.8	0.7	1.9	0.011
BLDS Delivery and Installation	1.5	1.8	0.1	0.1	0.4	0.002

**TABLE 2-5 (CONCLUDED)**

## Construction Emissions from Overlapping Requirements and Compliance Deadlines

<b>Activity</b>	<b>CO</b> (lbs/day)	<b>NO<sub>x</sub></b> (lbs/day)	<b>PM<sub>10</sub></b> (lbs/day)	<b>PM<sub>2.5</sub></b> (lbs/day)	<b>VOC</b> (lbs/day)	<b>SO<sub>x</sub></b> (lbs/day)
<b>TOTAL</b> Daily Construction Emissions	<b>8.5</b>	<b>13.3</b>	<b>0.9</b>	<b>0.8</b>	<b>2.3</b>	<b>0.013</b>
SCAQMD Daily Construction Significance Thresholds	550	100	150	55	75	150
Significant?	No	No	No	No	No	No

As shown in Table 2-5, the total emissions from construction activities occurring on the same day at three different facilities due to overlapping requirement and compliance deadlines does not exceed the SCAQMD construction significance thresholds. Further, as discussed earlier, less than one facility, on average, would be expected to be conducting any of these construction activities, yet according to the data in Table 2-5, up to 22 different facilities could be conducting one of these construction activities on a given day before the SCAQMD construction significance thresholds are exceeded. Therefore, the air quality impact from construction emissions to implement PR 1155 has been determined to be not significant.

***Operational Phase***

The operation of the new equipment and monitoring systems are expected to result in reductions in PM emissions and, thus, would be an air quality benefit. Other proposed rule requirements would also result in operational air quality benefits but would require no construction activity. Such requirements include monitoring visible emissions, limiting PM concentration, use of verified filtration products, and complying with permit conditions, BACT requirements, and manufacturer's specifications. The proposed project would not violate any ambient air quality standards, but would assist in continuing to reduce PM emissions, which will assist the SCAQMD in attaining state and national PM standards. Thus, ambient air quality standards are not anticipated to be violated nor will the proposed project generate any emissions that would exceed any of the significance thresholds in Table 2-2.

III. c): **Cumulative Impacts:** Since PR 1155 is not expected to generate potentially significant adverse project-specific construction or operational air quality impacts, the proposed project's contribution to a potentially significant cumulative impact during operation is rendered less than cumulatively considerable and, thus, is not significant (CEQA Guidelines §15064(h)(2)). With regard to other projects in the vicinity occurring at the same time as this project, CEQA Guidelines §15064(h)(4) states "the mere existence of significant cumulative impacts caused by other projects

alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable."

III. e): Noticeable odors from diesel fueled construction equipment are not expected to be generated during the construction period to install the new baghouses and BLDS because of the small number of construction equipment needed to install the systems. No objectionable odors will be generated from the operation of the control devices and monitoring systems and, thus, potential odor impacts will not result from the proposed project.

III. f): The proposed project will strengthen existing rule requirements, such as compliance with visible emissions, permit conditions and BACT, and provide additional requirements to further reduce PM emissions from PM control devices. Thus, the proposed project will not diminish an existing air quality rule or future compliance requirements.

III. g), h): **Greenhouse Gases/Climate Change:** Global climate change refers to changes in average climatic conditions on earth as a whole, including temperature, wind patterns, precipitation and storms. Global warming, a related concept, is the observed increase in average temperature of the earth's surface and atmosphere. One identified cause of global warming is an increase of greenhouse gases (GHGs) in the atmosphere. The six major GHGs identified by the Kyoto Protocol are CO<sub>2</sub>, methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorcarbons (HFCs), and perfluorocarbons (PFCs). The GHGs absorb longwave radiant energy reflected by the earth, which warms the atmosphere. GHGs also radiate longwave radiation both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation absorbed by the atmosphere is known as the "greenhouse effect." The potential effects of global climate change may include rising surface temperatures, loss in snow pack, sea level rise, more extreme heat days per year, and more drought years.

CO<sub>2</sub> is an odorless, colorless greenhouse gas. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human caused) sources of CO<sub>2</sub> are from burning coal, oil, natural gas, wood, butane, propane, etc. CH<sub>4</sub> is a flammable gas and is the main component of natural gas. N<sub>2</sub>O, also known as laughing gas, is a colorless greenhouse gas. Some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to the atmospheric load of GHGs. HFCs are synthetic man-made chemicals that are used as a substitute for chlorofluorocarbons (whose production was stopped as required by the Montreal Protocol) for automobile air conditioners and refrigerants. The two main sources of PFCs are primary aluminum production and semiconductor manufacture. SF<sub>6</sub> is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF<sub>6</sub> is used for insulation in

electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Events and activities, such as the industrial revolution and the increased combustion of fossil fuels (e.g., gasoline, diesel, coal, etc.), have heavily contributed to the increase in atmospheric levels of GHGs. As reported by the California Energy Commission (CEC), California contributes 1.4 percent of the global and 6.2 percent of the national GHGs emissions (CEC, 2004). The GHG inventory for California is presented in Table 2-6 (CARB, 2007). Approximately 80 percent of GHGs in California are from fossil fuel combustion and over 70 percent of GHG emissions are carbon dioxide emissions (see Table 2-6).

**TABLE 2-6**  
California GHG Emissions and Sinks Summary  
(Million metric tons of CO<sub>2</sub> equivalence)

Categories Included in the Inventory	1990	2004
<b>ENERGY</b>	<b>386.41</b>	<b>420.91</b>
<i>Fuel Combustion Activities</i>	<b>381.16</b>	<b>416.29</b>
Energy Industries	157.33	166.43
Manufacturing Industries & Construction	24.24	19.45
Transport	150.02	181.95
Other Sectors	48.19	46.29
Categories Included in the Inventory	1990	2004
Non-Specified	1.38	2.16
Fugitive Emissions from Fuels	5.25	4.62
Oil and Natural Gas	2.94	2.54
Other Emissions from Energy Production	2.31	2.07
INDUSTRIAL PROCESSES & PRODUCT USE	18.34	30.78
Mineral Industry	4.85	5.90
Chemical Industry	2.34	1.32
Non-Energy Products from Fuels & Solvent Use	2.29	1.37
Electronics Industry	0.59	0.88
Product Uses as Substitutes for Ozone Depleting Substances	0.04	13.97
Other Product Manufacture & Use Other	3.18	1.60
Other	5.05	5.74
<b>AGRICULTURE, FORESTRY, &amp; OTHER LAND USE</b>	<b>19.11</b>	<b>23.28</b>
Livestock	11.67	13.92
Land	0.19	0.19
Aggregate Sources & Non-CO <sub>2</sub> Emissions Sources on Land	7.26	9.17
<b>WASTE</b>	<b>9.42</b>	<b>9.44</b>
Solid Waste Disposal	6.26	5.62
Wastewater Treatment & Discharge	3.17	3.82

**TABLE 2-6 (CONCLUDED)**

California GHG Emissions and Sinks Summary  
(Million metric tons of CO<sub>2</sub> equivalence)

<b>EMISSION SUMMARY</b>		
Gross California Emissions	<b>433.29</b>	<b>484.4</b>
Sinks and Sequestrations	<b>-6.69</b>	<b>-4.66</b>
<b>Net California Emissions</b>	<b>426.60</b>	<b>479.74</b>

Source: CARB, 2007.

The analysis of GHGs is a much different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants significance thresholds are based on daily emissions because attainment or non-attainment is based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health, e.g., one-hour and eight-hour. Since the half-life of CO<sub>2</sub> is approximately 100 years, for example, the effects of GHGs are longer-term, affecting global climate over a relatively long time frame. As a result, the SCAQMD's current position is to evaluate GHG effects over a longer timeframe than a single day. GHG emissions in the form of CO<sub>2</sub> and CH<sub>4</sub> will be generated by the off-road equipment and on-road vehicles during the construction phase of the project. CO<sub>2</sub> and CH<sub>4</sub> emissions were estimated using emission factors from CARB's EMFAC2007 and OFFROAD2007 models and EPA's AP-42. The CO<sub>2</sub> and CH<sub>4</sub> emission factors and calculations can be found in the emission calculation spreadsheets in Appendix B for the different construction activities.

The construction phase during which CO<sub>2</sub> and CH<sub>4</sub> emissions would be generated from mobile source construction equipment and on-road vehicles is expected to take place in less than a week period of time per facility. Table 2-7 provides the CO<sub>2</sub>, CH<sub>4</sub> and corresponding CO<sub>2</sub>eq (total GHG) emissions from each of the construction phases, which is expected to take place in one day. Thus, the daily GHG emission is the same as the annual emissions. In the case of the manual shaker replacement, the construction phase with the peak emissions was used. To determine the impact from the proposed project, GHG emissions from the various construction activities are calculated for the total number of sources affected by proposed project on an annual basis. GHG emissions are annualized because this is the typical currency in which GHG emissions are expressed. GHG emissions from construction are amortized over a 30-year life of the project because, as explained later, this is how the significance threshold is applied.

**TABLE 2-7**  
GHG Emissions from Construction Phases

<b>Activity</b>	<b>CO2 Emissions (lbs/day)</b>	<b>CH4 Emissions (lbs/day)</b>	<b>CO2eq Emissions<sup>1</sup> (lbs/day)</b>	<b>CO2eq Emissions<sup>2</sup> (MT/year)<sup>3</sup></b>	<b>Affected Number of Sources (units/year)</b>	<b>TOTAL Annual GHG Emissions<sup>4</sup> (MT/year)</b>	<b>TOTAL Amortized Annual GHG Emissions<sup>5</sup> (MT/year)</b>
Manual Shaker Equipment Replacement	1038.2	0.17	1041.8	0.47	66	31.3	1.04
BLDS Delivery and Installation	186	0.03	186.6	0.08	240	20.4	0.68
<b>TOTAL GHG Emissions Proposed Project (MT/year)</b>							<b>1.7</b>

1. Global Warming Potential (GWP) for CH4 is a factor of 21. For example, CH4 emissions of 0.17 lbs/day are 3.57 lbs/day of CO2eq emissions (0.17 x 21 = 3.57). GWP for CO2 is 1.
2. Metric Tons = 2200 lbs; one day activity/year
3. MT = metric tons
4. Total Annual GHG Emissions = CO2eq x # sources (0.47 x 66 = 31.3)
5. Amortized Annual = Annual/30 year life (31.3 /30 = 1.04)

As shown in Table 2-7, the construction activities of replacing 66 manual shakers and installing 240 BLDS would result in 51.7 metric tons (MT) per year of GHG emissions. Amortizing those emissions over a 30-year estimated life of the project would result in less than two MT per year.

The operational phase of implementing the proposed project would result in no change or increase in CO2 or CH4 emissions as the operation of PM control devices does not generate GHG emissions.

The SCAQMD has convened a “Greenhouse Gas CEQA Significance Threshold Working Group” to consider a variety of benchmarks and potential significance thresholds to evaluate GHG impacts. On December 5, 2008, the SCAQMD adopted an interim CEQA GHG Significance Threshold for projects where SCAQMD is the lead agency (SCAQMD, 2008). This interim threshold is set at 10,000 MT CO2eq per year. The SCAQMD prepared a “Draft Guidance Document – Interim CEQA GHG Significance Thresholds” that outlined the approved tiered approach to determine GHG significance of projects (SCAQMD, 2008, pg. 3-10). The first two tiers involve (1) exempting the project because of potential reductions of GHG emissions allowed under CEQA and (2) demonstrating that the project’s GHG emissions are consistent with a local general plan. Because neither of these tiers is applicable for the proposed project, the analysis shifts to Tier 3. Tier 3 proposes a limit of 10,000 MT CO2eq per year as the incremental increase signifying significance (SCAQMD, 2008, pg. 3-11). Tier 4 (performance standards) is currently

not approved. Tier 5 imposes mitigation measures that would reduce the GHG impacts to below the Tier 3 brightline threshold. Projects with incremental increases below this threshold will not be cumulatively considerable.

Total increase in GHG emissions from the proposed project is calculated by adding the total construction GHG emissions (amortized over the known life of the project, or a default of 30-years) and the annual operational GHG emissions. To determine the annual amortized construction GHG emissions, the total construction GHG emissions are divided by 30 (default lifetime of the project). The operational phase of the proposed project does not generate GHG emissions and the amortized construction phase of the proposed project generates less than two metric tons so the total would be less than the limit of 10,000 MT CO<sub>2</sub>eq per year and, thus not cumulatively considerable.

Since GHG emissions are considered cumulative impacts, and PR 1155 GHG emissions are below the 10,000 MT CO<sub>2</sub>eq per year (Tier 3 determination), cumulative GHG adverse impacts from PR 1155 are not considered significant.

Based on the above considerations, significant adverse impacts to air quality are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

---

	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>IV. BIOLOGICAL RESOURCES.</b> Would the project:			
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- |    |  |                          |                          |                                     |
|----|--|--------------------------|--------------------------|-------------------------------------|
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) | Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?                            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) | Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) | Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Significance Criteria**

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

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

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

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

**Discussion**

IV. a), b), d): The proposed project is expected to require construction activities for the installation of replacement baghouses and BLDS as discussed in Section III. Air

Quality. However, installation of the equipment and monitoring systems is expected to take place at existing facilities whose property has been previously graded and paved. The proposed project will not require the construction of new structures on property not already established with a foundation although a facility operator may choose to conduct minor foundation work. Still, the new paving would take place on established property so it will not have a substantial adverse effect, either directly or through habitat modifications, on riparian habitat or other sensitive natural community. New facilities affected by the proposed rule will potentially impact biological resources from new construction but that construction is not a result of or required by PR 1155. Therefore, PR 1155 will have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely in the SCAQMD's jurisdiction. Further, PR 1155 does not require acquisition of additional land or further conversions of riparian habitats or sensitive natural communities where endangered or sensitive species may be found. Any changes to the existing physical environment would occur for business reasons, not as a result of implementing PR 1155.

IV. c): Acquisition of protected wetlands is not expected to be necessary to upgrade or replace PM control devices or add monitoring systems. Operators of PM control devices would upgrade or replace equipment at established facilities so no new property is required for installation and operation. Further, the replacement and installation of new PM control equipment and monitoring systems does not require removing, filling or interrupting any hydrological system or have an adverse effect on federally protected wetlands.

IV. e), f): There are no provisions in the proposed project that would adversely affect land use plans, local policies or ordinances, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by the proposed project. PR 1155 would not affect in any way habitat conservation or natural community conservation plans, agricultural resources or operations, and would not create divisions in any existing communities.

Based on the above considerations, significant adverse impacts to biological resources are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

---

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

**Significance Criteria**

Impacts to cultural resources will be considered significant if:

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

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

The project would disturb human remains.

**Discussion**

V. a) - d): There are existing laws in place that are designed to protect and mitigate potential impacts to cultural resources. Operators of existing affected facilities are not expected to perform such construction activities as grading and trenching to their existing facilities. Existing facilities are already substantially disturbed as a result of constructing and operating the current operation. New construction from new facilities subject to the rule is not a result of or required by PR 1155. Further, no new

property is required for installation and operation of the replaced or new PM control devices and monitoring systems because they are expected to be installed in the same location as where the existing equipment is currently located. Therefore, cultural resources are not expected to be disturbed in any way. As a result, the proposed project has no potential to cause a substantial adverse change to a historical or archaeological resource, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside formal cemeteries.

The proposed project activities will occur in areas of the affected facilities where the ground surface has already been disturbed, and this past disturbance reduces the likelihood that previously unknown cultural resources will be encountered. If cultural or archaeological resources were to be encountered unexpectedly during ground disturbance associated with installation of the replaced or new PM control devices and monitoring systems, proper procedures (i.e., contacting professional archaeologist, temporarily halting disturbance work in vicinity, etc.) will be taken.

Based on the above considerations, significant adverse impacts to cultural resources are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

---

	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>VI. ENERGY.</b> Would the project:			
a) Conflict with adopted energy conservation plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the need for new or substantially altered power or natural gas utility systems?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Create any significant effects on local or regional energy supplies and on requirements for additional energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create any significant effects on peak and base period demands for electricity and other forms of energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with existing energy standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 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): Some asphalt batch plant facilities have raised concerns with achieving the 0.01 grain/dscf PM concentration limit. Compliance at those facilities might require filter bag replacement and/or an increase in air-to-cloth ratio, which can be accomplished with an increase in air flow from an existing blower. The increased blower usage and operation of new monitoring systems may require additional electricity to operate. However, because the BLDS consists of minor probes requiring minimal electricity and the existing blowers, typically variable speed, affects less than 20 units, large amounts of electricity beyond the existing energy needs at the facility are not required. Thus, the increase energy usage is negligible beyond what is currently used nor are they expected to change current overall energy needs at affected facilities. Therefore, PR 1155 will not conflict with adopted energy conservation plans. Affected facilities would still be expected to comply with any existing energy conservation plans or energy standards, to the extent that affected equipment are subject to such plans or standards.

VI. b), c), d): Implementation of PR 1155 will not result in the need for new or substantially altered power or natural gas utility systems. Effects of the proposed project on the electricity capacity are not expected to occur because activity at affected facilities is not expected to change as a result of replacing PM control devices and installing monitoring systems. Thus, no increase in their operations is expected, so no significant adverse impacts on peak or base demands for electricity are anticipated.

Based on the above considerations, significant adverse impacts to energy are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

---

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>VII. GEOLOGY AND SOILS.</b> Would the project:			
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 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): New PM control devices and monitoring systems will be installed at existing affected facilities so PR 1155 will not expose people to substantial geological effects greater than what they are exposed to already. New construction from new facilities subject to the rule is not a result of or required by PR 1155. Since the proposed project will not require acquisition of new property that has not already been developed or required to implement the proposed rule, PR 1155 will not expose people or structures to new risks of loss, injury, or death involving: rupture of an earthquake fault, seismic ground shaking, ground failure or landslides.

VII. b): The proposed project will not require grading or trenching construction activities to install new PM control devices and monitoring systems at established affected facilities, so potential impacts to existing geophysical conditions are not anticipated since little or no soil will be disrupted. Therefore, no substantial soil erosion or loss of topsoil is expected from the existing affected facilities as a result of installing replacement and new PM control equipment. The new baghouse and BLDS will not create soil erosion problems because the equipment is located at established facilities already paved. Any soil disturbance that does occur will be subject to the dust control requirements of SCAQMD Rule 403, which would minimize any wind erosion.

VII. c) & d): PR 1155 would require action to reduce PM emissions at existing affected facilities and, therefore, will not involve locating any structures on soil that is unstable or expansive. However, as already noted, little or no new soil disturbance

is anticipated from the proposed project, therefore, no further destabilization of unstable soils would be expected that could cause on- or off-site landslides, lateral spreading, subsidence, liquefaction or collapse.

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

Based on the above considerations, significant adverse impacts to geology and soils are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

---

	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>VIII. HAZARDS AND HAZARDOUS MATERIALS.</b> Would the project:			
a) Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

or public use airport, would the project result in a safety hazard for people residing or working in the project area?

- |    |   |                          |                          |                                     |
|----|---|--------------------------|--------------------------|-------------------------------------|
| f) | For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) | Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) | Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i) | Significantly increased fire hazard in areas with flammable materials?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Significance Criteria**

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

Non-compliance with any applicable design code or regulation.

Non-conformance to National Fire Protection Association standards.

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

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

**Discussion**

VIII. a), b), & c): The proposed project does not require the routine transport, use, or disposal of hazardous materials beyond what is currently occurring at the facility. It is anticipated that, because the project does not involve the transport, use, or disposal of hazardous materials, the proposed project will not create a significant new hazard

to the public or create a reasonably foreseeable upset conditions involving the release of hazardous materials greater than existing conditions. Finally, PR 1155 would not require the use of equipment that has the potential to emit hazardous materials.

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

VIII. e) & f): The location of the affected facilities (see Table 2-1 for the number of affected sources) are scattered throughout the SCAQMD jurisdiction, affected facilities could be within two miles of an airport or private airstrips. However, the control and monitoring of PM emissions at existing and new facilities is not expected to have the potential to affect local airports or private airstrips, particularly since the proposed rule will ultimately reduce PM emissions, assisting in the visibility of the surrounding area.

VIII. g): The proposed project is expected to require minor modifications to install and operate the new PM control devices and monitoring systems. Such activities are not likely to impose any new emergency conditions at the facility that would warrant amendments to adopted emergency response plans or emergency evacuation plans, nor would the proposed project be expected to physically interfere with implementing adopted emergency response plans or emergency evacuation plans.

VIII. h,) & i): Because the proposed project would occur at existing facilities on established foundations in commercial or industrial areas, PR 1155 is not expected to expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands to a greater extent than is currently the case. Because affected operations are not expected to change substantially because of the proposed rule, there will be no significant increase of fire hazards in areas with flammable materials greater than whatever currently exists already.

Based on the above considerations, significant adverse hazards and hazardous materials impacts are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

---

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>IX. HYDROLOGY AND WATER QUALITY.</b> Would the project:			
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

other flood hazard delineation map?

- |    |  |                          |                          |                                     |
|----|--|--------------------------|--------------------------|-------------------------------------|
| h) | Place within a 100-year flood hazard area structures which would impede or redirect flood flows?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i) | Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| j) | Inundation by seiche, tsunami, or mudflow?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| k) | Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| l) | Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?                              | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| m) | Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| n) | Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| o) | Require in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Significance Criteria**

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

**Water Quality:**

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

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

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

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

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

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

**Water Demand:**

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

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

**Discussion**

IX. a), f): PR 1155 will have no direct or indirect adverse impact on water quality because operators of affected equipment do not require water so they are not expected to violate water quality standards, water discharge requirements or substantially degrade water quality when operating new PM control devices and monitoring systems.

IX. b), n), & o): PM control devices, such as baghouses, and BLDS do not require water to construct and operate the equipment so PR 1155 will not deplete groundwater supplies or interfere with groundwater recharge, water supplies or wastewater treatment.

IX. c), d), e): Because affected facilities are located at established sites, PR 1155 will not alter the existing drainage pattern of the site or area resulting in erosion or flooding. Operating PM control devices and monitoring systems do not create or contribute runoff water which would exceed capacity of existing or planned

stormwater drainage systems or provide substantial additional sources of polluted runoff.

IX. g) & h): PR 1155 does not involve construction of housing so it will not result in placing housing in 100-year flood hazard areas that could create new flood hazards or impede or redirect flood flows. The proposed project would primarily involve the installation of new equipment at existing facilities so any flood hazards would be part of the existing setting.

IX. i), j): Since PR 1155 primarily requires replacement of equipment and installation of monitoring systems at existing facilities, it will not create new flood risks or risks from seiches, tsunamis or create mudflow conditions. Affected facilities are located throughout the Basin so some might be located near large bodies of water, however, any risks from seiches, tsunamis, or mudflows would be part of the existing setting. In addition, affected facilities located in flat areas are not expected to be affected by mudslides.

IX. k), l) & m): Because the affected equipment does not require water or generate wastewater, no changes to any existing wastewater treatment permits would be necessary. As a result, the proposed project is not expected to alter any affected facility's ability to comply with existing wastewater treatment requirements or conditions from any applicable Regional Water Quality Control Board or local sanitation district. Because there is no increase in wastewater from complying with the proposed project, the capacity of existing stormwater drainage systems is not exceeded and the construction of new wastewater or stormwater drainage facilities is not required.

Based on the above considerations, significant adverse impacts to hydrology and water quality are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

---

	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>X. LAND USE AND PLANNING.</b> Would the project:			
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

adopted for the purpose of avoiding or mitigating an environmental effect?

- c) Conflict with any applicable habitat conservation or natural community conservation plan?

**Significance Criteria**

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

**Discussion**

X. a.): PR 1155 will not create divisions in any existing communities because the proposed project would primarily affect existing facilities that must comply with any land use policies or local zoning regulations. Similarly, the installation of replacement equipment and monitoring systems will affect operations at existing facilities and would not require activities such as freeways that would physically divide an established community. The new equipment is expected to be installed in the location of the existing facility.

X. b), c): Operations at affected facilities would still be expected to comply, and not interfere, with any applicable land use plans, zoning ordinances, habitat conservation or natural community conservation plans. There are no provisions of the proposed project that would directly affect these plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no present or planned land uses in the region or planning requirements will be altered by the proposed project.

Based on the above considerations, significant adverse impacts to land use and planning are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

---

	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>XI. MINERAL RESOURCES.</b> Would the project:			
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

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

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

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

**Discussion**

XI. a), b): There are no provisions of the proposed rule that would directly result in the loss of availability of a known mineral resource, such as aggregate, coal, shale, etc., of value to the region and the residents of the state, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Further, installing and operating PM control devices and monitoring systems would not change an existing uses of the mineral resources by facilities that must comply with the proposed rule.

Based on the above considerations, significant adverse impacts to mineral resources are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

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

**Significance Criteria**

Impacts on noise will be considered significant if:

Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise

levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.

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

## **Discussion**

XII. a), b), c) & d): Operation of new baghouses and monitoring systems is not expected to generate additional or new noise, excessive groundborne vibration, or substantially increase ambient noise levels beyond existing levels because PM control devices are not typically noise intensive. Construction equipment, however, does generate noise. These noise levels are not expected to be significant because construction activities will be short in duration, i.e., one to three days at affected sites, no more than one to five small pieces of construction equipment are needed during any one construction phase, and contractors are expected to comply with local noise ordinances and allowable operating hours during the construction phase. As a result, the proposed project is not expected to generate significant construction noise impact.

Operation of PM control devices are not noise intensive so no new or additional noise impacts are expected beyond what currently existing at affected facilities.

XII. e) & f): As indicated previously, the location of the affected facilities are scattered throughout the SCAQMD jurisdiction, so affected sources could be within two miles of an airport or private airstrips. However, the control and monitoring of PM emissions at existing and new facilities is not expected to have noise potential that would affect local airports or private airstrips because PM control devices are not typically noise intensive.

Based on the above considerations, significant adverse impacts to noise are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

---

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

**Significance Criteria**

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

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

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

**Discussion**

XIII. a), b), c): Human population in the SCAQMD’s jurisdiction is anticipated to grow notwithstanding the proposed project. Construction workers to install the new equipment would be needed on a temporary basis, i.e., no more than one to three days at each affected facility, and are expected to come from the existing labor force in the region. Additional permanent employees would not be required during operation because the operation of the PM control devices and monitoring system requires minimal attention. Recordkeeping is expected to be conducted by existing employees. District population will not be affected directly or indirectly as a result of adopting and implementing the proposed project. Further, continuing the control of PM emissions will not directly or indirectly induce growth in the area of affected facilities. The construction of single- or multiple-family housing units would not be

required as a result of implementing the proposed project since no new employees will be required at affected facilities. The proposed project will not require relocation of affected facilities, so existing housing or populations in the district are not anticipated to be displaced necessitating the construction of replacement housing elsewhere.

Based on the above considerations, significant adverse impacts to population and housing are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

---

	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>XIV. PUBLIC SERVICES.</b> Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:			
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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): PR 1155 will not involve the use of acutely hazardous materials. As a result, no new fire hazards or increased use of hazardous materials would be introduced at existing affected facilities. Thus, no new demands for fire or police protection are expected from implementing PR 1155 since the proposed project will not require equipment that use or generate hazardous materials that will require additional public services in the event of an emergency.

XIV. c), d): As noted in the “Population and Housing” discussion, implementing PR 1155 will not require new permanent employees for construction because no major construction is necessary to comply with the proposed project. Similarly, no new permanent employees will be required to maintain operation of the new PM control devices and monitoring systems. As a result, PR 1155 will have no direct or indirect effects on population growth in the district. Consequently, no new impacts to schools, parks or other recreational facilities are foreseen as a result of implementing PR 1155.

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

Based on the above considerations, significant adverse impacts to public services are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>XV. RECREATION.</b>			
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.?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Significance Criteria

Impacts to recreation will be considered significant if:

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

The project adversely effects existing recreational opportunities.

## Discussion

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

Based on the above considerations, significant adverse impacts to recreation are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

---

	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>XVI. SOLID/HAZARDOUS WASTE.</b> Would the project:			
a) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

waste?

### **Significance Criteria**

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

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

### **Discussion**

XVI. a), b): PR 1155 requirements will not generate or require the additional disposal of hazardous or non-hazardous waste during either construction or operation beyond the current operational activity at the affected facility. Further, solid waste impacts might experience a benefit as new baghouses are more efficient results in less bag wear and, thus, less filter replacement, which reduces the potential waste disposal impacts. Because the equipment type a facility will choose to replace the manual shaker is not known at this time, quantification of such a benefit cannot be determined at this time.

The 66 manual shaker baghouses being replaced over the next two years will need to be disposed of or recycled. The exact size of the manual shakers is not known, however, they likely are classified in all tiers (see Table 1-4). Due to the high cost and demand for metals, it is likely the metal parts from the manual shaker would be sold to be recycled and used in other applications. The remaining parts of the manual shaker baghouse may result in an increase of solid waste requiring disposal in landfills. In some cases, depending upon the operation, the waste generated could be hazardous. The 25 Class III landfills located within the district have a capacity of 97,269 tons per day (Table 3.5–1, 2007 AQMP EIR, SCAQMD) or 36 million tons per year. The remaining parts of the 33 manual shaker disposed annually (total 66 manual shakers/2 years to comply) will not cause a significant impact on the available solid waste disposal capacity in the district because of the large existing capacity in the region.

Thus, disposal capacity of local landfills would not be affected by the proposed project in any way. It is expected that PR 1155 will have no effect on an operator's ability to comply with relevant statutes and regulations related to solid and hazardous wastes. Consequently, it is anticipated that operators of affected facilities would continue to comply with federal, state, and local statutes and regulations related to solid and hazardous waste handling and disposal. Therefore, potential solid waste impacts are considered not significant.

Based on the above considerations, significant adverse solid/hazardous waste impacts are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>XVII. TRANSPORTATION/CIRCULATION</b>			
Would the project:			
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Significance Criteria

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

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

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

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

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

The demand for parking facilities is substantially increased.

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

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

The need for more than 350 employees

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

Increase customer traffic by more than 700 visits per day.

## Discussion

XVII. a), b), f): As noted in the "Discussion" sections of other environmental topics (see in particular III. Air Quality), compliance with PR 1155 is expected to require construction to install new PM control devices and monitoring systems. PR 1155 could result in delivery of equipment or additional construction worker commute trips for workers installing the new equipment. Each construction phase is expected to be completed in one day. For the manual shaker replacement, the traffic impacts from the different construction phases vary with four to six construction workers and one delivery truck per day. The BLDS installation requires only one delivery truck and one additional worker. If these activities overlap on a given day, the total additional vehicles on the road range from seven to nine as noted in Table 2-8. This increase in traffic is not expected to be a substantial change in relation to the existing

traffic load and capacity of the street system. In addition, if comparing against the SCAQMD significance threshold for customer traffic at 700 visits per day, there could be construction activity from over 150 facilities ( $700/9 \times 2$  activities) on a given day before the traffic threshold is exceeded. Since the average construction activity was estimated to be one facility per week (see Section III: Air Quality), construction activity at over 150 facilities is highly unlikely.

The increase of two additional truck vehicles per day would not exceed the significance threshold of 350 truck round trips per day for any individual facility. The increase of five to seven additional (temporary) employees per day to install equipment would not exceed the significance threshold of 350 employees per project. The temporary employees at each affected facility for a short duration, one to three days, would have no adverse impact on existing parking conditions and capacity. Thus, the temporary increase in vehicular transportation from the proposed projects will generate no significant adverse transportation and traffic impacts.

**TABLE 2-8**  
Additional Vehicles from Construction Phase

Activity	Delivery Trucks/day	Construction Workers/day	TOTAL Vehicles
Manual Shaker Equipment Replacement	1	4-6	5-7
BLDS Delivery and Installation	1	1	2
<b>TOTAL Vehicles</b>	<b>2</b>	<b>5-7</b>	<b>7-9</b>
SCAQMD Daily Traffic Significance Thresholds	350	350	700
Significant?	No	No	No

Because the affected facilities are located throughout the district, no intersections or major arterials are expected to experience overlapping traffic impacts during construction at the three affected facilities that could cause a substantial change in traffic that would significantly affect levels of service or congestion. Traffic in the vicinity of each affected facility will not be affected during operation. Facilities would not be expected to generate any new trips because no new permanent employees are expected to be required to operate the PM control devices and monitoring system.

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

XVII. c): Air traffic patterns are not expected to be directly or indirectly affected by the proposed project because PM control devices and monitoring systems do not require transport by air nor will operation of existing affected facilities interfere with

air traffic in any way. All applicable local, state and federal requirements would continue to be complied with so no increase in any safety risks is expected.

XVII. d), e): PR 1155 does not have direct or indirect impacts on specific traffic design features because the proposed project does not require or induce the construction of any roadways or other transportation design features. In addition, PR 1155 would not substantially change current operations at existing affected facilities, which would also not affect roadway design.

XVII. g): Affected facilities would still be expected to comply with, and not interfere with adopted policies, plans, or programs supporting alternative transportation. Since no new additional permanent employees are needed to operate in compliance, PR 1155 will not hinder compliance with any applicable alternative transportation plans or policies.

Based on the above consideration, significant adverse impacts to transportation/circulation are not expected from implementing PR 1155. Since there are no significant adverse impacts, no mitigation measures are required.

	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.</b>			
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

other current projects, and the effects of probable future projects)

- c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

**Discussion**

XVIII. a): As discussed in items I through XVII above, PR 1155 is expected to continue to reduce PM emissions through the use of PM control devices and monitoring systems. Therefore, the proposed project is beneficial to air quality and the environment. Because PR 1155 would not require acquisition of land and because it would not require major construction activities such as grading and trenching, PR 1155 is not expected to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal. Similarly, PR 1155 would not eliminate important examples of the major periods of California history or prehistory or otherwise degrade cultural resources because the proposed project is expected to affect existing facilities that have already been disrupted due to past construction and operation of the facility.

XVIII.b) Since PR 1155 is not expected to generate potentially significant adverse project-specific construction or operational impacts to any environmental topic areas evaluated in this checklist, the proposed project's contribution to potentially significant adverse cumulative impacts during construction or operation is rendered less than cumulatively considerable and, thus, is not cumulatively significant (CEQA Guidelines §15064(h)(2)).

XVIII.c) Based on the foregoing analyses, PR 1155 is not expected to cause significant permanent adverse effects on human beings, either directly, or indirectly. There is a potential for temporary adverse air quality impacts during construction activities to deliver and install new equipment. However, these impacts were concluded to be less than significant and would terminate after installation of the new equipment is completed.

## **APPENDIX A**

---

### **PROPOSED RULE 1155**

In order to save space and avoid repetition, please refer to the latest version of PR 1155 located elsewhere in the final rule package. The PR 1155b version (dated August 21, 2009) of the proposed rule circulated with the Draft EA released on September 18, 2009 for a 30-day public review and comment period ending October 20, 2009 has been updated but, as noted in the preface, the changes do not require the EA to be recirculated.

Original hard copies of the Draft EA, which included PR 1155b version (dated August 21, 2009) of the proposed rule circulated with the Draft EA, can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by calling (909) 396-2039.

**APPENDIX B**

---

**CONSTRUCTION EMISSION CALCULATIONS**

**Construction Activity - Demolition and Removal of Manual Shaker Equipment**

**Construction Activity**

Demolition and Removal of Manual Shaker Equipment

**Construction Schedule**

1 day

<b>Equipment Type<sup>a,b</sup></b>	<b>No. of Equipment</b>	<b>hr/day</b>	<b>Crew Size</b>
Cranes	1	2	4
Tractors/Loaders/Backhoes	1	6	

**Construction Equipment Combustion Emission Factors**

<b>Equipment Type<sup>b,c</sup></b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Crane	0.5705	1.5293	0.0678	0.1683	0.0014	129	0.0152
Tractors/Loaders/Backhoes	0.399	0.723	0.056	0.111	0.001	66.8	0.0

**Construction Vehicle (Mobile Source) Emission Factors**

	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Removal Haul Truck <sup>d</sup>	0.02016075	0.02236636	0.00080550	0.00278899	0.00002679	2.72330496	0.00013655
Passenger Vehicle <sup>d</sup>	0.00968562	0.00100518	0.00008601	0.00099245	0.00001066	1.09755398	0.00008767

**Number of Trips and Trip Length**

<b>Vehicle</b>	<b>No. of One-Way Trips/Day</b>	<b>One Way Trip Length (miles)</b>
Removal Haul Truck <sup>e</sup>	1	20
Worker Vehicles	4	10

**Construction Activity - Demolition and Removal of Manual Shaker Equipment**

<b>Incremental Increase from On-Site Equipment</b>							
<b>Equation:</b> Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Onsite Construction Emissions (lb/day)							
<b>Equipment Type</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Crane	1.14	3.06	0.14	0.34	0.00	258.00	0.03
Tractors/Loaders/Backhoes	2.40	4.34	0.34	0.67	0.00	400.80	0.06
<b>Total</b>	<b>3.54</b>	<b>7.39</b>	<b>0.47</b>	<b>1.00</b>	<b>0.01</b>	<b>658.80</b>	<b>0.09</b>

<b>Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles</b>							
<b>Equation:</b> Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
<b>Vehicle</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Removal Haul Truck	0.806	0.895	0.032	0.112	0.001	108.932	0.005
Worker Vehicles	0.775	0.080	0.007	0.079	0.001	87.804	0.007
<b>Total</b>	<b>1.58</b>	<b>0.98</b>	<b>0.04</b>	<b>0.19</b>	<b>0.00</b>	<b>196.74</b>	<b>0.01</b>

<b>Total Incremental Combustion Emissions from Construction Activities</b>							
<b>Sources</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Daily Emissions	<b>5.1</b>	<b>8.4</b>	<b>0.5</b>	<b>1.2</b>	<b>0.0</b>	<b>855.5</b>	<b>0.1</b>
Annual Emissions	<b>5.1</b>	<b>8.4</b>	<b>0.5</b>	<b>1.2</b>	<b>0.0</b>	<b>855.5</b>	<b>0.1</b>

<b>Combustion and Fugitive Summary</b>	<b>PM2.5 Fraction<sup>f</sup></b>	<b>PM10</b> lb/day	<b>PM2.5</b> lb/day
Combustion, Offroad	0.92	0.5	0.4
Combustion, Onroad	0.964	0.0	0.04
<b>Daily Total, lb/day</b>		<b>0.5</b>	<b>0.5</b>
<b>Annual Total, lbs/year</b>		<b>0.5</b>	<b>0.5</b>

## Construction Activity - Demolition and Removal of Manual Shaker Equipment

**Notes:**

- a) SCAQMD, staff estimation
- b) Emission factors from CARB Off-Road Model (see Off-Road Model EF worksheet) for scenario year 2009.
- c) District values provided by the CARB, 2007. Assumed equipment is diesel fueled.
- d) CARB, EMFAC2007 for Scenario year 2009 as summarized on SCAQMD website at [http://www.aqmd.gov/ceqa/handbook/onroad/onroadEF07\\_26.xls](http://www.aqmd.gov/ceqa/handbook/onroad/onroadEF07_26.xls)
- e) Assumed delivery truck travels 20 miles one-way
- f) CARB's CEIDARS database PM2.5 fractions - [http://www.aqmd.gov/ceqa/handbook/PM2\\_5/finalAppA.doc](http://www.aqmd.gov/ceqa/handbook/PM2_5/finalAppA.doc)

**Construction Activity - Paving New Foundaton for New Baghouse**

**Construction Activity**

Paving a New Foundation

**Construction Schedule**

1 day

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

**Construction Equipment Combustion Emission Factors**

<b>Equipment Type<sup>c</sup></b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Pavers	0.5756	1.0321	0.0739	0.1867	0.0009	77.9	0.0168
Paving Equipment	0.4544	0.9400	0.0655	0.1405	0.0008	68.9	0.0127
Forklifts	0.2366	0.5560	0.0302	0.0741	0.0006	54.4	0.0067
Rollers	0.4272	0.8166	0.0574	0.1250	0.0008	67.1	0.0113
Cement And Mortar Mixers	0.0440	0.0626	0.0040	0.0107	0.0001	7.2	0.0010

**Construction Vehicle (Mobile Source) Emission Factors**

	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Passenger Vehicle <sup>d</sup>	0.00968562	0.00100518	0.00008601	0.00099245	0.00001066	1.09755398	0.00008767

**Number of Trips and Trip Length**

<b>Vehicle</b>	<b>No. of One-Way Trips/Day</b>	<b>One Way Trip Length (miles)</b>
Worker Vehicles	6	10

**Construction Activity - Paving New Foundaton for New Baghouse**

<b>Incremental Increase from On-Site Equipment</b>							
<b>Equation:</b> Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Onsite Construction Emissions (lb/day)							
<b>Equipment Type</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Pavers	2.30	4.13	0.30	0.75	0.00	311.74	0.07
Paving Equipment	1.82	3.76	0.26	0.56	0.00	275.79	0.05
Forklift	0.71	1.67	0.09	0.22	0.00	163.19	0.02
Rollers	0.85	1.63	0.11	0.25	0.00	134.20	0.02
Cement And Mortar Mixers	0.13	0.19	0.01	0.03	0.00	21.60	0.00
<b>Total</b>	<b>5.82</b>	<b>11.38</b>	<b>0.77</b>	<b>1.81</b>	<b>0.01</b>	<b>906.52</b>	<b>0.16</b>

<b>Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles</b>							
<b>Equation:</b> Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
<b>Vehicle</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Worker Vehicles	1.162	0.121	0.010	0.119	0.001	131.706	0.011
<b>Total</b>	<b>1.16</b>	<b>0.12</b>	<b>0.01</b>	<b>0.12</b>	<b>0.00</b>	<b>131.71</b>	<b>0.01</b>

<b>Total Incremental Combustion Emissions from Construction Activities</b>							
<b>Sources</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Daily Emissions	<b>7.0</b>	<b>11.5</b>	<b>0.8</b>	<b>1.9</b>	<b>0.011</b>	<b>1038.2</b>	<b>0.17</b>
Annual Emissions	<b>7.0</b>	<b>11</b>	<b>0.8</b>	<b>2</b>	<b>0.011</b>	<b>1038.2</b>	<b>0.17</b>

<b>Combustion and Fugitive Summary</b>	<b>PM2.5 Fraction<sup>f</sup></b>	<b>PM10</b> lb/day	<b>PM2.5</b> lb/day
Combustion, Offroad	0.92	0.8	0.7
Combustion, Onroad	0.964	0.0	0.01
<b>Total, lb/project</b>		<b>0.8</b>	<b>0.7</b>
		<b>0.8</b>	<b>0.7</b>

## Construction Activity - Paving New Foundaton for New Baghouse

**Notes:**

- a) SCAQMD, staff estimation
- b) Emission factors from CARB Off-Road Model (see Off-Road Model EF worksheet) for scenario year 2009.
- c) District values provided by the CARB, 2007. Assumed equipment is diesel fueled.
- d) CARB, EMFAC2007 for Scenario year 2009 as summarized on SCAQMD website at [http://www.aqmd.gov/ceqa/handbook/onroad/onroadEF07\\_26.xls](http://www.aqmd.gov/ceqa/handbook/onroad/onroadEF07_26.xls)
- e) Assumed haul truck travels 20 miles one-way
- f) CARB's CEIDARS database PM2.5 fractions - [http://www.aqmd.gov/ceqa/handbook/PM2\\_5/finalAppA.doc](http://www.aqmd.gov/ceqa/handbook/PM2_5/finalAppA.doc)

**Construction Activity - Delivery and Installation of New Baghouse Equipment**

**Construction Activity**

New Baghouse Equipment Delivery and Installation

**Construction Schedule**

1 day

<b>Equipment Type<sup>a,b</sup></b>	<b>No. of Equipment</b>	<b>hr/day</b>	<b>Crew Size</b>
Forklifts	1	4.0	4
Cranes	1	2.0	
Welder	1	4.0	
Generator Sets	1	4.0	

**Construction Equipment Combustion Emission Factors**

<b>Equipment Type<sup>b,c</sup></b>	<b>CO</b> lb/hr	<b>NOx</b> lb/hr	<b>PM10</b> lb/hr	<b>VOC</b> lb/hr	<b>SOx</b> lb/hr	<b>CO2</b> lb/hr	<b>CH4</b> lb/day
Forklifts	0.237	0.556	0.030	0.074	0.001	54.4	0.0067
Cranes	0.571	1.529	0.068	0.168	0.001	128.7	0.0152
Welder	0.234	0.319	0.030	0.092	0.000	25.6	0.0076
Generator Sets	0.355	0.725	0.045	0.113	0.001	61.0	0.0092

**Construction Vehicle (Mobile Source) Emission Factors**

	<b>CO</b> lb/mile	<b>NOx</b> lb/mile	<b>PM10</b> lb/mile	<b>VOC</b> lb/mile	<b>SOx</b> lb/mile	<b>CO2</b> lb/mile	<b>CH4</b> lb/mile
Delivery Truck <sup>d</sup>	0.02016075	0.02236636	0.00080550	0.00278899	0.00002679	2.72330496	0.00013655
Passenger Vehicle <sup>d</sup>	0.00968562	0.00100518	0.00008601	0.00099245	0.00001066	1.09755398	0.00008767

**Number of Trips and Trip Length**

<b>Vehicle</b>	<b>No. of One-Way Trips/Day</b>	<b>one Way Trip Length (miles)</b>
Delivery Truck	1	20
Worker Vehicles	4	10

**Construction Activity - Delivery and Installation of New Baghouse Equipment**

<b>Incremental Increase from On-Site Equipment</b>							
<b>Equation:</b> Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Onsite Construction Emissions (lb/day)							
<b>Equipment Type</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Forklifts	0.95	2.22	0.12	0.30	0.002	218	0.03
Cranes	1.14	3.06	0.14	0.34	0.003	257	0.03
Welder	0.94	1.28	0.12	0.37	0.001	102	0.03
Generator Sets	1.42	2.90	0.18	0.45	0.003	244	0.04
<b>Total</b>	<b>4.44</b>	<b>9.46</b>	<b>0.55</b>	<b>1.45</b>	<b>0.009</b>	<b>821</b>	<b>0.12</b>

<b>Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles</b>							
<b>Equation:</b> Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
<b>Vehicle</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Delivery Truck	0.806	0.895	0.032	0.112	0.001	108.932	0.005
Worker Vehicles	0.775	0.080	0.0069	0.0794	0.0009	87.8	0.007
<b>Total</b>	<b>0.78</b>	<b>0.08</b>	<b>0.01</b>	<b>0.08</b>	<b>0.00</b>	<b>87.8</b>	<b>0.007</b>

<b>Total Incremental Combustion Emissions from Construction Activities</b>							
<b>Sources</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Daily Emissions	<b>5.2</b>	<b>9.5</b>	<b>0.6</b>	<b>1.5</b>	<b>0.010</b>	<b>909</b>	<b>0.13</b>
Annual Emissions	<b>5.2</b>	<b>10</b>	<b>0.6</b>	<b>2</b>	<b>0.010</b>	<b>909</b>	<b>0.00</b>

<b>Combustion and Fugitive Summary</b>	<b>PM2.5 Fraction<sup>e</sup></b>	<b>PM10</b> lb/day	<b>PM2.5</b> lb/day
Combustion, Offroad	0.92	0.6	0.5
Combustion, Onroad	0.964	0.0	0.01
<b>Total, lb/project</b>		<b>0.6</b>	<b>0.5</b>

## Construction Activity - Delivery and Installation of New Baghouse Equipment

### Notes:

- a) SCAQMD, staff estimation
- b) Emission factors from CARB Off-Road Model (see Off-Road Model EF worksheet) for scenario year 2009.
- c) District values provided by the CARB, 2007. Assumed equipment is diesel fueled.
- d) CARB, EMFAC2007 for Scenario year 2009 as summarized on SCAQMD website at [http://www.aqmd.gov/ceqa/handbook/onroad/onroadEF07\\_26.xls](http://www.aqmd.gov/ceqa/handbook/onroad/onroadEF07_26.xls)
- e) CARB's CEIDARS database PM2.5 fractions - [http://www.aqmd.gov/ceqa/handbook/PM2\\_5/finalAppA.doc](http://www.aqmd.gov/ceqa/handbook/PM2_5/finalAppA.doc)

**Construction Activity - Bag Leak Detection System (BLDS) Delivery and Installation**

**Construction Activity**

Bag Leak Detection System (BLDS) Delivery and Installation

**Construction Schedule**

1 day

<b>Equipment Type<sup>a,b</sup></b>	<b>No. of Equipment</b>	<b>hr/day</b>	<b>Crew Size</b>
Welders	1	3.0	1

**Construction Equipment Combustion Emission Factors**

<b>Equipment Type<sup>b,c</sup></b>	<b>CO</b> lb/hr	<b>NOx</b> lb/hr	<b>PM10</b> lb/hr	<b>VOC</b> lb/hr	<b>SOx</b> lb/hr	<b>CO2</b> lb/hr	<b>CH4</b> lb/day
Welders	0.228	0.302	0.028	0.085	0.000	25.6	0.0076

**Construction Vehicle (Mobile Source) Emission Factors**

	<b>CO</b> lb/mile	<b>NOx</b> lb/mile	<b>PM10</b> lb/mile	<b>VOC</b> lb/mile	<b>SOx</b> lb/mile	<b>CO2</b> lb/mile	<b>CH4</b> lb/mile
Delivery Truck <sup>d</sup>	0.02016075	0.02236636	0.00080550	0.00278899	0.00002679	2.72330496	0.00013655

**Number of Trips and Trip Length**

<b>Vehicle</b>	<b>No. of One-Way Trips/Day</b>	<b>One Way Trip Length (miles)</b>
Delivery Truck <sup>e</sup>	1	20

**Construction Activity - Bag Leak Detection System (BLDS) Delivery and Installation**

<b>Incremental Increase from On-Site Equipment</b>							
<b>Equation:</b> Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Onsite Construction Emissions (lb/day)							
<b>Equipment Type</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Welders	0.68	0.90	0.08	0.25	0.00	77	0.02
<b>Total</b>	<b>0.68</b>	<b>0.90</b>	<b>0.08</b>	<b>0.25</b>	<b>0.00</b>	<b>77</b>	<b>0.02</b>

<b>Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles</b>							
<b>Equation:</b> Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
<b>Vehicle</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Delivery Truck	0.806	0.895	0.0322	0.1116	0.0011	109	0.01
<b>Total</b>	<b>0.81</b>	<b>0.90</b>	<b>0.03</b>	<b>0.11</b>	<b>0.00</b>	<b>109</b>	<b>0.01</b>

<b>Total Incremental Combustion Emissions from Construction Activities</b>							
<b>Sources</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day
Daily Emissions	<b>1.5</b>	<b>1.8</b>	<b>0.1</b>	<b>0.4</b>	<b>0.002</b>	<b>186</b>	<b>0.03</b>
Annual Emissions	<b>1.5</b>	<b>2</b>	<b>0.1</b>	<b>0</b>	<b>0.002</b>	<b>186</b>	<b>0.03</b>

<b>Combustion and Fugitive Summary</b>	<b>PM2.5 Fraction<sup>f</sup></b>	<b>PM10</b> lb/day	<b>PM2.5</b> lb/day
Combustion, Offroad	0.92	0.1	0.1
Combustion, Onroad	0.964	0.0	0.03
<b>Total, lb/project</b>		<b>0.1</b>	<b>0.1</b>
		<b>0.1</b>	<b>0.1</b>

## Construction Activity - Bag Leak Detection System (BLDS) Delivery and Installation

**Notes:**

- a) SCAQMD, staff estimation
- b) Emission factors from CARB Off-Road Model (see Off-Road Model EF worksheet) for scenario year 2009.
- c) District values provided by the CARB, 2007. Assumed equipment is diesel fueled.
- d) CARB, EMFAC2007 for Scenario year 2009 as summarized on SCAQMD website at [http://www.aqmd.gov/ceqa/handbook/onroad/onroadEF07\\_26.xls](http://www.aqmd.gov/ceqa/handbook/onroad/onroadEF07_26.xls)
- e) Assumed delivery truck travels 20 miles one-way
- f) CARB's CEIDARS database PM2.5 fractions - [http://www.aqmd.gov/ceqa/handbook/PM2\\_5/finalAppA.doc](http://www.aqmd.gov/ceqa/handbook/PM2_5/finalAppA.doc)

**Construction Activity - Off Road 2009 Emission Factors**

<b>Equipment</b>	<b>CO lb/hr</b>	<b>NOX lb/hr</b>	<b>PM lb/hr</b>	<b>ROG lb/hr</b>	<b>SOX lb/hr</b>	<b>CO2 lb/hr</b>	<b>CH4 lb/hr</b>	<b>Fuel Use, gal/hr</b>
Aerial Lifts	0.2149	0.3748	0.0259	0.0710	0.0004	34.7	0.0064	
Air Compressors	0.3699	0.7664	0.0547	0.1180	0.0007	63.6	0.0106	
Bore/Drill Rigs	0.5200	1.2287	0.0541	0.1162	0.0017	165	0.0105	
Cement and Mortar Mixers	0.0440	0.0626	0.0040	0.0107	0.0001	7.2	0.0010	0.33
Concrete/Industrial Saws	0.4340	0.6906	0.0581	0.1363	0.0007	58.5	0.0123	
Cranes	0.5705	1.5293	0.0678	0.1683	0.0014	129	0.0152	9.82
Crawler Tractors	0.6616	1.4607	0.0898	0.1961	0.0013	114	0.0177	
Crushing/Proc. Equipment	0.7440	1.5130	0.0976	0.2274	0.0015	132	0.0205	
Dumpers/Tenders	0.0345	0.0662	0.0039	0.0114	0.0001	7.6	0.0010	
Excavators	0.5697	1.2340	0.0681	0.1584	0.0013	120	0.0143	
Forklifts	0.2366	0.5560	0.0302	0.0741	0.0006	54.4	0.0067	2.48
Generator Sets	0.3378	0.6718	0.0414	0.1020	0.0007	61.0	0.0092	2.79
Graders	0.6428	1.5237	0.0796	0.1825	0.0015	133	0.0165	6.06
Off-Highway Tractors	0.8664	2.0818	0.1017	0.2470	0.0017	151	0.0223	
Off-Highway Trucks	0.7931	2.5505	0.0929	0.2597	0.0027	260	0.0234	
Other Construction Equipment	0.4291	1.0812	0.0471	0.1130	0.0013	123	0.0102	
Other General Industrial Equipmen	0.6281	1.7488	0.0779	0.1941	0.0016	152	0.0175	
Other Material Handling Equipment	0.5801	1.6943	0.0753	0.1867	0.0015	141	0.0168	
Pavers	0.5756	1.0321	0.0739	0.1867	0.0009	77.9	0.0168	3.59
Paving Equipment	0.4544	0.9400	0.0655	0.1405	0.0008	68.9	0.0127	3.16
Plate Compactors	0.0263	0.0321	0.0018	0.0051	0.0001	4.3	0.0005	
Pressure Washers	0.0680	0.1020	0.0074	0.0212	0.0001	9.4	0.0019	
Pumps	0.3147	0.5779	0.0410	0.0991	0.0006	49.6	0.0089	
Rollers	0.4272	0.8166	0.0574	0.1250	0.0008	67.1	0.0113	3.07
Rough Terrain Forklifts	0.4815	0.8505	0.0719	0.1368	0.0008	70.3	0.0123	
Rubber Tired Dozers	1.5020	3.1254	0.1347	0.3508	0.0025	239	0.0316	
Rubber Tired Loaders	0.5214	1.2255	0.0688	0.1530	0.0012	109	0.0138	5.06
Scrapers	1.3277	3.0630	0.1321	0.3347	0.0027	263	0.0302	10.74
Signal Boards	0.0959	0.1678	0.0096	0.0234	0.0002	16.7	0.0021	
Skid Steer Loaders	0.2565	0.3057	0.0276	0.0783	0.0004	30.3	0.0071	
Surfacing Equipment	0.6589	1.6559	0.0639	0.1647	0.0017	166	0.0149	
Sweepers/Scrubbers	0.5475	0.9059	0.0733	0.1689	0.0009	78.5	0.0152	
Tractors/Loaders/Backhoes	0.3993	0.7227	0.0559	0.1109	0.0008	66.8	0.0100	3.41
Trenchers	0.4992	0.7910	0.0663	0.1762	0.0007	58.7	0.0159	
Welders	0.2281	0.3015	0.0280	0.0847	0.0003	25.6	0.0076	

**Equipment**

	gal/hr
Pavers	3.59
Rollers	3.07
Scrapers	10.74
Paving Equipmen	3.16
Cement and Mort	0.33
Cranes	9.82
Graders	6.06
Rubber Tired Loa	5.06
Tractors/Loaders/ Forklifts	3.41
Forklifts	2.48
Generator Sets	2.79