



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • [www.aqmd.gov](http://www.aqmd.gov)

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## A G E N D A

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### MEETING, DECEMBER 7, 2018

A meeting of the South Coast Air Quality Management District Board will be held at 9:00 a.m., in the Auditorium at SCAQMD Headquarters, 21865 Copley Drive, Diamond Bar, California.

#### Questions About an Agenda Item

- The name and telephone number of the appropriate staff person to call for additional information or to resolve concerns is listed for each agenda item.
- In preparation for the meeting, you are encouraged to obtain whatever clarifying information may be needed to allow the Board to move expeditiously in its deliberations.

#### Meeting Procedures

- The public meeting of the AQMD Governing Board begins at 9:00 a.m. The Governing Board generally will consider items in the order listed on the agenda. However, any item may be considered in any order.
- After taking action on any agenda item not requiring a public hearing, the Board may reconsider or amend the item at any time during the meeting.

#### Questions About Progress of the Meeting

- During the meeting, the public may call the Clerk of the Board's Office at (909) 396-2500 for the number of the agenda item the Board is currently discussing.

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The agenda and documents in the agenda packet will be made available upon request in appropriate alternative formats to assist persons with a disability. Disability-related accommodations will also be made available to allow participation in the Board meeting. Any accommodations must be requested as soon as practicable. Requests will be accommodated to the extent feasible. Please telephone the Clerk of the Boards Office at (909) 396-2500 from 7:00 a.m. to 5:30 p.m. Tuesday through Friday.

All documents (i) constituting non-exempt public records, (ii) relating to an item on the agenda, and (iii) having been distributed to at least a majority of the Governing Board after the agenda is posted, are available prior to the meeting for public review at the South Coast Air Quality Management District Clerk of the Board's Office, 21865 Copley Drive, Diamond Bar, CA 91765.

The Agenda is subject to revisions. For the latest version of agenda items herein or missing agenda items, check the District's web page ([www.aqmd.gov](http://www.aqmd.gov)) or contact the Clerk of the Board, (909) 396-2500. Copies of revised agendas will also be available at the Board meeting.

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*Cleaning the air that we breathe...™*

**CALL TO ORDER**

- Pledge of Allegiance
- Opening Comments: William A. Burke, Ed.D., Chair  
Other Board Members  
Wayne Nastri, Executive Officer
- Recognize Employees with Twenty, Twenty-Five, Thirty, and Thirty-Five Years of Service **Parker**
- Swearing in of Newly Appointed Board Member Janice Hahn **Parker**

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Staff/Phone (909) 396-

**CONSENT CALENDAR (Items 1 through 17)**

Note: Consent Calendar items held for discussion will be moved to Item No. 18

1. Approve Minutes of November 2, 2018 Board Meeting **Garzaro/2500**
2. Set Public Hearings to Consider Adoption of and/or Amendments to SCAQMD Rules and Regulations **Nastri/3131**

**January 4, 2019:**

- A. Determine that Proposed Amendments to Rule 1325 – Federal PM2.5 New Source Review Program Are Exempt from CEQA and Amend Rule 1325 **Nakamura/3105**

Rule 1325 establishes requirements for new and modified sources to ensure compliance with federal PM2.5 New Source Review requirements. Rule 1325 was amended in 2016 to expand the definition of “precursor” to include VOC and ammonia (NH3) emissions, as required under U.S. EPA’s 2016 implementation rule for PM2.5 State Implementation Plans and a court decision requiring states to regulate PM2.5 under the same part of the Federal Clean Air Act as PM10. The 2016 amendment expanded the definition of precursor, however, it did not expand the definition of “regulated NSR pollutant” to explicitly reference the PM2.5 precursors VOC and NH3. Proposed Amended Rule 1325 will address this deficiency by referencing “precursor” in the definition of “regulated NSR pollutant”. In addition, other revisions are made to improve clarity. This action is to adopt the Resolution: 1) Determining that the proposed amendments to Rule 1325 - Federal PM2.5 New Source Review Program are exempt from the California Environmental Quality Act, and 2) Amending Rule 1325 – Federal PM2.5 New Source Review Program. (Reviewed: Stationary Source Committee, November 16, 2018)

February 1, 2019:

- B. Determine that Proposed Amendments to Rule 1403 - Asbestos Emissions from Renovation/Demolition Activities Are Exempt from CEQA and Amend Rule 1403 **Rees/2856**

Proposed amendments to Rule 1403 will provide revisions to further clarify existing rule requirements, enhance enforceability, and align the requirements with the applicable U.S. EPA NESHAP and with other state and local agency regulations. The proposed amendments include clarifying who is covered by the rule, standard and emergency notification procedures, specifying information to be included in survey reports, and establishing minimum sampling requirements for determining whether materials are asbestos-containing. This action is to adopt the Resolution: 1) Determining that the proposed amendments to Rule 1403 - Asbestos Emissions from Renovation/Demolition Activities are exempt from the requirements of the California Environmental Quality Act; and 2) Amending Rule 1403 - Asbestos Emissions from Renovation/Demolition Activities. (Reviewed: Stationary Source Committee, November 16, 2018)

**Budget/Fiscal Impact**

3. Develop and Demonstrate Near-Zero and Zero Emissions Vehicles and Equipment at Ports **Miyasato/3249**

The Port of Long Beach and its project partners have received \$50,000,000 in funding and the Port of Los Angeles and its project partners have received \$41,122,260 under CARB's Low Carbon Transportation Investments grant solicitation to demonstrate near-zero and zero emissions on-road, off-road and marine vehicles and equipment, including battery electric and hydrogen fuel cell trucks and supporting infrastructure. Total anticipated projects costs are \$102,998,742 and \$82,547,024 for the Ports of Long Beach and Los Angeles, respectively. This action is to execute contracts from the Clean Fuels Program Fund (31) with the Port of Long Beach in an amount not to exceed \$500,000 and the Port of Los Angeles in an amount not to exceed \$1,000,000 for SCAQMD's project cost-share. (Reviewed: Technology Committee, November 16, 2018; Recommended for Approval)

4. **Conduct Emissions Study on Use of Alternative Diesel Blends in Off-Road Heavy-Duty Engines and Amend SOON Provision Awards** **Miyasato/3249**

CARB has committed to adopting a low emission diesel measure in the State Implementation Plan to reduce NOx and particulate matter (PM) emissions from on-road and off-road vehicles. Renewable diesel and biodiesel with NOx-mitigating additives show a potential for reductions up to 13 percent in NOx and 30 percent in PM. CARB is currently contributing \$932,499 in a \$1,353,499 study by the University of California Riverside (UCR) CE-CERT testing on- and off-road diesel engines on a wide matrix of test fuels. Additional cost-share is proposed for this comprehensive study as follows: SCAQMD, \$261,000; U.S. EPA, \$150,000; and San Joaquin Valley Air Pollution Control District, \$10,000. This action is to execute a contract with UCR CE-CERT in an amount not to exceed \$261,000 from the Clean Fuels Program Fund (31). In addition, in November 2017 and September 2018, the Board approved SOON Provision awards. This action is to also amend awards under the SOON Provision. (Reviewed: Technology Committee, November 16, 2018; Recommended for Approval)
  
5. **Execute Contract to Conduct Preliminary Cost and Economic Impact Analysis of Proposed Warehouse Indirect Source Rule** **Rees/2856**

Following Board direction at the May 2018 Board meeting, staff has begun formal rulemaking on a potential indirect source rule for warehouses. An RFP was released on September 7, 2018 to assist staff in estimating a range of potential costs based on hypothetical rule scenarios and the resultant impacts on freight operation, such as potential cargo diversion from local warehouses to facilities in adjacent regions. This preliminary analysis will be a component of a more comprehensive socioeconomic analysis that will be brought to the Board when it considers this proposed rule for adoption. This action is to execute a contract with Industrial Economics, Incorporated, in an amount not to exceed \$200,000, to conduct preliminary cost and economic impact analysis of a proposed warehouse indirect source rule. Funding for this contract is available in the Planning, Rule Development and Area Sources FY 2018-19 Budget. (Reviewed: Mobile Source Committee, November 16, 2018; Recommended for Approval)
  
6. **Issue RFP for Engineering Consultant to Assess BARCT for Proposed Rule 1109.1 – NOx Emission Reductions for Refinery Equipment** **Nakamura/3105**

Staff is seeking an independent third-party consultant with technical expertise and experience with NOx control equipment and emissions control technologies preferably in the refinery field. This action is to issue an RFP to solicit proposals for review of staff's BARCT technology assessment, estimated emission reductions, and cost-effectiveness for NOx emitting equipment at petroleum refineries to support Proposed Rule 1109.1, in an amount not to exceed \$100,000. Sufficient funding is available in the General Fund (AB 617). (Reviewed: Administrative Committee, November 9, 2018; Recommended for Approval)

7. **Execute Contracts for Legislative Representation in Washington, D.C.** **Alatorre/3122**

At the September 7, 2018 meeting, the Board approved release of an RFP to solicit proposals for legislative representation in Washington, D.C. Four proposals were submitted to the Legislative Committee for consideration at its November 9, 2018 meeting. After the Committee interviewed representatives of each firm, three firms were selected for recommendation to the full Board. This action is to execute contracts with Carmen Group, Inc. in the amount of \$222,090; Cassidy & Associates, Inc. in the amount of \$216,000; and Kadesh & Associates in the amount of \$226,400 for the agency's legislative representation in Washington, D.C. for one year beginning on January 11, 2019, with an option for up to two one-year renewals, upon satisfactory performance, at the Board's discretion. Funding is available in the Legislative, Public Affairs & Media FY 2018-19 Budget and for the two optional one-year extensions, contingent upon Board approval of the Budget for the respective fiscal years. (Reviewed: Legislative Committee, November 9, 2018; Recommended for Approval)

8. **Issue RFP for Consultant Services for SCAQMD Environmental Justice Outreach and Initiatives** **Alatorre/3122**

This action is to issue an RFP to solicit proposals from individuals and organizations to provide assistance with community and stakeholder outreach efforts related to SCAQMD's Environmental Justice Program, including but not limited to, the Environmental Justice Community Partnership Initiative meetings and conference. (Reviewed: Administrative Committee, November 9, 2018; Recommended for Approval)

9. **Execute Contract for Operation of Diamond Bar Headquarters Cafeteria** **Olvera/2309**

The current contract for operation of the Diamond Bar headquarters cafeteria expires December 31, 2018. On June 1, 2018, the Board approved release of an RFP to solicit proposals from food service management firms interested in providing these services for the next three-year period. This action is to execute a no-cost contract with California Dining Services from January 1, 2019 to December 31, 2021. (Reviewed: Administrative Committee, November 9, 2018; Recommended for Approval)

10. Transfer and Appropriate Funds, Recognize Revenue, Approve Positions, Issue Solicitations and Purchase Orders, and Execute Contracts and Agreements for Mid-Year Budget Adjustments, AB 617 Implementation, Volkswagen Mitigation Projects, and China Partnership for Cleaner Shipping; and Amend Salary Resolution **Whynot/3104**

Additional resources of \$4,436,328 are needed in the FY 2018-19 Budget to enable the implementation of critical projects and programs. In addition, SCAQMD is expected to receive up to \$20,000,000 for AB 617 implementation. These actions are to: (1) Appropriate \$3,611,776 from the Undesignated (Unassigned) Fund Balance as a budget restoration measure; (2) Appropriate an additional \$824,552 from the Undesignated (Unassigned) Fund Balance into the FY 2018-19 General Fund Budget for several key projects; (3) Recognize revenue up to \$20,000,000 for AB 617 into the General Fund and appropriate \$10,211,076 into the FY 2018-19 and/or 2019-20 General Fund Budgets; (4) Transfer \$421,390 from the Volkswagen (VW) Mitigation Fund (79) to the General Fund and appropriate \$421,390 for administrative costs into the FY 2018-19 Budget; (5) Approve the addition, reassignment and upgrade of positions for AB 617, VW Mitigation projects, and China Partnership for Cleaner Shipping; (6) Issue solicitations and purchase orders and execute contracts for Mid-Year Budget Adjustments, AB 617, VW Mitigation projects, and China Partnership for Cleaner Shipping; (7) Authorize the Executive Officer to enter into a Bailment Agreement with the National Park Service; and (8) Amend the Salary Resolution to revise the Assistant Deputy Executive Officer class title. (Reviewed: Administrative Committee, November 9, 2018; Recommended for Approval)

**Action Item/No Fiscal Impact**

11. Rule and Control Measure Forecast and AB 617 Expedited BARCT Implementation Schedule **Fine/2239**

This report highlights SCAQMD rulemaking activities and public hearings scheduled for 2019 and AB 617 Expedited BARCT Implementation Schedule. This action is to receive and file the report and adopt the proposed AB 617 BARCT Implementation Rules Schedule. (No Committee Review)

**Items 12 through 17 - Information Only/Receive and File**

12. Legislative, Public Affairs, and Media Report **Alatorre/3122**

This report highlights the October 2018 outreach activities of the Legislative, Public Affairs and Media Office, which includes: Major Events, Community Events/Public Meetings, Environmental Justice Update, Business Assistance, Media Relations and Outreach to Business and Federal, State, and Local Government. (No Committee Review)

13. **Hearing Board Report** **Prussack/2500**  
This reports the actions taken by the Hearing Board during the period of October 1 through October 31, 2018. (No Committee Review)
14. **Civil Filings and Civil Penalties Report** **Gilchrist/3459**  
This reports the monthly penalties from October 1, 2018 through October 31, 2018, and legal actions filed by the General Counsel's Office from October 1, 2018 through October 31, 2018. An Index of District Rules is attached with the penalty report. (Reviewed: Stationary Source Committee, November 16, 2018)
15. **Lead Agency Projects and Environmental Documents Received by SCAQMD** **Nakamura/3105**  
This report provides, for the Board's consideration, a listing of CEQA documents received by the SCAQMD between October 1, 2018 and October 31, 2018, and those projects for which the SCAQMD is acting as lead agency pursuant to CEQA. (Reviewed: Mobile Source Committee, November 16, 2018)
16. **Annual Audited Financial Statements for FY Ended June 30, 2018** **Jain/2804**  
This item transmits the annual audited financial statements of the SCAQMD. The SCAQMD has received an unmodified opinion (the highest obtainable) on its financial statements. (Reviewed: Administrative Committee, November 9, 2018)
17. **Status Report on Major Ongoing and Upcoming Projects for Information Management** **Moskowitz/3329**  
Information Management is responsible for data systems management services in support of all SCAQMD operations. This action is to provide the monthly status report on major automation contracts and planned projects. (Reviewed: Administrative Committee, November 9, 2018)
18. **Items Deferred from Consent Calendar**

## **BOARD CALENDAR**

*Note: The November meeting of the Mobile Source Air Pollution Reduction Review Committee (MSRC) was canceled. The next meeting of the MSRC is scheduled for December 20, 2018.*

19. **Administrative Committee (Receive & File)** **Chair: Burke** **Nastri/3131**
20. **Investment Oversight Committee (Receive & File)** **Chair: Cacciotti** **Jain/2804**

21. Legislative Committee Chair: Mitchell Alatorre/3122

Receive and file; and take the following actions as recommended:

Agenda Item	Recommendation
Interview Firms and Recommend Execution of Contract(s) for Legislative Representation in Washington, D.C.	Authorize the Chairman to execute contract(s) with Carmen Group, Inc., Cassidy & Associates, Inc., and Kadash & Associates for legislative representation in Washington, D.C.

22. Mobile Source Committee (Receive & File) Chair: Parker Fine/2239
23. Refinery Committee (Receive & File) Chair: Parker Fine/2239
24. Stationary Source Committee (Receive & File) Chair: Benoit Tisopoulos/3123
25. Technology Committee (Receive & File) Chair: Buscaino Miyasato/3249
26. California Air Resources Board Monthly Report (Receive & File) Board Rep: Mitchell Garzaro/2500

## **PUBLIC HEARINGS**

27. Certify Final Environmental Assessment and Adopt Rule 1118.1 - Control of Emissions from Non-Refinery Flares Nakamura/3105

***Staff is recommending that the public hearing on this item be continued to the January 4, 2019 Board Meeting.***

Proposed Rule 1118.1 applies to RECLAIM and non-RECLAIM facilities that operate non-refinery flares located at landfills, wastewater treatment plants, oil and gas production facilities, organic liquid loading stations, and tank farms. The proposed rule will implement, in part, the 2016 AQMP Control Measure CMB-03 - Emission Reductions from Non-Refinery Flares and facilitate the transition of the NOx RECLAIM program to a command-and-control regulatory structure. Proposed Rule 1118.1 establishes emission limits for NOx, VOC, and CO for new flares, and a capacity threshold for existing flares. In addition, some new flares at oil and gas production facilities will have additional limitations. Proposed Rule 1118.1 also establishes provisions for source testing, monitoring, reporting, recordkeeping, and provides exemptions for low-use and low-emitting flares. This action is to adopt the Resolution: 1) Certifying the Final Environmental Assessment for Proposed Rule 1118.1 - Control of Emissions from Non-Refinery Flares, and 2) Adopting Proposed Rule 1118.1 - Control of Emissions from Non-Refinery Flares. (Reviewed: Stationary Source Committee, October 19, 2018, and To Be Reviewed: December 19, 2018)

28. Certify Final Subsequent Environmental Assessment and Amend Rules 1146, 1146.1, 1146.2 and Adopt Rule 1100 **Nakamura/3105**

The adoption Resolution of the 2016 AQMP directed staff to achieve additional NOx emission reductions and to transition the RECLAIM program to a command-and-control regulatory structure as soon as practicable. Proposed Amended Rules 1146, 1146.1 and 1146.2 updates NOx emission limits for boilers, heaters, and steam generators applicable to these rules. The revised NOx emission limits represent BARCT and apply to RECLAIM and non-RECLAIM facilities. Proposed Rule 1100 establishes the compliance schedule for equipment at RECLAIM facilities that are subject to Proposed Amended Rules 1146 and 1146.1. PAR 1146.2 includes the compliance schedule for equipment regulated under this rule. This action is to adopt the Resolution: 1) Certifying the Final Subsequent Environmental Assessment for Proposed Amended Rules 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters; 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and Proposed Rule 1100 - Implementation Schedule for NOx Facilities; 2) Amending Rules 1146, 1146.1, and 1146.2; and 3) Adopting Rule 1100. (Reviewed: Stationary Source Committee, April 20 and October 19, 2018)

29. Determine that Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations Is Exempt from CEQA and Adopt Rule 1407.1 (***Continued from November 2, 2018 Board Meeting***) **Nakamura/3105**

***Staff is recommending that the public hearing on this item be withdrawn from consideration.***

Proposed Rule 1407.1 is an information gathering rule that will require a one-time source test and submittal of information to quantify arsenic, cadmium, chromium, hexavalent chromium and nickel emissions from chromium alloy melting operations. Information obtained will be used to establish emission standards and other provisions. Proposed Rule 1407.1 also includes requirements for metals composition testing, recordkeeping, and reporting. This action is to adopt the Resolution: 1) Determining that Proposed Rule 1407.1 – Toxic Air Contaminants from Chromium Alloy Melting Operations is exempt from the requirements of the California Environmental Quality Act; and 2) Adopting Rule 1407.1 – Toxic Air Contaminants from Chromium Alloy Melting Operations. (Reviewed: Stationary Source Committee, September 21, and November 16, 2018)

**PUBLIC COMMENT PERIOD – (Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3)**

### **BOARD MEMBER TRAVEL – (No Written Material)**

Board member travel reports have been filed with the Clerk of the Boards, and copies are available upon request.

### **CONFLICT OF INTEREST DISCLOSURES – (No Written Material)**

Under the approval authority of the Executive Officer the District will enter into a contract modification with Gladstein, Neandross & Associates (Contract No. C170973) and agreements with the Port of Long Beach (Contract No. C19181) and Southern California Edison (Contract No. C19193). Gladstein, Neandross & Associates, the Port of Long Beach, and Southern California Edison are potential sources of income for Governing Board Member Joseph Lyou which qualify for the remote interest exception of Section 1090 of the California Government Code. Dr. Lyou abstained from any participation in the making of the contract modification and agreements.

### **CLOSED SESSION - (No Written Material)**

Gilchrist/3459

#### CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION

It is necessary for the Board to recess to closed session pursuant to Government Code sections 54956.9(a) and 54956.9(d)(1) to confer with its counsel regarding pending litigation which has been initiated formally and to which the SCAQMD is a party. The actions are:

- In the Matter of SCAQMD v. Aerocraft Heat Treating Co., Inc. and Anaplex Corp., SCAQMD Hearing Board Case No. 6066-1 (Order for Abatement);
- SCAQMD v. Anaplex, Los Angeles Superior Court Case No. BC608322 (Paramount Hexavalent Chromium);
- In the Matter of SCAQMD v. Browning-Ferris Industries of California, Inc. dba Sunshine Canyon Landfill, SCAQMD Hearing Board Case No. 3448-14;
- Communities for a Better Environment v. SCAQMD, Los Angeles Superior Court Case No. BS161399 (RECLAIM);
- Communities for a Better Environment v. South Coast Air Quality Management District, Los Angeles Superior Court Case No. BS169841; Safe Fuel and Energy Resources California, et al. v. South Coast Air Quality Management District, Los Angeles Superior Court Case No. BS169923 (Tesoro);
- People of the State of California, ex rel. SCAQMD v. Exide Technologies, Inc., Los Angeles Superior Court Case No. BC533528;
- In re: Exide Technologies, Inc., U.S. Bankruptcy Court, District of Delaware, Case No. 13-11482 (KJC) (Bankruptcy Case);
- Fast Lane Transportation, Inc., et al. v. City of Los Angeles, et al., Court of Appeal, First Appellate District, Case No. A148993 (formerly Contra Costa County Superior Court Case No. MSN14-0300) (SCIG);
- In the Matter of SCAQMD v. Southern California Gas Company, Aliso Canyon Storage Facility, SCAQMD Hearing Board Case No. 137-76 (Order for Abatement); People of the State of California, ex rel SCAQMD v. Southern California Gas Company, Los Angeles Superior Court Case No. BC608322; Judicial Council Coordinated Proceeding No. 4861;

- South Coast Air Quality Management District v. Top Shelf Consulting LLC, Los Angeles Superior Court, Case No. BC676606; In re: Top Shelf Consulting, LLC, U.S. Bankruptcy Court, Central District of California (Los Angeles), Case No. 2:18-bk-11975-ER (Bankruptcy case);
- In the Matter of SCAQMD v. Torrance Refining Company, LLC, SCAQMD Hearing Board Case No. 6060-5 (Order for Abatement); and
- State of California, et al. v. U.S. EPA, et al., U.S. Court of Appeals, D.C. Circuit, Case No. 18-1114 (mid-term evaluation for light-duty vehicles).

#### CONFERENCE WITH LEGAL COUNSEL – INITIATING LITIGATION

It is also necessary for the Board to recess to closed session pursuant to Government Code section 54956.9(a) and 54956.9(d)(4) to consider initiation of litigation (two cases).

#### CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION

Also, it is necessary for the Board to recess to closed session pursuant to Government Code section 54956.9(d)(2) to confer with its counsel because there is a significant exposure to litigation against the SCAQMD (one case)—Letter from Steven J. Olson, O'Melveny & Myers LLP, on behalf of ExxonMobil Corporation, dated August 22, 2018.

#### **ADJOURNMENT**

**\*\*PUBLIC COMMENTS\*\***

Members of the public are afforded an opportunity to speak on any agenda item before consideration of that item. Please notify the Clerk of the Board, (909) 396-2500, if you wish to do so. All agendas are posted at SCAQMD Headquarters, 21865 Copley Drive, Diamond Bar, California, at least 72 hours in advance of the meeting. At the end of the agenda, an opportunity is also provided for the public to speak on any subject within the SCAQMD's authority. Speakers will be limited to a total of three (3) minutes for the Consent Calendar and Board Calendar and three (3) minutes or less for other agenda items.

Note that on items listed on the Consent Calendar and the balance of the agenda any motion, including action, can be taken (consideration is not limited to listed recommended actions). Additional matters can be added and action taken by two-thirds vote, or in the case of an emergency, by a majority vote. Matters raised under the Public Comment Period may not be acted upon at that meeting other than as provided above.

Written comments will be accepted by the Board and made part of the record, provided 25 copies are presented to the Clerk of the Board. Electronic submittals to [cob@aqmd.gov](mailto:cob@aqmd.gov) of 10 pages or less including attachment, in MS WORD, PDF, plain or HTML format will also be accepted by the Board and made part of the record if received no later than 5:00 p.m., on the Tuesday prior to the Board meeting.

**ACRONYMS**

AQ-SPEC = Air Quality Sensor Performance  
Evaluation Center

AQIP = Air Quality Investment Program

AQMP = Air Quality Management Plan

AVR = Average Vehicle Ridership

BACT = Best Available Control Technology

BARCT = Best Available Retrofit Control Technology

Cal/EPA = California Environmental Protection Agency

CARB = California Air Resources Board

CEMS = Continuous Emissions Monitoring Systems

CEC = California Energy Commission

CEQA = California Environmental Quality Act

CE-CERT =College of Engineering-Center for Environmental  
Research and Technology

CNG = Compressed Natural Gas

CO = Carbon Monoxide

DOE = Department of Energy

EV = Electric Vehicle

FY = Fiscal Year

GHG = Greenhouse Gas

HRA = Health Risk Assessment

LEV = Low Emission Vehicle

LNG = Liquefied Natural Gas

MATES = Multiple Air Toxics Exposure Study

MOU = Memorandum of Understanding

MSERCs = Mobile Source Emission Reduction Credits

MSRC = Mobile Source (Air Pollution Reduction) Review  
Committee

NATTS =National Air Toxics Trends Station

NESHAPS = National Emission Standards for  
Hazardous Air Pollutants

NGV = Natural Gas Vehicle

NOx = Oxides of Nitrogen

NSPS = New Source Performance Standards

NSR = New Source Review

OEHHA = Office of Environmental Health Hazard  
Assessment

PAMS = Photochemical Assessment Monitoring  
Stations

PEV = Plug-In Electric Vehicle

PHEV = Plug-In Hybrid Electric Vehicle

PM10 = Particulate Matter  $\leq$  10 microns

PM2.5 = Particulate Matter  $\leq$  2.5 microns

RECLAIM=Regional Clean Air Incentives Market

RFP = Request for Proposals

RFQ = Request for Quotations

SCAG = Southern California Association of Governments

SIP = State Implementation Plan

SOx = Oxides of Sulfur

SOON = Surplus Off-Road Opt-In for NOx

SULEV = Super Ultra Low Emission Vehicle

TCM = Transportation Control Measure

ULEV = Ultra Low Emission Vehicle

U.S. EPA = United States Environmental Protection  
Agency

VOC = Volatile Organic Compound

ZEV = Zero Emission Vehicle

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BOARD MEETING DATE: December 7, 2018

AGENDA NO. 1

MINUTES: Governing Board Monthly Meeting

SYNOPSIS: Attached are the Minutes of the November 2, 2018 meeting.

**RECOMMENDED ACTION:**

Approve Minutes of the November 2, 2018 Board Meeting.

Denise Garzaro  
Clerk of the Boards

DG

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**FRIDAY, NOVEMBER 2, 2018**

Notice having been duly given, the regular meeting of the South Coast Air Quality Management District Board was held at District Headquarters, 21865 Copley Drive, Diamond Bar, California. Members present:

William A. Burke, Ed.D., Chairman  
Speaker of the Assembly Appointee

Dr. Clark E. Parker, Sr., Vice Chairman  
Senate Rules Committee Appointee

Mayor Ben Benoit  
Cities of Riverside County

Council Member Joe Buscaino  
City of Los Angeles

Council Member Michael A. Cacciotti  
Cities of Los Angeles County – Eastern Region

Dr. Joseph K. Lyou  
Governor's Appointee

Mayor Larry McCallon  
Cities of San Bernardino County

Mayor Pro Tem Judith Mitchell  
Cities of Los Angeles County – Western Region

Supervisor Shawn Nelson (Arrived at 9:20 a.m.)  
County of Orange

Council Member Dwight Robinson  
Cities of Orange County

Supervisor Janice Rutherford  
County of San Bernardino

Supervisor Hilda L. Solis  
County of Los Angeles

Member absent:

Supervisor V. Manuel Perez  
County of Riverside

**CALL TO ORDER:** Chairman Burke called the meeting to order at 9:00 a.m.

- Pledge of Allegiance: Led by Mayor Benoit.
- Opening Comments

Dr. Lyou noted the upcoming retirement of Fred Minassian, Assistant DEO/Science and Technology Advancement and recognized him for his many years of valuable service to the District.

Council Member Buscaino announced that the City of Los Angeles will host the National League of Cities-City Summit on November 7-10, 2018.

Chairman Burke announced that he and Dr. Parker attended the Taste of Soul event on October 20, 2018 in South Los Angeles, which was attended by over 375,000 people. He expressed appreciation to staff for providing information to attendees regarding air quality issues and available District programs.

Dr. Parker noted the increased interest in District programs and information as a result of attendance at community events. He expressed appreciation to staff for participating in these events.

Mayor Pro Tem Mitchell reported that she participated in a panel at the CAPCOA annual meeting regarding AB 617. She noted that the District will work closely with CARB in the implementation of monitoring and emission reduction plans in disadvantaged communities that are most severely affected by air pollution. She highlighted the three communities located in the Basin that will be included in the first year of the program.

**CONSENT CALENDAR**

1. Approve Minutes of October 5, 2018 Board Meeting
2. Set Public Hearings December 7, 2018 to Consider Adoption of and/or Amendments to SCAQMD Rules and Regulations
  - A. Certify the Final Environmental Assessment and Adopt Rule 1118.1 - Control of Emissions from Non-Refinery Flares
  - B. Certify Final Subsequent Environmental Assessment and Amend Rules 1146, 1146.1, 1146.2 and Adopt Rule 1100

**Budget/Fiscal Impact**

3. Execute Contract for Expansion of Hydrogen Fueling Station
4. Develop and Demonstrate Zero Emissions Heavy-Duty Trucks, Freight Handling Equipment, EV Infrastructure and Renewable Energy
5. Approve Awards for Heavy-Duty Diesel Drayage Truck Replacement Projects
6. Establish Special Revenue Fund, Recognize Revenue, Execute Agreements for Volkswagen Environmental Mitigation Program and Transfer Funds
7. Adopt Resolution Recognizing Funds for FY 2017-18 Carl Moyer State Reserve Program, Execute Contracts for FY 2017-18 "Year 20" Carl Moyer Program, SOON Provision and Community Air Protection AB 134 Program, Amend Awards and Transfer Funds
8. Issue RFP for Health Study of Impacts of Well Rupture at Aliso Canyon
9. Issue RFP to Evaluate Meteorological Factors and Trends Contributing to Recent Poor Air Quality in South Coast Air Basin
10. Amend Contracts for Legislative Representation in Sacramento, California
11. Recognize Revenue and Execute Agreements for Installation and Maintenance of Air Filtration Systems
12. Approve Contract Awards and Modifications Approved by MSRC

**Action Item/No Fiscal Impact**

13. Establish Board Meeting Schedule for Calendar Year 2019

**Items 14 through 19 – Information Only/Receive and File**

14. Legislative, Public Affairs and Media Report

15. Hearing Board Report
16. Civil Filings and Civil Penalties Report
17. Lead Agency Projects and Environmental Documents Received by SCAQMD
18. Rule and Control Measure Forecast
19. Status Report on Major Ongoing and Upcoming Projects for Information Management

Dr. Lyou announced his abstention on Item No. 4 because Volvo North America and CARB are potential sources of income to him; on Item No. 6 because Bay Area AQMD and CARB are potential sources of income to him; on Item No. 7 because Clean Energy and CARB are potential sources of income to him; on Item No. 8 because SoCal Gas is a potential source of income to him; and on Item No. 11 because IQAir North America is a potential source of income to him.

Council Member Robinson announced his abstention on Item No. 7 because Burlington Northern Santa Fe (BNSF) Railway is potential source of income to him; Supervisor Rutherford announced her abstention on Item No. 7 because of campaign contributions from BNSF Railway, CR&R Inc. and Robertsons Ready Mix; and Council Member Buscaino announced his abstention on Item No. 7 because of campaign contributions from Clean Energy.

Council Member Mitchell noted that she is a Board Member of the CARB which is involved with Item Nos. 4, 6, and 7.

Mayor McCallon and Supervisor Rutherford noted that they are members of Omnitrans which is involved with Item No. 7.

Supervisor Solis noted she is a Supervisor for Los Angeles County which is involved with Item No. 7.

Due to a number of requests to speak received on Consent Calendar items 2, 4, 5, and 8, the vote on the Consent Calendar was deferred until after those comments were made.

20. Items Deferred from Consent Calendar

2. Set Public Hearing December 7, 2018 to Consider Adoption of and/or Amendments to SCAQMD Rules and Regulations:

A. Certify the Final Environmental Assessment and Adopt Rule 1118.1  
- Control of Emissions from Non-Refinery Flares

Bill LaMarr, California Small Business Alliance, expressed concerns with the addition of an 800-hour annual limit on new or relocated flares for oil and gas facilities. He noted that the rule does not account for the safety of employees and the surrounding communities and may lead to increased flaring. He asked that the set hearing be delayed to allow further discussions with stakeholders.

Ivan Tether, California Independent Petroleum Association, expressed concern that the 800-hour annual limit in the proposed rule would curtail oil and gas production, discourage the installation of cleaner flares, and negatively impact jobs. He noted that CEQA already has flaring thresholds and current flares are very clean. He added that exemptions for non-routine maintenance, testing, start-up and shutdown, and emergency upsets should be considered prior to adoption of the rule.

Council Member Mitchell asked staff if the item should be referred back to the Stationary Source Committee to allow further discussions with stakeholders.

Mr. Nastri responded that the proposed rule is scheduled to return to the Stationary Source Committee in November to allow further discussions with stakeholders before the public hearing in December.

Dr. Philip Fine, DEO/Planning, Rule Development and Area Sources, explained that staff has been working with stakeholders and will continue to address concerns prior to the public hearing. Staff is confident that they have a path forward to address the issues that have been raised.

Dr. Lyou asked staff for clarification on the potential exemptions.

Dr. Fine explained that staff will review the rule language to determine if the 800-hour limit is sufficient to accommodate maintenance, upgrades and breakdowns and determine what exemptions may be necessary.

- B. Certify Final Subsequent Environmental Assessment and Amend Rules 1146, 1146.1, 1146.2 and Adopt Rule 1100

Harvey Eder, Public Solar Power Coalition, expressed support for solar retrofit technologies and expressed concerns regarding climate change.

Written Comments Submitted By:

Michael J. Carroll, Latham & Watkins LLP on behalf of Regulatory Flexibility Group and Western States Petroleum Association (WSPA)

(Supervisor Nelson arrived at 9:20 a.m.)

4. Develop and Demonstrate Zero Emissions Heavy-Duty Trucks, Freight Handling Equipment, EV Infrastructure and Renewable Energy
5. Approve Awards for Heavy-Duty Diesel Drayage Truck Replacement Projects

Council Member Buscaino asked if labor law compliance language will be included in these contracts.

Dr. Matt Miyasato, DEO/Science and Technology Advancement, explained that the concerns regarding labor violations was discussed at the October Technology Committee meeting and legal counsel will include safeguards in the contracts with drayage companies. These companies will be required to report any labor violations within the previous three years and report back to the District annually on any labor violations from the previous year. He added that lease-to-own arrangements will not be allowed under the contracts.

For Item Nos. 4 and 5, Mr. Eder expressed support for solar electric heavy-duty trucks and for awarding funds to implement solar technologies in disadvantaged areas.

Chairman Burke asked staff to look at the potential to promote solar technologies in EJ areas.

8. Issue RFP for Health Study of Impacts of Well Rupture at Aliso Canyon

Mr. Eder stressed that the health study must recognize natural gas as a toxic.

Supervisor Nelson announced his abstention on Item No. 7 because of campaign contributions from SA Recycling.

MOVED BY BENOIT, SECONDED BY SOLIS,  
AGENDA ITEMS 1 THROUGH 19 APPROVED  
AS RECOMMENDED, ADOPTING  
RESOLUTION 18-16 RECOGNIZING FUNDS  
AND ACCEPTING THE TERMS AND  
CONDITIONS OF THE FY 2017-18 CARL  
MOYER STATE RESERVE GRANT AWARD  
AND RESOLUTION 18-17 SETTING THE TIME  
AND PLACE OF REGULAR MEETINGS, BY  
THE FOLLOWING VOTE:

AYES: Benoit, Burke, Buscaino (*except  
Item #7*), Cacciotti, Lyou (*except  
Items #4, #6, #7, #8 & #11*),  
McCallon, Mitchell, Nelson (*except  
Item #7*), Parker, Robinson (*except  
Item #7*), Rutherford (*except Item  
#7*) and Solis

NOES: None

ABSTAIN: Buscaino (*Item #7 only*), Lyou (*Items  
#4, #6, #7, #8 & #11 only*), Nelson  
(*Item #7 only*), Robinson (*Item #7  
only*) and Rutherford (*Item #7 only*)

ABSENT: Perez

### **BOARD CALENDAR**

21. Administrative Committee
22. Mobile Source Committee
23. Stationary Source Committee
24. Technology Committee
25. Mobile Source Air Pollution Reduction Review Committee

26. California Air Resources Board Monthly Report

MOVED BY LYOU, SECONDED BY NELSON,  
AGENDA ITEMS 21 THROUGH 26,  
APPROVED AS RECOMMENDED,  
RECEIVING AND FILING THE COMMITTEE,  
AND MSRC REPORTS, BY THE FOLLOWING  
VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti,  
Lyou, McCallon, Mitchell, Nelson,  
Parker, Robinson, Rutherford and  
Solis

NOES: None

ABSENT: Perez

**PUBLIC HEARINGS**

27. Certify Final Mitigated Subsequent Environmental Assessment and Amend Rule 1135 - Emissions of Oxides of Nitrogen from Electricity Generating Facilities

Michael Morris, Planning and Rules Manager, gave the staff presentation on Item No. 27.

Council Member McCallon asked staff what actual NO<sub>x</sub> emissions reductions would result from the rule amendments. Mr. Morris replied that reductions would be approximately one half ton per day.

The public hearing was opened and the following individuals addressed the Board on Item 27.

Curtis Coleman, Southern California Air Quality Alliance, expressed that they are not opposed to the adoption of the rule amendments, however, commented that they do not agree with the position presented in the staff report that BARCT can require total replacement of equipment rather just retrofitting existing equipment with add-on control technology. He stated that they will continue to discuss this issue with staff in future rulemaking.

Mr. Eder expressed support for solar technologies and that solar be included as BARCT. He added support for solar thermal technologies and recommended a visit to a thermal power plant in Barstow.

Mark Sedlacek, Los Angeles Department of Water and Power, expressed appreciation to staff for touring one of their power plants during the rulemaking process and noted their commitment to partnering with the District to implement the rule amendments.

Adrian Martinez, Earthjustice, expressed appreciation to staff for their work with stakeholders during the rulemaking process. He noted support for the rule and the transition of the RECLAIM program to a command-and-control structure. He added support for solar energy storage to be considered as BARCT. (Submitted Written Comments on behalf of Earthjustice as well as eleven environmental organizations)

There being no further testimony on this item, the public hearing was closed.

Written Comments Submitted By:

Michael J. Carroll, Latham & Watkins LLP on behalf of Regulatory Flexibility Group and WSPA

Mark Phair, Ultramar, Inc, a Valero Company

MOVED BY CACCIOTTI, SECONDED BY  
BUSCAINO, AGENDA ITEM NO. 27  
APPROVED AS RECOMMENDED,  
ADOPTING RESOLUTION NO. 18-18  
CERTIFYING THE FINAL MITIGATED  
SUBSEQUENT ENVIRONMENTAL  
ASSESSMENT FOR PROPOSED AMENDED  
RULE 1135 – EMISSION OF OXIDES OF  
NITROGEN FROM ELECTRICITY  
GENERATING FACILITIES AND AMENDING  
RULE 1135, BY THE FOLLOWING VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti,  
Lyou, McCallon, Mitchell, Nelson,  
Parker, Robinson, Rutherford and  
Solis

NOES: None

ABSENT: Perez

28. Determine that Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations Is Exempt from CEQA and Adopt Rule 1407.1

Michael Morris, Planning and Rules Manager, gave the staff presentation on Item No. 28. Staff's recommendation is to continue the public hearing to allow for additional discussion with stakeholders.

Supervisor Solis expressed support for continuing to work on developing a rule that is an important step to protect disadvantaged communities that are severely impacted by toxic air contaminants. She expressed appreciation for the efforts of staff during the rulemaking process.

Dr. Parker asked how long it has been known that melting chromium results in hexavalent chromium emissions.

Mr. Morris responded that the discovery of the conversion to hexavalent chromium is a relatively new discovery.

Mr. Nastri explained that the information about hexavalent chromium was the result of the investigations in Paramount and it was discovered that the high temperatures involved with metal operations resulted in high concentrations of hexavalent chromium. In this regard, the District is leading the way to develop further understanding of hexavalent chromium formation through monitoring, analysis and rulemaking.

The public hearing was opened and the following individual addressed the Board on Item 28.

James Simonelli, California Metals Coalition, expressed support for the proposed approach and noted the strong collaboration with staff and industry that occurred throughout the rule development process.

Mr. Nastri explained that staff is requesting that the public hearing be continued to the December 7, 2018 Board meeting to allow further discussions with stakeholders at the November 16 Stationary Source Committee meeting.

SUPERVISOR SOLIS MOVED TO CONTINUE THE PUBLIC HEARING ON PROPOSED RULE 1407.1 TO THE DECEMBER 7, 2018 BOARD MEETING. THE MOTION WAS SECONDED BY COUNCIL MEMBER CACCIOTTI AND CARRIED BY THE FOLLOWING VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti, Lyou, McCallon, Mitchell, Nelson, Parker, Robinson, Rutherford and Solis

NOES: None

ABSENT: Perez

29. Certify Revised Final Environmental Assessment and Amend Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

Susan Nakamura, Assistant DEO/Planning, Rule Development and Area Sources, gave the staff presentation on Item No. 29.

The public hearing was opened and the following individuals addressed the Board on Item 29.

Bryan Leiker, Metal Finishing Association of Southern California (MFASC), expressed appreciation to staff for their collaboration with the metal finishing industry during the extensive rulemaking process and stated that they look forward to continued collaboration in the future. He stressed the importance of performing economic impact analysis earlier during the rulemaking process to ascertain the true expected impact to businesses. The MFASC will comply with the rule and committed to continue working with staff on future rules.

Wesley Turnbow, MFASC, acknowledged the work of staff and stakeholders to develop an acceptable rule and stressed the importance of utilizing science-based studies to develop regulations. He explained that MFASC is no longer opposed to PAR 1469. He added that rule enforcement should come after the development of a rule and recommended that socio-economic impacts be considered earlier in the rulemaking process.

Jim Meyer, Aviation Repair Solutions, expressed concerns about the cost of implementation for small businesses and the potential safety risks for employees. He noted that the Federal Aviation Administration regulations specify the components that must be used in aircraft construction which presently include hexavalent chromium.

There being no further testimony on this item, the public hearing was closed.

Supervisor Solis expressed appreciation to staff for their efforts in developing a rule that will protect the health of residents and workers. She recommended that part of the implementation of AB 617 include monitoring near parks and other public areas where sensitive receptors might be. She also inquired about the type of referrals the District makes regarding employee safeguards.

Mr. Nastri responded that the suggestion regarding monitoring near parks, can be shared with the AB 617 community steering committees for their consideration. He added that the District works closely with agencies such as Cal/OSHA and OSHA on issues dealing with worker safety. During the investigation in Paramount, the District worked with the local municipalities and state agencies on not just air quality concerns but a breadth of environmental

issues. The District is committed to working collaboratively with a variety of regulatory agencies.

MOVED BY MITCHELL, SECONDED BY CACCIOTTI, AGENDA ITEM NO. 29 APPROVED AS RECOMMENDED, ADOPTING RESOLUTION NO. 18-19 CERTIFYING THE REVISED FINAL ENVIROMENTAL ASSESSMENT FOR PROPOSED AMENDED RULE 1469 – HEXAVALENT CHROMIUM EMISSIONS FROM CHROMIUM ELECTROPLATING AND CHROMIC ACID ANODIZING OPERATIONS AND AMENDING RULE 1469, BY THE FOLLOWING VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti, Lyou, McCallon, Mitchell, Nelson, Parker, Robinson, Rutherford and Solis

NOES: None

ABSENT: Perez

30. Determine that Updated 1-Hour Ozone Standard Attainment Demonstration Is Exempt from CEQA and Approve Updated 1-Hour Ozone Standard Attainment Demonstration

Staff waived the presentation on Item No 30.

The public hearing was opened; there being no requests to speak, the public hearing was closed.

MOVED BY CACCIOTTI, SECONDED BY SOLIS, AGENDA ITEM NO. 30 APPROVED AS RECOMMENDED, ADOPTING RESOLUTION NO. 18-20 DETERMINING THAT THE UPDATED 1-HOUR OZONE STANDARD ATTAINMENT DEMONSTRATION FOR THE SOUTH COAST AIR BASIN IS EXEMPT FROM THE REQUIREMENTS OF CEQA AND ADOPTING THE UPDATED 1-HOUR OZONE STANDARD ATTAINMENT DEMONSTRATION FOR THE SOUTH COAST AIR BASIN, BY THE FOLLOWING VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti, Lyou, McCallon, Mitchell, Nelson, Parker, Robinson, Rutherford and Solis

NOES: None

ABSENT: Perez

**PUBLIC COMMENT PERIOD** – (Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3)

Mr. Eder expressed concerns about California’s subsidy of Edison and PG&E and the deregulation of the electricity market. He referenced a 2003 report by the California Public Policy Institute regarding the California electricity crisis. He urged for statewide total solar conversion.

**CLOSED SESSION**

The Board did not meet in closed session.

**ADJOURNMENT**

There being no further business, the meeting was adjourned by Chairman Burke at 10:30 a.m.

The foregoing is a true statement of the proceedings held by the South Coast Air Quality Management District Board on November 2, 2018.

Respectfully Submitted,

Denise Garzaro  
Clerk of the Boards

Date Minutes Approved: \_\_\_\_\_

\_\_\_\_\_  
Dr. Clark E. Parker, Vice Chairman

## **ACRONYMS**

BARCT = Best Available Retrofit Control Technology  
CAPCOA = California Air Pollution Control Officers Association  
CARB = California Air Resources Board  
CEQA = California Environmental Quality Act  
DEO = Deputy Executive Officer  
EJ = Environmental Justice  
EV = Electric Vehicle  
FY = Fiscal Year  
MSRC = Mobile Source (Air Pollution Reduction) Review Committee  
NO<sub>x</sub> = Oxides of Nitrogen  
OSHA = Occupational Safety and Health Administration  
PAR = Proposed Amended Rule  
RECLAIM = Regional Clean Air Incentives Market  
RFP = Request for Proposals  
SOON = Surplus Off-Road Opt-In for NO<sub>x</sub>

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BOARD MEETING DATE: December 7, 2018

AGENDA NO. 2

PROPOSAL: Set Public Hearings to Consider Adoption of and/or Amendments to SCAQMD Rules and Regulations

January 4, 2019:

A. Determine that Proposed Amendments to Rule 1325 – Federal PM2.5 New Source Review Program Are Exempt from CEQA and Amend Rule 1325

Rule 1325 establishes requirements for new and modified sources to ensure compliance with federal PM2.5 New Source Review requirements. Rule 1325 was amended in 2016 to expand the definition of “precursor” to include VOC and ammonia (NH3) emissions, as required under U.S. EPA’s 2016 implementation rule for PM2.5 State Implementation Plans and a court decision requiring states to regulate PM2.5 under the same part of the Federal Clean Air Act as PM10. The 2016 amendment expanded the definition of precursor, however, it did not expand the definition of “regulated NSR pollutant” to explicitly reference the PM2.5 precursors VOC and NH3. Proposed Amended Rule 1325 will address this deficiency by referencing “precursor” in the definition of “regulated NSR pollutant”. In addition, other revisions are made to improve clarity. This action is to adopt the Resolution: 1) Determining that the proposed amendments to Rule 1325 - Federal PM2.5 New Source Review Program are exempt from the California Environmental Quality Act, and 2) Amending Rule 1325 – Federal PM2.5 New Source Review Program. (Reviewed: Stationary Source Committee, November 16, 2018)

February 1, 2019:

**B. Determine that Proposed Amendments to Rule 1403 - Asbestos Emissions from Renovation/Demolition Activities Are Exempt from CEQA and Amend Rule 1403**

Proposed amendments to Rule 1403 will provide revisions to further clarify existing rule requirements, enhance enforceability, and align the requirements with the applicable U.S. EPA NESHAP and with other state and local agency regulations. The proposed amendments include clarifying who is covered by the rule, standard and emergency notification procedures, specifying information to be included in survey reports, and establishing minimum sampling requirements for determining whether materials are asbestos-containing. This action is to adopt the Resolution: 1) Determining that the proposed amendments to Rule 1403 - Asbestos Emissions from Renovation/Demolition Activities are exempt from the requirements of the California Environmental Quality Act; and 2) Amending Rule 1403 - Asbestos Emissions from Renovation/Demolition Activities. (Reviewed: Stationary Source Committee, November 16, 2018)

The complete text of the proposed rules and amendments, staff reports and other supporting documents will be available from the SCAQMD's Public Information Center, (909) 396-2001 and on the Internet ([www.aqmd.gov](http://www.aqmd.gov)) as of December 5, 2018 for Rule 1325, and as of January 2, 2019 for Rule 1403.

**RECOMMENDED ACTION:**

Set Public Hearing January 4, 2019 to Amend Rule 1325 and set Public Hearing February 1, 2019 to Amend Rule 1403.

Wayne Natri  
Executive Officer

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BOARD MEETING DATE: December 7, 2018

AGENDA NO. 3

**PROPOSAL:** Develop and Demonstrate Near-Zero and Zero Emissions Vehicles and Equipment at Ports

**SYNOPSIS:** The Port of Long Beach and its project partners have received \$50,000,000 in funding and the Port of Los Angeles and its project partners have received \$41,122,260 under CARB's Low Carbon Transportation Investments grant solicitation to demonstrate near-zero and zero emissions on-road, off-road and marine vehicles and equipment, including battery electric and hydrogen fuel cell trucks and supporting infrastructure. Total anticipated projects costs are \$102,998,742 and \$82,547,024 for the Ports of Long Beach and Los Angeles, respectively. This action is to execute contracts from the Clean Fuels Program Fund (31) with the Port of Long Beach in an amount not to exceed \$500,000 and the Port of Los Angeles in an amount not to exceed \$1,000,000 for SCAQMD's project cost-share.

**COMMITTEE:** Technology, November 16, 2018; Recommended for Approval

**RECOMMENDED ACTION:**

Authorize the Chairman to execute a contract with the Port of Long Beach in an amount not to exceed \$500,000 and a contract with Port of Los Angeles in an amount not to exceed \$1,000,000 from the Clean Fuels Program Fund (31) to develop and demonstrate near-zero and zero emissions vehicles and equipment at the Ports.

Wayne Natri  
Executive Officer

MMM:FM:NB

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**Background**

In July, the Port of Long Beach (POLB) and its project partners submitted an application to CARB under their Low Carbon Transportation Investments grant solicitation for a project entitled Sustainable Terminals Accelerating Regional Transformation (START). The Port of Los Angeles (POLA) and its project partners also submitted an application to CARB under their Low Carbon Transportation Investments grant solicitation for a project entitled Zero Emissions Freight "Shore to

Store” (S2S). CARB recently awarded the POLB \$50,000,000 towards their START Project, which has an anticipated total project cost of \$102,998,742, and POLA \$41,122,260 towards their S2S Project, which has an anticipated total project cost of \$82,547,024.

### **Proposal**

The POLB’s START Project is to develop and demonstrate 102 near-zero and zero emissions vehicles, vessels and cargo handling equipment, including charging infrastructure, across an intermodal freight network spanning three California seaports and three California air districts. All deployments will be located in disadvantaged communities, improving air quality in areas heavily burdened by freight related emissions. At the POLB, the demonstration will include 33 zero emissions yard tractors, one top handler, 9 rubber tire gantry cranes, five Class 8 trucks and one tug. Additionally, two Tier 3 ocean going vessels will service the POLB and Port of Oakland. Several vehicle and original equipment manufacturers as well as multiple port terminals and fleets will be involved in this project. The remainder of equipment will operate in the Ports of Oakland and Stockton.

The POLA’s S2S Project is to develop and demonstrate ten Kenworth zero emissions Class 8 hydrogen fuel cell electric trucks, integrated with Toyota’s fuel cell drive technology, along with the two hydrogen fueling stations that will be built in Ontario and Wilmington. Like the POLB project, all deployments will be located in disadvantaged communities. The hydrogen fuel cell electric trucks will be operated by UPS, Total Transportation Services, Inc., Southern Counties Express and Toyota Logistics Services (TLS) throughout the Los Angeles basin ports, inland locations such as Riverside County and the Port of Hueneme (POH). Additionally, POH will demonstrate two electric yard tractors, and TLS will demonstrate two zero emissions forklifts at their facility. Fleet operators participating in this demonstration project are subject to change, contingent upon CARB’s approval if required.

### **Sole Source Justification**

Section VIII.B.2. of the Procurement Policy and Procedure identifies provisions under which a sole source award may be justified. The request for a sole source award for this project is made under the provision B.2.d.(1): Projects involving cost-sharing by multiple sponsors. The development and demonstration project with the POLB will be cost-shared by CARB, POLB, SCE and other project partners; the project with the POLA, by CARB, CEC, Toyota and other project partners. Further details are in the Resource Impacts section.

### **Benefits to SCAQMD**

This demonstration project provides a unique opportunity to directly compare the performance of battery electric trucks to hydrogen fuel cell trucks, as well as provide a pathway for implementation of the recently adopted Clean Air Action Plan by the Gateway Ports. Projects to support development and demonstration of battery electric

and hydrogen fuel cell transportation technologies are included in the *Technology Advancement Office Clean Fuels Program 2018 Plan Update* under “Electric/Hybrid Technologies & Infrastructure” and “Hydrogen and Mobile Fuel Cell Technologies & Infrastructure.” This project will also provide additional NOx reductions towards attainment of upcoming 1-hour and 8-hour ozone air quality standards, as well as the 24-hour and annual PM2.5 air quality standards.

**Resource Impacts**

SCAQMD’s cost-share will not exceed \$500,000 and \$1,000,000 from the Clean Fuels Program Fund (31) for these two projects. Anticipated cost-share and partners are shown below.

**POLB START Project**

<b>Proposed Partners</b>	<b>Cost-Share</b>	<b>Percent of Project</b>
CARB	\$50,000,000	48.5
POLB	\$7,891,157	7.7
Southern California Edison	\$3,000,000	2.9
Port of Stockton	\$2,000,000	2.0
Port of Oakland	\$1,250,000	1.2
Other Project Partners (cash & in-kind)* --Harley Marine Services --Matson --SSA Marine --Shippers Transport Express --Tetra Tech	\$38,357,585	37.2
SCAQMD ( <i>requested</i> )	\$500,000	0.5
<b>Total</b>	<b>\$102,998,742</b>	<b>100.0</b>

\*subject to change

**POLA S2S Project**

<b>Proposed Partners</b>	<b>Cost-Share</b>	<b>Percent of Project</b>
CARB	\$41,122,260	49.8
CEC	\$25,999,331	31.5
Toyota	\$9,740,000	11.8
Other Project Partners* --Kenworth Truck Company --Port of Hueneme --Shell Oil Products USA --Southern Counties Express --Total Transportation Services --UPS	\$4,685,433	5.7
SCAQMD ( <i>requested</i> )	\$1,000,000	1.2
<b>Total</b>	<b>\$82,547,024</b>	<b>100.0</b>

\*subject to change

Sufficient funds are available from the Clean Fuels Program Fund (31), established as a special revenue fund resulting from the state-mandated Clean Fuels Program. The Clean Fuels Program, under Health and Safety Code Sections 40448.5 and 40512 and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile sources to support projects to increase the utilization of clean fuels, including the development of the necessary advanced enabling technologies. Funds collected from motor vehicles are restricted, by statute, to be used for projects and program activities related to mobile sources that support the objectives of the Clean Fuels Program.

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 4

**TITLE:** Conduct Emissions Study on Use of Alternative Diesel Blends in Off-Road Heavy-Duty Engines and Amend SOON Provision Awards

**SYNOPSIS:** CARB has committed to adopting a low emission diesel measure in the State Implementation Plan to reduce NOx and particulate matter (PM) emissions from on-road and off-road vehicles. Renewable diesel and biodiesel with NOx-mitigating additives show a potential for reductions up to 13 percent in NOx and 30 percent in PM. CARB is currently contributing \$932,499 in a \$1,353,499 study by the University of California Riverside (UCR) CE-CERT testing on- and off-road diesel engines on a wide matrix of test fuels. Additional cost-share is proposed for this comprehensive study as follows: SCAQMD, \$261,000; U.S. EPA, \$150,000; and San Joaquin Valley Air Pollution Control District, \$10,000. This action is to execute a contract with UCR CE-CERT in an amount not to exceed \$261,000 from the Clean Fuels Program Fund (31). In addition, in November 2017 and September 2018, the Board approved SOON Provision awards. This action is to also amend awards under the SOON Provision.

**COMMITTEE:** Technology, November 16, 2018; Recommended for Approval

**RECOMMENDED ACTIONS:**

1. Authorize the Chairman to execute a contract with UCR CE-CERT to conduct an emissions and performance study to characterize tailpipe emissions using renewable diesel and biodiesel in off-road engines in an amount not to exceed \$261,000 from the Clean Fuels Program Fund (31).
2. Amend SOON Provision awards approved by the Board in November 2017 and September 2018 with C5 Equipment Rental and Peed Equipment to change the project types from engine replacements to repowers.

Wayne Natri  
Executive Officer

## **Background**

CARB has committed to adopting a low emission diesel (LED) measure in the State Strategy for the 2016 State Implementation Plan to reduce NO<sub>x</sub> and particulate matter (PM) emissions from on-road and off-road vehicles. This measure, which is anticipated for implementation in the South Coast Air Basin first, would require diesel fuel providers to steadily decrease criteria pollutant emissions from diesel products. This includes achieving emissions reductions from currently available renewable diesel and NO<sub>x</sub>-mitigated biodiesel fuels that can reduce both NO<sub>x</sub> and PM. CARB, in conjunction with researchers from the University of California Riverside (UCR), University of California Davis and others, conducted a study to characterize the emissions impacts of biodiesel and renewable diesel relative to ultra-low sulfur diesel (ULSD) fuel in several on-road and off-road engines under a variety of test conditions. However, this study did not investigate the emissions impacts of these fuels on performance or in engines without emissions controls. Since off-road engines, including those for stationary uses, represent a large NO<sub>x</sub> and PM source in the South Coast Air Basin, it is essential to support the development and implementation of clean fuels that will help reduce mobile source emissions. It is also equally important to assess the new technologies to prevent or mitigate any negative impact on air quality and public health.

In November 2017, the Board approved FY 2016-17 “Year 19” Carl Moyer Program and SOON Provision awards, and subsequently amended these awards augmenting funds in September 2018. These Board letters included awards for engine replacements to C5 Equipment Rental and Peed Equipment. Staff realized these two project awards should have been listed in the Board letter as engine repowers (not replacements); they were evaluated as repower projects and the emissions reductions, cost-effectiveness and ranking remain unchanged.

## **Proposal**

The purpose of this study is to better understand emissions and performance effects from renewable diesel and NO<sub>x</sub>-mitigated biodiesel relative to ULSD fuel. This study proposes to conduct detailed emissions testing on various renewable diesel blends and biodiesel blends on heavy-duty off-road engines, with and without selective catalytic reduction (SCR) exhaust treatments and diesel particulate filters (DPF) using an engine dynamometer. The study will focus on the physical and chemical characterization of particulate emissions and gaseous toxic pollutants from two off-road engines, one equipped with SCR and DPF aftertreatment systems and one Tier 2 engine without an aftertreatment system. This action is to execute a contract with UCR CE-CERT to conduct an emissions and performance study to characterize tailpipe emissions using renewable diesel and biodiesel in off-road engines.

This action is to also amend SOON Provision awards with C5 Equipment Rental and Peed Equipment to change the project types from engine replacements to repowers. The funding awards and project parameters remain the same.

### **Sole Source Justification**

Section VIII.B.2 of the Procurement Policy and Procedure identifies provisions under which a sole source award may be justified. This request for a sole source award to UCR CE-CERT is made under provisions B.2.d.(1) and (8): Other circumstances exist which in the determination of the Executive Officer require such waiver in the best interest of the SCAQMD. Specifically, such circumstances may include but are not limited to projects involving cost-sharing by multiple sponsors and research and development efforts with educational institutions or nonprofit organizations. The project is being funded by CARB and may also be funded by the U.S. EPA and the San Joaquin Valley APCD. UCR is an educational institution and CE-CERT is their research center with multidisciplinary resources to engage in diverse environmental and transportation research programs.

### **Benefits to SCAQMD**

To achieve national ambient air quality standards and protect public health, one of SCAQMD's primary priorities is to reduce NOx and PM emissions from mobile sources while realizing GHG co-benefits, where possible. The proposed alternative diesel fuel study will help to better understand the air quality and public health impact of older equipment that exists in large numbers in the off-road sector. It will also support the need and benefit for cleaner fuels in the Basin. Large-scale use of renewable diesel and NOx-mitigated biodiesel in California can lead to the expanded availability of these alternatives as a transportation fuel, as well as a clean alternative energy source. This will further accelerate the deployment of near-zero heavy-duty transportation technologies, helping to lower NOx and PM emissions in the Basin.

### **Resource Impacts**

The total estimated cost for the proposed project is \$1,353,499, of which SCAQMD's proposed cost-share will not exceed \$261,000 from the Clean Fuels Program Fund (31), as summarized below:

**Proposed Project Cost-Share**

<b>Project Partner</b>	<b>UCR Study</b>
CARB	\$932,499
U.S. EPA*	\$150,000
SJVAPCD*	\$10,000
SCAQMD ( <i>requested</i> )	\$261,000
<b>Total Project Cost</b>	<b>\$1,353,499</b>

\*anticipated

Sufficient funds are available in the Clean Fuels Program Fund (31) for this proposed project. The Clean Fuels Program Fund (31) is established as a special revenue fund resulting from the state-mandated Clean Fuels Program. The Clean Fuels Program, under Health and Safety Code Sections 40448.5 and 40512 and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile sources to support projects to increase the utilization of clean fuels, including the development of the necessary advanced enabling technologies. Funds collected from motor vehicles are restricted, by statute, to be used for projects and program activities related to mobile sources that support the objectives of the Clean Fuels Program.

There is no fiscal impact for the two SOON Provision awards, which simply change the project type from engine replacements to repowers.

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 5

**PROPOSAL:** Execute Contract to Conduct Preliminary Cost and Economic Impact Analysis of Proposed Warehouse Indirect Source Rule

**SYNOPSIS:** Following Board direction at the May 2018 Board meeting, staff has begun formal rulemaking on a potential indirect source rule for warehouses. An RFP was released on September 7, 2018 to assist staff in estimating a range of potential costs based on hypothetical rule scenarios and the resultant impacts on freight operation, such as potential cargo diversion from local warehouses to facilities in adjacent regions. This preliminary analysis will be a component of a more comprehensive socioeconomic analysis that will be brought to the Board when it considers this proposed rule for adoption. This action is to execute a contract with Industrial Economics, Incorporated, in an amount not to exceed \$200,000, to conduct preliminary cost and economic impact analysis of a proposed warehouse indirect source rule. Funding for this contract is available in the Planning, Rule Development and Area Sources FY 2018-19 Budget.

**COMMITTEE:** Mobile Source, November 16, 2018; Recommended for Approval

**RECOMMENDED ACTION:**

Authorize the Executive Officer to execute a contract with Industrial Economics, Incorporated to conduct preliminary cost and economic impact analysis of a proposed warehouse indirect source rule, in an amount not to exceed \$200,000 from the Planning, Rule Development and Area Sources' FY 2018-19 Budget, Services and Supplies Major Object, Professional Special Services account.

Wayne Natri  
Executive Officer

## **Background**

On May 4, 2018 the Board directed staff to pursue development of facility-based emission reduction strategies for warehouses and distribution centers. The Board also directed staff to regularly report back to the Mobile Source Committee and the full Board with more detail on each proposed approach, and to provide interim assessments of the potential compliance costs and economic impacts. Specific economic factors to be assessed include potential impacts on competitiveness of the region's logistics sector, potential cargo diversion, impacts to the industrial real estate market, and regional employment. On September 7, 2018, the Board approved the release of RFP #P2019-02 to solicit qualified contractors to assist staff in conducting an evaluation of preliminary cost and economic impacts associated with regulating mobile source emissions from the operation of warehouses and distribution centers.

## **Proposal**

Staff is seeking Board approval to authorize the Executive Officer to execute a contract with Industrial Economics, Incorporated (IEc) in an amount not to exceed \$200,000.

The purpose of the contract is to prepare a report which will classify the region's warehouses by operation type, estimate how potential costs associated with the regulation would be incurred by these facilities and associated trucking fleets, and assess the resultant impacts on freight operation, such as potential cargo diversion from local warehouses and distribution centers to facilities in nearby regions. A range of potential compliance costs will be estimated based on hypothetical rule scenarios and informed by existing literature, other ongoing studies that estimate the cost of applicable technologies, and the warehouse indirect source rule working group. The results of this study will be used to help determine the potential economic impacts of the final proposed rule that will be presented to the Board for consideration.

## **Outreach**

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFP and inviting bids was published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may have been notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the RFP was emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<http://www.aqmd.gov>). The RFP was also sent to various individuals, firms and organizations with potential expertise in the subject areas.

**Bid Evaluation**

A total of two bids were received by the 12:01 p.m. deadline on October 9, 2018 in response to the RFP. One of the firms is certified as a small business and received additional points. The other firm is certified as a low-emission vehicle business and off-peak hours delivery business and received additional points accordingly. The Attachment reflects the evaluation of the submitted proposals in response to RFP #P2019-02.

Using the prescribed evaluation criteria to consider technical and cost qualifications, only one of the two proposals for RFP #2019-02 was scored as technically qualified. This bid was from Industrial Economics, Incorporated (IEc). The important factors noted by the review panel that contributed to the IEC proposal's high score are: excellent understanding of the problem to be studied, high level of detail and specificity as to how each task will be implemented, in depth knowledge of transportation technologies, relevant data analysis expertise, experience working directly with the goods movement sector in Southern California, and prior experience analyzing potential regulatory impacts for various federal, state, and local agencies.

**Panel Composition**

The submitted proposals for RFP #P2019-02 were evaluated by a panel consisting of an SCAQMD Program Supervisor, a Division Chief from CARB and a Senior Regional Planner from the Southern California Association of Governments. Of the three panel members, one is Asian, and two are Caucasian; one male and two female.

**Resource Impacts**

Sufficient funds in the amount of \$200,000 are available in Planning, Rule Development and Area Sources' FY 2018-19 Budget.

**Attachment**

Evaluation of Proposals for RFP #P2019-02

## ATTACHMENT

### Evaluation of Proposals for RFP 2019-02

#### Cost and Economic Impact Analysis of Regulating Local Warehouses and Distribution Centers to Reduce Associated Vehicular Air Pollution

<b>Bidder</b>	<b>Proposed Cost</b>	<b>Cost Points</b>	<b>Technical Expertise Points</b>	<b>Additional Points</b>	<b>Total Score</b>
Berkeley Economic Advising and Research	\$147,834.00	30	25.2*	12	67.2
Industrial Economics, Incorporated	\$199,999.72	19.4	59	7	85.4
Maximum Possible Points		30	70	17	117

\*This proposal was disqualified for scoring less than 56 points on technical expertise.

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 6

**PROPOSAL:** Issue RFP for Engineering Consultant to Assess BARCT for Proposed Rule 1109.1 – NOx Emission Reductions for Refinery Equipment

**SYNOPSIS:** Staff is seeking an independent third party consultant with technical expertise and experience with NOx control equipment and emissions control technologies preferably in the refinery field. This action is to issue an RFP to solicit proposals for review of staff's BARCT technology assessment, estimated emission reductions, and cost-effectiveness for NOx emitting equipment at petroleum refineries to support Proposed Rule 1109.1, in an amount not to exceed \$100,000. Sufficient funding is available in the General Fund (AB 617).

**COMMITTEE:** Administrative, November 9, 2018; Recommended for Approval

**RECOMMENDED ACTION:**

Issue RFP #P2019-07 to solicit proposals for review of staff's BARCT technology assessment, estimated emission reductions, and cost-effectiveness for NOx emitting equipment at petroleum refineries for Proposed Rule 1109.1, in an amount not to exceed \$100,000.

Wayne Natri  
Executive Officer

JW:PF:BB:SN:MK:HF:JHL:SK

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**Background**

On October 15, 1993, the Board adopted the REgional CLean Air Incentives Market (RECLAIM) program. RECLAIM is a market-based program where facilities are required to meet a mass emissions target through implementing emission reduction projects or purchasing RECLAIM Trading Credits. In response to the growing concern that a number of pieces of equipment in RECLAIM have not implemented emission reduction projects and are not meeting Best Available Retrofit Control Technology (BARCT) emission levels, the 2016 AQMP included a control measure, CMB-05, to achieve an additional five tons per day of NOx emissions as soon as practicable, but no later than 2025 and to transition NOx RECLAIM to a command-and-control regulatory

structure. AB 617 accelerated SCAQMD efforts by requiring that air districts establish BARCT schedules no later than January 1, 2019, and implement BARCT no later than December 31, 2023 for facilities in the state greenhouse gas cap and trade program.

To facilitate the transition of facilities from RECLAIM to a command-and-control regulatory structure, a series of industry- and source-specific rules are being developed that include NOx emission limits that are based on a BARCT technology assessment. Proposed Rule 1109.1 is an industry-specific rule for petroleum refineries and will propose NOx emission limits for equipment at petroleum refineries. Staff is developing proposed NOx and ammonia emission limits based on a BARCT technology assessment for each equipment category and estimating emission reductions and cost-effectiveness of achieving the proposed NOx emission limits.

### **Proposal**

Staff is seeking approval to release an RFP in an amount not to exceed \$100,000 to solicit qualified firms or sole practitioners to review staff's BARCT technology assessment for Proposed Rule 1109.1. The purpose of this RFP is to solicit an entity to independently review the feasibility of the proposed NOx and ammonia emission limits, estimated emission reductions, and cost-effective estimates for the following seven major emitting categories of stationary source equipment located at refineries and associated facilities:

- Boilers and heaters;
- Gas turbines/duct burners;
- Fluid catalytic cracking units;
- Sulfur recovery and tail gas treatment units;
- Non-sulfur Recovery incinerators (flares, thermal oxidizers, and afterburners);
- Primary internal combustion engines; and
- Coke calciners.

Once approved and the work is completed, the entity or entities (Contractor), will provide a summary of their findings and provide additional recommendations, if appropriate. The contractor will evaluate and confirm that the NOx control technologies can achieve the NOx levels proposed by staff or they may recommend an alternative NOx emission limit.

### **Bid Evaluation**

Proposals received will be evaluated by a panel consisting of SCAQMD staff and technically qualified outside experts who have appropriate expertise. The panel will make recommendations and the final selection of the Contractor will be subject to approval by the Board.

**Outreach**

In accordance with SCAQMD’s Procurement Policy and Procedure, a public notice advertising the RFPs and inviting bids will be published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County’s Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may be notified utilizing SCAQMD’s own electronic listing of certified minority vendors. Notice of the RFP will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD’s website (<http://www.aqmd.gov>) where it can be viewed by making the selection “Grants & Bids.” Staff will also contact potential qualified bidders whose work have been cited in related literature or referred to staff by other subject experts.

Bidders will have several opportunities to interact with staff based on the following tentative timeline:

- 12/7/2018 RFP Released
- 12/20/2018 Bidder’s Conference
- 1/16/2019 Proposals due by 5 p.m.
- 2/8/2019 Recommendation to Administrative Committee
- 3/1/2019 Recommendation to Board

**Resource Impacts**

AB 617 funds are available for this effort in the General Fund, as approved in the January 2018 Board letter.

**Attachment**

RFP #P2019-07



# **SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

## **REQUEST FOR PROPOSAL**

**P2019-07**

### **Review of BARCT Technology Assessment and Cost Estimates for Proposed Rule 1109.1**

The South Coast Air Quality Management District (SCAQMD) requests proposals for the following purpose according to the terms and conditions attached. In the preparation of this Request for Proposals (RFP) the words "Proposer," "Contractor," and "Consultant" are used interchangeably.

#### **PURPOSE**

The purpose of this RFP is to obtain proposals from potential qualified contractors with technical expertise and experience in nitrogen oxides (NOx) emissions control technologies to conduct a review of SCAQMD staff's Best Available Retrofit Control Technology (BARCT) technology assessment and cost estimates. The BARCT technology assessment will focus on NOx emission reduction technologies for the following stationary equipment at refineries:

- Fluid catalytic cracking units,
- Sulfur recovery and tail gas treatment units (SRU),
- Non-sulfur Recovery Units incinerators (flares, thermal oxidizers, and afterburners),
- Boilers and heaters (refineries and hydrogen plants),
- Gas turbines/duct burners,
- Primary internal combustion engines,
- Coke calciner

This project is conducted to provide an independent third party review of staff's BARCT<sup>1</sup> technology assessment and cost estimates for refinery and refinery related equipment for refineries that are currently in the SCAQMD's RECLAIM (REgional CLean Air Incentives Market) Program. BARCT NOx emission limits will be incorporated in Proposed Rule 1109.1 – NOx Emission Reductions for Refinery Equipment.

Total funding for this RFP is a maximum of \$100,000. The successful bidder for this RFP will be compensated on a fixed-price basis upon completion of tasks described in the Statement of Work.

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<sup>1</sup> Best Available Retrofit Control Technology (BARCT) means an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source. (California Health and Safety Code § 40406)

**INDEX - The following are contained in this RFP:**

Section I	Background/Information
Section II	Contact Person
Section III	Tentative Schedule of Events
Section IV	Participation in the Procurement Process
Section V	Statement of Work/Schedule of Deliverables
Section VI	Required Qualifications
Section VII	Proposal Submittal Requirements
Section VIII	Proposal Submission
Section IX	Proposal Evaluation/Contractor Selection Criteria
Section X	Award of Contract(s)
Section XI	Draft Contract
Attachment A	Participation in the Procurement Process
Attachment B	Certifications and Representations

**SECTION I: BACKGROUND/INFORMATION**

The SCAQMD Governing Board adopted the RECLAIM program – Regulation XX on October 15, 1993 RECLAIM is a market-based cap and trade program aimed at reducing NOx and SOx emissions by imposing program-wide mass emissions caps that decline overtime. Regulation XX includes a series of rules that specify the applicability and procedure for determining NOx and SOx facility allocations, program requirements, monitoring, reporting, and recordkeeping requirements for RECLAIM facilities. At the beginning of this program, facilities were issued NOx and SOx allocations, also known as RECLAIM Trading Credits (RTCs), which declined over time. To meet the declining RTC allocations, RECLAIM facilities have the option of installing air pollution control equipment, process changes, or purchasing RTCs from other facilities in the RECLAIM program.

In response to the growing concern that a number of pieces of equipment in RECLAIM are not at BARCT levels, the RECLAIM program was amended in December 2015 to achieve programmatic NOx RECLAIM Trading Credit (RTC) reductions of 12 tons per day beginning compliance years 2016 through 2022.

In 2016 Air Quality Management Plan (AQMP) included Control Measure CMB-05, to achieve an additional five tons per day of NOx emission reductions as soon as practicable, but no later than 2025 and to transition the RECLAIM program to a command-and-control regulatory framework. Recent legislation, AB 617, accelerated SCAQMD efforts by requiring that air districts establish BARCT identification and installation schedules no later than January 1, 2019, and implement NOx BARCT requirements no later than December 31, 2023 for facilities in the RECLAIM program. The highest priority is for older, higher polluting units to install retrofit controls.

Proposed Rule 1109.1 is an industry-specific rule that pertains to NOx emitting equipment at petroleum refineries and related operations. Proposed Rule 1109.1 will apply to refineries and will establish NOx emission standards consistent with BARCT, and monitoring, recordkeeping, and reporting requirements. Proposed Rule 1109.1 is needed prior to transitioning refineries from RECLAIM to a command-and-control regulatory program.

Staff is currently in the process of conducting a BARCT technology assessment to establish NOx emission standards for equipment at refineries and is gathering cost data to estimate the cost-effectiveness of NOx emission standards. The goal of this RFP is to solicit competitive bids for a contractor to review SCAQMD staff's BARCT technology assessment, feasibility of BARCT limits, and cost data. Staff's BARCT assessment includes:

- Identifying existing SCAQMD regulatory requirements for that particular source category such as current requirements, other rules regulating that category, and existing exemptions. Staff will also consider potential issues identified during previous rule makings.
- Evaluating other air districts and states with more stringent limits for same source categories. The evaluation will also include international requirements and achievements, consider implementation date, applicability, and alternative compliance approach for each source category.
- Identifying pollution control technologies, approaches and potential emission reductions. The assessment will be all encompassing, identifying known controls, and consider emerging technology.

The technology assessment will be conducted for the following seven major emitting categories of stationary source equipment identified below:

- Fluid catalytic cracking units
- Sulfur recovery and tail gas treatment units
- Non-sulfur Recovery Units incinerators (flares, thermal oxidizers, and afterburners)
- Boilers and heaters (refineries and hydrogen plants)
- Gas turbines/duct burners
- Primary Internal combustion engines
- Coke calciner

The contractor shall conduct a review of Staff's BARCT technology assessment focusing on other international requirements and technology review of NOx emission reduction technologies for the seven equipment categories at refineries technical feasibility, costs, and implementation schedule. The contractor may also recommend alternative BARCT emission limits to address the technical feasibility and costs estimates proposed by staff, provided there's sufficient supporting information (e.g. technical studies, manufacturers' data). The contractor will be required to sign a non-disclosure agreement with the SCAQMD prior to having access to the SCAQMD documentations for review. SCAQMD will provide a list of affected facilities and any other supporting documentation that is stated in the statement of work outline.

To gather the most up-to-date information on the operation and current performance of their existing equipment for the preliminary staff BARCT analysis, staff developed a survey questionnaire and distributed the survey to facilities affected by Propose Rule 1109.1. The responses provided from the facilities to the Survey are mostly confidential, and if allowed by the facilities, can be made available to the contractor who is awarded the contract, as long as the non-disclosure agreement is signed.

## **SECTION II: CONTACT PERSONS**

Questions regarding the RFP submission procedural matters, general questions, schedule, and funding of this RFP should be addressed to:

Mr. Michael Krause, Planning and Rules Manager  
Planning, Rule Development and Area Sources  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4182  
(909) 396-2706  
E-mail – [MKrause@aqmd.gov](mailto:MKrause@aqmd.gov)

Technical questions regarding schedule and funding of this RFP should be addressed to:

Sarady Ka  
Air Quality Specialist  
Planning, Rule Development and Area Sources  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4182  
(909) 396-2331  
E-mail – [ska@aqmd.gov](mailto:ska@aqmd.gov)

## **SECTION III: TENTATIVE SCHEDULE OF EVENTS**

<b>Date</b>	<b>Event</b>
12/07/18	RFP Released
12/20/18	Bidder's Conference*
1/16/19	Proposals Due to SCAQMD (No Later Than 5:00 pm)
2/8/19	Recommendations to Administrative Committee
3/1/19	Anticipated Contract Execution

\*Participation in the Bidder's Conference is optional. Such participation would assist in notifying potential Bidders of any updates or amendments. The Bidder's Conference will be held in Room CC3-5 at SCAQMD Headquarters in Diamond Bar, California at 9:00 A.M. PST on Thursday, December 20, 2018. Please contact Mr. Michael Krause at (909) 396-2706 by close of business on Wednesday, December 19, 2018, if you plan to attend.

## **SECTION IV: PARTICIPATION IN THE PROCUREMENT PROCESS**

It is the policy of SCAQMD to ensure that all businesses including minority business enterprises, women business enterprises, disabled veteran business enterprises and small businesses have a fair and equitable opportunity to compete for and participate in SCAQMD contracts. Attachment A to this RFP contains definitions and further information.

## **SECTION V: STATEMENT OF WORK & SCHEDULE OF DELIVERABLES OBJECTIVE**

### **A. STATEMENT OF WORK**

The objective of this RFP is to solicit one engineering contractor with strong technical expertise and experience in NOx equipment and emissions control technologies, as well as installing new or retrofitted applications at existing facilities because refineries and support facilities (e.g., sulfuric acid plants) will be subject to Rule 1109.1. Experience and expertise in the petroleum processing and refining would be a consideration factor. The experienced contractor will conduct a review of SCAQMD staff's BARCT analysis as an independent 3<sup>rd</sup> party validation.

Staff is currently in the process of conducting a BARCT analysis on the seven emitting sources that are listed in Section I. Staff is also in the process of analyzing information submitted by each of the facilities that are subject to Proposed Rule 1109.1 and has not yet finalized a completion date of the BARCT analysis. Once staff has completed the analysis, the contractor will be notified and the review of staff's BARCT analysis can commence. As part of the staff BARCT review process, the contractor shall provide supporting documents for the described task.

**As part of the process of reviewing staff's assessment, the contractor shall perform all of each specific tasks written below:**

#### **Task 1- Feasibility Assessment**

- **Emission Reductions Levels.** The contractor shall conduct an independent technology assessment analysis, starting with the commercially viable control technology that is most effective and can be potentially installed/retrofitted for each source category taking into consideration existing site-specific conditions at the facility, and making a recommendation on the emission reduction levels that can be achieved with each control technology.
- **Assessment of Suppliers/Vendors of Control Technologies.** For the technology assessment, the contractor shall evaluate suppliers/vendors for each of the seven equipment categories located at refineries and assess the levels of emission reductions that could be achieved using their products.
- **Concurrent Effect on Other Air Pollutants.** The contractor shall evaluate the effect on other pollutants, and make comments and recommendations on the ability of each technology to reduce NOx emissions, and concurrently reducing (or increasing) Ammonia, PM, and/or CO<sub>2</sub>.
- **Environmental Impacts.** The contractor shall identify and quantify, as appropriate, the environmental effects or impacts (water demand, wastewater treatment, solid waste, energy consumption) and provide information on any hazardous materials and hazardous waste, if known, of for each NOx reduction technique or technology evaluated.

- **Review Facility-Specific Confidential Data and Preliminary Findings.** The contractor shall review facility-specific and site-specific data used in the analysis with each facility to ensure that the data are accurate and correct. If any data, or preliminary findings, are designated by the facility as confidential, or competitively sensitive information, the contractor shall not share those facility-specific or site-specific data with other facilities, or third parties, except with the District as required.

## **Task 2 – Cost Analysis**

- **Costs and Performance Warranty.** The contractor shall directly contact the control equipment vendors or manufacturers to gather equipment cost information and performance warranty information.
- **Cost Effectiveness Verification.** The contractor shall review cost effective analysis conducted by SCAQMD staff. Staff will estimate costs of installing new equipment or modifying existing equipment, and annual operating costs to meet the emission reduction levels recommended,

## **Task 3 – Potential Field Visits**

The contractor shall conduct field visit(s) if necessary (e.g. coke calciner) to gather site-specific information to assess the technological feasibility of installing NOx control equipment and available space to install future NOx control devices.

During that visit, the contractor shall gather site specific information (e.g. operating conditions) from the facility's representatives to conduct site-specific feasibility assessment in Task 1 and cost analysis in Task 2. When visiting the site, the contractor will be expected to conduct an engineering evaluation of each potential technology for the site at which the technology could potentially be applicable. The field visits are necessary for the purpose of assessing both physical and operational factors that would impact the feasibility and the cost of additional emission control equipment.

## **Task 4 – Submit Progress Report and Final Report**

The contractor shall submit one progress report and one final report of findings and recommendations to the SCAQMD, according to the schedule in Table 2. For task 2 and 3, the progress report shall be submitted by 5:00 p.m. April 26, 2019, and the final report shall be submitted by 5:00 p.m. May 24, 2019.

The contractor(s) shall obtain prior approval from the SCAQMD based on a report outline and incorporate comments from SCAQMD staff before finalizing the interim or final reports.

## Task 5 – Mandatory Participation in SCAQMD Meetings

- It is **mandatory** that the contractor attend a Governing Board meetings if requested by SCAQMD staff and be available, if asked, to give a presentation and testimony to the Board about its findings and recommendations. The meetings dates are still TBD. If the meetings are moved to later dates, or additional meetings are added, SCAQMD staff will notify the contractor as soon as possible, and the contractor shall adjust his/her schedule in order to attend the meetings accordingly.
- SCAQMD staff may conduct conferences, workshops, or public meetings to communicate with industry and the public on the project findings. If necessary, the contractor shall prepare presentation materials and attend these events to assist staff in responding to public comments on a case-by-case basis. Additional stipends will be assessed if needed.

A tentative timeline for the project is presented in Table 1, and report due dates in Table

**TABLE 1  
Project Implementation**

<b>Task</b>	<b>Duration</b>
Tasks 1, 2, 3 and 4: Review Staff's Technology Assessment, Feasibility and Cost Analysis Verification, and Develop Final Report	Maximum 3 Months. Commencing immediately following the signing of the contract or final release of staff's BARCT analysis.
Tasks 3:Coke Calciner Field Visit and Develop Progress Report	Maximum 1 Month. Commencing immediately following the signing of the contract.
Task 5: Participate in Governing Board Meetings & Outreach Events If Needed	TBD, and as needed when notified by SCAQMD staff.
<b>TOTAL</b>	Maximum 3 Months. Must Complete By May 24, 2019.

## **B. SCHEDULE OF DELIVERABLES**

In addition to the task deliverables itemized above, successful bidders are expected at minimum to supply a progress report by 5:00 p.m. on April 26, 2019 the progress reports shall summarize preliminary results and findings. The contractors shall maintain information related to site visit and company-specific data confidential and shall not share these data with other facilities.

Written reports shall be submitted to Mr. Michael Krause such that the confidential information is protected. The written reports should accompany any invoices billed to SCAQMD. The progress report will be included in the Final Report submitted by 5:00 p.m. on April 26, 2019.

**TABLE 2**  
**Progress and Final Reports**

<b>Report</b>	<b>Due Date</b>
Progress Report	April 26, 2019.
Final Report	May 24, 2019.

## **SECTION VI: REQUIRED QUALIFICATIONS**

- A. The SCAQMD requests submittal of detailed expertise and capabilities from consultants who meet a combination of the technical qualifications listed below. Individuals can team to submit a joint bid if they have complementary expertise and qualifications that collectively meet the requirements. Statements of qualifications should include evidence documenting experience, expertise, and capabilities in refinery equipment and operations.
- B. Bidder(s) shall be selected for contract award based on the best combinations of qualifications. Persons or firms who bid on this RFP must possess qualifications, education and experience in emissions control technologies for NO<sub>x</sub>, and must have demonstrable experience with respect to estimating the cost of retrofit installations of emission control systems or technologies at existing facilities of the type identified in this RFP.

## **SECTION VII: PROPOSAL SUBMITTAL REQUIREMENTS**

Submitted proposals must follow the format outlined below and all requested information must be supplied. Failure to submit proposals in the required format will result in elimination from proposal evaluation. SCAQMD may modify the RFP or issue supplementary information or guidelines during the proposal preparation period prior to the due date. Please check our website for updates (<http://www.aqmd.gov/grants-bids>). The cost for developing the proposal is the responsibility of the Contractor, and shall not be chargeable to SCAQMD.

Each proposal must be submitted in three separate volumes:

- Volume I - Technical Proposal
- Volume II - Cost Proposal
- Volume III - Certifications and Representations included in Attachment B to this RFP, must be completed and executed by an authorized official of the Contractor.

A separate cover letter including the name, address, and telephone number of the contractor, and signed by the person or persons authorized to represent the Firm should accompany the proposal submission. Firm contact information as follows should also be included in the cover letter:

1. Address and telephone number of office in, or nearest to, Diamond Bar, California.
2. Name and title of Firm's representative designated as contact.

A separate Table of Contents should be provided for Volumes I and II.

## **VOLUME I - TECHNICAL PROPOSAL**

### **DO NOT INCLUDE ANY COST INFORMATION IN THE TECHNICAL VOLUME**

Summary (Section A) - State overall approach to meeting the objectives and satisfying the scope of work to be performed, the sequence of activities, and a description of methodology or techniques to be used.

Program Schedule (Section B) - Provide projected milestones or benchmarks for submitting reports within the total time allowed.

Project Organization (Section C) - Describe the proposed management structure, program monitoring procedures, and organization of the proposed team.

Qualifications (Section D) - Describe the technical capabilities of the firm. Provide references of other similar studies performed during the last five years demonstrating ability to successfully complete the project. Include contact name, title, and telephone number for any references listed. Provide a statement of your firm's background and experience in performing similar projects for other governmental organizations.

Assigned Personnel (Section E) - Provide the following information on the staff to be assigned to this project:

1. List all key personnel assigned to the project by level and name. Provide a resume or similar statement of the qualifications of the lead person and all persons assigned to the project. Substitution of project manager or lead personnel will not be permitted without prior written approval of SCAQMD.
2. Provide a spreadsheet of the labor hours proposed for each labor category at the task level.

3. Provide a statement indicating whether or not 90% of the work will be performed within the geographical boundaries of the SCAQMD.
4. Provide a statement of the education and training program provided by, or required of, the staff identified for participation in the project, particularly with reference to management consulting, governmental practices and procedures, and technical matters.
5. Provide a summary of your firm's general qualifications to meet required qualifications and fulfill statement of work, including additional firm personnel and resources beyond those who may be assigned to the project.

Subcontractors (Section F) - This project may require expertise in multiple technical areas. List any subcontractors that may be used and the work to be performed by them.

Conflict of Interest (Section G) - Address possible conflicts of interest with other clients affected by actions performed by the firm on behalf of SCAQMD. Although the Proposer will not be automatically disqualified by reason of work performed for such firms, SCAQMD reserves the right to consider the nature and extent of such work in evaluating the proposal.

Additional Data (Section H) - Provide other essential data that may assist in the evaluation of this proposal.

## **VOLUME II - COST PROPOSAL**

Name and Address - The Cost Proposal must list the name and complete address of the Proposer in the upper left-hand corner.

Cost Proposal – SCAQMD anticipates awarding a fixed price contract. Cost information must be provided as listed below:

1. Detail must be provided by the following categories:
  - A. Labor – The Cost Proposal must list the fully-burdened hourly rates and the total number of hours estimated for each level of professional and administrative staff to be used to perform the tasks required by this RFP. Costs should be estimated for each of the components of the work plan.
  - B. Supplies, Hardware, Equipment - Provide an itemized list of supplies, hardware, and equipment to be used or purchased (the name, number, and cost of each).
  - C. Subcontractor Costs - List subcontractor costs and identify subcontractors by name. Itemize subcontractor charges per hour or per day.
  - D. Travel Costs - Indicate amount of travel cost and basis of estimate to include trip destination, purpose of trip, length of trip, airline fare or mileage expense, per diem costs, lodging and car rental.
  - E. Other Direct Costs -This category may include such items as postage and mailing expense, printing and reproduction costs, etc. Provide a basis of estimate for these costs.

F. Payment Schedule – Using the project schedule submitted under Section B of the Technical Proposal (Volume I), provide a proposed payment schedule tied to specific deliverables by task.

2. It is the policy of the SCAQMD to receive at least as favorable pricing, warranties, conditions, benefits, and terms as other customers or clients making similar purchases or receiving similar services. SCAQMD will give preference, where appropriate, to vendors who certify that they will provide “most favored customer” status to the SCAQMD. To receive preference points, Proposer shall certify that SCAQMD is receiving “most favored customer” pricing in the Business Status Certifications page of Volume III, Attachment B – Certifications and Representations.

### **VOLUME III - CERTIFICATIONS AND REPRESENTATIONS** (see Attachment A to this RFP)

These forms must be executed by an authorized official of the Contractor.

### **SECTION VIII: PROPOSAL SUBMISSION**

All proposals must be submitted according to specifications set forth in the section above. Failure to adhere to these specifications may be cause for rejection of proposal.

Signature - All proposals should be signed by an authorized representative of the Proposer.

Due Date – The Proposer shall submit eight (8) complete copies of the proposal in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the Proposer and the words "Request for Proposals #-P2019-07." **All proposals are due no later than 5:00 p.m., December 19, 2018**, and should be directed to

Procurement Unit  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178  
(909) 396-3520

Submittal - Submit five (5) complete copies of the proposal in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the Proposer and the words "Request for Proposals P2019-07."

**Late bids/proposals will not be accepted.** Any correction or resubmission done by the Proposer will not extend the submittal due date.

Grounds for Rejection - A proposal may be immediately rejected if:

- It is not prepared in the format described, or
- It is signed by an individual not authorized to represent the firm.

Disposition of Proposals - SCAQMD reserves the right to reject any or all proposals. All responses become the property of SCAQMD. One copy of the proposal shall be retained for

SCAQMD files. Additional copies and materials will be returned only if requested and at the proposer's expense.

Modification or Withdrawal - Once submitted, proposals cannot be altered without the prior written consent of SCAQMD. All proposals shall constitute firm offers and may not be withdrawn for a period of ninety (90) days following the last day to accept proposals.

**SECTION IX: PROPOSAL EVALUATION & CONTRACTOR SELECTION CRITERIA**

- A. Proposals will be evaluated by a panel of three to five SCAQMD staff members familiar with the subject matter of the project. The panel shall be appointed by the Executive Officer or his designee. In addition, the evaluation panel may include such outside public sector or academic community expertise as deemed desirable by the Executive Officer. The panel will make a recommendation to the Executive Officer and/or the Governing Board of SCAQMD for final selection of a contractor and negotiation of a contract.
- B. Each member of the evaluation panel shall be accorded equal weight in his or her rating of proposals. The evaluation panel members shall evaluate the proposals according to the specified criteria and numerical weightings set forth below.

1. Evaluation Criteria

<b><u>Technical Criteria</u></b>	<b><u>Points</u></b>
Understanding the Scope of Work	10
Past Experience on Similar Projects, Engineering Expertise	40
Technical/Management Approach & Schedule	20
<b><u>Project Cost</u></b>	
Cost	30
<b>TOTAL:</b>	<b>100</b>

**Additional Points**

Small Business or Small Business Joint Venture	10
DVBE or DVBE Joint Venture	10
Use of DVBE or Small Business Subcontractors	7
Low-Emission Vehicle Business	5
Local Business (Non-EPA Funded Projects Only)	5
Off-Peak Hours Delivery Business	2

**The cumulative points awarded for small business, DVBE, use of small business or DVBE subcontractors, low-emission vehicle business, local business, and off-peak hours delivery business shall not exceed 15 points.**

**Self-Certification for Additional Points**

**The award of these additional points shall be contingent upon Proposer completing the Self-Certification section of Attachment B – Certifications**

**and Representations and/or inclusion of a statement in the proposal self-certifying that Proposer qualifies for additional points as detailed above.**

2. To receive additional points in the evaluation process for the categories of Small Business or Small Business Joint Venture, DVBE or DVBE Joint Venture or Local Business (for non-federally funded projects), the proposer must submit a self-certification or certification from the State of California Office of Small Business Certification and Resources at the time of proposal submission certifying that the proposer meets the requirements set forth in Section III. To receive points for the use of DVBE and/or Small Business subcontractors, at least 25 percent of the total contract value must be subcontracted to DVBEs and/or Small Businesses. To receive points as a Low-Emission Vehicle Business, the proposer must demonstrate to the Executive Officer, or designee, that supplies and materials delivered to SCAQMD are delivered in vehicles that operate on either clean-fuels or if powered by diesel fuel, that the vehicles have particulate traps installed. To receive points as a Local Business, the proposer must affirm that it has an ongoing business within the SCAQMD at the time of bid/proposal submittal and that 90% of the work related to the contract will be performed within the SCAQMD. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points. Federally funded projects are not eligible for local business incentive points. To receive points as an Off-Peak Hours Delivery Business, the proposer must submit, at proposal submission, certification of its commitment to delivering supplies and materials to SCAQMD between the hours of 10:00 a.m. and 3:00 p.m. To receive points for Most Favored Customer status, the proposer must submit, at proposal submission, certification of its commitment to provide most favored customer status to the SCAQMD. The cumulative points awarded for small business, DVBE, use of Small Business or DVBE Subcontractors, Local Business, Low-Emission Vehicle Business and Off-Peak Hour Delivery Business shall not exceed 15 points.

The Procurement Section will be responsible for monitoring compliance of suppliers awarded purchase orders based upon use of low-emission vehicles or off-peak traffic hour delivery commitments through the use of vendor logs which will identify the contractor awarded the incentive. The purchase order shall incorporate terms which obligate the supplier to deliver materials in low-emission vehicles or deliver during off-peak traffic hours. The Receiving department will monitor those qualified supplier deliveries to ensure compliance to the purchase order requirements. Suppliers in non-compliance will be subject to a two percent of total purchase order value penalty. The Procurement Manager will adjudicate any disputes regarding either low-emission vehicle or off-peak hour deliveries.

- C. During the selection process the evaluation panel may wish to interview some proposers for clarification purposes only. No new material will be permitted at this time. Additional information provided during the bid review process is limited to clarification by the Proposer of information presented in his/her proposal, upon request by SCAQMD.

- D. The Executive Officer or Governing Board may award the contract to a Proposer other than the Proposer receiving the highest rating in the event the Governing Board determines that another Proposer from among those technically qualified would provide the best value to SCAQMD considering cost and technical factors. The determination shall be based solely on the Evaluation Criteria contained in the Request for Proposal (RFP), on evidence provided in the proposal and on any other evidence provided during the bid review process.
- E. Selection will be made based on the above-described criteria and rating factors. The selection will be made by and is subject to Executive Officer or Governing Board approval. Proposers shall be notified of the results by letter.
- F. The Governing Board has approved a Bid Protest Procedure which provides a process for a Bidder or prospective Bidder to submit a written protest to SCAQMD Procurement Manager in recognition of two types of protests: Protest Regarding Solicitation and Protest Regarding Award of a Contract. Copies of the Bid Protest Policy can be secured through a request to SCAQMD Procurement Department.
- G. The Executive Officer or Governing Board may award contracts to more than one proposer if in (his or their) sole judgment the purposes of the (contract or award) would best be served by selecting multiple proposers.
- H. If additional funds become available, the Executive Officer or Governing Board may increase the amount awarded. The Executive Officer or Governing Board may also select additional proposers for a grant or contract if additional funds become available.
- I. Disposition of Proposals – Pursuant to SCAQMD’s Procurement Policy and Procedure, SCAQMD reserves the right to reject any or all proposals. All proposals become the property of SCAQMD, and are subject to the California Public Records Act. One copy of the proposal shall be retained for SCAQMD files. Additional copies and materials will be returned only if requested and at the proposer's expense.
- J. **If proposal submittal is for a Public Works project as defined by State of California Labor Code Section 1720, Proposer is required to include Contractor Registration No. in Attachment B. Proposal submittal will be deemed as non-responsive and Bidder may be disqualified if Contractor Registration No. is not included in Attachment B. Proposer is alerted to changes to California Prevailing Wage compliance requirements as defined in Senate Bill 854 (Stat. 2014, Chapter 28), and California Labor Code Sections 1770, 1771 and 1725.**
- K. PAYMENT BOND (MATERIAL AND LABOR BOND) - Within fourteen days after execution of the Contract by SCAQMD and prior to performing any work under the Contract, the CONTRACTOR shall file with SCAQMD, a payment bond (material and labor bond) in an amount equal to one hundred (100) percent of the contract price, to satisfy claims of material suppliers and of mechanics and laborers employed by the Contractor to perform the work.
  - A. UNSATISFACTORY SURETIES - Should any Surety, at any time, be deemed unsatisfactory by SCAQMD, notice will be given to the Contractor to that effect. No further payments shall be deemed due, or will be made under the Contract until a new Surety shall qualify and be accepted by SCAQMD.
  - B. EFFECT OF CHANGES IN THE WORK/EXTENSIONS OF TIME ON THE SURETY - Changes in the work, or extensions of time, made pursuant to the

Contract, shall in no way release the Contractor or the Surety from their obligations under the bond. Notice of such changes or extensions shall be waived by the Surety.

#### **SECTION X: AWARD OF CONTRACT(S)**

All contracts are subject to approval by the Executive Officer or the Governing Board. SCAQMD reserves the right to fund multiple contracts, and to award specific portions of this effort to different contractors. All bidders will be notified of the results by letter.

The total funding for the work contemplated by this RFP will be approximately \$100,000.

#### **SECTION XI: DRAFT CONTRACT**

A sample contract to carry out the work described in this RFP is available on SCAQMD's website at <http://www.aqmd.gov/grants-bids> or upon request from the RFP Contact Person (Section II).

## ATTACHMENT A

### PARTICIPATION IN THE PROCUREMENT PROCESS

A. It is the policy of South Coast Air Quality Management District (SCAQMD) to ensure that all businesses including minority business enterprises, women business enterprises, disabled veteran business enterprises and small businesses have a fair and equitable opportunity to compete for and participate in SCAQMD contracts.

B. Definitions:

The definition of minority, women or disadvantaged business enterprises set forth below is included for purposes of determining compliance with the affirmative steps requirement described in Paragraph G below on procurements funded in whole or in part with federal grant funds which involve the use of subcontractors. The definition provided for disabled veteran business enterprise, local business, small business enterprise, low-emission vehicle business and off-peak hours delivery business are provided for purposes of determining eligibility for point or cost considerations in the evaluation process.

1. "Women business enterprise" (WBE) as used in this policy means a business enterprise that meets all of the following criteria:
  - a. a business that is at least 51 percent owned by one or more women, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
  - b. a business whose management and daily business operations are controlled by one or more women.
  - c. a business which is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign-based business.
2. "Disabled veteran" as used in this policy is a United States military, naval, or air service veteran with at least 10 percent service-connected disability who is a resident of California.
3. "Disabled veteran business enterprise" (DVBE) as used in this policy means a business enterprise that meets all of the following criteria:
  - a. is a sole proprietorship or partnership of which at least 51 percent is owned by one or more disabled veterans or, in the case of a publicly owned business, at least 51 percent of its stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.

- b. the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
  - c. is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.
4. "Local business" as used in this policy means a company that has an ongoing business within geographical boundaries of SCAQMD at the time of bid or proposal submittal and performs 90% of the work related to the contract within the geographical boundaries of SCAQMD and satisfies the requirements of subparagraph H below. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points.
5. "Small business" as used in this policy means a business that meets the following criteria:
- a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
    - A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or
    - A manufacturer with 100 or fewer employees.
  - b. Manufacturer means a business that is both of the following:
    - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
    - 2) Classified between Codes 311000 and 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.
6. "Joint ventures" as defined in this policy pertaining to certification means that one party to the joint venture is a DVBE or small business and owns at least 51 percent of the joint venture.
7. "Low-Emission Vehicle Business" as used in this policy means a company or contractor that uses low-emission vehicles in conducting deliveries to SCAQMD. Low-emission vehicles include vehicles powered by electric, compressed natural gas (CNG), liquefied natural gas (LNG), liquefied petroleum gas (LPG), ethanol, methanol, hydrogen and diesel retrofitted with particulate matter (PM) traps.

8. "Off-Peak Hours Delivery Business" as used in this policy means a company or contractor that commits to conducting deliveries to SCAQMD during off-peak traffic hours defined as between 10:00 a.m. and 3:00 p.m.
9. "Benefits Incentive Business" as used in this policy means a company or contractor that provides janitorial, security guard or landscaping services to SCAQMD and commits to providing employee health benefits (as defined below in Section VIII.D.2.d) for full time workers with affordable deductible and co-payment terms.
10. "Minority Business Enterprise" as used in this policy means a business that is at least 51 percent owned by one or more minority person(s), or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more or minority persons.
  - a. a business whose management and daily business operations are controlled by one or more minority persons.
  - b. a business which is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign-based business.
  - c. "Minority person" for purposes of this policy, means a Black American, Hispanic American, Native-American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian (including a person whose origins are from India, Pakistan, and Bangladesh), Asian-Pacific-American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, and Taiwan).
11. "Most Favored Customer" as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.
12. "Disadvantaged Business Enterprise" as used in this policy means a business that is an entity owned and/or controlled by a socially and economically disadvantaged individual(s) as described by Title X of the Clean Air Act Amendments of 1990 (42 U.S.C. 7601 note) (10% statute), and Public Law 102-389 (42 U.S.C. 4370d)(8% statute), respectively;
  - a Small Business Enterprise (SBE);
  - a Small Business in a Rural Area (SBRA);
  - a Labor Surplus Area Firm (LSAF); or
  - a Historically Underutilized Business (HUB) Zone Small Business Concern, or a concern under a successor program.

C. Under Request for Quotations (RFQ), DVBEs, DVBE business joint ventures, small businesses, and small business joint ventures shall be granted a preference in an amount equal to 5% of the lowest cost responsive bid. Low-Emission Vehicle Businesses shall be granted a preference in an amount equal to 5 percent of the lowest cost responsive bid.

Off-Peak Hours Delivery Businesses shall be granted a preference in an amount equal to 2 percent of the lowest cost responsive bid. Local businesses (if the procurement is not funded in whole or in part by federal grant funds) shall be granted a preference in an amount equal to 2% of the lowest cost responsive bid. Businesses offering Most Favored Customer status shall be granted a preference in an amount equal to 2 percent of the lowest cost responsive bid.

- D. Under Request for Proposals, DVBEs, DVBE joint ventures, small businesses, and small business joint ventures shall be awarded ten (10) points in the evaluation process. A non-DVBE or large business shall receive seven (7) points for subcontracting at least twenty-five (25%) of the total contract value to a DVBE and/or small business. Low-Emission Vehicle Businesses shall be awarded five (5) points in the evaluation process. On procurements which are not funded in whole or in part by federal grant funds local businesses shall receive five (5) points. Off-Peak Hours Delivery Businesses shall be awarded two (2) points in the evaluation process. Businesses offering Most Favored Customer status shall be awarded two (2) points in the evaluation process.
- E. SCAQMD will ensure that discrimination in the award and performance of contracts does not occur on the basis of race, color, sex, national origin, marital status, sexual preference, creed, ancestry, medical condition, or retaliation for having filed a discrimination complaint in the performance of SCAQMD contractual obligations.
- F. SCAQMD requires Contractor to be in compliance with all state and federal laws and regulations with respect to its employees throughout the term of any awarded contract, including state minimum wage laws and OSHA requirements.
- G. When contracts are funded in whole or in part by federal funds, and if subcontracts are to be let, the Contractor must comply with the following, evidencing a good faith effort to solicit disadvantaged businesses. Contractor shall submit a certification signed by an authorized official affirming its status as a MBE or WBE, as applicable, at the time of contract execution. SCAQMD reserves the right to request documentation demonstrating compliance with the following good faith efforts prior to contract execution.
  - 1. Ensure Disadvantaged Business Enterprises (DBEs) are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
  - 2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
  - 3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and Local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.

4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
  5. Using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.
  6. If the prime contractor awards subcontracts, require the prime contractor to take the above steps.
- H. To the extent that any conflict exists between this policy and any requirements imposed by federal and state law relating to participation in a contract by a certified MBE/WBE/DVBE as a condition of receipt of federal or state funds, the federal or state requirements shall prevail.
- I. When contracts are not funded in whole or in part by federal grant funds, a local business preference will be awarded. For such contracts that involve the purchase of commercial off-the-shelf products, local business preference will be given to suppliers or distributors of commercial off-the-shelf products who maintain an ongoing business within the geographical boundaries of SCAQMD. However, if the subject matter of the RFP or RFQ calls for the fabrication or manufacture of custom products, only companies performing 90% of the manufacturing or fabrication effort within the geographical boundaries of SCAQMD shall be entitled to the local business preference. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points.
- J. In compliance with federal fair share requirements set forth in 40 CFR Part 33, SCAQMD shall establish a fair share goal annually for expenditures with federal funds covered by its procurement policy.

## ATTACHMENT B



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • [www.aqmd.gov](http://www.aqmd.gov)

### **Business Information Request**

Dear SCAQMD Contractor/Supplier:

South Coast Air Quality Management District (SCAQMD) is committed to ensuring that our contractor/supplier records are current and accurate. If your firm is selected for award of a purchase order or contract, it is imperative that the information requested herein be supplied in a timely manner to facilitate payment of invoices. In order to process your payments, we need the enclosed information regarding your account. **Please review and complete the information identified on the following pages, remember to sign all documents for our files, and return them as soon as possible to the address below:**

**Attention: Accounts Payable, Accounting Department  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178**

If you do not return this information, we will not be able to establish you as a vendor. This will delay any payments and would still necessitate your submittal of the enclosed information to our Accounting department before payment could be initiated. Completion of this document and enclosed forms would ensure that your payments are processed timely and accurately.

If you have any questions or need assistance in completing this information, please contact Accounting at (909) 396-3777. We appreciate your cooperation in completing this necessary information.

Sincerely,

Sujata Jain  
Asst. Deputy Executive Officer  
Finance

DH:tm

Enclosures: Business Information Request  
Disadvantaged Business Certification  
W-9  
Form 590 Withholding Exemption Certificate  
Federal Contract Debarment Certification  
Campaign Contributions Disclosure  
Direct Deposit Authorization

REV 1/18



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • [www.aqmd.gov](http://www.aqmd.gov)

## BUSINESS INFORMATION REQUEST

Business Name	
Division of	
Subsidiary of	
Website Address	
Type of Business <i>Check One:</i>	<input type="checkbox"/> Individual <input type="checkbox"/> DBA, Name _____, County Filed in _____ <input type="checkbox"/> Corporation, ID No. _____ <input type="checkbox"/> LLC/LLP, ID No. _____ <input type="checkbox"/> Other _____

## REMITTING ADDRESS INFORMATION

Address			
City/Town			
State/Province		Zip	
Phone	(    )    -    Ext	Fax	(    )    -
Contact		Title	
E-mail Address			
Payment Name if Different			

All invoices must reference the corresponding Purchase Order Number(s)/Contract Number(s) if applicable and mailed to:

**Attention: Accounts Payable, Accounting Department  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178**

## BUSINESS STATUS CERTIFICATIONS

Federal guidance for utilization of disadvantaged business enterprises allows a vendor to be deemed a small business enterprise (SBE), minority business enterprise (MBE) or women business enterprise (WBE) if it meets the criteria below.

- is certified by the Small Business Administration or
- is certified by a state or federal agency or
- is an independent MBE(s) or WBE(s) business concern which is at least 51 percent owned and controlled by minority group member(s) who are citizens of the United States.

### Statements of certification:

As a prime contractor to SCAQMD, (name of business) will engage in good faith efforts to achieve the fair share in accordance with 40 CFR Section 33.301, and will follow the six affirmative steps listed below **for contracts or purchase orders funded in whole or in part by federal grants and contracts.**

1. Place qualified SBEs, MBEs, and WBEs on solicitation lists.
2. Assure that SBEs, MBEs, and WBEs are solicited whenever possible.
3. When economically feasible, divide total requirements into small tasks or quantities to permit greater participation by SBEs, MBEs, and WBEs.
4. Establish delivery schedules, if possible, to encourage participation by SBEs, MBEs, and WBEs.
5. Use services of Small Business Administration, Minority Business Development Agency of the Department of Commerce, and/or any agency authorized as a clearinghouse for SBEs, MBEs, and WBEs.
6. If subcontracts are to be let, take the above affirmative steps.

### **Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with SCAQMD Procurement Policy and Procedure:**

Check all that apply:

- |   |  |
|---|--|
| <input type="checkbox"/> Small Business Enterprise/Small Business Joint Venture | <input type="checkbox"/> Women-owned Business Enterprise                               |
| <input type="checkbox"/> Local business   | <input type="checkbox"/> Disabled Veteran-owned Business Enterprise/DVBE Joint Venture |
| <input type="checkbox"/> Minority-owned Business Enterprise                     | <input type="checkbox"/> Most Favored Customer Pricing Certification                   |

Percent of ownership: \_\_\_\_\_ %

Name of Qualifying Owner(s): \_\_\_\_\_

**State of California Public Works Contractor Registration No. \_\_\_\_\_ . MUST BE INCLUDED IF BID PROPOSAL IS FOR PUBLIC WORKS PROJECT.**

I, the undersigned, hereby declare that to the best of my knowledge the above information is accurate. Upon penalty of perjury, I certify information submitted is factual.

\_\_\_\_\_  
*NAME*

\_\_\_\_\_  
*TITLE*

\_\_\_\_\_  
*TELEPHONE NUMBER*

\_\_\_\_\_  
*DATE*

## Definitions

**Disabled Veteran-Owned Business Enterprise** means a business that meets all of the following criteria:

- is a sole proprietorship or partnership of which is at least 51 percent owned by one or more disabled veterans, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
- the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
- is a sole proprietorship, corporation, partnership, or joint venture with its primary headquarters office located in the United States and which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.

**Joint Venture** means that one party to the joint venture is a DVBE and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that DVBE will receive at least 51 percent of the project dollars.

**Local Business** means a business that meets all of the following criteria:

- has an ongoing business within the boundary of SCAQMD at the time of bid application.
- performs 90 percent of the work within SCAQMD's jurisdiction.

**Minority-Owned Business Enterprise** means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more minority persons or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more minority persons.
- is a business whose management and daily business operations are controlled or owned by one or more minority person.
- is a business which is a sole proprietorship, corporation, partnership, joint venture, an association, or a cooperative with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

"Minority" person means a Black American, Hispanic American, Native American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian American (including a person whose origins are from India, Pakistan, or Bangladesh), Asian-Pacific American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, or Taiwan).

**Small Business Enterprise** means a business that meets the following criteria:

- a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
  - **A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or**
  - A manufacturer with 100 or fewer employees.
- b. Manufacturer means a business that is both of the following:
  - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
  - 2) Classified between Codes 311000 to 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.

**Small Business Joint Venture** means that one party to the joint venture is a Small Business and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that the Small Business will receive at least 51 percent of the project dollars.

**Women-Owned Business Enterprise** means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more women or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
- is a business whose management and daily business operations are controlled or owned by one or more women.
- is a business which is a sole proprietorship, corporation, partnership, or a joint venture, with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

**Most Favored Customer** as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.



By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting*, later, for further information.

**Note:** If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

**Foreign person.** If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*).

**Nonresident alien who becomes a resident alien.** Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

**Example.** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

## Backup Withholding

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

**Payments you receive will be subject to backup withholding if:**

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the instructions for Part II for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

## What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

## Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

## Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

## Specific Instructions

### Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

**Note: ITIN applicant:** Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

### Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

### Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

### Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

#### Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 <sup>1</sup>	Generally, exempt payees 1 through 5 <sup>2</sup>
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

<sup>1</sup> See Form 1099-MISC, Miscellaneous Income, and its instructions.

<sup>2</sup> However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

**Exemption from FATCA reporting code.** The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

**Note:** You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

## Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

## Line 6

Enter your city, state, and ZIP code.

## Part I. Taxpayer Identification Number (TIN)

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

**Note:** See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at [www.SSA.gov](http://www.SSA.gov). You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at [www.irs.gov/Businesses](http://www.irs.gov/Businesses) and clicking on Employer Identification Number (EIN) under Starting a Business. Go to [www.irs.gov/Forms](http://www.irs.gov/Forms) to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to [www.irs.gov/OrderForms](http://www.irs.gov/OrderForms) to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note:** Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

## Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

**Signature requirements.** Complete the certification as indicated in items 1 through 5 below.

**1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.** You must give your correct TIN, but you do not have to sign the certification.

**2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.** You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

**3. Real estate transactions.** You must sign the certification. You may cross out item 2 of the certification.

**4. Other payments.** You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

**5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions.** You must give your correct TIN, but you do not have to sign the certification.

**What Name and Number To Give the Requester**

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account <sup>1</sup>
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor <sup>2</sup>
5. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee <sup>1</sup> The actual owner <sup>1</sup>
6. Sole proprietorship or disregarded entity owned by an individual	The owner <sup>3</sup>
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor <sup>4</sup>
For this type of account:	Give name and EIN of:
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity <sup>4</sup>
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee

For this type of account:	Give name and EIN of:
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

<sup>1</sup> List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

<sup>2</sup> Circle the minor's name and furnish the minor's SSN.

<sup>3</sup> You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

<sup>4</sup> List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

\*Note: The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

**Secure Your Tax Records From Identity Theft**

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

**Protect yourself from suspicious emails or phishing schemes.**

Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to [phishing@irs.gov](mailto:phishing@irs.gov). You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at [spam@uce.gov](mailto:spam@uce.gov) or report them at [www.ftc.gov/complaint](http://www.ftc.gov/complaint). You can contact the FTC at [www.ftc.gov/idtheft](http://www.ftc.gov/idtheft) or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see [www.IdentityTheft.gov](http://www.IdentityTheft.gov) and Pub. 5027.

Visit [www.irs.gov/IdentityTheft](http://www.irs.gov/IdentityTheft) to learn more about identity theft and how to reduce your risk.

## Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

# 2018 Withholding Exemption Certificate

# 590

The payee completes this form and submits it to the withholding agent. The withholding agent keeps this form with their records.

### Withholding Agent Information

Name \_\_\_\_\_

### Payee Information

Name \_\_\_\_\_

SSN or ITIN  FEIN  CA Corp no.  CA SOS file no.

Address (apt./sta., room, PO box, or PMB no.) \_\_\_\_\_

City (if you have a foreign address, see instructions.) \_\_\_\_\_

State \_\_\_\_\_ ZIP code \_\_\_\_\_

### Exemption Reason

Check only one box.

By checking the appropriate box below, the payee certifies the reason for the exemption from the California income tax withholding requirements on payment(s) made to the entity or individual.

- Individuals — Certification of Residency:**  
I am a resident of California and I reside at the address shown above. If I become a nonresident at any time, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.
- Corporations:**  
The corporation has a permanent place of business in California at the address shown above or is qualified through the California Secretary of State (SOS) to do business in California. The corporation will file a California tax return. If this corporation ceases to have a permanent place of business in California or ceases to do any of the above, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.
- Partnerships or Limited Liability Companies (LLCs):**  
The partnership or LLC has a permanent place of business in California at the address shown above or is registered with the California SOS, and is subject to the laws of California. The partnership or LLC will file a California tax return. If the partnership or LLC ceases to do any of the above, I will promptly inform the withholding agent. For withholding purposes, a limited liability partnership (LLP) is treated like any other partnership.
- Tax-Exempt Entities:**  
The entity is exempt from tax under California Revenue and Taxation Code (R&TC) Section 23701 \_\_\_\_\_ (insert letter) or Internal Revenue Code Section 501(c) \_\_\_\_\_ (insert number). If this entity ceases to be exempt from tax, I will promptly notify the withholding agent. Individuals cannot be tax-exempt entities.
- Insurance Companies, Individual Retirement Arrangements (IRAs), or Qualified Pension/Profit-Sharing Plans:**  
The entity is an insurance company, IRA, or a federally qualified pension or profit-sharing plan.
- California Trusts:**  
At least one trustee and one noncontingent beneficiary of the above-named trust is a California resident. The trust will file a California fiduciary tax return. If the trustee or noncontingent beneficiary becomes a nonresident at any time, I will promptly notify the withholding agent.
- Estates — Certification of Residency of Deceased Person:**  
I am the executor of the above-named person's estate or trust. The decedent was a California resident at the time of death. The estate will file a California fiduciary tax return.
- Nonmilitary Spouse of a Military Servicemember:**  
I am a nonmilitary spouse of a military servicemember and I meet the Military Spouse Residency Relief Act (MSRRA) requirements. See instructions for General Information E, MSRRA.

**CERTIFICATE OF PAYEE:** Payee must complete and sign below.

To learn about your privacy rights, how we may use your information, and the consequences for not providing the requested information, go to [ftb.ca.gov/forms](http://ftb.ca.gov/forms) and search for 1131. To request this notice by mail, call 800.852.5711.

Under penalties of perjury, I declare that I have examined the information on this form, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. I further declare under penalties of perjury that if the facts upon which this form are based change, I will promptly notify the withholding agent.

Type or print payee's name and title \_\_\_\_\_ Telephone (\_\_\_\_) \_\_\_\_\_

Payee's signature ► \_\_\_\_\_ Date \_\_\_\_\_

# 2017 Instructions for Form 590

## Withholding Exemption Certificate

References in these instructions are to the California Revenue and Taxation Code (R&TC).

### General Information

**Registered Domestic Partners (RDP)** – For purposes of California income tax, references to a spouse, husband, or wife also refer to a Registered Domestic Partner (RDP) unless otherwise specified. For more information on RDPs, get FTB Pub. 737, Tax Information for Registered Domestic Partners.

### A Purpose

Use Form 590, Withholding Exemption Certificate, to certify an exemption from nonresident withholding.

Form 590 does not apply to payments of backup withholding. For more information, go to [ftb.ca.gov](http://ftb.ca.gov) and search for **backup withholding**.

Form 590 does not apply to payments for wages to employees. Wage withholding is administered by the California Employment Development Department (EDD). For more information, go to [edd.ca.gov](http://edd.ca.gov) or call 888.745.3886.

**Do not** use Form 590 to certify an exemption from withholding if you are a **Seller of California real estate**. Sellers of California real estate use Form 593-C, Real Estate Withholding Certificate, to claim an exemption from the real estate withholding requirement.

**The following are excluded from withholding and completing this form:**

- The United States and any of its agencies or instrumentalities.
- A state, a possession of the United States, the District of Columbia, or any of its political subdivisions or instrumentalities.
- A foreign government or any of its political subdivisions, agencies, or instrumentalities.

### B Income Subject to Withholding

California Revenue and Taxation Code (R&TC) Section 18662 requires withholding of income or franchise tax on payments of California source income made to nonresidents of California.

Withholding is required on the following, but is not limited to:

- Payments to nonresidents for services rendered in California.
- Distributions of California source income made to domestic nonresident partners, members, and S corporation shareholders and allocations of California source income made to foreign partners and members.
- Payments to nonresidents for rents if the payments are made in the course of the withholding agent's business.
- Payments to nonresidents for royalties from activities sourced to California.

- Distributions of California source income to nonresident beneficiaries from an estate or trust.
- Endorsement payments received for services performed in California.
- Prizes and winnings received by nonresidents for contests in California.

However, withholding is optional if the total payments of California source income are \$1,500 or less during the calendar year.

For more information on withholding get FTB Pub. 1017, Resident and Nonresident Withholding Guidelines. To get a withholding publication, see Additional Information.

### C Who Certifies this Form

Form 590 is certified by the payee. California residents or entities exempt from the withholding requirement should complete Form 590 and submit it to the withholding agent before payment is made. The withholding agent is then relieved of the withholding requirements if the agent relies in good faith on a completed and signed Form 590 unless notified by the Franchise Tax Board (FTB) that the form should not be relied upon.

An incomplete certificate is invalid and the withholding agent should not accept it. If the withholding agent receives an incomplete certificate, the withholding agent is required to withhold tax on payments made to the payee until a valid certificate is received. In lieu of a completed exemption certificate, the withholding agent may accept a letter from the payee as a substitute explaining why they are not subject to withholding. The letter must contain all the information required on the certificate in similar language, including the under penalty of perjury statement and the payee's taxpayer identification number (TIN). The withholding agent must retain a copy of the certificate or substitute for at least five years after the last payment to which the certificate applies, and provide it upon request to the FTB.

If an entertainer (or the entertainer's business entity) is paid for a performance, the entertainer's information must be provided. **Do not** submit the entertainer's agent or promoter information.

The grantor of a grantor trust shall be treated as the payee for withholding purposes. Therefore, if the payee is a grantor trust and one or more of the grantors is a nonresident, withholding is required. If all of the grantors on the trust are residents, no withholding is required. Resident grantors can check the box on Form 590 labeled "Individuals — Certification of Residency."

### D Definitions

For California nonwage withholding purposes, **nonresident** includes all of the following:

- Individuals who are not residents of California.
- Corporations not qualified through the California Secretary of State (CA SOS) to do business in California or having no permanent place of business in California.
- Partnerships or limited liability companies (LLCs) with no permanent place of business in California.
- Any trust without a resident grantor, beneficiary, or trustee, or estates where the decedent was not a California resident.

Foreign refers to non-U.S.

For more information about determining resident status, get FTB Pub. 1031, Guidelines for Determining Resident Status. Military servicemembers have special rules for residency. For more information, get FTB Pub. 1032, Tax Information for Military Personnel.

### Permanent Place of Business:

A corporation has a permanent place of business in California if it is organized and existing under the laws of California or it has qualified through the CA SOS to transact intrastate business. A corporation that has not qualified to transact intrastate business (e.g., a corporation engaged exclusively in interstate commerce) will be considered as having a permanent place of business in California only if it maintains a permanent office in California that is permanently staffed by its employees.

### E Military Spouse Residency Relief Act (MSRRA)

Generally, for tax purposes you are considered to maintain your existing residence or domicile. If a military servicemember and nonmilitary spouse have the same state of domicile, the MSRRA provides:

- A spouse shall not be deemed to have lost a residence or domicile in any state solely by reason of being absent to be with the servicemember serving in compliance with military orders.
- A spouse shall not be deemed to have acquired a residence or domicile in any other state solely by reason of being there to be with the servicemember serving in compliance with military orders.

**Domicile** is defined as the one place:

- Where you maintain a true, fixed, and permanent home.
- To which you intend to return whenever you are absent.

A military servicemember's nonmilitary spouse is considered a nonresident for tax purposes if the servicemember and spouse have the same domicile outside of California and the spouse is in California solely to be with the servicemember who is serving in compliance with Permanent Change of Station orders.

California may require nonmilitary spouses of military servicemembers to provide proof that they meet the criteria for California personal income tax exemption as set forth in the MSRRA.

Income of a military servicemember's nonmilitary spouse for services performed in California is not California source income subject to state tax if the spouse is in California to be with the servicemember serving in compliance with military orders, and the servicemember and spouse have the same domicile in a state other than California.

For additional information or assistance in determining whether the applicant meets the MSRRA requirements, get FTB Pub. 1032.

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## Specific Instructions

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### Payee Instructions

Enter the withholding agent's name.

Enter the payee's information, including the TIN and check the appropriate TIN box.

You must provide a valid TIN as requested on this form. The following are acceptable TINs: social security number (SSN); individual taxpayer identification number (ITIN); federal employer identification number (FEIN); California corporation number (CA Corp no.); or CA SOS file number.

**Private Mail Box (PMB)** – Include the PMB in the address field. Write "PMB" first, then the box number. Example: 111 Main Street PMB 123.

**Foreign Address** – Follow the country's practice for entering the city, county, province, state, country, and postal code, as applicable, in the appropriate boxes. **Do not** abbreviate the country name.

**Exemption Reason** – Check the box that reflects the reason why the payee is exempt from the California income tax withholding requirement.

### Withholding Agent Instructions

**Do not** send this form to the FTB. The withholding agent retains this form for a minimum of five years or until the payee's status changes, and must provide this form to the FTB upon request.

The payee must notify the withholding agent if any of the following situations occur:

- The individual payee becomes a nonresident.
- The corporation ceases to have a permanent place of business in California or ceases to be qualified to do business in California.

- The partnership ceases to have a permanent place of business in California.
- The LLC ceases to have a permanent place of business in California.
- The tax-exempt entity loses its tax-exempt status.

If any of these situations occur, then withholding may be required. For more information, get Form 592, Resident and Nonresident Withholding Statement, Form 592-B, Resident and Nonresident Withholding Tax Statement, and Form 592-V, Payment Voucher for Resident and Nonresident Withholding.

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## Additional Information

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**Website:** For more information go to [ftb.ca.gov](http://ftb.ca.gov) and search for **nonwage**.  
**MyFTB** offers secure online tax account information and services. For more information and to register, go to [ftb.ca.gov](http://ftb.ca.gov) and search for **myftb**.

**Telephone:** 888.792.4900 or 916.845.4900, Withholding Services and Compliance phone service

**Fax:** 916.845.9512

**Mail:** WITHHOLDING SERVICES AND COMPLIANCE MS F182  
FRANCHISE TAX BOARD  
PO BOX 942867  
SACRAMENTO CA 94267-0651

For questions unrelated to withholding, or to download, view, and print California tax forms and publications, or to access the TTY/TDD numbers, see the information below.

### Internet and Telephone Assistance

**Website:** [ftb.ca.gov](http://ftb.ca.gov)

**Telephone:** 800.852.5711 from within the United States  
916.845.6500 from outside the United States

**TTY/TDD:** 800.822.6268 for persons with hearing or speech impairments

### Asistencia Por Internet y Teléfono

**Sitio web:** [ftb.ca.gov](http://ftb.ca.gov)

**Teléfono:** 800.852.5711 dentro de los Estados Unidos  
916.845.6500 fuera de los Estados Unidos

**TTY/TDD:** 800.822.6268 para personas con discapacidades auditivas o de habla

## **Certification Regarding Debarment, Suspension, and Other Responsibility Matters**

The prospective participant certifies to the best of its knowledge and belief that it and the principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgement rendered against them or commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statute or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property:
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

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Typed Name & Title of Authorized Representative

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Signature of Authorized Representative Date

I am unable to certify to the above statements. My explanation is attached.



## CAMPAIGN CONTRIBUTIONS DISCLOSURE

In accordance with California law, bidders and contracting parties are required to disclose, at the time the application is filed, information relating to any campaign contributions made to South Coast Air Quality Management District (SCAQMD) Board Members or members/alternates of the MSRC, including: the name of the party making the contribution (which includes any parent, subsidiary or otherwise related business entity, as defined below), the amount of the contribution, and the date the contribution was made. 2 C.C.R. §18438.8(b).

California law prohibits a party, or an agent, from making campaign contributions to SCAQMD Governing Board Members or members/alternates of the Mobile Source Air Pollution Reduction Review Committee (MSRC) of more than \$250 while their contract or permit is pending before SCAQMD; and further prohibits a campaign contribution from being made for three (3) months following the date of the final decision by the Governing Board or the MSRC on a donor's contract or permit. Gov't Code §84308(d). For purposes of reaching the \$250 limit, the campaign contributions of the bidder or contractor plus contributions by its parents, affiliates, and related companies of the contractor or bidder are added together. 2 C.C.R. §18438.5.

In addition, SCAQMD Board Members or members/alternates of the MSRC must abstain from voting on a contract or permit if they have received a campaign contribution from a party or participant to the proceeding, or agent, totaling more than \$250 in the 12-month period prior to the consideration of the item by the Governing Board or the MSRC. Gov't Code §84308(c).

The list of current SCAQMD Governing Board Members can be found at SCAQMD website ([www.aqmd.gov](http://www.aqmd.gov)). The list of current MSRC members/alternates can be found at the MSRC website (<http://www.cleantransportationfunding.org>).

### **SECTION I.**

**Contractor (Legal Name):** \_\_\_\_\_

DBA, Name _____, County Filed in _____ Corporation, ID No. _____ LLC/LLP, ID No. _____
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**List any parent, subsidiaries, or otherwise affiliated business entities of Contractor:**  
*(See definition below).*

\_\_\_\_\_  
\_\_\_\_\_

### **SECTION II.**

Has Contractor and/or any parent, subsidiary, or affiliated company, or agent thereof, made a campaign contribution(s) totaling \$250 or more in the aggregate to a current member of the South Coast Air Quality Management Governing Board or member/alternate of the MSRC in the 12 months preceding the date of execution of this disclosure?

Yes     No    **If YES, complete Section II below and then sign and date the form. If NO, sign and date below. Include this form with your submittal.**

**Campaign Contributions Disclosure, continued:**

Name of Contributor \_\_\_\_\_

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
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Name of Contributor \_\_\_\_\_

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
---	------------------------	----------------------

Name of Contributor \_\_\_\_\_

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
---	------------------------	----------------------

Name of Contributor \_\_\_\_\_

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
---	------------------------	----------------------

**I declare the foregoing disclosures to be true and correct.**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**DEFINITIONS**

Parent, Subsidiary, or Otherwise Related Business Entity (2 Cal. Code of Regs., §18703.1(d).)

- (1) Parent subsidiary. A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing more than 50 percent of the voting power of another corporation.
- (2) Otherwise related business entity. Business entities, including corporations, partnerships, joint ventures and any other organizations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if any one of the following three tests is met:
  - (A) One business entity has a controlling ownership interest in the other business entity.
  - (B) There is shared management and control between the entities. In determining whether there is shared management and control, consideration should be given to the following factors:
    - (i) The same person or substantially the same person owns and manages the two entities;
    - (ii) There are common or commingled funds or assets;
    - (iii) The business entities share the use of the same offices or employees, or otherwise share activities, resources or personnel on a regular basis;
    - (iv) There is otherwise a regular and close working relationship between the entities; or
  - (C) A controlling owner (50% or greater interest as a shareholder or as a general partner) in one entity also is a controlling owner in the other entity.



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • [www.aqmd.gov](http://www.aqmd.gov)

## Direct Deposit Authorization

### STEP 1: Please check all the appropriate boxes

- |  |  |
|--|--|
| <input type="checkbox"/> Individual (Employee, Governing Board Member) | <input type="checkbox"/> New Request           |
| <input type="checkbox"/> Vendor/Contractor                             | <input type="checkbox"/> Cancel Direct Deposit |
| <input type="checkbox"/> Changed Information                           |  |

### STEP 2: Payee Information

Last Name		First Name		Middle Initial	Title
Vendor/Contractor Business Name (if applicable)					
Address				Apartment or P.O. Box Number	
City		State	Zip	Country	
Taxpayer ID Number		Telephone Number		Email Address	

### Authorization

- I authorize South Coast Air Quality Management District (SCAQMD) to direct deposit funds to my account in the financial institution as indicated below. I understand that the authorization may be rejected or discontinued by SCAQMD at any time. If any of the above information changes, I will promptly complete a new authorization agreement. If the direct deposit is not stopped before closing an account, funds payable to me will be returned to SCAQMD for distribution. This will delay my payment.
- This authorization remains in effect until SCAQMD receives written notification of changes or cancellation from you.
- I hereby release and hold harmless SCAQMD for any claims or liability to pay for any losses or costs related to insufficient fund transactions that result from failure within the Automated Clearing House network to correctly and timely deposit monies into my account.

### STEP 3:

You must verify that your bank is a member of an Automated Clearing House (ACH). Failure to do so could delay the processing of your payment. You must attach a voided check or have your bank complete the bank information and the account holder must sign below.

### To be Completed by your Bank

<b>Staple Voided Check Here</b>	Name of Bank/Institution				
	Account Holder Name(s)				
	<input type="checkbox"/> Saving <input type="checkbox"/> Checking		Account Number	Routing Number	
	Bank Representative Printed Name		Bank Representative Signature		Date
	ACCOUNT HOLDER SIGNATURE:				Date

For SCAQMD Use Only

Input By \_\_\_\_\_

Date \_\_\_\_\_

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 7

**PROPOSAL:** Execute Contracts for Legislative Representation in Washington, D.C.

**SYNOPSIS:** At the September 7, 2018 meeting, the Board approved release of an RFP to solicit proposals for legislative representation in Washington, D.C. Four proposals were submitted to the Legislative Committee for consideration at its November 9, 2018 meeting. After the Committee interviewed representatives of each firm, three firms were selected for recommendation to the full Board. This action is to execute contracts with Carmen Group, Inc. in the amount of \$222,090; Cassidy & Associates, Inc. in the amount of \$216,000; and Kadesh & Associates in the amount of \$226,400 for the agency's legislative representation in Washington, D.C. for one year beginning on January 11, 2019, with an option for up to two one-year renewals, upon satisfactory performance, at the Board's discretion. Funding is available in the Legislative, Public Affairs & Media FY 2018-19 Budget and for the two optional one-year extensions, contingent upon Board approval of the Budget for the respective fiscal years.

**COMMITTEE:** Legislative, November 9, 2018; Recommended for Approval

**RECOMMENDED ACTIONS:**

Authorize the Chairman to execute contracts with Carmen Group, Inc. for \$222,090; Cassidy & Associates, Inc. for \$216,000; and Kadesh & Associates for \$226,400 for legislative consulting services in Washington, D.C. for one year beginning on January 11, 2019, with an option for up to two one-year renewals, upon satisfactory performance, at the Board's discretion.

Wayne Natri  
Executive Officer

## **Background**

The current contracts for legislative representation in Washington, D.C. expire on January 15, 2019. Following Board approval on September 7, 2018, staff released RFP #P2019-03 to solicit proposals for legislative representation in Washington, D.C.

As one of the largest air quality regulatory agencies in the United States and a leader in air quality innovations, SCAQMD is an important contributor to national policymaking discussions relevant to air quality related issues. Representation in Washington, D.C. ensures that the agency's input and policy priorities are conveyed in a timely and effective manner during the federal legislative and policy-setting process.

It is critical that SCAQMD be involved in policy development relating to federal air quality legislation, federal Clean Air Act implementation, subvention funding, special grants, and that all these issues and any other related matters are closely monitored. Therefore, staff recommends continued direct representation and advocacy of SCAQMD's policy positions on environmental issues in Washington, D.C.

## **Outreach**

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFP and inviting bids was published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, the Riverside County Press Enterprise, and The Hill newspapers to leverage the most cost-effective method of outreach to qualified firms providing federal legislative representation services.

Additionally, in an effort to notify as many potential bidders as possible, approximately 100 RFP notification letters were mailed to lobbying and public affairs firms in the Washington, D.C. area. Notice of the RFP was also emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<http://www.aqmd.gov>).

## **Bid Evaluation**

Six proposals were received in response to the RFP. The proposals were evaluated and scored by a three-member evaluation panel (see Panel Composition section). Of the six proposals evaluated, four were considered technically qualified and forwarded to the Legislative Committee for consideration. The remaining two proposals were deemed to not be technically qualified. The attached matrix presents the scores and total proposal costs for the firms interviewed by the Legislative Committee.

## **Panel Composition**

The evaluation panel consisted of one SCAQMD Deputy Executive Officer, one SCAQMD Public Affairs Manager, and one staff representative from the city of Pico Rivera. Of the three panelists, two are Hispanic and one is Asian-American; two are male and one is female.

**Committee Recommendations**

After interviewing the four firms, and reviewing written materials submitted as part of the proposals, the Legislative Committee recommends to the Board the selection of the following firms: Carmen Group, Inc., Cassidy & Associates, Inc., and Kadash & Associates.

**Resource Impacts**

Funding of \$664,490 is available in the Legislative, Public Affairs & Media FY 2018-19 Budget. Funding for two optional one-year extensions is contingent upon Board approval of the Budget for the respective fiscal years.

**Attachment**

RFP #P2019-03 Scores and Costs Matrix

**RFP # P2019-03 SCORES AND COSTS MATRIX  
FOR QUALIFYING FIRMS**

<b>Firm Name</b>	<b>Technical Score</b>	<b>Additional Points</b>	<b>Cost Points</b>	<b>Total Points</b>	<b>Total Cost</b>
Carmen Group, Inc.	58.7	2.0	28.2	89.0	\$225,000
Cassidy & Associates	64.7	0.0	30.0	95.0	\$216,000
The Glover Park Group, LLC	63	0.0	0.0	63	\$439,900
Kadesh & Associates	67.3	12.0	27.5	107.0	\$233,847

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 8

**PROPOSAL:** Issue RFP for Consultant Services for SCAQMD Environmental Justice Outreach and Initiatives

**SYNOPSIS:** This action is to issue an RFP to solicit proposals from individuals and organizations to provide assistance with community and stakeholder outreach efforts related to SCAQMD's Environmental Justice Program, including but not limited to, the Environmental Justice Community Partnership Initiative meetings and conference.

**COMMITTEE:** Administrative, November 9, 2019; Recommended for Approval

**RECOMMENDED ACTION:**

Authorize the release of RFP #P2019-09 to solicit proposals from qualified individuals and organizations with Public Relations and/or Public Affairs expertise to assist with community and stakeholder outreach efforts related to SCAQMD's Environmental Justice Program, including but not limited, to the Environmental Justice Community Partnership Initiative for a one-year period in an amount not to exceed \$160,000, with an option for up to two one-year contract renewals, contingent on satisfactory performance, approval of subsequent budgets, and Board approval.

Wayne Nastri  
Executive Officer

DJA:FW:RR:JF

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**Background**

The Environmental Community Justice Community Partnership (the Partnership) was initiated in February 2015, under the direction of Chairman Burke. The objective of the Partnership is to both strengthen and build SCAQMD's relationships and alliances with community members and organizations to work towards achieving clean air and healthy sustainable communities for everyone. The Partnership will host a series of events and workshops throughout the year to facilitate open dialogue and information sharing on air quality issues between SCAQMD and community members, government officials, government representatives, businesses, and academic institutions. The outreach efforts will include forums, training opportunities, and special presentations to

educate and to receive feedback from participants on air quality, SCAQMD rules and programs, and other related topics.

Staff periodically releases Requests for Proposals (RFPs) for consultants to augment in-house expertise and assist staff with external advisory groups, and the development, planning, and implementation of specifically targeted workshops, events, and conferences. The consultant's expertise will assist with the following:

- 1) Coordination and regular interaction with the Environmental Justice Community Partnership Advisory Council (Advisory Council);
- 2) Execution of a Youth Bus Tour on Environmental Justice;
- 3) Execution of a series of four (4) annual Environmental Justice Community Partnership workshops, or events, each to be held in a different community identified throughout the South Coast Air Basin; and the fifth annual Environmental Justice for All Conference in 2019 and;
- 4) Execution of an Inter-Agency and Community Summit.

### **Proposal**

Staff recommends that SCAQMD seek proposals from qualified public affairs and/or public relations firms or other organizations to implement the Environmental Justice Community Partnership initiative.

#### *Environmental Justice Community Partnership Advisory Council*

The Advisory Council assists with the creation and implementation of air quality related events or workshops that best address the needs of environmental justice communities in Los Angeles, Orange, Riverside, and San Bernardino counties. The Advisory Council also provides SCAQMD with valuable feedback on how to best promote a two-way flow of communication with stakeholders.

#### *Environmental Justice Community Partnership Community Events and Conference*

Key elements of the Partnership initiative are to provide community members and local businesses with opportunities to learn about air quality related issues, to hold forums to share information on community issues, and to offer access to learning opportunities and empowerment resources.

Each outreach opportunity conducted under the Partnership must be geographically specific, with events or workshops held equally throughout SCAQMD's four-county jurisdiction. The information shared through each outreach opportunity must be relevant to the targeted communities and provide the SCAQMD with data and resources to continually strengthen its relationships with the public and businesses it serves and to work effectively towards building healthy, sustainable communities. The events will culminate in SCAQMD's hosting of its 2019 Environmental Justice Conference.

### Youth Bus Tour on Environmental Justice

The Youth Bus Tour brings together students for an environmental justice bus tour of the South Coast Air Basin. Students learn a brief history of environmental justice and issues that continue to persist throughout the Basin with visits to sites that include areas heavily affected by air pollution, facilities emitting excess criteria air pollutants, major freeway interchanges and refineries alongside environmental justice communities.

### Inter-Agency and Community Summit

The Inter-Agency and Community Summit brings together public agencies and environmental justice organizations to discuss environmental complaints and how they can collaborate to better address them. Attendees participate in a robust roundtable discussion on strategies to serve all communities, and identify common goals among agencies, to minimize duplication and determine if agencies can leverage existing efforts. Ongoing collaboration to effectively streamline complaints is year round.

### **Outreach**

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFP and inviting bids will be published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the entire South Coast Basin.

Additionally, potential bidders may be notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the RFP will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<http://www.aqmd.gov>) where it can be viewed by making the selection "Grants & Bids."

### **Bid Evaluation**

Proposals will be reviewed and evaluated by a diverse, qualified panel in accordance with criteria contained in the attached RFP.

### **Resource Impacts**

Funding for year one services is contained in the Legislative, Public Affairs & Media FY 2018-19 budget. Any future funding for fiscal years 2019-20 and/or 2020-21 will be subject to Board approval.

### **Attachment**

RFP #P2019-09 – Consultant Services for SCAQMD Environmental Justice Outreach and Initiatives Assistance



## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

### REQUEST FOR PROPOSALS

#### Consultant Services for SCAQMD Environmental Justice Outreach and Initiatives Assistance

**P2019-09**

South Coast Air Quality Management District (SCAQMD) requests proposals for the following purpose according to terms and conditions attached. In the preparation of this Request for Proposals (RFP) the words "Proposer," "Contractor," "Consultant," "Bidder" and "Firm" are used interchangeably.

#### **PURPOSE**

The purpose of this Request for Proposals (RFP) is to solicit qualified firms, organizations or sole practitioners to assist the SCAQMD with outreach efforts related to environmental justice, including but not limited to, the Environmental Justice Community Partnership Initiative (the Partnership). Work will be on an as needed basis and all work and/or expenditures shall be approved in writing by the Deputy Executive Officer of Legislative, Public Affairs and Media or designee.

#### **INDEX** - The following are contained in this RFP:

Section I	Background/Information
Section II	Contact Person
Section III	Schedule of Events
Section IV	Participation in the Procurement Process
Section V	Statement of Work/Schedule of Deliverables
Section VI	Required Qualifications
Section VII	Proposal Submittal Requirements
Section VIII	Proposal Submission
Section IX	Proposal Evaluation/Contractor Selection Criteria
Section X	Funding
Section XI	Sample Contract

Attachment A - Participation in the Procurement Process

Attachment B - Certifications and Representations

**SECTION I: BACKGROUND/INFORMATION**

The objective of the Environmental Justice Community Partnership (the Partnership) is to strengthen relationships and build alliances with community members and organizations toward the goal of achieving clean air and healthy sustainable communities in the South Coast Air Basin. The Partnership will host a series of events and workshops throughout the year to facilitate open dialogue and information sharing on air quality issues between SCAQMD and community members, government officials and representatives, businesses, health, environmental, academic institutions, and others. The outreach efforts or formats will include forums; learning opportunities; and, special presentations to educate the participants on air quality, SCAQMD rules and programs, and other related topics. An external advisory council has been formed to provide input to the Partnership to ensure programs are relevant and address the air quality issues of diverse communities throughout SCAQMD's jurisdiction. The Partnership outreach programs will culminate in an environmental justice conference that will bring together stakeholders from all the events held throughout the year with the intent to have a broader forum to share information gained and lessons learned.

The Partnership, with the assistance of an advisory council, will build stronger bonds to communities most affected by air pollution. All efforts, formats or events will be designed to facilitate a two-way flow of discussion between the agency and participants in the proposed events. At the same time, the outreach opportunities will help to create bridges for on-going communication between SCAQMD and the communities it serves.

This RFP is seeking qualified organizations and/or sole practitioners to assist the SCAQMD's Office of Legislative, Public Affairs and Media (LPAM) with an external advisory council for the Partnership and to assist LPAM with the development, planning, and implementation of specifically targeted workshops, events, and conferences. The organization and/or consultants responding to this RFP shall submit proposals that demonstrate their qualifications and experience to assist LPAM with the following, but not limited, to the following general tasks:

- 1) Coordination, and regular interaction with the Environmental Justice Community Partnership Advisory Council (Advisory Council);
- 2) Execution of a Youth Bus Tour on Environmental Justice;
- 3) Execution of a series of four (4) annual Environmental Justice Community Partnership workshops, or events, each to be held in a different community identified throughout the South Coast Air Basin; and the fifth annual Environmental Justice for All Conference in 2019 and;
- 4) Execution of an Inter-Agency and Community Summit

**SECTION II: CONTACT PERSON:**

Questions regarding the content or intent of this RFP or on procedural matters should be addressed to:

Fabian Wesson  
 Assistant Deputy Executive Officer  
 Legislative, Public Affairs and Media  
 SCAQMD  
 21865 Copley Drive  
 Diamond Bar, CA 91765-4178  
 (909) 396-2410

**SECTION III: SCHEDULE OF EVENTS**

Date	Event
December 7, 2018	RFP Released
January 9, 2019	Proposals Due to SCAQMD – <b>No Later Than 1:00 pm</b>
January 9-11, 2019	Proposal Evaluations
February 8, 2019	Potential Interviews
March 1, 2019	Governing Board Approval
March 6, 2019	Anticipated Contract Execution

**SECTION IV: PARTICIPATION IN THE PROCUREMENT PROCESS**

It is the policy of SCAQMD to ensure that all businesses including minority business enterprises, women business enterprises, disabled veteran business enterprises and small businesses have a fair and equitable opportunity to compete for and participate in SCAQMD contracts. Attachment A to this RFP contains definitions and further information.

**SECTION V: STATEMENT OF WORK/SCHEDULE OF DELIVERABLES**

Statement of Work

Under the direction of the Deputy Executive Officer of Legislative, Public Affairs and Media or designee, the CONTRACTOR shall perform, but not limited to, the following tasks on an as-needed basis for SCAQMD’s Environmental Justice Community Partnership:

- 1) Develop the Partnership Advisory Council membership materials and provide recommendations for the membership for the council taking into consideration that the membership shall be composed of individuals representing all four (4) counties within SCAQMD’s jurisdiction.
- 2) The CONTRACTOR shall, in coordination with SCAQMD, secure and formalize the membership of the Advisory Council pursuant to the charter.

- 3) Based on the approved charter, the CONTRACTOR shall schedule and convene the meetings of the Advisory Council, facilitate the meeting, including, but not limited to, track work plan, meeting calendar and communications channels and coordinate and complete action items.
- 4) CONTRACTOR shall identify a list of locations and venues for workshops, events and a conference.
- 5) CONTRACTOR shall handle logistics for each workshop, event and conference, as needed, which may include recommendations for registration and staff assistance during the event.
- 6) CONTRACTOR shall develop list of topics for workshops, events and conference based on guidance from SCAQMD and the Advisory Council. Contractor shall identify potential co-sponsors, co-hosts and partners, as well as secure speakers and assist with the identification of community leaders for workshops, events and conference.
- 7) CONTRACTOR shall develop and create materials including, but not limited to, invitation, hand-outs, signage and any other print document for each workshop, event and conference.
- 8) CONTRACTOR shall conduct outreach to generate attendance as determined by SCAQMD for each workshop, event and conference. Outreach shall include social media, website development with associated marketing to drive traffic, announcements at meetings and events, widespread distribution throughout intended community, and other means of marketing and communication.
- 9) CONTRACTOR shall prepare follow-up surveys to garner input from those attending the workshops, events and conference. The CONTRACTOR shall analyze the information received and create reports and action items for SCAQMD and the Advisory Council to review and act on as appropriate.
- 10) CONTRACTOR shall take minutes and/or notes for each Advisory Council meeting, workshop, event and/or conference and update appropriate communication channels as directed by SCAQMD.
- 11) CONTRACTOR shall provide monthly progress reports to SCAQMD staff that will accompany each CONTRACTOR invoice. Progress reports will include a summary of work pending and completed during the reporting period.

## **SECTION VI: REQUIRED QUALIFICATIONS**

- A. Persons or firms proposing to bid on this proposal must be qualified and experienced in representing and advising governmental agencies and must submit qualifications demonstrating this ability in cases involving as many as possible of the following areas: administrative law, SCAQMD Rules and Regulations, air quality law, and other environmental issues.
- B. Proposer must submit the following:
  1. Resumes or similar statement of qualifications of person or persons who may be designated as lead attorney for Hearing Board projects.
  2. List of representative clients.

3. Summary of proposer's general qualifications to meet required qualifications and fulfill statement of work, including additional Firm personnel and resources beyond those of the designated lead attorney.

## **SECTION VII: PROPOSAL SUBMITTAL REQUIREMENTS**

Submitted proposals must follow the format outlined below and all requested information must be supplied. Failure to submit proposals in the required format will result in elimination from proposal evaluation. SCAQMD may modify the RFP or issue supplementary information or guidelines during the proposal preparation period prior to the due date. Please check our website for updates (<http://www.aqmd.gov/grants-bids>). The cost for developing the proposal is the responsibility of the Contractor, and shall not be chargeable to SCAQMD.

Each proposal must be submitted in three separate volumes:

- Volume I - Technical Proposal
- Volume II - Cost Proposal
- Volume III - Certifications and Representations included in Attachment B to this RFP, must be completed and executed by an authorized official of the Contractor.

A separate cover letter including the name, address, and telephone number of the contractor, and signed by the person or persons authorized to represent the Firm should accompany the proposal submission. Firm contact information as follows should also be included in the cover letter:

1. Address and telephone number of office in, or nearest to, Diamond Bar, California.
2. Name and title of Firm's representative designated as contact.

A separate Table of Contents should be provided for Volumes I and II.

### **VOLUME I - TECHNICAL PROPOSAL**

#### **DO NOT INCLUDE ANY COST INFORMATION IN THE TECHNICAL VOLUME**

Summary (Section A) - State overall approach to meeting the objectives and satisfying the scope of work to be performed, the sequence of activities, and a description of methodology or techniques to be used.

Program Schedule (Section B) - Provide projected milestones or benchmarks for completing the project (to include reports) within the total time allowed.

Project Organization (Section C) - Describe the proposed management structure, program monitoring procedures, and organization of the proposed team. Provide a statement detailing your approach to the project, specifically address the Firm's ability and willingness to commit and maintain staffing to successfully complete the project on the proposed schedule.

Qualifications (Section D) - Describe the technical capabilities of the Firm. Provide references of other similar studies or projects performed during the last five years demonstrating ability to successfully complete the work. Include contact name, title, and telephone number for any references listed. Provide a statement of your Firm's background and related experience in performing similar services for other governmental organizations.

Assigned Personnel (Section E) - Provide the following information about the staff to be assigned to this project:

1. List all key personnel assigned to the project by level, name and location. Provide a resume or similar statement describing the background, qualifications and experience of the lead person and all persons assigned to the project. Substitution of project manager or lead personnel will not be permitted without prior written approval of SCAQMD.
2. Provide a spreadsheet of the labor hours proposed for each labor category at the task level.
3. Provide a statement indicating whether or not 90% of the work will be performed within the geographical boundaries of SCAQMD.
4. Provide a statement of education and training programs provided to, or required of, the staff identified for participation in the project, particularly with reference to management consulting, governmental practices and procedures, and technical matters.
5. Provide a summary of your Firm's general qualifications to meet required qualifications and fulfill statement of work, including additional Firm personnel and resources beyond those who may be assigned to the project.

Subcontractors (Section F) - This project may require expertise in multiple technical areas. List any subcontractors that will be used, identifying functions to be performed by them, their related qualifications and experience and the total number of hours or percentage of time they will spend on the project.

Conflict of Interest (Section G) - Address possible conflicts of interest with other clients affected by actions performed by the Firm on behalf of SCAQMD. SCAQMD recognizes that prospective Contractors may be performing similar projects for other clients. Include a complete list of such clients for the past three (3) years with the type of work performed and the total number of years performing such tasks for each client. Although the Proposer will not be automatically disqualified by reason of work performed for such clients, SCAQMD reserves the right to consider the nature and extent of such work in evaluating the proposal.

Additional Data (Section H) - Provide other essential data that may assist in the evaluation of this proposal.

## **VOLUME II - COST PROPOSAL**

Name and Address - The Cost Proposal must list the name and complete address of the Proposer in the upper left-hand corner.

Cost Proposal – SCAQMD may, based on the proposals, issue a fixed price or T&M contract. Cost information must be provided as listed below:

1. Detail must be provided by the following categories:

- A. Labor – The Cost Proposal must list the fully-burdened hourly rates and the total number of hours estimated for each level of professional and administrative staff to be used to perform the tasks required by this RFP. Costs should be estimated for each of the components of the work plan.
  - B. Subcontractor Costs - List subcontractor costs and identify subcontractors by name. Itemize subcontractor charges per hour or per day.
  - C. Travel Costs - Indicate amount of travel cost and basis of estimate to include trip destination, purpose of trip, length of trip, airline fare or mileage expense, per diem costs, lodging and car rental.
  - D. Other Direct Costs -This category may include such items as postage and mailing expense, printing and reproduction costs, etc. Provide a basis of estimate for these costs.
2. It is the policy of the SCAQMD to receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services. SCAQMD will give preference, where appropriate, to vendors who certify that they will provide “most favored customer” status to the SCAQMD. To receive preference points, Proposer shall certify that SCAQMD is receiving “most favored customer” pricing in the Business Status Certifications page of Volume III, Attachment B – Certifications and Representations.

### **VOLUME III - CERTIFICATIONS AND REPRESENTATIONS** (see Attachment B to this RFP)

#### **SECTION VIII: PROPOSAL SUBMISSION**

All proposals must be submitted according to specifications set forth in the section above, and this section. Failure to adhere to these specifications may be cause for rejection of the proposal.

Signature - All proposals must be signed by an authorized representative of the Proposer.

Due Date - **All proposals are due no later than 1:00 p.m., January 9, 2019, and should be directed to:**

Procurement Unit  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765-4178  
 (909) 396-3520

Submittal - Submit eight (8) complete copies of the proposal in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the Proposer and the words "Request for Proposals P2019-09."

**Late bids/proposals will not be accepted under any circumstances.**

Grounds for Rejection - A proposal may be immediately rejected if:

- It is not prepared in the format described, or
- It is signed by an individual not authorized to represent the Firm.

Modification or Withdrawal - Once submitted, proposals cannot be altered without the prior written consent of SCAQMD. All proposals shall constitute firm offers and may not be withdrawn for a period of ninety (90) days following the last day to accept proposals.

**SECTION IX: PROPOSAL EVALUATION/CONTRACTOR SELECTION CRITERIA**

- A. Proposals will be evaluated by a panel of three to five SCAQMD staff members familiar with the subject matter of the project. The panel shall be appointed by the Executive Officer or his designee. In addition, the evaluation panel may include such outside public sector or academic community expertise as deemed desirable by the Executive Officer. The panel will make a recommendation to the Executive Officer and/or the Governing Board of SCAQMD for final selection of a contractor and negotiation of a contract.
- B. Each member of the evaluation panel shall be accorded equal weight in his or her rating of proposals. The evaluation panel members shall evaluate the proposals according to the specified criteria and numerical weightings set forth below.

(a) <u>Standardized Services</u>	<u>Points</u>
Understanding of Requirement	20
Contractor Qualifications	20
Past Experience	30
Cost	<u>30</u>
TOTAL:	100
(b) <u>Additional</u>	
Small Business or Small Business Joint Venture	10
DVBE or DVBE Joint Venture	10
Use of DVBE or Small Business Subcontractors	7
Low-Emission Vehicle Business	5
Local Business (Non-Federally Funded Projects Only)	5
Off-Peak Hours Delivery Business	2
Most Favored Customer	2

**The cumulative points awarded for small business, DVBE, use of small business or DVBE subcontractors, low-emission vehicle business, local business, and off-peak hours delivery business shall not exceed 15 points. Most Favored Customer status incentive points shall be added, as applicable for a total of 17 points.**

**Self-Certification for Additional Points**

**The award of these additional points shall be contingent upon Proposer completing the Self-Certification section of Attachment B – Certifications and Representations and/or inclusion of a statement in the proposal self-certifying that Proposer qualifies for additional points as detailed above.**

2. To receive additional points in the evaluation process for the categories of Small Business or Small Business Joint Venture, DVBE or DVBE Joint Venture or Local Business (for non-federally funded projects), the proposer must submit a self-certification or certification from the State of California Office of Small Business Certification and Resources at the time of proposal submission certifying that the proposer meets the requirements set forth in Section IV. To receive points for the use of DVBE and/or Small Business subcontractors, at least 25 percent of the total contract value must be subcontracted to DVBEs and/or Small Businesses. To receive points as a Low-Emission Vehicle Business, the proposer must demonstrate to the Executive Officer, or designee, that supplies and materials delivered to SCAQMD are delivered in vehicles that operate on either clean-fuels or if powered by diesel fuel, that the vehicles have particulate traps installed. To receive points as a Local Business, the proposer must affirm that it has an ongoing business within the South Coast AQMD at the time of bid/proposal submittal and that 90% of the work related to the contract will be performed within the South Coast AQMD. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points. Federally funded projects are not eligible for local business incentive points. To receive points as an Off-Peak Hours Delivery Business, the proposer must submit, at proposal submission, certification of its commitment to delivering supplies and materials to SCAQMD between the hours of 10:00 a.m. and 3:00 p.m. To receive points for Most Favored Customer status, the proposer must submit, at proposal submission, certification of its commitment to provide most favored customer status to the SCAQMD. The cumulative points awarded for small business, DVBE, use of Small Business or DVBE Subcontractors, Local Business, Low-Emission Vehicle Business and Off-Peak Hour Delivery Business shall not exceed 15 points.
3. For procurement of Research and Development (R & D) projects or projects requiring technical or scientific expertise or special projects requiring unique knowledge and abilities, technical factors including past experience shall be weighted at 70 points and cost shall be weighted at 30 points. A proposal must receive at least 56 out of 70 points on R & D projects and projects requiring technical or scientific expertise or special projects requiring unique knowledge and abilities, in order to be deemed qualified for award.
4. The lowest cost proposal will be awarded the maximum cost points available and all other cost proposals will receive points on a prorated basis. For example if the lowest cost proposal is \$1,000 and the maximum points available are 30 points, this proposal would receive the full 30 points. If the next lowest cost proposal is \$1,100 it would receive 27 points reflecting the fact that it is 10% higher than the lowest cost (90% of 30 points = 27 points).

- C. During the selection process the evaluation panel may wish to interview some proposers for clarification purposes only. No new material will be permitted at this time. Additional information provided during the bid review process is limited to clarification by the Proposer of information presented in his/her proposal, upon request by SCAQMD.
- D. The Executive Officer or Governing Board may award the contract to a Proposer other than the Proposer receiving the highest rating in the event the Governing Board determines that another Proposer from among those technically qualified would provide the best value to SCAQMD considering cost and technical factors. The determination shall be based solely on the Evaluation Criteria contained in the Request for Proposal (RFP), on evidence provided in the proposal and on any other evidence provided during the bid review process.
- E. Selection will be made based on the above-described criteria and rating factors. The selection will be made by and is subject to Executive Officer or Governing Board approval. Proposers may be notified of the results by letter.
- F. The Governing Board has approved a Bid Protest Procedure which provides a process for a Bidder or prospective Bidder to submit a written protest to SCAQMD Procurement Manager in recognition of two types of protests: Protest Regarding Solicitation and Protest Regarding Award of a Contract. Copies of the Bid Protest Policy can be secured through a request to SCAQMD Procurement Department.
- G. The Executive Officer or Governing Board may award contracts to more than one proposer if in (his or their) sole judgment the purposes of the (contract or award) would best be served by selecting multiple proposers.
- H. If additional funds become available, the Executive Officer or Governing Board may increase the amount awarded. The Executive Officer or Governing Board may also select additional proposers for a grant or contract if additional funds become available.
- I. Disposition of Proposals – Pursuant to SCAQMD's Procurement Policy and Procedure, SCAQMD reserves the right to reject any or all proposals. All proposals become the property of SCAQMD, and are subject to the California Public Records Act. One copy of the proposal shall be retained for SCAQMD files. Additional copies and materials will be returned only if requested and at the proposer's expense.
- J. If proposal submittal is for a Public Works project as defined by State of California Labor Code Section 1720, Proposer is required to include Contractor Registration No. in Attachment B. Proposal submittal will be deemed as non-responsive and Bidder may be disqualified if Contractor Registration No. is not included in Attachment B. Proposer is alerted to changes to California Prevailing Wage compliance requirements as defined in Senate Bill 854 (Stat. 2014, Chapter 28), and California Labor Code Sections 1770, 1771 and 1725.**

**SECTION X: FUNDING**

The total funding for the work contemplated by this RFP will be a maximum \$160,000 for the base year with an option to renew the contract for up to two one-year periods.

**SECTION XI: SAMPLE CONTRACT**

A sample contract to carry out the work described in this RFP is available on SCAQMD's website at <http://www.aqmd.gov/grants-bids> or upon request from the RFP Contact Person (Section II).

# ATTACHMENT A

## PARTICIPATION IN THE PROCUREMENT PROCESS

A. It is the policy of South Coast Air Quality Management District (SCAQMD) to ensure that all businesses including minority business enterprises, women business enterprises, disabled veteran business enterprises and small businesses have a fair and equitable opportunity to compete for and participate in SCAQMD contracts.

B. Definitions:

The definition of minority, women or disadvantaged business enterprises set forth below is included for purposes of determining compliance with the affirmative steps requirement described in Paragraph G below on procurements funded in whole or in part with federal grant funds which involve the use of subcontractors. The definition provided for disabled veteran business enterprise, local business, small business enterprise, low-emission vehicle business and off-peak hours delivery business are provided for purposes of determining eligibility for point or cost considerations in the evaluation process.

1. "Women business enterprise" (WBE) as used in this policy means a business enterprise that meets all of the following criteria:
  - a. a business that is at least 51 percent owned by one or more women, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
  - b. a business whose management and daily business operations are controlled by one or more women.
  - c. a business which is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign-based business.
2. "Disabled veteran" as used in this policy is a United States military, naval, or air service veteran with at least 10 percent service-connected disability who is a resident of California.
3. "Disabled veteran business enterprise" (DVBE) as used in this policy means a business enterprise that meets all of the following criteria:
  - a. is a sole proprietorship or partnership of which at least 51 percent is owned by one or more disabled veterans or, in the case of a publicly owned business, at least 51 percent of its stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.

- b. the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
    - c. is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.
4. "Local business" as used in this policy means a company that has an ongoing business within geographical boundaries of SCAQMD at the time of bid or proposal submittal and performs 90% of the work related to the contract within the geographical boundaries of SCAQMD and satisfies the requirements of subparagraph H below. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points.
5. "Small business" as used in this policy means a business that meets the following criteria:
  - a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
    - A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or
    - A manufacturer with 100 or fewer employees.
  - b. Manufacturer means a business that is both of the following:
    - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
    - 2) Classified between Codes 311000 and 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.
6. "Joint ventures" as defined in this policy pertaining to certification means that one party to the joint venture is a DVBE or small business and owns at least 51 percent of the joint venture.
7. "Low-Emission Vehicle Business" as used in this policy means a company or contractor that uses low-emission vehicles in conducting deliveries to SCAQMD. Low-emission vehicles include vehicles powered by electric, compressed natural gas (CNG), liquefied natural gas (LNG), liquefied petroleum gas (LPG), ethanol, methanol, hydrogen and diesel retrofitted with particulate matter (PM) traps.

8. "Off-Peak Hours Delivery Business" as used in this policy means a company or contractor that commits to conducting deliveries to SCAQMD during off-peak traffic hours defined as between 10:00 a.m. and 3:00 p.m.
  9. "Benefits Incentive Business" as used in this policy means a company or contractor that provides janitorial, security guard or landscaping services to SCAQMD and commits to providing employee health benefits (as defined below in Section VIII.D.2.d) for full time workers with affordable deductible and co-payment terms.
  10. "Minority Business Enterprise" as used in this policy means a business that is at least 51 percent owned by one or more minority person(s), or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more or minority persons.
    - a. a business whose management and daily business operations are controlled by one or more minority persons.
    - b. a business which is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign-based business.
    - c. "Minority person" for purposes of this policy, means a Black American, Hispanic American, Native-American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian (including a person whose origins are from India, Pakistan, and Bangladesh), Asian-Pacific-American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, and Taiwan).
  11. "Most Favored Customer" as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.
  12. "Disadvantaged Business Enterprise" as used in this policy means a business that is an entity owned and/or controlled by a socially and economically disadvantaged individual(s) as described by Title X of the Clean Air Act Amendments of 1990 (42 U.S.C. 7601 note) (10% statute), and Public Law 102-389 (42 U.S.C. 4370d)(8% statute), respectively;
    - a Small Business Enterprise (SBE);
    - a Small Business in a Rural Area (SBRA);
    - a Labor Surplus Area Firm (LSAF); or
    - a Historically Underutilized Business (HUB) Zone Small Business Concern, or a concern under a successor program.
- C. Under Request for Quotations (RFQ), DVBEs, DVBE business joint ventures, small businesses, and small business joint ventures shall be granted a preference in an amount equal to 5% of the lowest cost responsive bid. Low-Emission Vehicle Businesses shall be granted a preference in an amount equal to 5 percent of the lowest cost responsive bid. Off-Peak Hours Delivery Businesses shall be granted a preference in an amount equal to 2

percent of the lowest cost responsive bid. Local businesses (if the procurement is not funded in whole or in part by federal grant funds) shall be granted a preference in an amount equal to 2% of the lowest cost responsive bid. Businesses offering Most Favored Customer status shall be granted a preference in an amount equal to 2 percent of the lowest cost responsive bid.

- D. Under Request for Proposals, DVBEs, DVBE joint ventures, small businesses, and small business joint ventures shall be awarded ten (10) points in the evaluation process. A non-DVBE or large business shall receive seven (7) points for subcontracting at least twenty-five (25%) of the total contract value to a DVBE and/or small business. Low-Emission Vehicle Businesses shall be awarded five (5) points in the evaluation process. On procurements which are not funded in whole or in part by federal grant funds local businesses shall receive five (5) points. Off-Peak Hours Delivery Businesses shall be awarded two (2) points in the evaluation process. Businesses offering Most Favored Customer status shall be awarded two (2) points in the evaluation process.
- E. SCAQMD will ensure that discrimination in the award and performance of contracts does not occur on the basis of race, color, sex, national origin, marital status, sexual preference, creed, ancestry, medical condition, or retaliation for having filed a discrimination complaint in the performance of SCAQMD contractual obligations.
- F. SCAQMD requires Contractor to be in compliance with all state and federal laws and regulations with respect to its employees throughout the term of any awarded contract, including state minimum wage laws and OSHA requirements.
- G. When contracts are funded in whole or in part by federal funds, and if subcontracts are to be let, the Contractor must comply with the following, evidencing a good faith effort to solicit disadvantaged businesses. Contractor shall submit a certification signed by an authorized official affirming its status as a MBE or WBE, as applicable, at the time of contract execution. SCAQMD reserves the right to request documentation demonstrating compliance with the following good faith efforts prior to contract execution.
  - 1. Ensure Disadvantaged Business Enterprises (DBEs) are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
  - 2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
  - 3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and Local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
  - 4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.

5. Using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.
  6. If the prime contractor awards subcontracts, require the prime contractor to take the above steps.
- H. To the extent that any conflict exists between this policy and any requirements imposed by federal and state law relating to participation in a contract by a certified MBE/WBE/DVBE as a condition of receipt of federal or state funds, the federal or state requirements shall prevail.
- I. When contracts are not funded in whole or in part by federal grant funds, a local business preference will be awarded. For such contracts that involve the purchase of commercial off-the-shelf products, local business preference will be given to suppliers or distributors of commercial off-the-shelf products who maintain an ongoing business within the geographical boundaries of SCAQMD. However, if the subject matter of the RFP or RFQ calls for the fabrication or manufacture of custom products, only companies performing 90% of the manufacturing or fabrication effort within the geographical boundaries of SCAQMD shall be entitled to the local business preference. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points.
- J. In compliance with federal fair share requirements set forth in 40 CFR Part 33, SCAQMD shall establish a fair share goal annually for expenditures with federal funds covered by its procurement policy.

## ATTACHMENT B



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • [www.aqmd.gov](http://www.aqmd.gov)

### **Business Information Request**

Dear SCAQMD Contractor/Supplier:

South Coast Air Quality Management District (SCAQMD) is committed to ensuring that our contractor/supplier records are current and accurate. If your firm is selected for award of a purchase order or contract, it is imperative that the information requested herein be supplied in a timely manner to facilitate payment of invoices. In order to process your payments, we need the enclosed information regarding your account. **Please review and complete the information identified on the following pages, remember to sign all documents for our files, and return them as soon as possible to the address below:**

**Attention: Accounts Payable, Accounting Department  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178**

If you do not return this information, we will not be able to establish you as a vendor. This will delay any payments and would still necessitate your submittal of the enclosed information to our Accounting department before payment could be initiated. Completion of this document and enclosed forms would ensure that your payments are processed timely and accurately.

If you have any questions or need assistance in completing this information, please contact Accounting at (909) 396-3777. We appreciate your cooperation in completing this necessary information.

Sincerely,

Sujata Jain  
Asst. Deputy Executive Officer  
Finance

DH:tm

Enclosures: Business Information Request  
Disadvantaged Business Certification  
W-9  
Form 590 Withholding Exemption Certificate  
Federal Contract Debarment Certification  
Campaign Contributions Disclosure  
Direct Deposit Authorization



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • [www.aqmd.gov](http://www.aqmd.gov)

## BUSINESS INFORMATION REQUEST

Business Name	
Division of	
Subsidiary of	
Website Address	
Type of Business <i>Check One:</i>	<input type="checkbox"/> Individual <input type="checkbox"/> DBA, Name _____, County Filed in _____ <input type="checkbox"/> Corporation, ID No. _____ <input type="checkbox"/> LLC/LLP, ID No. _____ <input type="checkbox"/> Other _____

## REMITTING ADDRESS INFORMATION

Address			
City/Town			
State/Province		Zip	
Phone	( ) - Ext	Fax	( ) -
Contact		Title	
E-mail Address			
Payment Name if Different			

All invoices must reference the corresponding Purchase Order Number(s)/Contract Number(s) if applicable and mailed to:

**Attention: Accounts Payable, Accounting Department  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178**

## BUSINESS STATUS CERTIFICATIONS

Federal guidance for utilization of disadvantaged business enterprises allows a vendor to be deemed a small business enterprise (SBE), minority business enterprise (MBE) or women business enterprise (WBE) if it meets the criteria below.

- is certified by the Small Business Administration or
- is certified by a state or federal agency or
- is an independent MBE(s) or WBE(s) business concern which is at least 51 percent owned and controlled by minority group member(s) who are citizens of the United States.

### Statements of certification:

As a prime contractor to SCAQMD, (name of business) will engage in good faith efforts to achieve the fair share in accordance with 40 CFR Section 33.301, and will follow the six affirmative steps listed below **for contracts or purchase orders funded in whole or in part by federal grants and contracts.**

1. Place qualified SBEs, MBEs, and WBEs on solicitation lists.
2. Assure that SBEs, MBEs, and WBEs are solicited whenever possible.
3. When economically feasible, divide total requirements into small tasks or quantities to permit greater participation by SBEs, MBEs, and WBEs.
4. Establish delivery schedules, if possible, to encourage participation by SBEs, MBEs, and WBEs.
5. Use services of Small Business Administration, Minority Business Development Agency of the Department of Commerce, and/or any agency authorized as a clearinghouse for SBEs, MBEs, and WBEs.
6. If subcontracts are to be let, take the above affirmative steps.

### **Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with SCAQMD Procurement Policy and Procedure:**

Check all that apply:

- |   |  |
|---|--|
| <input type="checkbox"/> Small Business Enterprise/Small Business Joint Venture | <input type="checkbox"/> Women-owned Business Enterprise                               |
| <input type="checkbox"/> Local business   | <input type="checkbox"/> Disabled Veteran-owned Business Enterprise/DVBE Joint Venture |
| <input type="checkbox"/> Minority-owned Business Enterprise                     | <input type="checkbox"/> Most Favored Customer Pricing Certification                   |

Percent of ownership: \_\_\_\_\_ %

Name of Qualifying Owner(s): \_\_\_\_\_

**State of California Public Works Contractor Registration No. \_\_\_\_\_ . MUST BE INCLUDED IF BID PROPOSAL IS FOR PUBLIC WORKS PROJECT.**

I, the undersigned, hereby declare that to the best of my knowledge the above information is accurate. Upon penalty of perjury, I certify information submitted is factual.

\_\_\_\_\_  
*NAME*

\_\_\_\_\_  
*TITLE*

\_\_\_\_\_  
*TELEPHONE NUMBER*

\_\_\_\_\_  
*DATE*

## Definitions

**Disabled Veteran-Owned Business Enterprise** means a business that meets all of the following criteria:

- is a sole proprietorship or partnership of which is at least 51 percent owned by one or more disabled veterans, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
- the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
- is a sole proprietorship, corporation, partnership, or joint venture with its primary headquarters office located in the United States and which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.

**Joint Venture** means that one party to the joint venture is a DVBE and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that DVBE will receive at least 51 percent of the project dollars.

**Local Business** means a business that meets all of the following criteria:

- has an ongoing business within the boundary of SCAQMD at the time of bid application.
- performs 90 percent of the work within SCAQMD's jurisdiction.

**Minority-Owned Business Enterprise** means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more minority persons or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more minority persons.
- is a business whose management and daily business operations are controlled or owned by one or more minority person.
- is a business which is a sole proprietorship, corporation, partnership, joint venture, an association, or a cooperative with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

“Minority” person means a Black American, Hispanic American, Native American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian American (including a person whose origins are from India, Pakistan, or Bangladesh), Asian-Pacific American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, or Taiwan).

**Small Business Enterprise** means a business that meets the following criteria:

- a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
  - **A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or**
  - A manufacturer with 100 or fewer employees.
- b. Manufacturer means a business that is both of the following:
  - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
  - 2) Classified between Codes 311000 to 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.

**Small Business Joint Venture** means that one party to the joint venture is a Small Business and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that the Small Business will receive at least 51 percent of the project dollars.

**Women-Owned Business Enterprise** means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more women or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
- is a business whose management and daily business operations are controlled or owned by one or more women.
- is a business which is a sole proprietorship, corporation, partnership, or a joint venture, with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

**Most Favored Customer** as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.

## Request for Taxpayer Identification Number and Certification

▶ Go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9) for instructions and the latest information.

Give Form to the  
requester. Do not  
send to the IRS.

Print or type. See Specific Instructions on page 3.	<p><b>1</b> Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.</p> <hr/> <p><b>2</b> Business name/disregarded entity name, if different from above</p> <hr/> <p><b>3</b> Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only <b>one</b> of the following seven boxes.</p> <p> <input type="checkbox"/> Individual/sole proprietor or single-member LLC                 <input type="checkbox"/> C Corporation                 <input type="checkbox"/> S Corporation                 <input type="checkbox"/> Partnership                 <input type="checkbox"/> Trust/estate  <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____  <b>Note:</b> Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is <b>not</b> disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.  <input type="checkbox"/> Other (see instructions) ▶ _____         </p>	<p><b>4</b> Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):</p> <p>Exempt payee code (if any) _____</p> <p>Exemption from FATCA reporting code (if any) _____</p> <p><small>(Applies to accounts maintained outside the U.S.)</small></p>
	<p><b>5</b> Address (number, street, and apt. or suite no.) See instructions.</p> <hr/> <p><b>6</b> City, state, and ZIP code</p> <hr/> <p><b>7</b> List account number(s) here (optional)</p>	<p>Requester's name and address (optional)</p> <hr/> <hr/>

### Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

**Note:** If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

<b>Social security number</b>					
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; border: 1px solid black; height: 20px;"></td> <td style="width: 5%; text-align: center;">-</td> <td style="width: 25%; border: 1px solid black; height: 20px;"></td> <td style="width: 5%; text-align: center;">-</td> <td style="width: 40%; border: 1px solid black; height: 20px;"></td> </tr> </table>		-		-	
	-		-		
<b>OR</b>					
<b>Employer identification number</b>					
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; border: 1px solid black; height: 20px;"></td> <td style="width: 5%; text-align: center;">-</td> <td style="width: 90%; border: 1px solid black; height: 20px;"></td> </tr> </table>		-			
	-				

### Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

<b>Sign Here</b>	Signature of U.S. person ▶	Date ▶
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### General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

**Future developments.** For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9).

### Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

*If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.*

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting*, later, for further information.

**Note:** If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

**Foreign person.** If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*).

**Nonresident alien who becomes a resident alien.** Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

**Example.** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

## Backup Withholding

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

**Payments you receive will be subject to backup withholding if:**

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the instructions for Part II for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

## What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

## Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

## Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

## Specific Instructions

### Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

**Note: ITIN applicant:** Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

### Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

### Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

### Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

#### Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 <sup>1</sup>	Generally, exempt payees 1 through 5 <sup>2</sup>
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

<sup>1</sup> See Form 1099-MISC, Miscellaneous Income, and its instructions.

<sup>2</sup> However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

**Exemption from FATCA reporting code.** The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

**Note:** You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

## Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

## Line 6

Enter your city, state, and ZIP code.

## Part I. Taxpayer Identification Number (TIN)

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

**Note:** See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at [www.SSA.gov](http://www.SSA.gov). You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at [www.irs.gov/Businesses](http://www.irs.gov/Businesses) and clicking on Employer Identification Number (EIN) under Starting a Business. Go to [www.irs.gov/Forms](http://www.irs.gov/Forms) to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to [www.irs.gov/OrderForms](http://www.irs.gov/OrderForms) to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note:** Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

## Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

**Signature requirements.** Complete the certification as indicated in items 1 through 5 below.

**1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.** You must give your correct TIN, but you do not have to sign the certification.

**2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.** You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

**3. Real estate transactions.** You must sign the certification. You may cross out item 2 of the certification.

**4. Other payments.** You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

**5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions.** You must give your correct TIN, but you do not have to sign the certification.

### What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account <sup>1</sup>
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor <sup>2</sup>
5. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee <sup>1</sup> The actual owner <sup>1</sup>
6. Sole proprietorship or disregarded entity owned by an individual	The owner <sup>3</sup>
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	Give name and EIN of:
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity <sup>4</sup>
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee

For this type of account:	Give name and EIN of:
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

<sup>1</sup> List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

<sup>2</sup> Circle the minor's name and furnish the minor's SSN.

<sup>3</sup> You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

<sup>4</sup> List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

\*Note: The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

### Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

**Protect yourself from suspicious emails or phishing schemes.** Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to [phishing@irs.gov](mailto:phishing@irs.gov). You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at [spam@uce.gov](mailto:spam@uce.gov) or report them at [www.ftc.gov/complaint](http://www.ftc.gov/complaint). You can contact the FTC at [www.ftc.gov/idtheft](http://www.ftc.gov/idtheft) or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see [www.IdentityTheft.gov](http://www.IdentityTheft.gov) and Pub. 5027.

Visit [www.irs.gov/IdentityTheft](http://www.irs.gov/IdentityTheft) to learn more about identity theft and how to reduce your risk.

## Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

# 2018 Withholding Exemption Certificate

590

The payee completes this form and submits it to the withholding agent. The withholding agent keeps this form with their records.

**Withholding Agent Information**

Name \_\_\_\_\_

**Payee Information**

Name \_\_\_\_\_

SSN or ITIN  FEIN  CA Corp no.  CA SOS file no.

Address (apt./sta., room, PO box, or PMB no.) \_\_\_\_\_

City (if you have a foreign address, see instructions.) \_\_\_\_\_

State \_\_\_\_\_ ZIP code \_\_\_\_\_

**Exemption Reason**

**Check only one box.**

By checking the appropriate box below, the payee certifies the reason for the exemption from the California income tax withholding requirements on payment(s) made to the entity or individual.

- Individuals — Certification of Residency:**  
I am a resident of California and I reside at the address shown above. If I become a nonresident at any time, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.
- Corporations:**  
The corporation has a permanent place of business in California at the address shown above or is qualified through the California Secretary of State (SOS) to do business in California. The corporation will file a California tax return. If this corporation ceases to do any of the above, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.
- Partnerships or Limited Liability Companies (LLCs):**  
The partnership or LLC has a permanent place of business in California at the address shown above or is registered with the California SOS, and is subject to the laws of California. The partnership or LLC will file a California tax return. If the partnership or LLC ceases to do any of the above, I will promptly inform the withholding agent. For withholding purposes, a limited liability partnership (LLP) is treated like any other partnership.
- Tax-Exempt Entities:**  
The entity is exempt from tax under California Revenue and Taxation Code (R&TC) Section 23701 \_\_\_\_\_ (insert letter) or Internal Revenue Code Section 501(c) \_\_\_\_\_ (insert number). If this entity ceases to be exempt from tax, I will promptly notify the withholding agent. Individuals cannot be tax-exempt entities.
- Insurance Companies, Individual Retirement Arrangements (IRAs), or Qualified Pension/Profit-Sharing Plans:**  
The entity is an insurance company, IRA, or a federally qualified pension or profit-sharing plan.
- California Trusts:**  
At least one trustee and one noncontingent beneficiary of the above-named trust is a California resident. The trust will file a California fiduciary tax return. If the trustee or noncontingent beneficiary becomes a nonresident at any time, I will promptly notify the withholding agent.
- Estates — Certification of Residency of Deceased Person:**  
I am the executor of the above-named person's estate or trust. The decedent was a California resident at the time of death. The estate will file a California fiduciary tax return.
- Nonmilitary Spouse of a Military Servicemember:**  
I am a nonmilitary spouse of a military servicemember and I meet the Military Spouse Residency Relief Act (MSRRA) requirements. See instructions for General Information E, MSRRA.

**CERTIFICATE OF PAYEE:** Payee must complete and sign below.

To learn about your privacy rights, how we may use your information, and the consequences for not providing the requested information, go to [ftb.ca.gov/forms](http://ftb.ca.gov/forms) and search for 1131. To request this notice by mail, call 800.852.5711.

Under penalties of perjury, I declare that I have examined the information on this form, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. I further declare under penalties of perjury that if the facts upon which this form are based change, I will promptly notify the withholding agent.

Type or print payee's name and title \_\_\_\_\_ Telephone (\_\_\_\_) \_\_\_\_\_

Payee's signature ► \_\_\_\_\_ Date \_\_\_\_\_

# 2017 Instructions for Form 590

## Withholding Exemption Certificate

References in these instructions are to the California Revenue and Taxation Code (R&TC).

### General Information

**Registered Domestic Partners (RDP)** – For purposes of California income tax, references to a spouse, husband, or wife also refer to a Registered Domestic Partner (RDP) unless otherwise specified. For more information on RDPs, get FTB Pub. 737, Tax Information for Registered Domestic Partners.

### A Purpose

Use Form 590, Withholding Exemption Certificate, to certify an exemption from nonresident withholding.

Form 590 does not apply to payments of backup withholding. For more information, go to [ftb.ca.gov](http://ftb.ca.gov) and search for **backup withholding**.

Form 590 does not apply to payments for wages to employees. Wage withholding is administered by the California Employment Development Department (EDD). For more information, go to [edd.ca.gov](http://edd.ca.gov) or call 888.745.3886.

**Do not** use Form 590 to certify an exemption from withholding if you are a **Seller of California real estate**. Sellers of California real estate use Form 593-C, Real Estate Withholding Certificate, to claim an exemption from the real estate withholding requirement.

**The following are excluded from withholding and completing this form:**

- The United States and any of its agencies or instrumentalities.
- A state, a possession of the United States, the District of Columbia, or any of its political subdivisions or instrumentalities.
- A foreign government or any of its political subdivisions, agencies, or instrumentalities.

### B Income Subject to Withholding

California Revenue and Taxation Code (R&TC) Section 18662 requires withholding of income or franchise tax on payments of California source income made to nonresidents of California.

Withholding is required on the following, but is not limited to:

- Payments to nonresidents for services rendered in California.
- Distributions of California source income made to domestic nonresident partners, members, and S corporation shareholders and allocations of California source income made to foreign partners and members.
- Payments to nonresidents for rents if the payments are made in the course of the withholding agent's business.
- Payments to nonresidents for royalties from activities sourced to California.

- Distributions of California source income to nonresident beneficiaries from an estate or trust.
- Endorsement payments received for services performed in California.
- Prizes and winnings received by nonresidents for contests in California.

However, withholding is optional if the total payments of California source income are \$1,500 or less during the calendar year.

For more information on withholding get FTB Pub. 1017, Resident and Nonresident Withholding Guidelines. To get a withholding publication, see Additional Information.

### C Who Certifies this Form

Form 590 is certified by the payee. California residents or entities exempt from the withholding requirement should complete Form 590 and submit it to the withholding agent before payment is made. The withholding agent is then relieved of the withholding requirements if the agent relies in good faith on a completed and signed Form 590 unless notified by the Franchise Tax Board (FTB) that the form should not be relied upon.

An incomplete certificate is invalid and the withholding agent should not accept it. If the withholding agent receives an incomplete certificate, the withholding agent is required to withhold tax on payments made to the payee until a valid certificate is received. In lieu of a completed exemption certificate, the withholding agent may accept a letter from the payee as a substitute explaining why they are not subject to withholding. The letter must contain all the information required on the certificate in similar language, including the under penalty of perjury statement and the payee's taxpayer identification number (TIN). The withholding agent must retain a copy of the certificate or substitute for at least five years after the last payment to which the certificate applies, and provide it upon request to the FTB.

If an entertainer (or the entertainer's business entity) is paid for a performance, the entertainer's information must be provided. **Do not** submit the entertainer's agent or promoter information.

The grantor of a grantor trust shall be treated as the payee for withholding purposes. Therefore, if the payee is a grantor trust and one or more of the grantors is a nonresident, withholding is required. If all of the grantors on the trust are residents, no withholding is required. Resident grantors can check the box on Form 590 labeled "Individuals — Certification of Residency."

### D Definitions

For California nonwage withholding purposes, **nonresident** includes all of the following:

- Individuals who are not residents of California.
- Corporations not qualified through the California Secretary of State (CA SOS) to do business in California or having no permanent place of business in California.
- Partnerships or limited liability companies (LLCs) with no permanent place of business in California.
- Any trust without a resident grantor, beneficiary, or trustee, or estates where the decedent was not a California resident.

Foreign refers to non-U.S.

For more information about determining resident status, get FTB Pub. 1031, Guidelines for Determining Resident Status. Military servicemembers have special rules for residency. For more information, get FTB Pub. 1032, Tax Information for Military Personnel.

### Permanent Place of Business:

A corporation has a permanent place of business in California if it is organized and existing under the laws of California or it has qualified through the CA SOS to transact intrastate business. A corporation that has not qualified to transact intrastate business (e.g., a corporation engaged exclusively in interstate commerce) will be considered as having a permanent place of business in California only if it maintains a permanent office in California that is permanently staffed by its employees.

### E Military Spouse Residency Relief Act (MSRRA)

Generally, for tax purposes you are considered to maintain your existing residence or domicile. If a military servicemember and nonmilitary spouse have the same state of domicile, the MSRRA provides:

- A spouse shall not be deemed to have lost a residence or domicile in any state solely by reason of being absent to be with the servicemember serving in compliance with military orders.
- A spouse shall not be deemed to have acquired a residence or domicile in any other state solely by reason of being there to be with the servicemember serving in compliance with military orders.

**Domicile** is defined as the one place:

- Where you maintain a true, fixed, and permanent home.
- To which you intend to return whenever you are absent.

A military servicemember's nonmilitary spouse is considered a nonresident for tax purposes if the servicemember and spouse have the same domicile outside of California and the spouse is in California solely to be with the servicemember who is serving in compliance with Permanent Change of Station orders.

California may require nonmilitary spouses of military servicemembers to provide proof that they meet the criteria for California personal income tax exemption as set forth in the MSRRA.

Income of a military servicemember's nonmilitary spouse for services performed in California is not California source income subject to state tax if the spouse is in California to be with the servicemember serving in compliance with military orders, and the servicemember and spouse have the same domicile in a state other than California.

For additional information or assistance in determining whether the applicant meets the MSRRA requirements, get FTB Pub. 1032.

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## Specific Instructions

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### Payee Instructions

Enter the withholding agent's name.

Enter the payee's information, including the TIN and check the appropriate TIN box.

You must provide a valid TIN as requested on this form. The following are acceptable TINs: social security number (SSN); individual taxpayer identification number (ITIN); federal employer identification number (FEIN); California corporation number (CA Corp no.); or CA SOS file number.

**Private Mail Box (PMB)** – Include the PMB in the address field. Write "PMB" first, then the box number. Example: 111 Main Street PMB 123.

**Foreign Address** – Follow the country's practice for entering the city, county, province, state, country, and postal code, as applicable, in the appropriate boxes. **Do not** abbreviate the country name.

**Exemption Reason** – Check the box that reflects the reason why the payee is exempt from the California income tax withholding requirement.

### Withholding Agent Instructions

**Do not** send this form to the FTB. The withholding agent retains this form for a minimum of five years or until the payee's status changes, and must provide this form to the FTB upon request.

The payee must notify the withholding agent if any of the following situations occur:

- The individual payee becomes a nonresident.
- The corporation ceases to have a permanent place of business in California or ceases to be qualified to do business in California.

- The partnership ceases to have a permanent place of business in California.
- The LLC ceases to have a permanent place of business in California.
- The tax-exempt entity loses its tax-exempt status.

If any of these situations occur, then withholding may be required. For more information, get Form 592, Resident and Nonresident Withholding Statement, Form 592-B, Resident and Nonresident Withholding Tax Statement, and Form 592-V, Payment Voucher for Resident and Nonresident Withholding.

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## Additional Information

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**Website:** For more information go to [ftb.ca.gov](http://ftb.ca.gov) and search for **nonwage**.  
**MyFTB** offers secure online tax account information and services. For more information and to register, go to [ftb.ca.gov](http://ftb.ca.gov) and search for **myftb**.

**Telephone:** 888.792.4900 or 916.845.4900, Withholding Services and Compliance phone service

**Fax:** 916.845.9512

**Mail:** WITHHOLDING SERVICES AND COMPLIANCE MS F182  
FRANCHISE TAX BOARD  
PO BOX 942867  
SACRAMENTO CA 94267-0651

For questions unrelated to withholding, or to download, view, and print California tax forms and publications, or to access the TTY/TDD numbers, see the information below.

### Internet and Telephone Assistance

**Website:** [ftb.ca.gov](http://ftb.ca.gov)

**Telephone:** 800.852.5711 from within the United States  
916.845.6500 from outside the United States

**TTY/TDD:** 800.822.6268 for persons with hearing or speech impairments

### Asistencia Por Internet y Teléfono

**Sitio web:** [ftb.ca.gov](http://ftb.ca.gov)

**Teléfono:** 800.852.5711 dentro de los Estados Unidos  
916.845.6500 fuera de los Estados Unidos

**TTY/TDD:** 800.822.6268 para personas con discapacidades auditivas o de habla

## **Certification Regarding Debarment, Suspension, and Other Responsibility Matters**

The prospective participant certifies to the best of its knowledge and belief that it and the principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgement rendered against them or commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statute or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

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Typed Name & Title of Authorized Representative

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Signature of Authorized Representative Date

I am unable to certify to the above statements. My explanation is attached.

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## CAMPAIGN CONTRIBUTIONS DISCLOSURE

In accordance with California law, bidders and contracting parties are required to disclose, at the time the application is filed, information relating to any campaign contributions made to South Coast Air Quality Management District (SCAQMD) Board Members or members/alternates of the MSRC, including: the name of the party making the contribution (which includes any parent, subsidiary or otherwise related business entity, as defined below), the amount of the contribution, and the date the contribution was made. 2 C.C.R. §18438.8(b).

California law prohibits a party, or an agent, from making campaign contributions to SCAQMD Governing Board Members or members/alternates of the Mobile Source Air Pollution Reduction Review Committee (MSRC) of more than \$250 while their contract or permit is pending before SCAQMD; and further prohibits a campaign contribution from being made for three (3) months following the date of the final decision by the Governing Board or the MSRC on a donor's contract or permit. Gov't Code §84308(d). For purposes of reaching the \$250 limit, the campaign contributions of the bidder or contractor plus contributions by its parents, affiliates, and related companies of the contractor or bidder are added together. 2 C.C.R. §18438.5.

In addition, SCAQMD Board Members or members/alternates of the MSRC must abstain from voting on a contract or permit if they have received a campaign contribution from a party or participant to the proceeding, or agent, totaling more than \$250 in the 12-month period prior to the consideration of the item by the Governing Board or the MSRC. Gov't Code §84308(c).

The list of current SCAQMD Governing Board Members can be found at SCAQMD website ([www.aqmd.gov](http://www.aqmd.gov)). The list of current MSRC members/alternates can be found at the MSRC website (<http://www.cleantransportationfunding.org>).

### **SECTION I.**

**Contractor (Legal Name):** \_\_\_\_\_

DBA, Name _____, County Filed in _____ Corporation, ID No. _____ LLC/LLP, ID No. _____
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**List any parent, subsidiaries, or otherwise affiliated business entities of Contractor:**  
*(See definition below).*

\_\_\_\_\_  
\_\_\_\_\_

### **SECTION II.**

Has Contractor and/or any parent, subsidiary, or affiliated company, or agent thereof, made a campaign contribution(s) totaling \$250 or more in the aggregate to a current member of the South Coast Air Quality Management Governing Board or member/alternate of the MSRC in the 12 months preceding the date of execution of this disclosure?

Yes     No    **If YES, complete Section II below and then sign and date the form. If NO, sign and date below. Include this form with your submittal.**

**Campaign Contributions Disclosure, continued:**

Name of Contributor \_\_\_\_\_

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
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Name of Contributor \_\_\_\_\_

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
---	------------------------	----------------------

Name of Contributor \_\_\_\_\_

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
---	------------------------	----------------------

Name of Contributor \_\_\_\_\_

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
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**I declare the foregoing disclosures to be true and correct.**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**DEFINITIONS**

Parent, Subsidiary, or Otherwise Related Business Entity (2 Cal. Code of Regs., §18703.1(d).)

- (1) Parent subsidiary. A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing more than 50 percent of the voting power of another corporation.
- (2) Otherwise related business entity. Business entities, including corporations, partnerships, joint ventures and any other organizations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if any one of the following three tests is met:
  - (A) One business entity has a controlling ownership interest in the other business entity.
  - (B) There is shared management and control between the entities. In determining whether there is shared management and control, consideration should be given to the following factors:
    - (i) The same person or substantially the same person owns and manages the two entities;
    - (ii) There are common or commingled funds or assets;
    - (iii) The business entities share the use of the same offices or employees, or otherwise share activities, resources or personnel on a regular basis;
    - (iv) There is otherwise a regular and close working relationship between the entities; or
  - (C) A controlling owner (50% or greater interest as a shareholder or as a general partner) in one entity also is a controlling owner in the other entity.



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • [www.aqmd.gov](http://www.aqmd.gov)

## Direct Deposit Authorization

### STEP 1: Please check all the appropriate boxes

- |  |  |
|--|--|
| <input type="checkbox"/> Individual (Employee, Governing Board Member) | <input type="checkbox"/> New Request           |
| <input type="checkbox"/> Vendor/Contractor                             | <input type="checkbox"/> Cancel Direct Deposit |
| <input type="checkbox"/> Changed Information                           |  |

### STEP 2: Payee Information

Last Name		First Name		Middle Initial	Title
Vendor/Contractor Business Name (if applicable)					
Address				Apartment or P.O. Box Number	
City		State	Zip	Country	
Taxpayer ID Number		Telephone Number		Email Address	

### Authorization

- I authorize South Coast Air Quality Management District (SCAQMD) to direct deposit funds to my account in the financial institution as indicated below. I understand that the authorization may be rejected or discontinued by SCAQMD at any time. If any of the above information changes, I will promptly complete a new authorization agreement. If the direct deposit is not stopped before closing an account, funds payable to me will be returned to SCAQMD for distribution. This will delay my payment.
- This authorization remains in effect until SCAQMD receives written notification of changes or cancellation from you.
- I hereby release and hold harmless SCAQMD for any claims or liability to pay for any losses or costs related to insufficient fund transactions that result from failure within the Automated Clearing House network to correctly and timely deposit monies into my account.

### STEP 3:

You must verify that your bank is a member of an Automated Clearing House (ACH). Failure to do so could delay the processing of your payment. You must attach a voided check or have your bank complete the bank information and the account holder must sign below.

### To be Completed by your Bank

<b>Staple Voided Check Here</b>	Name of Bank/Institution		
	Account Holder Name(s)		
	<input type="checkbox"/> Saving <input type="checkbox"/> Checking	Account Number	Routing Number
	Bank Representative Printed Name	Bank Representative Signature	Date
	ACCOUNT HOLDER SIGNATURE:		Date

For SCAQMD Use Only

Input By \_\_\_\_\_

Date \_\_\_\_\_

[↑ Back to Agenda](#)

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 9

**PROPOSAL:** Execute Contract for Operation of Diamond Bar Headquarters Cafeteria

**SYNOPSIS:** The current contract for operation of the Diamond Bar headquarters cafeteria expires December 31, 2018. On June 1, 2018, the Board approved release of an RFP to solicit proposals from food service management firms interested in providing these services for the next three-year period. This action is to execute a no-cost contract with California Dining Services from January 1, 2019 to December 31, 2021.

**COMMITTEE:** Administrative, November 9, 2018; Recommended for Approval

**RECOMMENDED ACTION:**

Authorize the Chairman to execute a three-year contract with California Dining Services from January 1, 2019 through December 31, 2021 to operate the Diamond Bar headquarters cafeteria, with an option to extend the contract for up to two additional years.

Wayne Nastri  
Executive Officer

AJO:GT:lm

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**Background**

SCAQMD currently contracts with California Dining Services to provide quality food services at reasonable prices to meet agency needs. Cafeteria services are used on a regular basis by employees, those doing business and attending meetings at SCAQMD, tenants within the building, and members of the public. The cafeteria also provides catering services for onsite meetings and special events.

The current contract with California Dining Services expires December 31, 2018. On June 1, 2018, the Board approved release of RFP #2018-12 to solicit proposals from cafeteria management firms interested in operating the Diamond Bar headquarters cafeteria for the next three-year period, from January 1, 2019 through December 31, 2021.

## **Outreach**

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFP and inviting bids was published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may have been notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the RFP has been emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<http://www.aqmd.gov>).

## **Proposal Evaluation**

Twenty copies of the RFP were mailed out and three vendors attended the mandatory bidders conference held on July 18, 2018. Two proposals were received by the closing date on August 16, 2018 at 2:00 p.m.

The panel evaluating proposals included four SCAQMD employees: a Business Services Manager, Building Services Supervisor, Clerk of the Boards, and Senior Administrative Secretary. Of these four panel members, two are Caucasian, one is Hispanic, and one is Asian American; three are female and one is male.

After reviewing proposals and conducting site visits, panel members rated proposals according to the criteria specified in the RFP, which include: quality of food service based on site visit to a contracted-operated facility; management and food service experience of proposed staff; food service management experience similar in nature and scope; commitment to environmentally sustainable practices in operating the cafeteria; and strategies and incentives to encourage patrons to make both environmentally sensitive and healthy choices. Staff recommends awarding a three-year contract, with the option for up to two additional years, to the firm receiving the highest rating by the evaluation panel, California Dining Services. A summary of the rating is attached.

## **Resource Impacts**

This is a no-cost contract. The cafeteria management firm generates its own revenue to cover its operating costs. SCAQMD will provide the cafeteria operator with a "turn-key" operation, completely equipped and ready to operate, together with heat, refrigeration, equipment and utility services as may be reasonably required for the efficient operation of the cafeteria.

## **Attachment**

RFP #2018-12 Bid Evaluation Summary

# ATTACHMENT

## Bid Evaluation Summary RFP #2018-12- SCAQMD CAFETERIA OPERATION

<b>CONTRACTOR</b>	<b>Summary of Points</b>	<b>Additional Points</b>	<b>Total Points</b>
California Dining Services	90	15	105
Food Systems, Inc.	85	15	100

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 10

**PROPOSAL:** Transfer and Appropriate Funds, Recognize Revenue, Approve Positions, Issue Solicitations and Purchase Orders, and Execute Contracts and Agreements for Mid-Year Budget Adjustments, AB 617 Implementation, Volkswagen Mitigation Projects, and China Partnership for Cleaner Shipping; and Amend Salary Resolution

**SYNOPSIS:** Additional resources of \$4,247,302 are needed in the FY 2018-19 Budget to enable the implementation of critical projects and programs. In addition, SCAQMD is expected to receive up to \$20,000,000 for AB 617 implementation. These actions are to: (1) Appropriate \$3,611,776 from the Undesignated (Unassigned) Fund Balance as a budget restoration measure; (2) Appropriate an additional \$635,526 from the Undesignated (Unassigned) Fund Balance into the FY 2018-19 General Fund Budget for several key projects; (3) Recognize revenue up to \$20,000,000 for AB 617 into the General Fund and appropriate \$10,211,076 into the FY 2018-19 and/or 2019-20 General Fund Budgets; (4) Transfer \$421,390 from the Volkswagen (VW) Mitigation Fund (79) to the General Fund and appropriate \$421,390 for administrative costs into the FY 2018-19 Budget; (5) Approve the addition, reassignment and upgrade of positions for AB 617, VW Mitigation projects, and China Partnership for Cleaner Shipping; (6) Issue solicitations and purchase orders and execute contracts for Mid-Year Budget Adjustments, AB 617, VW Mitigation projects, and the China Partnership for Cleaner Shipping; (7) Authorize the Executive Officer to enter into a Bailment Agreement with the National Park Service; and (8) Amend the Salary Resolution to revise the Assistant Deputy Executive Officer class title.

**COMMITTEE:** Administrative, November 9, 2018; Recommended for Approval

**RECOMMENDED ACTIONS:**

1. Appropriate \$3,611,776 from the Undesignated (Unassigned) Fund Balance to the FY 2018-19 General Fund Budget as listed in Tables 1 & 2;
2. Appropriate \$635,526 from the Undesignated (Unassigned) Fund Balance to the FY 2018-19 General Fund Budgets as listed in Table 3;

3. Recognize revenue up to \$20,000,000 upon receipt from CARB into the General Fund and appropriate \$10,211,076 into the FY 2018-19 and/or FY 2019-20 General Fund Budgets, for AB 617 expenditures as listed in Tables 5-8;
4. Approve the addition of 47 new positions, a 0.5 position reassignment, and five position upgrades for AB 617 as listed in Table 4;
5. Approve the addition of five positions for VW Mitigation projects as listed in Table 9 and transfer and appropriate funds in an amount not to exceed \$421,390 as listed in Table 10 from the VW Mitigation Fund (79) to the FY 2018-19 General Fund Budget for the implementation of VW Mitigation projects;
6. Authorize the Executive Officer to issue solicitations and, based on results, issue purchase orders and execute contracts in accordance with SCAQMD Procurement Policy and Procedure for items listed in Tables 2-3 and 6-8;
7. Authorize the Executive Office to enter into a Bailment Agreement with the National Park Service for the use of a Proton Transfer Mass Spectrometer; and
8. Adopt the attached Resolution amending Article 7 of the SCAQMD *Salary Resolution* to revise the Assistant Deputy Executive Officer class title to include Chief Information Officer.

Wayne Nastri  
Executive Officer

JW:MM:SJ

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## **Background**

This Board letter addresses a mid-year budget adjustment, resource requests related to implementing AB 617 and resource needs related to the VW Mitigation Projects.

### Mid-Year Budget Adjustment

During the FY 2018-19 Annual Budget review process, the Board directed staff to reduce budgeted expenditures in order to achieve a balanced budget. Thus, total expenditures of \$3,611,776 were removed from the proposed FY 2018-19 budget with the understanding that the reductions could be restored if necessary as a mid-year FY 2018-19 budget adjustment dependent on the year-end FY 2017-18 financial results. The reductions included \$1,389,276 in Salaries and Employee Benefits (vacancy rate increased by 1%), \$1,100,000 in Services and Supplies, and \$1,122,500 in Capital Outlays. SCAQMD ended FY 2017-18 with revenues exceeding expenses by \$8.8M (unaudited), \$11.7M over the FY 2017-18 Adopted Budget and \$14.3M over the FY 2017-18 Amended Budget. In addition, since the FY 2018-19 Budget was adopted, several key projects with budget needs have been identified, including the China Partnership for Cleaner Shipping, fleet vehicle replacement, and Board Member committee assignments. Staff is also recommending changing the title of Assistant Deputy Executive Officer in the Information Management Division to Assistant Deputy Executive Officer/Chief Information Officer, with no fiscal impact.

### AB 617 Implementation

Major elements of AB 617 include: accelerated BARCT rulemaking, statewide consistent emission reporting, air monitoring in communities, and community emission reduction plans.

In January 2018, the Board approved 36.5 new positions, \$400,000 for contracts, \$865,000 for capital outlays, and \$1,460,000 for other services and supplies for initial work for AB 617, based on first-year AB 617 funding for SCAQMD.

SCAQMD is expected to receive \$20 million this year as our portion of the state funding as the community monitoring and emission reduction plan elements begin. Additional resources are needed to fulfill these requirements. In July, the Board approved a list of four communities to forward to CARB for their consideration for first-year AB 617 communities. In September, the CARB Board selected 10 communities statewide for emission monitoring and/or community emission reduction plans, including three communities for South Coast.

The three communities are: Wilmington/West Long Beach/Carson; East Los Angeles Neighborhoods/Boyle Heights/West Commerce; and Muscoy/San Bernardino. The fourth community recommended by SCAQMD – South Gate/Huntington Park/Florence-Firestone/Walnut Park – was not selected for year one, but will be considered for next year. All three of the first-year AB 617 communities will have emission monitoring and community emission reduction plans. Steering committees are being formed for each area, and their input will help shape the nature and scope of these efforts.

By July 1, 2019, air districts must put monitoring systems in place, and have a mechanism to send data to the CARB website. AB 617 also requires community emission reduction programs based on monitoring and other data. Within one year, air districts must adopt a community emissions reduction program. It is envisioned that efforts in each community will take several years to complete. Additional communities are expected to be added each year, which will require monitoring and/or emission reduction programs in those areas, as well. Additional resources will be needed in the future as new communities are added.

Rule development is underway for BARCT for sources in the state greenhouse gas program, which accelerates many of the SCAQMD rulemaking activities to transition RECLAIM to a command-and-control regulatory structure. Under AB 617, BARCT must be implemented by December 31, 2023.

Another area where staff is working closely with CARB and other air districts is the mandate to improve the consistency of statewide emission reporting. Staff anticipates that this will involve changes to SCAQMD's Annual Emissions Reporting program, data collection and transmission to CARB, with a significant increase in workload. CARB is proposing to require extensive annual reporting of criteria and toxic emissions

from all facilities with a district permit in each AB 617 community. This will likely more than double the number of facilities that currently report emissions to the SCAQMD, and include smaller businesses that will need help understanding and complying with the new requirements.

### VW Mitigation Projects

On May 25, 2018, CARB approved the Beneficiary Mitigation Plan for the VW Environmental Mitigation Trust. This plan identifies five funding categories that are intended to mitigate the excess NOx emissions caused by VW vehicles. SCAQMD has been identified by CARB as the administrator of two project funding categories: Zero Emission Class 8 Freight and Port Drayage Trucks; and Combustion Freight and Marine Projects. Funding allocations for these two project categories are \$90 million and \$60 million, respectively, for a total of \$150 million, including ten percent for administrative costs.

## **Proposal**

### Mid-Year Budget Adjustment

Staff is seeking Board approval for a total appropriation of \$4,247,302 from the Undesignated (Unassigned) Fund Balance to the FY 2018-19 General Fund Budget. These actions will restore expenditure reductions of \$1,389,276 in Salaries and Employee Benefits, \$1,100,000 in Services and Supplies, and \$1,122,500 in Capital Outlays, as listed in Tables 1 & 2, which were made as part of the \$3,611,766 reduction to balance the FY 2018-19 Budget. Staff is also seeking Board approval to appropriate \$635,526 from the Undesignated (Unassigned) Fund Balance to the FY 2018-19 General Fund Budget as listed in Table 3. These actions will provide the necessary funding of \$36,500 to compensate Board Members for additional committee assignments, and \$310,000 to replace 10 fleet vehicles that have over 150,000 miles, as well as provide \$189,026 in Salaries and Employee Benefits for two staff positions and \$100,000 in contractual assistance for the China Partnership for Cleaner Shipping. In addition, staff is seeking Board approval to amend the SCAQMD *Salary Resolution* to revise the Assistant Deputy Executive Officer class title to include Chief Information Officer.

### AB 617

Staff is seeking Board approval to recognize funds from CARB, authorize the addition of 47 new staff positions, reassignment of 0.5 FTE, upgrade five additional positions listed in Table 4, approve the funding appropriation for these positions as listed in Table 5, execute contracts as listed in Table 6, procure capital equipment as listed in Table 7, and procure related services and supplies listed in Table 8 to support work required under AB 617.

Staff is proposing to enter into a Bailment Agreement with the National Parks Service to utilize their proton transfer mass spectrometer (PTR-MS). Use of the PTR-MS will allow staff to assess this instrument's capabilities of near real-time detection of VOCs prior to SCAQMD procuring a PTR-MS instrument pending the evaluation results. It is estimated that \$35,000 will be needed for parts and shipping for the use of this instrument. These funds are part of the AB 617 budget being proposed.

### VW Mitigation Projects

Staff is seeking Board approval to add five positions, as listed in Table 9 and appropriate funding for these positions as listed in Table 10 to support the initial increased workload under this program. Additional resource requests are likely to follow in subsequent years.

### **Sole Source Justifications**

#### AB 617

##### Laboratory Instrument Services

Section VIII.B.2 of the Procurement Policy identifies provisions under which sole source awards may be justified. This request for a sole source purchase is made under provision B.2.c.(1): The unique experience and capabilities of the proposed contractor or contractor team. This request is to issue sole source purchase orders for repair and service of laboratory instrumentation with PANanalytical, Full Spectrum Analytics,, Inc., Markes International, Carl Zeiss Microscopy LLC, Thermo Fisher Scientific, and Promium, LLC.

##### 8872B SiteNode Data Logger

Section VIII.B.2 of the Procurement Policy identifies provisions under which sole source awards may be justified. This request for sole source purchase of three 8872B SiteNode Data Logger is made under provision B.2.c(3): The project involves the use of proprietary technology. Agilaire is the only manufacturer who produces Data Loggers to work with the Agilaire, Air Vision air quality data collection software.

##### Regents of the University of California

Section VIII.B.2 of the Procurement Policy identifies provisions under which sole source awards may be justified. This request for a sole source purchase is made under provisions B.2.c.(1): The unique experience and capabilities of the proposed contractor or contractor team, and B.2.d.(8): Research and development efforts with educational institutions or nonprofit organizations. The request is to issue a sole source contract in an amount not to exceed \$100,000 to the Regents of the University of California (UC Regents). This contract will involve work with Professor Roya Bahreini at the University of California, Riverside to utilize her research group's aerosol mass spectrometer for near real-time metal measurements within one or more of the first-year AB 617 communities.

## **Benefits to SCAQMD**

### Mid-Year Budget Adjustment

Restoring the budgeted expenditures that were reduced in order to balance the budget and providing an additional \$635,526 for FY 2018-19 will allow staff to fully implement critical projects and programs, including the purchase of a redundant core network switch, continuation of compliance document automation, outreach efforts, system maintenance efforts, Board Member compensation, fleet vehicle replacement and the China Partnership for Cleaner Shipping.

### AB 617

The additional staffing, contracts, equipment, and related services and supplies will allow SCAQMD to fulfill the legislative directives of AB 617, which will result in benefits to environmental justice communities, and to all of the people in our region.

### VW Mitigation Projects

The requested staffing increases related to the VW Mitigation Projects will help ensure adequate resources to support the substantial workload for emission reduction projects.

## **Resource Impacts**

The General Fund Undesignated (Unassigned) Fund Balance position as of June 30, 2018 is sufficient to allow the proposed appropriation of funds and still meet the Board's Unreserved Fund Balance Policy of a minimum of 20 percent of revenues for this fiscal year.

CARB's Community Air Protection Program under AB 617 will provide sufficient resources to implement SCAQMD's AB 617 program. The administrative portion of the VW Mitigation Grant will be sufficient to support the additional positions for the VW Mitigation projects. Resources needed to continue SCAQMD's AB 617 program and the VW Mitigation projects in future years will be included as part of the annual budget process.

## **Attachments**

- A. Tables (1 – 10)
- B. Amendments to Article 7 of *Salary Resolution*
- C. Resolution to Amend SCAQMD's *Salary Resolution*

**ATTACHMENT A**

**Table 1**

**Proposed Mid-Year FY 2018-19 Budget Restoration Adjustments  
Salaries & Employee Benefits and Services & Supplies Major Objects**

<b>Org Unit</b>	<b>Account/Description</b>	<b>Amount</b>
All	Salaries & Employee Benefits	\$1,389,276*
DG	67850 – Utilities	253,668
AHR	67450 – Professional & Special Services	169,979
C&E	67450 – Professional & Special Services	25,645
E&P	67450 – Professional & Special Services	26,414
EO	67450 – Professional & Special Services	75,000
FIN	67450 – Professional & Special Services	29,469
IM	67450 – Professional & Special Services	147,761
LPAM	67450 – Professional & Special Services	132,995
LEG	67450 – Professional & Special Services	32,799
PRDAS	67450 – Professional & Special Services	98,516
STA	67450 – Professional & Special Services	107,754
	<b>Total</b>	<b>\$2,489,276</b>

\*Reflected a 1% decrease to the budgeted vacancy rate

**Table 2**

**Proposed Mid-Year FY 2018-19 Budget Restoration Adjustments  
Capital Outlays Major Object**

<b>Org Unit</b>	<b>Project Description</b>	<b>Amount</b>
C&E	Compliance Document Automation	\$ 200,000
DG	Redundant Core Network Switch	225,000
E&P	Title V On-line Permit Publishing	20,000
IM	Network Server Upgrade	75,000
IM	Fiber Channel Switch Replacement	60,000
IM	High-Capacity Internet Router	35,000
IM	Next Generation Firewall	75,000
IM	SAN Replacement	200,000
STA	Replace Instruments for Gaseous Measurements	222,500
STA	Zero Air Generator System	10,000
	<b>Total</b>	<b>\$ 1,122,500</b>

**Table 3****Proposed FY 2018-19 Additional Budget Adjustments**

<b>Org Unit</b>	<b>Account/Description</b>	<b>Amount</b>
GB	67450 – Board Member Expenditures	\$ 36,500
DG	77000 – 10 Fleet Vehicles	310,000
<b>China Partnership for Cleaner Shipping:</b>		
PRDAS	Salaries & Employee Benefits - Program Supervisor	94,513
STA	Salaries & Employee Benefits - Program Supervisor	94,513
PRDAS	67450 – Professional & Special Services	100,000
<b>Total</b>		<b>\$ 635,526</b>

Note: Appropriation for Salaries and Benefits is for January – June, 2019

**Table 4****Proposed FY 2018-19 Staffing Additions & Changes for AB 617**

<b>Position Title</b>	<b>FTEs</b>	<b>Org Unit</b>
Air Quality Chemist	2	STA
Air Quality Engineer II	1	PRDAS
Air Quality Inspector II	2	C&E
Air Quality Inspector III	1	C&E
Air Quality Instrument Specialist I	4	STA
Air Quality Instrument Specialist II	5	STA
Air Quality Specialist	11	7 PRDAS; 4 STA
Contract Assistant	1	STA
Laboratory Technician	1	STA
Office Assistant (Reassign)	0.5	LEG
Planning and Rules Manager	1	PRDAS
Principal Air Quality Chemist	1	STA
Program Supervisor	3	PRDAS
Senior Air Quality Chemist	1	STA
Senior Air Quality Engineer	3	1 PRDAS; 2 STA
Senior Air Quality Instrument Specialist	2	STA
Senior Deputy District Counsel	1	LEG
Senior Office Assistant	1	HR
Senior Public Information Specialist	3	LPAM
Systems Analyst	1	IM
Systems & Program Supervisor	2	IM

**Table 4 (continued)**

<b>Position Title</b>	<b>FTEs</b>	<b>Org Unit</b>
Upgrade Office Assistant to Senior Office Assistant	3	2 STA; 1 HR
Upgrade Office Assistant to Contracts Assistant	1	STA
Upgrade Principal Air Quality Instrument Specialist to Manager*	1	STA
(47 New, 5 Upgrades, 0.5 Reassigned)	<b>52.5</b>	Total FTEs

\*Position to be created as Level III Manager

**Table 5**

**Proposed FY 2018-19 Funding Appropriations for Staffing Additions & Changes for AB 617**

<b>Org Unit</b>	<b>Amount</b>
AHR	\$ 48,140
C&E	201,326
LEG	135,598
LPAM	228,369
IM	287,695
PRDAS	1,114,279
STA	1,646,500
<b>Total</b>	<b>\$3,661,907</b>

Note: Appropriation is for January – June, 2019

**Table 6**

**Proposed FY 2018-19/FY 2019-20 Contracts for AB 617**

<b>Contractor</b>	<b>Description</b>	<b>Org Unit</b>	<b>Account</b>	<b>Estimated Amount</b>	<b>Action</b>
TBD	Application Maintenance	STA	67450	\$ 100,000	Solicitation
UC Regents	Aerosol Mass Spectrometer Measurements	STA	67450	100,000	Sole-Source
<b>Total</b>				<b>\$ 200,000</b>	

Note: Listed expenditures may be appropriated in the Capital Outlays Major Object as warranted.

**Table 7****Proposed FY 2018-19/FY 2019-20 Capital Outlay Expenditures for AB 617**

<b>Description</b>	<b>Org Unit</b>	<b>Account</b>	<b>Qty</b>	<b>Estimated Amount</b>	<b>Action</b>
Air Monitoring Trailer	STA	77000	2	\$ 140,000	RFQ or Prior Bid, Last Price
Aethalometers	STA	77000	3	105,000	RFQ or Prior Bid, Last Price
Continuous PM analyzer (FEM)	STA	77000	3	105,000	RFQ or Prior Bid, Last Price
Continuous PM analyzer	STA	77000	3	18,000	RFQ or Prior Bid, Last Price
Field Gas Chromatograph	STA	77000	2	200,000	RFQ or Prior Bid, Last Price
Gas analyzers (e.g., Ozone, NOx, CO, and H2S Monitors)	STA	77000	12	360,000	RFQ
Meteorological Stations	STA	77000	3	45,000	RFQ
Vans for Field Staff	STA	77000	10	450,000	Cooperative Purchasing
Proton Transfer-Time of Flight (PTR-TOF) Mass Spectrometer	STA	77000	1	550,000	RFQ
Mobile Platform Design and Integration of PTR-TOF onto Field Staff van	STA	77000	1	180,000	RFQ
X-ray Fluorescence Instrument	STA	77000	1	100,000	RFQ
Inductively Coupled Plasma - Mass Spectrometer	STA	77000	1	210,000	RFQ
Gas Chromatograph-Mass Spectrometer Concentrator	STA	77000	1	75,000	RFQ or Prior Bid, Last Price
Field X-ray Fluorescence Instrument	STA	77000	1	220,000	RFQ

**Table 7 (continued)**

<b>Description</b>	<b>Org Unit</b>	<b>Account</b>	<b>Qty</b>	<b>Estimated Amount</b>	<b>Action</b>
Dilution System	STA	77000	1	30,000	RFQ or Prior Bid, Last Price
Sample Storage	STA	77000	1	15,000	Informal Bid
FEM NOX Analyzer	STA	77000	3	44,985	RFQ or Prior Bid, Last Price
FEM CO Analyzer	STA	77000	3	41,370	RFQ or Prior Bid, Last Price
Pure Air Generator	STA	77000	3	27,570	RFQ or Prior Bid, Last Price
Field Dilution System	STA	77000	3	60,399	RFQ or Prior Bid, Last Price
Portable Gas Calibration System	STA	77000	3	61,728	RFQ or Prior Bid, Last Price
Portable Zero Air Generator	STA	77000	3	26,580	RFQ or Prior Bid, Last Price
8872B SiteNode Data Logger	STA	77000	3	30,837	Sole Source
AQ-Spec Chamber	STA	77000	0.5	450,000	RFQ
Cars for Inspectors	C&E	77000	3	93,000	RFQ
Software, Data Enhancement, Programming	PRDAS	77000	1	300,000	Already Approved Vendors
Application for Data Visualization	STA	77000	1	600,000	Solicitation and/or Already Approved Vendors
				<b>Total</b>	<b>\$ 4,539,469</b>

Note: Listed expenditures may be appropriated in the Services and Supplies Major Object as warranted. Also, quantities may be adjusted as community monitoring needs are identified (not to exceed total estimated amount).

**Table 8****Proposed FY 2018-19/FY 2019-20 Other Services and Supplies Expenditures for AB 617**

<b>Description</b>	<b>Account</b>	<b>Org Unit</b>	<b>Estimated Amount</b>
Lab Supplies	68050	STA	\$ 219,200
Small Tools, Instruments, Equipment	68300	STA	195,500
Rents and Leases Structure	67350	STA	100,000
Office Expense	68100	STA	50,000
Demurrage	67550	STA	50,000
Maintenance of Equipment	67600	STA	200,000
Communications	67900	STA	200,000
Training	69500	STA	30,000
Miscellaneous Expense	69700	STA	215,000
Contract Lab Work	67450	STA	30,000
Postage	68060	STA	5,000
Laboratory Instruments Service Agreements	67450	STA	250,000
Office Supplies-New Staff	68100	C&E	15,000
Office Supplies-New Staff	68100	AHR	5,000
Office Supplies-New Staff	68100	IM	15,000
Office Supplies-New Staff	68100	Legal	5,000
Office Supplies-New Staff	68100	LPAM	15,000
Office Supplies-New Staff	68100	PRDAS	65,000
Office Supplies-New Staff	68100	STA	115,000
Office Expense – SW Licenses, Computers & Servers*	68100	PRDAS	30,000
		<b>Total</b>	<b>\$ 1,809,700</b>

\*Listed expenditures may be appropriated in the Capital Outlays Major Object as specific needs are identified.

**Table 9**

**Proposed FY 2018-19 Staffing Additions for VW Mitigation Projects**

<b>Position Title</b>	<b>FTEs</b>	<b>Org Unit</b>
Program Supervisor	1	STA
Air Quality Specialist	2	STA
Financial Analyst	1	FIN
Senior Staff Specialist	1	STA
	<b>5</b>	Total New

**Table 10**

**Proposed FY 2018-19 Funding Appropriations for Staffing Additions for VW Mitigation Projects**

<b>Org Unit</b>	<b>Amount</b>
FIN	\$ 83,859
STA	337,531
<b>Total</b>	<b>\$ 421,390</b>

Note: Appropriation is for January – June, 2019

**ATTACHMENT B**

**AMENDMENTS TO SALARY RESOLUTION**

**SOUTH COAST**

**AIR QUALITY MANAGEMENT DISTRICT**

***SALARY RESOLUTION***

**~~October 5, 2018~~ November 2, 2018**

## ARTICLE 7

### DESIGNATED DEPUTY ANNUAL SALARIES

(Effective with the start of the pay period encompassing January 1, 2017)

Assistant Chief Deputy Counsel, Major Prosecutions	\$162,826
Assistant Deputy Executive Officer, <u>including Chief Information Officer</u>	\$160,374
Chief Deputy Counsel	\$183,790
Deputy Executive Officer, including Chief Operating Officer	\$171,651
Director of Strategic Initiatives	\$153,218
Director of Communications	\$153,218
Health Effects Officer	\$126,053 - \$153,218 (Steps 1 – 5)
Intergovernmental Affairs Officer	Vacant
Senior Policy Advisor	\$156,196

(Effective with the start of the pay period encompassing July 1, 2018)

Assistant Chief Deputy Counsel, Major Prosecutions	\$167,304
Assistant Deputy Executive Officer, <u>including Chief Information Officer</u>	\$164,784
Chief Deputy Counsel	\$188,844
Deputy Executive Officer, including Chief Operating Officer and Chief Administrative Officer	\$176,371
Director of Strategic Initiatives	\$157,432
Director of Communications	\$157,432
Health Effects Officer	\$126,053 - \$157,432 (Steps 1 – 6)
Intergovernmental Affairs Officer	Vacant
Senior Policy Advisor	Vacant

(Effective with the start of the pay period encompassing July 1, 2019)

Assistant Chief Deputy Counsel, Major Prosecutions	\$171,905
Assistant Deputy Executive Officer, <u>including Chief Information Officer</u>	\$169,316
Chief Deputy Counsel	\$194,037
Deputy Executive Officer, including Chief Operating Officer and Chief Administrative Officer	\$181,222
Director of Strategic Initiatives	\$161,761
Director of Communications	\$161,761
Health Effects Officer	\$126,053 - \$161,761 (Steps 1 – 7)
Intergovernmental Affairs Officer	Vacant
Senior Policy Advisor	Vacant

(Effective with the start of the pay period encompassing July 1, 2020)

Assistant Chief Deputy Counsel, Major Prosecutions	\$176,632
Assistant Deputy Executive Officer, <u>including Chief Information Officer</u>	\$173,972
Chief Deputy Counsel	\$199,373
Deputy Executive Officer, including Chief Operating Officer and Chief Administrative Officer	\$186,205
Director of Strategic Initiatives	\$166,209
Director of Communications	\$166,209
Health Effects Officer	\$126,053 - \$166,209 (Steps 1 – 8)
Intergovernmental Affairs Officer	Vacant
Senior Policy Advisor	Vacant

**ATTACHMENT C**

**RESOLUTION NO. 18-\_\_\_\_\_**

A Resolution of the South Coast Air Quality Management District Governing Board to amend SCAQMD's *Salary Resolution* to add the Designated Deputy title of Chief Information Officer.

**WHEREAS**, the Governing Board of the South Coast Air Quality Management District exercises its duty to review and determine appropriate wages, hours, and other terms and conditions of employment provided to its employees.

**THEREFORE, BE IT RESOLVED** that the Board of the South Coast Air Quality Management District, in a regular session assembled on December 7, 2018, in Diamond Bar, California, does hereby amend SCAQMD's *Salary Resolution*, as set forth in the attachment (Attachment B) hereto and incorporated by reference herein, modifying the terms and conditions for compensation and work conditions.

AYES:

NOES:

ABSTAIN:

ABSENT:

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Clerk of the Boards*

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 11

REPORT: Rule and Control Measure Forecast and AB 617 Expedited BARCT Implementation Schedule

SYNOPSIS: This report highlights SCAQMD rulemaking activities and public hearings scheduled for 2019 and AB 617 Expedited BARCT Implementation Schedule. This action is to receive and file the report and adopt the proposed AB 617 BARCT Implementation Rules Schedule.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:

Receive and file the Rule and Control Measure Forecast and adopt Table 1, Proposed Schedule for AB 617 BARCT Implementation Rules.

Wayne Nastri  
Executive Officer

PMF:SN:AF:EG

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## 2019 MASTER CALENDAR

The SCAQMD is required by state law to publish a list of all rules potentially scheduled for consideration during the coming year. The Rule and Control Measure Forecast is expanded for this purpose and includes a list of the proposed and proposed amended rules scheduled for 2019.

For each month, a description of the proposed rule or proposed amended rule is provided with a notation in the third column indicating if the rulemaking is for the 2016 AQMP, Toxics, AB 617 BARCT, or Other. Projected emission reductions will be determined during rulemaking. The following symbols next to the rule number indicate if the rulemaking will be a potentially significant hearing, reduce criteria pollutants, or part of the RECLAIM transition:

\* *Potentially significant hearing*

+ *Reduce criteria air contaminants and assist toward attainment of ambient air quality standards*

# *Part of the transition of RECLAIM to a command-and-control regulatory structure*

Attachment 1 is the AB 617 Expedited Best Available Retrofit Control Technology (BARCT) Implementation Schedule that includes the proposed rulemaking schedule for AB 617 rules and a summary of other requirements under AB 617. The BARCT Implementation Schedule was presented to the Stationary Source Committee on November 16, 2018.

### 2019 MASTER CALENDAR

Month	Title and Description	Type of Rulemaking
<b>January</b>		
1118.1*+##	<p><b>Control of Emissions from Non-Refinery Flares</b>  Proposed Rule 1118.1 will reduce NOx emissions from flaring at non-refinery facilities. The proposed rule encourages beneficial use of gases as an alternate to flaring and establishes emission standards for flares at sources such as landfills, wastewater treatment plants, and oil and gas production facilities.</p> <p><i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1325	<p><b>Federal PM2.5 New Source Review Program</b>  Proposed Amended Rule 1325 will address a deficiency identified by U.S. EPA to provide a clarification in the definition of “regulated NSR pollutant” as well as other minor administrative revisions to existing rule language to provide clarity.</p> <p><i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other/ AQMP
<b>February</b>		
1403*	<p><b>Asbestos Emissions from Demolition/Renovation Activities</b>  Proposed Amended Rule 1403 will enhance implementation, improve rule enforceability, and align provisions with the applicable U.S. EPA National Emission Standard for Hazardous Air Pollutants (NESHAP) and other state and local requirements as necessary.</p> <p><i>David De Boer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics

\* Potentially significant hearing

+ Will reduce criteria air contaminants and assist toward attainment of ambient air quality standards

# Part of the transition of RECLAIM to a command-and-control regulatory structure

**2019 MASTER CALENDAR (Continued)**

<b>Month</b>	<b>Title and Description</b>	<b>Type of Rulemaking</b>
<b>March</b>		
110	<b>Rule Adoption Procedures to Assure Protection and Enhancement of the Environment</b>	Other
212	<b>Standards for Approving Permits and Issuing Public Notice</b>	
301	<b>Permitting and Associated Fees</b>	
303	<b>Hearing Board Fees</b>	
306	<b>Plan Fees</b>	
307.1	<b>Alternative Fees for Air Toxics Emissions Inventory</b>	
309	<b>Fees for Regulation XVI and Regulation XXV</b>	
315	<b>Fees for Training Classes and License Renewal</b>	
510	<b>Notice of Hearing</b>	
515	<b>Findings and Decision</b>	
812	<b>Notice of Hearing</b>	
3006	<b>Public Participation</b>	
	The above proposed amended rules will revise noticing requirements to reflect recent amendments to state law that allow certain public notices to be sent via electronic mail (email) and streamline other types of noticing requirements. <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	
<b>April</b>		
1106 <sup>+</sup>	<b>Marine Coating Operations</b>	AQMP/ AB 617 BARCT
1106.1 <sup>+</sup>	<b>Pleasure Craft Coating Operations</b> Rule 1106 would subsume the requirements of Rule 1106.1, revise VOC content limits for several categories in order to align limits with U.S. EPA Control Techniques Guidelines and other California air districts, and add new limits for several new categories. Rule 1106.1 is proposed to be rescinded. <i>David DeBoer 909.396.2329 CEQA: Jillian Wong 909.396.3176 and Socio: Ian MacMillan 909.396.3244</i>	
1407 <sup>*</sup>	<b>Control of Emissions of Arsenic, Cadmium and Nickel from Non-Ferrous Metal Operations</b> Proposed Amended Rule 1407 will establish additional requirements to minimize point source and fugitive toxic air contaminant emissions from non-chromium metal melting operations. <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	Toxics

\* Potentially significant hearing

+ Will reduce criteria air contaminants and assist toward attainment of ambient air quality standards

# Part of the transition of RECLAIM to a command-and-control regulatory structure

**2019 MASTER CALENDAR (Continued)**

<b>Month</b>	<b>Title and Description</b>	<b>Type of Rulemaking</b>
<b>April</b> (Continued)		
1134*+##	<b>Emissions of Oxides of Nitrogen from Stationary Gas Turbines</b> Proposed Amended Rule 1134 will update the NOx emission standard to reflect Best Available Retrofit Control Technology for RECLAIM and non-RECLAIM facilities. Proposed Rule 1134 will also establish an ammonia emission limit for pollution controls with ammonia emissions, and update monitoring, reporting, and recordkeeping requirements.	AQMP/ AB 617 BARCT
1100	<b>Implementation Schedule for NOx Facilities</b> Proposed Rule 1100 will establish the implementation schedule for NOx RECLAIM facilities that are transitioning to command and control. <i>Michael Morris 909.396.3282 CEQA: Jillian Wong 909.396.3176 and Socio: Ian MacMillan 909.396.3244</i>	
<b>May</b>		
1410*	<b>Hydrogen Fluoride Use at Refineries</b> Proposed Rule 1410 will establish requirements including mitigation measures, a performance standard, and potential phase-out of hydrogen fluoride or modified hydrogen fluoride for the use and storage of hydrogen fluoride at petroleum refineries. <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	Toxics
Reg. III	<b>Fees</b> Proposed amendments to Regulation III will incorporate the Consumer Price Index adjustment to reflect inflation, pursuant to Rule 320. Other proposed amendments may be needed to update fees associated with existing programs and implementation of new or revised programs. <i>Ian MacMillan 909.396.3244; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	Other
<b>June</b>		
Reg. IX Reg. X	<b>Standards of Performance for New Stationary Sources (NSPS)</b> <b>National Emission Standards for Hazardous Air Pollutants (NESHAPS)</b> Proposed amendments to Regulations IX and X are periodically made to incorporate by reference new or amended federal standards that have been enacted by U.S. EPA for stationary sources. Regulations IX and X provide stationary sources with a single point of reference for determining which federal and local requirements apply to their specific operations. <i>Carol Gomez 909.396.3264; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	Other

\* Potentially significant hearing

+ Will reduce criteria air contaminants and assist toward attainment of ambient air quality standards

# Part of the transition of RECLAIM to a command-and-control regulatory structure

## 2019 MASTER CALENDAR (Continued)

Month	Title and Description	Type of Rulemaking
<b>June</b> (Continued)		
1480*	<p><b>Toxics Monitoring</b> Proposed Rule 1480 will establish requirements for ambient monitoring of certain metal toxic air contaminants. Proposed rule will establish applicability, on-ramps and off-ramps for ambient monitoring, and provisions to address high ambient levels.</p> <p style="text-align: center;"><i>Jillian Wong 909.396.3176 CEQA: Jillian Wong 909.396.3176 and Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
<b>July</b>		
Reg. XIII*# Reg. XX	<p><b>New Source Review RECLAIM</b> Proposed Amendments to Regulation XIII will revise New Source Review provisions to address facilities that are transitioning from RECLAIM to command-and-control. Staff may be proposing a new rule within Regulation XIII to address offsets for facilities that transition out of RECLAIM. Proposed Amendments to Regulation XX also are needed to coordinate amendments to Regulation XIII.</p> <p style="text-align: center;"><i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
1138*+	<p><b>Control of Emissions from Restaurant Operations</b> Proposed Amended Rule 1138 will reduce NOx emissions from establishments utilizing commercial cooking ovens, ranges, fryers, and charbroilers.</p> <p style="text-align: center;"><i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1450	<p><b>Control of Methylene Chloride Emissions</b> Proposed Rule 1450 will reduce methylene chloride emissions from furniture stripping and establish monitoring, reporting, and recordkeeping requirements.</p> <p style="text-align: center;"><i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; and Socio: Ian MacMillan 909.396.3244</i></p>	Toxics

\* Potentially significant hearing

+ Will reduce criteria air contaminants and assist toward attainment of ambient air quality standards

# Part of the transition of RECLAIM to a command-and-control regulatory structure

**2019 MASTER CALENDAR (Continued)**

<b>Month</b>	<b>Title and Description</b>	<b>Type of Rulemaking</b>
<b>September</b>		
1110.2*+##^	<b>Emissions from Stationary Internal Combustion Engines</b> Rule 1110.2 will update the NOx emission standard to reflect Best Available Retrofit Control Technology for RECLAIM and non-RECLAIM facilities. Proposed Rule 1110.2 will also establish an ammonia emission limit for pollution controls with ammonia emissions, and update monitoring, reporting, and recordkeeping requirements.	AQMP/ AB 617 BARCT
1100	<b>Implementation Schedule for NOx Facilities</b> Proposed Rule 1100 will establish the implementation schedule for NOx RECLAIM facilities that are transitioning to command-and-control. <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	
1147*+##	<b>NOx Reductions from Miscellaneous Sources</b>	Other/ AB 617 BARCT
1147.1	<b>NOx Reductions from Large Miscellaneous Combustion</b> Proposed Rule 1147.1 will establish NOx emission limits to reflect Best Available Retrofit Control Technology for large miscellaneous combustion sources and will apply to RECLAIM and non-RECLAIM facilities. Proposed Amended Rule 1147 will remove equipment that will be regulated under Proposed Rule 1147.1 and evaluate the existing NOx emission limits.	
1100	<b>Implementation Schedule for NOx Facilities</b> Proposed Rule 1100 will establish the implementation schedule for NOx RECLAIM facilities that are transitioning to command-and-control. <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	
<b>October</b>		
113*##	<b>Monitoring, Reporting, and Recordkeeping (MRR) Requirements for NOx and SOx Sources</b> Proposed Rule 113 will establish MRR requirements for facilities exiting RECLAIM and transitioning to a command-and-control regulatory structure. <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	AQMP
218*##	<b>Continuous Emission Monitoring</b>	AQMP
218.1	<b>Continuous Emission Monitoring Performance Specifications</b> Proposed Amended Rule 218 will revise provisions for continuous emission monitoring systems for facilities exiting RECLAIM and transitioning to a command-and-control regulatory structure. <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	

\* Potentially significant hearing

+ Will reduce criteria air contaminants and assist toward attainment of ambient air quality standards

# Part of the transition of RECLAIM to a command-and-control regulatory structure

**2019 MASTER CALENDAR (Continued)**

Month	Title and Description	Type of Rulemaking
<b>October</b> (Continued)		
1109*+  1109.1	<p><b>Emissions of Oxides of Nitrogen from Boilers and Process Heaters in Petroleum Refineries</b>  <b>Reduction of Emissions of Oxides of Nitrogen from Refinery Equipment</b>                      Proposed Rule 1109.1 will establish NOx emission limits to reflect Best Available Retrofit Control Technology for NOx emitting equipment at petroleum refineries and related operations. Proposed Rule 1109.1 is an industry-specific rule, will establish an ammonia emission limit for pollution controls with ammonia emissions, and update monitoring, reporting, and recordkeeping requirements. Proposed Rule 1109.1 will replace Rule 1109.</p> <p><i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ BARCT (AB 617)
<b>November</b>		
N/A	<p><b>Airports MOU/Ports MOU/Potential Regulation</b>                      The proposed MOUs with the marine ports and commercial airports will implement the facility-based mobile source measures MOB-01 and MOB-04 from the 2016 AQMP. In the event that the MOU approach with the ports or airports is not agreed on, staff will pursue a regulatory approach.</p> <p><i>Zorik Pirveysian 909.396.2431; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
1147*+ 1147.2	<p><b>NOx Reductions from Miscellaneous Sources</b>  <b>NOx Reductions from Metal Melting and Heat Treating Furnaces</b>                      Proposed Rule 1147.2 will establish NOx emission limits to reflect Best Available Retrofit Control Technology for metal melting and heat treating furnaces and will apply to RECLAIM and non-RECLAIM facilities. Proposed Amended Rule 1147 will remove equipment that will be regulated under Proposed Rule 1147.2.</p> <p><i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB617 BARCT
1435*	<p><b>Control of Emissions from Metal Heat Treating Processes</b>                      Proposed Rule 1435 will establish requirements to reduce point source and fugitive toxic air contaminants including hexavalent chromium emissions from heat treating processes. Proposed Rule 1435 will also include monitoring, reporting, and recordkeeping requirements.</p> <p><i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics

\* Potentially significant hearing

+ Will reduce criteria air contaminants and assist toward attainment of ambient air quality standards

# Part of the transition of RECLAIM to a command-and-control regulatory structure

**2019 MASTER CALENDAR (Continued)**

Month	Title and Description	Type of Rulemaking
December		
1117 <sup>+#</sup>	<p><b>Emissions of Oxides of Nitrogen from Glass Melting Furnaces</b>                      Proposed Amended Rule 1117 will establish NOx emission limits to reflect Best Available Retrofit Control Technology for glass melting furnaces and will apply to RECLAIM and non-RECLAIM facilities.  <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1147 <sup>*+#</sup> 1147.3	<p><b>NOx Reductions from Miscellaneous Sources</b>  <b>NOx Reductions for Equipment at Aggregate Facilities</b>                      Proposed Rule 1147.3 will establish NOx emission limits to reflect Best Available Retrofit Control Technology for NOx equipment at aggregate facilities and will apply to RECLAIM and non-RECLAIM facilities. Proposed Amended Rule 1147 will remove equipment that will be regulated under Proposed Rule 1147.3.  <i>Michael Krause 909.396.2706 CEQA: Jillian Wong 909.396.3176 and Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1150.3 <sup>*+</sup>	<p><b>NOx Emission Reduction from Combustion Equipment at Landfills</b>                      Proposed Rule 1150.3 will establish NOx emission limits for boilers, process heaters, furnaces, and engines to reflect Best Available Retrofit Control Technology at landfills. The proposed rule will also include implementation schedules and monitoring, recordkeeping, and reporting requirements.  <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1179.1 <sup>*+</sup>	<p><b>NOx Emission Reduction from Combustion Equipment at Publicly Owned Treatment Work Facilities</b>                      Proposed Rule 1179.1 will establish NOx emission limits for boilers, process heaters, furnaces, and engines to reflect Best Available Retrofit Control Technology at publicly owned treatment works. The proposed rule will also include implementation schedules and monitoring, recordkeeping, and reporting requirements.  <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1426 <sup>*</sup>	<p><b>Reduction of Toxic Air Contaminants from Metal Finishing Operations</b>                      Proposed amendments to Rule 1426 will establish requirements to reduce nickel, cadmium, hexavalent chromium, and other air toxics from plating operations. Proposed Amended Rule 1426 will establish requirements to control point source and fugitive toxic air contaminant emissions.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics

\* Potentially significant hearing

+ Will reduce criteria air contaminants and assist toward attainment of ambient air quality standards

# Part of the transition of RECLAIM to a command-and-control regulatory structure

**2019 MASTER CALENDAR (Continued)**

<b>Month</b>	<b>Title and Description</b>	<b>Type of Rulemaking</b>
<b>December (Continued)</b>		
Reg. XXIII <sup>*+</sup>	<p><b>Facility Based Mobile Sources</b>  Proposed rules within Regulation XXIII would reduce emissions from indirect sources (e.g., mobile sources that visit facilities). The rule or set of rules that would be brought for Board consideration in this month would reduce emissions from warehouses and distribution centers, consistent with Control Measure MOB-03 from the 2016 AQMP.  <i>Ian MacMillan 909.396.3244 CEQA; Jillian Wong 909.396.3176 Socio; Ian MacMillan 909.396.3244</i></p>	AQMP

\* *Potentially significant hearing*

+ *Will reduce criteria air contaminants and assist toward attainment of ambient air quality standards*

# *Part of the transition of RECLAIM to a command-and-control regulatory structure*

## 2019 To-Be-Determined

The following list of proposed or proposed amended rules have not been scheduled for a specific month in 2019 at this time. Monthly revisions to the Rule and Control Measure Forecast will reflect any changes in the status of a rule that is moved from this list of “To-Be-Determined” to a specific month in 2019.

2019	Title and Description	Type of Rulemaking
102	<p><b>Definition of Terms (VOC)</b> Staff may propose amendments to Rule 102 to add or revise definitions in order to support amendments to other Regulation XI rules. <i>Carol Gomez 909.396.3264; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
209 301	<p><b>Transfer and Voiding of Permits; Permitting and Associated Fees</b> Staff may propose amendments to clarify requirements for change of ownership and permits and the assessment of associated fees.</p>	
219	<p><b>Equipment Not Requiring a Written Permit Pursuant to Regulation II</b> Proposed Amended Rule 219 will add or revise equipment not requiring a written permit. <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
222	<p><b>Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II</b> Proposed Amended Rule 222 will add or revise equipment subject to filing requirements. <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
223 1133.3	<p><b>Emission Reduction Permits for Large Confined Animal Facilities</b> Proposed Amended Rules 223 and 1133.3 will seek additional emission reductions from large confined animal facilities by lowering the applicability threshold. <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
416	<p><b>Odors from Kitchen Grease Processing</b> Proposed Rule 416 will reduce odors from kitchen grease processing operations. The proposed rule will establish best management practices, and examine enclosure requirements for wastewater treatment operations and filter cake storage. <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
425	<p><b>Odors from Cannabis Processing</b> Proposed Rule 425 will establish requirements to control the odors from cannabis processing. <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
429	<p><b>Start-Up and Shutdown Exemption Provisions for Oxides of Nitrogen</b> Proposed Amendments to Rule 429 to address start-up/shutdown provisions related to the transition of NO<sub>x</sub> RECLAIM to a command-and-control regulatory program and if U.S. EPA requires updates to such provisions. <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other

**2019 To-Be-Determined (Continued)**

2019	Title and Description	Type of Rulemaking
430	<p><b>Breakdown Provisions</b>            This rule will be amended or replaced to address specific issues raised by U.S. EPA regarding start-ups or shutdowns associated with breakdowns.  <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
445	<p><b>Wood Burning Devices (PM 2.5 Contingency)</b>            Proposed Amendments to Rule 445 will include provisions for contingency in the event of failure to attain, or make reasonable further progress toward, the PM2.5 federal ambient air quality standards and other provisions.  <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
461	<p><b>Gasoline Transfer and Dispensing</b>            Proposed Amendments to Rule 461 will reflect information from the California Air Resources Board, corrections, revisions and additions to improve the effectiveness, enforceability, and clarity of the rule.  <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ Toxics
462	<p><b>Organic Liquid Loading</b>            Proposed Amendments to Rule 462 will improve the effectiveness, enforceability, and clarity of the rule.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
463	<p><b>Organic Liquid Storage</b>            Proposed Amendments to Rule 463 will address the current test method and improve the effectiveness, enforceability, and clarity of the rule.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
464	<p><b>Wastewater Separators</b>            Proposed Amendments to Rule 464 will improve the effectiveness, enforceability, and clarity of the rule.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1107	<p><b>Coating of Metal Parts and Products</b>            Proposed Amended Rule 1107 will lower VOC emission limits for certain categories of coatings for metal parts and products and improve rule clarity and enforceability.  <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
1111.1	<p><b>Reduction of NO<sub>x</sub> Emissions from Natural Gas Fired Commercial Furnaces (CMB-01)</b>            Proposed Rule 1111.1 will establish equipment-specific NO<sub>x</sub> emission limits and other requirements for the operation of commercial furnaces.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP Other
1113	<p><b>Architectural Coatings</b>            Proposed Amended Rule 1113 may be needed to remove the tBAC exemption and pCBtF as a VOC exempt compound based on guidance from the Stationary Source Committee.  <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other

**2019 To-Be-Determined (Continued)**

2019	Title and Description	Type of Rulemaking
1118	<p><b>Refinery Flares</b>  Proposed Amended Rule 1118 will revise provisions to improve the enforceability of the rule.  <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	
1123	<p><b>Refinery Process Turnarounds</b>  Proposed Amended Rule 1123 will establish procedures that better quantify emission impacts from start-up, shutdown or turnaround activities.  <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
1135	<p><b>Emissions of Oxides of Nitrogen from Electricity Generating Facilities</b>  Proposed Amended Rule 1135 will revise monitoring, reporting, and recordkeeping provisions to reflect amendments to Proposed Rule 113 and possibly other amendments to address comments from U.S. EPA.  <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1136	<p><b>Wood Products Coatings</b>  Proposed Amended Rule 1136 will revise VOC limits for wood product coatings and other clarifications.  <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
1142	<p><b>Marine Tank Vessel Operations</b>  Proposed Amended Rule 1142 will address VOC emissions from marine tank vessel operations and provide clarifications.  <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1146.2	<p><b>Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters</b>  Proposed Amended Rule 1146.2 may be revised to lower the NO<sub>x</sub> emission limit to reflect a Best Available Retrofit Control Technology assessment.  <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB617 BARCT
1148.1 1148.2	<p><b>Oil and Gas Production Wells  Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers</b>  Proposed Amended Rules 1148.1 and 1148.2 may be revised to address community notification procedures, the inclusion of water injection wells, and potentially other measures based on an evaluation of information collected since the last rule adoption. Possibly other amendments to improve the enforceability.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1149	<p><b>Tank Degassing</b>  Proposed Amended Rule 1149 will improve the effectiveness, enforceability, and clarity of the rule.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other

**2019 To-Be-Determined (Continued)**

2019	Title and Description	Type of Rulemaking
1148.3	<p><b>Requirements for Natural Gas Underground Storage Facilities</b>  Proposed Rule 1148.3 will establish requirements to address public nuisance and VOC emissions from underground natural gas storage facilities.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1150.1	<p><b>Control of Gaseous Emissions from Municipal Solid Waste Landfills</b>  Proposed Amended Rule 1150.1 will address U.S. EPA revisions to the New Source Performance Standards for Municipal Solid Waste Landfills and Existing Guidelines and Compliance Timelines for Municipal Solid Waste Landfills, as well as CARB GHG requirements.  <i>Ian MacMillan 909.396.3244; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1151	<p><b>Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations</b>  Proposed Amended Rule 1151 is considering removing the tBac exemption and is evaluating the impact from removing pCBtF as a VOC exempt compound based on guidance from the Stationary Source Committee.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1153.1	<p><b>Emissions of Oxides of Nitrogen from Commercial Food Ovens</b>  Proposed Amendments to Rule 1153.1 may be needed to address applicability and technological feasibility of low-NOx burner technologies for new commercial food ovens.  <i>Michael Krause 909.396.2706 CEQA: Jillian Wong 909.396.3176 and Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1157	<p><b>PM10 Emission Reductions from Aggregate Related Operations</b>  Proposed Amended Rule 1157 will remove outdated language, revise opacity requirements, improve the effectiveness, enforceability, and clarity of the rule.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1159.1	<p><b>Nitric Acid Units – Oxides of Nitrogen</b>  Proposed Rule 1159.1 will address NOx emissions from processes using nitric acid and is needed as part of the transition of RECLAIM to command-and-control.  <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP AB 617 BARCT
1166	<p><b>VOC Emissions from Decontamination of Soil</b>  Proposed Amended Rule 1166 will revise notification provisions, improve the effectiveness, enforceability, and clarity of the rule.  <i>Michael Morris 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1173	<p><b>Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants</b>  Proposed revisions to Rule 1173 are being considered based on recent U.S. EPA regulations and CARB oil and gas regulations and revisions to improve the effectiveness, enforceability, and clarity of the rule.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other

**2019 To-Be-Determined (Continued)**

2019	Title and Description	Type of Rulemaking
1190, 1191, 1192, 1193, 1194, 1195, 1196, & 1186.1	<p><b>Fleet Vehicle Requirements</b>  Proposed amendments to fleet rules may be necessary to improve rule implementation. In addition, the current fleet rules may be expanded to achieve criteria pollutant and air toxic emission reductions pending new legislative authority.  <i>Zorik Pirveysian 909.396.2431; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1304.2  1304.3	<p><b>California Public Utilities Commission Regulated Electrical Local Publicly Owned Electrical Utility Fee for Use of SO<sub>x</sub>, PM<sub>10</sub> and NO<sub>x</sub> Offsets</b>  <b>Local Publicly Owned Electrical Generating Facility Fee for Use of SO<sub>x</sub>, PM<sub>10</sub> and NO<sub>x</sub> Offsets</b>  Proposed Rules 1304.2 and 1304.3 would allow new greenfield facilities and additions to existing electricity generating facilities conditional access to SCAQMD internal offset accounts for a fee, for subsequent funding of qualifying improvement projects consistent with the AQMP.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other  Other
1401	<p><b>New Source Review of Toxic Air Contaminants</b>  Proposed Amended Rule 1401 may be revised to add, remove, or revise toxic air contaminants based on changes from OEHHA.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1402	<p><b>Control of Toxic Air Contaminant Emissions from Existing Sources</b>  Proposed Amended Rule 1402 may be revised based on implementation of other toxic rules or programs.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1407.1	<p><b>Control of Toxic Air Contaminant Emissions from Chromium Alloy Melting Operations</b>  Proposed Rule 1407.1 will establish requirements to reduce point source and fugitive toxic air contaminant emissions from metal melting operations.  <i>Michael Morris 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1415 1415.1	<p><b>Reduction of Refrigerant Emissions from Stationary Air Conditioning Systems, and Reduction of Refrigerant Emissions from Stationary Refrigeration Systems</b>  Amendments will align with the proposed CARB Refrigerant Management Program and U.S. EPA's Significant New Alternatives Policy Rule provisions relative to prohibitions on specific hydrofluorocarbons.  <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1426	<p><b>Emissions from Metal Finishing Operations</b>  Proposed Amended Rule 1426 will establish requirements to control point and fugitive toxic air contaminant emissions from metal finishing operations.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics

**2019 To-Be-Determined (Continued)**

2019	Title and Description	Type of Rulemaking
1430	<p><b>Control of Emissions from Metal Grinding Operations at Metal Forging Facilities</b>  Proposed Amended Rule 1430 may be needed to establish requirements to reduce toxic air contaminant emissions from metal forging operations.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1445	<p><b>Control of Toxic Emissions from Laser Arc Cutting</b>  Proposed Rule 1445 will establish requirements to reduce toxic metal particulate emissions from laser arc cutting.  <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1469.1	<p><b>Spraying Operations Using Coatings Containing Chromium</b>  Proposed Amended Rule 1469.1 will establish additional requirements to address fugitive emissions from facilities that are conducting spraying operations using chromium primers or coatings to further reduce hexavalent chromium emissions.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1470	<p><b>Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines</b>  Proposed Amended Rule 1470 will establish additional provisions to reduce the exposure to diesel particulate from new and existing small (<math>\leq 50</math> brake horsepower) diesel engines located near sensitive receptors.  <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1902	<p><b>Transportation Conformity</b>  Proposed Amended Rule 1902 may be necessary to align the rule with current U.S. EPA requirements.  <i>Ian MacMillan 909.396.3244; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1905	<p><b>Pollution Controls for Automotive Tunnel Vents</b>  Proposed Rule 1905 will address emissions from proposed roadway tunnel projects that could have air quality impacts.  <i>Ian MacMillan 909.396.3244; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
2202	<p><b>On-Road Motor Vehicle Mitigation Options</b>  Proposed Rule 2202 may be amended to address program streamlining for regulated entities, as well as reduce review and administration time for SCAQMD staff. Proposed Rule amendment concepts may include program components to facilitate the obtainment of average vehicle ridership (AVR) targets.  <i>Carol Gomez 909.396.3264; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
Reg. XVI	<p><b>Mobile Source Offset Programs</b>  Proposed Amendments to Regulation XVI rules will allow generation of criteria pollutant Mobile Source Emission Reduction Credits (MSERCs) from various on-road and off-road sources, such as on-road heavy-duty trucks, off-road equipment, locomotives, and marine vessels. Credits will be generated by retrofitting existing engines or replacing the engines with new lower-emitting or zero-emission engines.  <i>Zorik Pirveysian 909.396.2431; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP

**2019 To-Be-Determined (Continued)**

2019	Title and Description	Type of Rulemaking
Reg. XVII	<p><b>Prevention of Significant Deterioration(PSD)</b>                      Proposed Amendments to Regulation XVII are being considered for possible revisions based on information from U.S. EPA.  <i>Carol Gomez 909.396.3264; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
Reg. XXVII	<p><b>Climate Change</b>                      Changes may be needed to Regulation XXVII to add or update protocols for GHG reductions, and other changes.  <i>Zorik Pirveysian 909.396.2431; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
Reg. II, IV, XIV, XI, XXIII, XXIV, XXX and XXXV	<p>Various rule amendments may be needed to meet the requirements of state and federal laws, implement OEHHA’s 2015 revised risk assessment guidance, address variance issues/ technology-forcing limits, to abate a substantial endangerment to public health or additional reductions to meet the SIP short-term measure commitment. The associated rule development or amendments include, but are not limited to, SCAQMD existing rules, new or amended rules to implement the 2012 or 2016 AQMP measures. This includes measures in the 2010 Clean Communities Plan (CCP) or 2016 AQMP to reduce toxic air contaminants or reduce exposure to air toxics from stationary, mobile, and area sources. Rule adoption amendments may include updates to provide consistency with CARB Statewide Air Toxic Control Measures, U.S. EPA’s National Emission Standards for Hazardous Air Pollutants, or implementation of AB 617.</p>	Other/ AQMP

## ATTACHMENT 1

### **AB 617 Expedited BARCT Implementation Schedule**

On July 26, 2017, Assembly Bill (AB) 617 authored by Assembly Member Cristina Garcia was signed into law with the objective to address the disproportionate impacts of air pollution in disadvantaged communities. AB 617 requires air districts to take specific actions to reduce air pollutants and toxic air contaminants from commercial and industrial sources within and affecting communities most impacted by air pollution. The SCAQMD is actively conducting comprehensive community-based efforts that focus on improving air quality and public health in environmental justice communities. SCAQMD is closely working with CARB, community groups, community members, environmental organizations, and regulated industries, to develop community air monitoring and community emissions reduction programs pursuant to AB 617 requirements.

Other aspects of AB 617 and related bills appropriate funding to incentivize deployment of cleaner technologies in disadvantaged communities, grants for community participation, higher penalty fees, and greater transparency and availability of air quality and emissions data. Additionally, AB 617 requires each air district that is in nonattainment for one or more air pollutants to adopt, by January 1, 2019, an expedited schedule for the implementation of Best Available Retrofit Control Technology (BARCT) no later than December 31, 2023 for facilities that are in the state's greenhouse gas cap-and-trade program. The schedule shall give the highest priority to older, higher polluting units that have not modified emissions-related equipment for the greatest period of time.

The South Coast Air Basin is currently in federal non-attainment for annual and 24-hour PM<sub>2.5</sub> and 1-hour and 8-hour ozone. It is also in non-attainment of state air quality standards for PM<sub>2.5</sub>, PM<sub>10</sub>, and ozone. The Coachella Valley is also in non-attainment for 8-hour ozone and PM<sub>10</sub>. As required by state and federal law, the SCAQMD develops and adopts Air Quality Management Plans (AQMPs) that describe the measures that will bring the region into attainment by applicable deadlines. Federal law requires that these plans implement all Reasonably Available Control Technologies and Measures (RACT and RACM). State law requires that districts in non-attainment areas implement BARCT. Therefore, the SCAQMD is already required to adopt rules to implement the best pollution controls in order to meet federal and state air quality standards. AB 617 adds an additional deadline (December 31, 2023) for a subset of pollution sources in the region to these other pre-existing other requirements.

Since the early 1990s, SCAQMD has implemented a market-based alternative to direct command-and-control regulations that require BARCT-level controls on individual pieces of equipment. The RECLAIM program, which addressed NO<sub>x</sub> and SO<sub>x</sub> emissions, was required to be at least as stringent as command-and control regulations in terms of overall emission reductions achieved. When the 2016 AQMP was adopted, the Board directed staff to sunset the NO<sub>x</sub> RECLAIM program and return to a command-

and-control regulatory structure. The sunset is to occur as soon as practicable, and achieve an additional five tons of NO<sub>x</sub> reductions per day by 2025. Thus, prior to the passage of AB 617, the SCAQMD was already in the process of developing command-and-control BARCT on all NO<sub>x</sub> sources (not just those in the state's GHG cap-and-trade program). AB 617 requirements have expedited the transition by moving up the target implementation date to December 2023, given statutory feasibility and cost-effectiveness constraints. The suite of NO<sub>x</sub> rules scheduled for adoption in the coming years to complete the NO<sub>x</sub> RECLAIM transition (and thus comply with AB 617) is provided in the table below. Note that these rules will cover all NO<sub>x</sub> sources, including those currently within and outside of RECLAIM, whether they are in the state's GHG cap-and-trade program or not, and include electrical generating facilities. In other words, AB 617's narrow applicability does not preclude SCAQMD's other obligations under state law to require BARCT.

Current efforts are focused on requiring BARCT for NO<sub>x</sub> given this pollutant's primary role leading to PM and ozone non-attainment. However, VOC emissions also lead to ozone formation, and VOCs, SO<sub>x</sub>, ammonia, and direct PM emissions also lead to ambient PM. Federal RACT/RACM and state BARCT requirements also apply to these other precursors and pollutants. These requirements are satisfied through the AQMP process. Each AQMP includes an analysis of the best available controls for all pollutants and precursors. Based on that analysis, measures are proposed and rules developed or amended to require BARCT, and in some cases, technology-forcing rules are adopted that go beyond existing BARCT. The evaluation of BARCT is continual to reflect the progress in technology development. Thus, for VOC, direct PM, and ammonia, current SCAQMD regulatory requirements largely require BARCT on all sources already. Future updates to BARCT requirements will be considered within the AQMP process. A few rules in the table below are intended to address PM and VOC BARCT prior to the next AQMP cycle.

Like NO<sub>x</sub>, SO<sub>x</sub> emissions from larger sources are addressed through the RECLAIM program. The last BARCT assessment was conducted in 2005, led to a significant SO<sub>x</sub> "shave" in the RECLAIM market, and led to the installation of controls at most of the RECLAIM SO<sub>x</sub> sources. While not yet directed by the Board, and not necessarily required by AB 617, a full assessment of the SO<sub>x</sub> RECLAIM program, and whether it too should be transitioned to command-and-control, will occur subsequent to the adoption of the major rules for the RECLAIM NO<sub>x</sub> transition (likely 2020). The priority on NO<sub>x</sub> is necessary given its importance for both PM<sub>2.5</sub> and ozone attainment and the need for an integrated and efficient control strategy.

**Table 1**  
**Proposed Schedule for AB617 BARCT Implementation Rules**

<b>AB 617 BARCT Implementation Rules<sup>1</sup></b>		<b>Proposed Rulemaking Schedule</b>	<b>Pollutant</b>	<b>Air Quality Benefits (tpd)<sup>2</sup></b>
1146 <sup>3</sup>	Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters	December 2018	NOx	0.27
1118.1	Control of Emissions from Non-Refinery Flares	January 2019	NOx	0.20
1106.1	Pleasure Craft Coatings	Q1 2019	VOC	TBD
1134	Emissions of Oxides of Nitrogen from Stationary Gas Turbines	Q2 2019	NOx	TBD
1110.2	Emissions from Stationary Internal Combustion Engines	Q3 2019	NOx	TBD
1138	Emissions Control from Restaurant Operations	Q3 2019	PM	TBD
1147	NOx Reductions from Miscellaneous Sources	Q3 2019	NOx	TBD
1147.1	NOx Reductions from Large Miscellaneous Sources	Q3 2019	NOx	TBD
445	Wood Burning Devices	Q4 2019	PM	TBD
1109.1	Refinery Equipment	Q4 2019	NOx	TBD
1117	Glass Melting Furnaces	Q4 2019	NOx	TBD
1147.2	NOx Reductions from Metal Melting Sources	Q4 2019	NOx	TBD
1147.3	NOx Reductions from Aggregate Facilities	Q4 2019	NOx	TBD
1150.3	NOx Reductions from Combustion Equipment at Landfills	Q1 2020	NOx	TBD
1179.1	NOx Reductions from Combustion Equipment at Publicly Owned Treatment Works	Q1 2020	NOx	TBD
1159.1	Nitric Acid Units - Oxides of Nitrogen	Q1 2020	NOx	TBD
1153.1	NOx Reductions from Commercial Food Ovens	Q1 2020	NOx	TBD
1146.2	NOx Reductions from Large Water Heaters and Small Boilers and Process Heaters	Q1 2022	NOx	TBD

The expedited BARCT implementation schedule will be adopted pursuant to the requirements in paragraph (d)(1)-(3) of California H&SC 40920.6:

*(d) Prior to adopting the schedule pursuant to paragraph (1) of subdivision (c), a district shall hold a public meeting and take into account:*

*(1) The local public health and clean air benefits to the surrounding community.*

*(2) The cost-effectiveness of each control option.*

*(3) The air quality and attainment benefits of each control option.*

<sup>1</sup> The listed AB 617 BARCT Implementation Rules, in addition to Rule 1135 (Emissions of Oxides of Nitrogen from Electric Power Generating Facilities) and Rule 1153.1 (Emissions of Oxides of Nitrogen from Commercial Food Ovens) are rulemakings for the transition of the RECLAIM program to a command-and-control regulatory structure.

<sup>2</sup> Reductions to be determined once the technical assessment is complete, and inventory and control approach are identified.

<sup>3</sup> The rulemaking for Rule 1146 includes amendments to Rule 1146.1 (Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters) and Rule 1146.2 (Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters).

## **Local Public Health and Clean Air Benefits**

Although there are compliance costs for implementing controls to achieve the necessary emission reductions, there will be significant savings in public health and clean air benefits both locally and regionally by lowering health risks. These necessary emission reductions needed to attain the ozone and PM<sub>2.5</sub> air quality standards are not only required by federal law, but will also improve public health with cleaner air quality across the region, which will lower the health risks described below<sup>4</sup>.

### *Ozone*

Individuals working outdoors, children (including teenagers), older adults, people with preexisting lung disease, such as asthma, and individuals with certain nutritional deficiencies are considered to be the subgroups most susceptible to ozone effects. Short-term exposures (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Elevated ozone levels are associated with increased school absences and daily hospital admission rates, as well as increased mortality. An increased risk for asthma has been found in children who participate in multiple sports and live in high-ozone communities. Ozone exposure under exercising conditions is known to increase the severity of respiratory symptoms. Although lung volume and airway resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

### *PM<sub>2.5</sub> and PM<sub>10</sub>*

Several studies have found correlations between elevated ambient particulate matter levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions in different parts of the United States and in various areas around the world. In recent years, studies have reported an association between long-term exposure to PM<sub>2.5</sub> and increased total mortality (reduction in life-span and increased mortality from lung cancer). Higher levels of PM<sub>2.5</sub> have also been related to increased mortality due to cardiovascular or respiratory diseases, hospital admissions for acute respiratory conditions, school absences, lost work days, a decrease in respiratory function in children, and increased medication use in children and adults with asthma. Long-term exposure to PM has been found to be associated with reduced lung function growth in children, and increased risk of cardiovascular diseases in adults. Elderly persons, young children, and people with pre-existing respiratory and/or cardiovascular disease appear to be more susceptible to the effects of PM<sub>10</sub> and PM<sub>2.5</sub>.

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<sup>4</sup> An expanded discussion and additional references of studies relating to exposures to air pollutants and the health effects can be found in Appendix I of the 2016 AQMP.

## *NO2*

Evidence of the health effects of NO<sub>2</sub> is derived from human and animal studies, which link NO<sub>2</sub> with respiratory effects such as decreased lung function and increases in airway responsiveness, pulmonary inflammation, and oxidative stress, and can lead to the development of allergic responses. These biological responses provide evidence of a plausible mechanism for NO<sub>2</sub> to cause asthma. Additionally, results from controlled exposure studies of asthmatics demonstrate an increase in the tendency of airways to contract in response to a chemical stimulus (airway responsiveness) or after inhaled allergens. Animal studies also provide evidence that NO<sub>2</sub> exposures have negative effects on the immune system, and therefore increase the host's susceptibility to respiratory infections. Epidemiological studies showing associations between NO<sub>2</sub> levels and hospital admissions for respiratory infections support such a link, although the studies examining respiratory infections in children are less consistent.

### **Cost-Effectiveness**

Consistent with Health & Safety Code Section 40920.6, a cost-effectiveness analysis is performed when establishing BARCT emission limits. Cost-effectiveness is measured in terms of the control cost in dollars per ton of air pollutant reduced. The costs for the control technology includes purchasing, installing, operating, and maintaining the control technology. The 2016 AQMP established a cost-effectiveness threshold of \$50,000 per ton of NO<sub>x</sub> reduced<sup>5</sup> for each control measure considered in the 2016 AQMP and for subsequent rule developments when more detailed information is available. When the cost-effectiveness of a rule or control option is higher than this threshold, additional analysis should be performed. An integrated control strategy addressing multiple objectives provides for a more efficient path in meeting all clean air standards, including the federal ozone and PM<sub>2.5</sub> standards. For example, the NO<sub>x</sub> emission reductions that are needed for ozone attainment will also reduce PM<sub>2.5</sub> attainment levels, since NO<sub>x</sub> is an important precursor to ozone and PM<sub>2.5</sub> formation. Therefore, allocating resources towards NO<sub>x</sub> reductions is a more cost-effective strategy than separately implementing controls that only benefit PM<sub>2.5</sub>. Furthermore, in designing an integrated control strategy to achieve the ozone and PM<sub>2.5</sub> air quality standards, consideration must be given to the health of the public, the economic well-being of the region, and challenges for local business.

### **Attainment Benefits**

In order to assist in the attainment of the 1997 and 2008 8-hour ozone standards (80 ppb and 75 ppb respectively), CMB-05 seeks to reduce 5 tpd of NO<sub>x</sub> emissions by transitioning RECLAIM facilities to a command-and-control regulatory structure. Projected creditable emission reductions from the implementation of CMB-05 are expected to generate 5 tpd NO<sub>x</sub> emission reductions by 2025. The 2016 AQMP includes

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<sup>5</sup> Although, the cost-effectiveness threshold was not developed for particulate matter, it provides a useful framework for evaluating control strategies for particulate matter.

10 stationary source control measures designed to reduce PM<sub>2.5</sub> levels that are to be adopted and implemented in the next several years. These measures involve Best Available Control Measures (BACM) as required and would see reductions from a variety of sources (such as restaurants, industrial cooling towers, road dust sources, ammonia emissions and more) and will seek to assist in meeting the annual (12 µg/m<sup>3</sup>) and 24-hour (35 µg/m<sup>3</sup>) PM<sub>2.5</sub> standards.

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BOARD MEETING DATE: December 7, 2018

AGENDA NO. 12

REPORT: Legislative, Public Affairs and Media Report

SYNOPSIS: This report highlights the October 2018 outreach activities of the Legislative, Public Affairs and Media Office, which includes Major Events, Community Events/Public Meetings, Environmental Justice Update, Speakers Bureau/Visitor Services, Communications Center, Public Information Center, Business Assistance, Media Relations, and Outreach to Community Groups and Federal, State, and Local Government.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:  
Receive and file.

Wayne Nastri  
Executive Officer

DJA:LTO:DM:jns

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## **BACKGROUND**

This report summarizes the activities of the Legislative, Public Affairs and Media Office for October 2018. The report includes: Major Events; Community Events/Public Meetings; Environmental Justice Update; Speakers Bureau/Visitor Services; Communications Center; Public Information Center; Business Assistance; Media Relations; and Outreach to Community Groups and Governments.

## **MAJOR EVENTS (HOSTED AND SPONSORED)**

Each year SCAQMD staff engage in holding and sponsoring a number of major events throughout the SCAQMD's four county area to promote, educate and provide important information to the public regarding reducing air pollution, protecting public health, and improving air quality and the economy.

## **October 5**

SCAQMD held the 30<sup>th</sup> Annual Clean Air Awards to honor those who have made outstanding clean air contributions to the health of our communities and economy. The event was attended by more than 350 guests and emceed by Kaj Goldberg, Anchor and Weathercaster for KTLA TV.

2018 Clean Air Award Recipients are listed below:

### **Robert M. Zweig, M.D Memorial Award**

- Dr. Keith L. Black, M.D., Chairman and Professor, Department of Neurosurgery, Director, Maxine Dunitz Neurosurgical Institute Cedars-Sinai Medical Center

### **Model Community Achievement**

- Metrolink (Southern California Regional Rail Authority)
- City of Paramount

### **Innovative Clean Air Technology**

- Tesla

### **Clean Air Education and Outreach**

- California State University, Los Angeles

### **Business Leadership in Air Quality**

- Los Angeles World Airports (LAWA)
- Proterra, Inc.

### **Youth Leadership in Air Quality**

- Grid Alternatives, Inland Empire

## **COMMUNITY EVENTS/PUBLIC MEETINGS**

Each year SCAQMD staff engage with thousands of residents, providing valuable information about the agency, incentive programs and ways individuals can help reduce air pollution through events and meetings sponsored solely by SCAQMD or in partnership with others. Attendees typically receive the following information:

- Tips on reducing their exposure to smog and its health effects;
- Clean air technologies and their deployment;
- Invitations or notices of conferences, seminars, workshops and other public events;
- SCAQMD incentive programs;
- Ways to participate in SCAQMD's rule and policy development; and
- Assistance in resolving air pollution-related problems.

SCAQMD staff attended and/or provided information and updates at the following events:

**October 3**

- Science Technology Education Program (STEP) Conference, Bourns College of Engineering and the Center for Environmental Research and Technology, University of California, Riverside
- Los Angeles County Public Health & Air Quality Workshop Meeting, Los Angeles

**October 6**

- 6<sup>th</sup> Annual Rendezvous Back to Route 66, Downtown San Bernardino.

**October 10**

- Ride & Drive Electric Vehicle Exhibition, Loyola Marymount University, Los Angeles

**October 20**

- 2018 Annual Taste of Soul Family Festival, Los Angeles

**October 27**

- The Green Prize Festival, Admiral Kidd Park, Long Beach

**ENVIRONMENTAL JUSTICE UPDATE**

The following are key environmental justice-related activities in which staff participated throughout the month of October 2018. These events involve communities affected disproportionately from adverse air quality impacts.

**October 2**

A kickoff community meeting was held in Wilmington for the AB 617 program, which focuses on reducing air pollution in environmental justice communities. The purpose of the meeting was to seek members for the Community Steering Committee, to help guide program implementation in the Wilmington, Carson and West Long Beach AB 617 communities.

**October 2**

Staff participated in an environmental justice community roundtable meeting hosted by East Yard Communities for Environmental Justice and the State Lands Commission in Long Beach. The Commission has drafted an Environmental Justice Policy and Implementation Plan and are seeking community input throughout the State on how to better identify and address environmental justice concerns impacting communities.

### **October 9**

Staff organized and participated in conference calls to provide updates on Health Risk Assessments for two companies operating in Paramount. One was with representatives of elected officials and the other was with government agencies, including the U.S. EPA, Cal/EPA, State Regional Water Control Board, Los Angeles County Public Health, City of Paramount, and the Los Angeles County Fire Department.

### **October 9**

A kickoff community meeting was held in San Bernardino for the AB 617 program, which focuses on reducing air pollution in environmental justice communities. The purpose of the meeting was to seek members for the Community Steering Committee to help guide program implementation in the San Bernardino/Muscoy AB 617 communities.

### **October 11**

Staff participated in the second California Environmental Quality Act (CEQA) scoping meeting for Quemetco at the Hacienda Heights Community Center. There were about 150 attendees including federal, state and local government representatives, residents, stakeholders, and environmental justice organizations.

### **October 16**

A kickoff community meeting in Commerce for the AB 617 program, which focuses on reducing air pollution in environmental justice communities. The purpose of the meeting was to seek members for the Community Steering Committee to help guide program implementation in the West Commerce, Boyle Heights and East Los Angeles AB 617 communities.

### **October 18**

Staff attended the Environmental Justice Summit hosted by Comite Civico del Valle in Heber, CA. The Summit was a networking opportunity for conference attendees. There were about 100 attendees including CARB staff, Eastern Coachella Valley and Imperial County community-based organizations, community members, and academia.

### **October 19**

Staff attended the 9<sup>th</sup> Annual Environmental Health Leadership Summit hosted by Comite Civico del Valle in Heber, CA. There were approximately 200 attendees, including a group of high school students. The conference included a panel on the Salton Sea Air Basin District's Emission Reduction Efforts including SCAQMD staff and staff from the Imperial County Air Pollution Control District.

### **October 24**

Staff participated in an Environmental Justice tour led by the Leadership Counsel for Justice and Accountability of a Polanco Park in Eastern Coachella Valley. The mobile home park has unpaved roads which leads to airborne dust affecting the air quality and health of residents, especially children.

### **October 24**

Staff participated in the Coachella Valley Environmental Justice Enforcement Task Force meeting hosted by Comite Civico del Valle and the Colorado River Basin Los Angeles Regional Water Quality Board. Staff from the California Department of Public Health presented information regarding the current California Regional Exposure (CARE) Study. The CARE Study measures some of the potentially harmful chemicals in people's bodies and investigates how people in California come into contact with the chemicals.

### **October 30**

Staff held the first AB 617 Steering Committee meeting in Wilmington. The purpose of the meeting was to provide the Steering Committee members with more information about their role in providing program guidance for the Wilmington, Carson and West Long Beach AB 617 communities.

## **SPEAKERS BUREAU/VISITOR SERVICES**

SCAQMD regularly receives requests for staff to speak on air quality-related issues from a wide variety of organizations, such as trade associations, chambers of commerce, community-based groups, schools, hospitals and health-based organizations. SCAQMD also hosts visitors from around the world who meet with staff on a wide range of air quality issues.

### **October 11**

- Staff presented information on SCAQMD Rule 1403 - Asbestos Emissions from Demolition/Renovation Activities, to 70 members of the Indoor Air Quality Association at the Trinity Episcopal Church in Orange.

### **October 19**

- Staff hosted 15 automotive repair professionals and instructors from Rio Hondo College in Whittier. The visit included a tour of SCAQMD's laboratory, alternative fueling stations, and a display of various types of clean air vehicles.

**COMMUNICATION CENTER STATISTICS**

The Communication Center handles calls on SCAQMD’s main line, the 1-800-CUT-SMOG® line, the Spanish line, and after-hours calls to each of those lines. Total calls received in the month of October were:

Calls to SCAQMD’s Main Line and 1-800-CUT-SMOG® Line	3,565
Calls to SCAQMD’s Spanish-language Line	<u>37</u>
Total Calls	3,602

**PUBLIC INFORMATION CENTER STATISTICS**

The Public Information Center (PIC) handles phone calls and walk-in requests for general information. Information for the month of October is summarized below:

Calls Received by PIC Staff	150
<u>Calls to Automated System</u>	<u>723</u>
Total Calls	873

Visitor Transactions	290
Email Advisories Sent	41,209

**BUSINESS ASSISTANCE**

SCAQMD notifies local businesses of proposed regulations so they can participate in the agency’s rule development process. SCAQMD also works with other agencies and governments to identify efficient, cost-effective ways to reduce air pollution and shares that information broadly. Staff provides personalized assistance to small businesses both over the telephone and via on-site consultation. The information is summarized below:

- Provided permit application assistance to 164 companies
- Processed 54 Air Quality Permit Checklists
- Conducted 6 free on-site consultations

**Types of businesses assisted**

Auto Body Shops	Dry Cleaners	Furniture Refinishing Facilities
Plating Facilities	Gas Stations	Manufacturing Facilities
Auto Repair Centers	Restaurants	Printing Facilities
Engineering, Construction, & Architecture Firms		

## **MEDIA RELATIONS**

The Media Office handles all SCAQMD outreach and communications with television, radio, newspapers and all other publications and media operations.

Total Media Inquiries: 68

Press Releases Issued: 6

### **Major Media Topics for October**

#### **All inquiries closed unless noted as pending**

- **Summer Ozone Exceedances:** L.A. Times requested information regarding ozone exceedances during the summer smog season. Staff conducted telephone interviews with the reporter.
- **Coastal Odors:** Two reporters from the Orange County Register inquired about weekend odor events including the number of complaints, whether a source was identified, ongoing SCAQMD efforts to identify coastal odors, and the presence or absence of H<sub>2</sub>S in coastal odor events.
- **Air Pollution Science Under the Administration:** A reporter from Reveal News requested information on what measurable public health improvements have resulted from air quality improvements in Southern California, including any studies or data showing the positive health impacts from ozone and PM reduction. Staff provided references to two publications from the Children's Health Study and referrals to the study's authors at USC.
- **Air Quality Trends:** A reporter from KPCC/LAist requested general information on early air pollution efforts in the Southland, and a spreadsheet showing peak ozone levels in PM from 1955 - present. Staff directed the reporter to data and charts on the SCAQMD website and in the AQMP.
- **Clean Air Awards:** Staff received and fulfilled requests for quotes from the Executive Officer for the Los Angeles World Airport and Metrolink for press releases, which the respective agencies issued upon receipt of their awards.
- **Process Failure at Chevron Refinery in El Segundo:** Staff provided information to a reporter for Easy Reader newspaper about results from SCAQMD's sampling and analyses of catalyst dust during recent flaring/catalyst dust release incidents at Chevron's El Segundo refinery. Bloomberg News sought information about a possible process failure at the refinery and was informed that the SCAQMD is investigating the incident.
- **Fresno EPA Meeting:** The Fresno Bee inquired about the SCAQMD's participation in a Fresno-based U.S. EPA meeting on the proposed federal "SAFE" rule to roll back vehicle fuel efficiency standards. Staff issued a statement regarding SCAQMD's attendance and testimony. Staff also conducted an interview with Valley Public on the same topic.
- **Aliso Canyon Gas Leak:** The Los Angeles Daily News interviewed SCAQMD's Health Effects Officer regarding the SCAQMD health study on the Aliso Canyon gas leak. Staff also provided an update on the study to KPCC.

- **Autonomous Vehicles:** Staff conducted an interview with KPCC on autonomous vehicles and what impact they might have on emissions.
- **Mira Costa High School Asbestos Cleanup:** A Reporter with Easy Reader Newspaper inquired about the status of cleanup at the high school.
- **Smog Emissions from Commercial Cooking:** Bloomberg Environmental News inquired about SCAQMD rule proposals related to commercial cooking on underfired charbroilers.
- **Petition for Ultra-Low NOx Heavy-Duty Engine Rule:** IWP News requested a status update on the 2016 SCAQMD petition to the U.S. EPA.
- **Mitigation Fees:** The Daily Breeze requested a list of all violations, Supplemental Environmental Projects and mitigation fees paid to SCAQMD by ExxonMobil and PBF for the Torrance Refinery. A Public Records Request was submitted on behalf of the reporter.
- **Air Quality:** Staff conducted an interview with KPCC on the week's air quality and the possible causes of hazy conditions.
- **Westways Infographic:** Westways Magazine invited SCAQMD to provide a short quote for inclusion in a special article pertaining to alternative fuel vehicles and U.S. EPA stickers/labels.
- **Metrolink:** Staff responded to a request from the Southern California Newspaper Group for two NOV's issued to Metrolink for operating contrary to permit conditions.
- **Anaplex and Aircraft:** Following the issuance of the October 30, 2018 press release on hexavalent chrome risks relating to Anaplex and Aircraft facilities in Paramount, the Long Beach Post requested more information on the specific local communities to be notified in the AB 2588 process.
- **Asbestos:** The Boyle Heights Beat requested a status update on the issue of asbestos reported on Friday, October 26, 2018 at Roosevelt High School. Staff provided a summary of SCAQMD's activities.

## Media Campaigns

### Check Before You Burn:

- Video production and post-production underway for short video vignettes for social media
- Season kickoff press release issued on October 31, 2018

### News Releases & Media Advisories Issued

- Anaplex in Paramount Ordered to Temporarily Suspend Operations - October 4, 2018
- SCAQMD to Honor Clean Air Heroes at Annual Clean Air Awards Luncheon - October 5, 2018
- SCAQMD Takes Rapid Action to Protect Public Health Following Disturbance of Asbestos at Roosevelt High School - October 26, 2018

- SCAQMD Sets Public Meetings to Review Risks from Anaplex Corp. and Aerocraft Heat Treating Co. in Paramount - October 30, 2018
- SCAQMD Issues Windblown Dust Advisory - October 31, 2018
- Check Before You Burn This Season to Help Improve Air Quality - October 31, 2018

**OUTREACH TO COMMUNITY GROUPS AND FEDERAL, STATE, AND LOCAL GOVERNMENTS**

Field visits and/or communications were conducted with elected officials or staff from the following cities:

Alhambra	Fontana	Pomona
Anaheim	Fountain Valley	Rosemead
Arcadia	Glendora	San Bernardino
Azusa	Huntington Beach	San Dimas
Baldwin Park	Laguna Niguel	San Gabriel
Brea	La Cañada Flintridge	San Marino
Carson	La Puente	Sierra Madre
Claremont	La Verne	South El Monte
Chino	Los Angeles	South Pasadena
Covina	Mission Viejo	Temple City
Cypress	Monrovia	Tustin
Diamond Bar	Monterey Park	Walnut
Duarte	Ontario	West Covina
El Monte	Paramount	

Visits and/or communications were conducted with elected officials and/or staff from the following state and federal offices:

- U.S. Senator Dianne Feinstein
- U.S. Senator Kamala Harris
- U.S. Representative Judy Chu
- U.S. Representative Ken Calvert
- U.S. Representative Ted Lieu
- U.S. Representative Grace Napolitano
- U.S. Representative Lucille Roybal-Allard
- U.S. Representative Mark Takano
- U.S. Representative Mimi Walters
- Senator Ben Allen
- Senator Steven Bradford
- Senator Ling Ling Chang
- Senator Ricardo Lara
- Senator Connie M. Leyva
- Senator Mike Morrell
- Senator Anthony Portantino
- Assembly Member Autumn Burke
- Assembly Majority Floor Leader Ian Calderon
- Assembly Member Ed Chau
- Assembly Member Steven Choi
- Assembly Member Ed Hernandez
- Assembly Member Chris Holden
- Assembly Member Jose Medina
- Assembly Speaker Anthony Rendon
- Assembly Member Eloise Reyes
- Assembly Member Jay Obernolte

Staff represented SCAQMD and/or provided updates or a presentation to the following governmental agencies and business organizations:

Anaheim Chamber of Commerce  
Bear Valley Chamber of Commerce  
Chino Valley Chamber of Commerce  
Clean Cities Coalition  
Los Angeles County Department of Public Health  
Los Angeles Area Chamber of Commerce  
Metropolitan Water District, Southern California  
Omnitrans, San Bernardino  
Orange County Council of Governments  
Orange County Business Council  
Pasadena Chamber of Commerce  
San Bernardino County Transportation Authority  
San Bernardino Area Chamber of Commerce  
San Bernardino International Airport  
San Gabriel Valley Council of Governments  
San Gabriel Valley Economic Partnership  
South Bay Association of Chambers of Commerce  
South Bay Cities Council of Governments  
Southern California Gas Company  
Yucaipa Chamber of Commerce  
Western Riverside Council of Governments  
Wilmington Chamber of Commerce

Staff represented SCAQMD and/or provided updates or a presentation to the following community and educational groups and organizations:

California State University, San Bernardino  
California Conference of Carpenters  
California State Council of Laborers  
Coachella Valley Environmental Justice Task Force  
Coalition for Clean Air, Los Angeles  
East Yard Communities for Environmental Justice, Long Beach  
Inland Action, San Bernardino  
IBEW  
Five Mountain Communities, San Bernardino County  
Jobs to Move America  
Loma Linda University  
Riverside County Department of Education  
San Bernardino Valley College  
San Bernardino Department of Education  
State Lands Commission, Long Beach  
Wilmington Chamber of Commerce

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BOARD MEETING DATE: December 7, 2018

AGENDA NO. 13

REPORT: Hearing Board Report

SYNOPSIS: This reports the actions taken by the Hearing Board during the period of October 1 through October 31, 2018.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:  
Receive and file.

Julie Prussack  
Chairman of Hearing Board

DG

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Two summaries are attached: **October 2018 Hearing Board Cases and Rules From Which Variances and Orders for Abatement Were Requested in 2018**. An Index of District Rules is also attached.

The total number of appeals filed during the period October 1 to October 31, 2018 is 0; and total number of appeals filed during the period of January 1 to October 31, 2018 is 0.

## Report of October 2018 Hearing Board Cases

Case Name and Case No. (SCAQMD Attorney)	Rules	Reason for Petition/Hearing	District Position/ Hearing Board Action	Type and Length of Variance or Order	Excess Emissions
1. O.F. Wolfinbarger, Inc. Case No. 6120-1 (D. Hsu)	203 1401	Operating without a valid permit.	Opposed/Dismissed	IV & RV dismissed with prejudice for a lack of jurisdiction.	N/A
2. SCAQMD vs. MatchMaster Dyeing & Finishing, Inc. Case No 6110-1 (M. Reichert)	402 H&S §41700	Respondent seeking modification to test and implement new control equipment.	Stipulated/Issued	Mod. O/A issued commencing 7/24/18; the Hearing Board shall retain jurisdiction over this matter until 6/30/19.	N/A

### Acronyms

IV: Interim Variance

Mod. O/A: Modification Order for Abatement

N/A: Not Applicable

RV: Regular Variance

**Rules from which Variances and Orders for Abatement were Requested in 2018**

	2018	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
# of HB Actions Involving Rules														
109(c)(1)				1										1
202(a)								1		1				2
203											1			1
203(a)				2			1	1	1					5
203(b)		2	4	2	4	2	3	2	4	3				26
218(f)										1				1
222							1							1
401(b)(1)										1				1
402								1			1			2
431.1(c)(2)					2	1	1							4
461										1				1
461(c)(2)(B)								1						1
461(c)(3)(P)								1						1
461(e)(5)								3						3
463(c)(2)							2							2
463(d)(2)							2							2
463(e)(4)							2							2
463(f)(1)(C)							2							2
1110.2(d)(1)(F)							1							1
1110.2(d)(1)(H)							1							1
1110.2(d)(1)(L)				1										1
1110.2(e)(3)(b)										1				1
1110.2(f)(1)										1				1
1146(d)(6)							1			1				2
1146(d)(8)							1			1				2
1146.2							1							1
1146.2(e)							1							1
1147							1	1						2
1147(c)(1)		1							1					2
1149(c)(1)							1							1
1149(c)(2)							1							1
1149(c)(7)							1							1
1173(g)(1)										1				1
1178(d)(3)							2							2
1178(g)							2							2
1178(h)(4)							2							2
1401											1			1
1407				1										1
1415(d)(1)(A)							1							1
1420.2				2		1			1					4
1420.2(g)(3)(B)									1					1
1430									1					1
1430(d)(8)(A)									1	1				2
1470							1							1
2004(f)(1)		2	3		2		2	1	1	1				12
2011(c)(2)(A)		1												1
2011(c)(2)(B)		1												1
2011(e)(1)		1												1
2012(c)(2)(A)		1												1
2012(c)(2)(B)		1												1
2012(g)(1)		1												1
3002(c)		1												1
3002(c)(1)		1	3		3		3	2	2	1				15
H&S 41700								1			1			2
H&S 41701										1				1
H&S 42401										1				1

**DISTRICT RULES AND REGULATIONS INDEX  
FOR 2018 HEARING BOARD CASES AS OF OCTOBER 31, 2018**

**REGULATION I – GENERAL PROVISIONS**

Rule 109      Recordkeeping for Volatile Organic Compound Emissions

**REGULATION II – PERMITS**

Rule 202      Temporary Permit to Operate

Rule 203      Permit to Operate

Rule 218      Continuous Emission Monitoring

Rule 222      Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II

**REGULATION IV – PROHIBITIONS**

Rule 401      Visible Emissions

Rule 402      Nuisance

Rule 431.1    Sulfur Content of Gaseous Fuels

Rule 461      Gasoline Transfer and Dispensing

Rule 463      Organic Liquid Storage

**REGULATION XI - SOURCE SPECIFIC STANDARDS**

Rule 1110.2   Emissions from Gaseous- and Liquid-Fueled Internal Combustion Engines

Rule 1143      Consumer Paint Thinners and Multi-Purpose Solvents

Rule 1146      Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters

Rule 1146.2   Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters

Rule 1147      NOx Reductions from Miscellaneous Sources

Rule 1149      Storage Tank and Pipeline Cleaning and Degassing

Rule 1173      Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants

Rule 1178      Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities

**REGULATION XIV – TOXICS AND OTHER NON-CRITERIA POLLUTANTS**

- Rule 1401 New Source Review of Toxic Air Contaminants
- Rule 1407 Control of Emissions of Arsenic, Cadmium, and Nickel from Non-Ferrous Metal Melting Operations
- Rule 1415 Reduction of Refrigerant Emissions from Stationary Air Conditioning Systems
- Rule 1420.2 Emission Standard for Lead from Metal Melting Facilities
- Rule 1430 Control of Emissions from Metal Grinding Operations at Metal Forging Facilities
- Rule 1470 Requirements for Stationary Diesel-Fueled Internal Combustion and Other Ignition Engines

**REGULATION XX - REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)**

- Rule 2004 Requirements
- Rule 2011 Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SOx) Emissions
- Rule 2012 Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NOx) Emissions

**REGULATION XXX - TITLE V PERMITS**

- Rule 3002 Requirements

**CALIFORNIA HEALTH AND SAFETY CODE**

- §41700 Prohibited Discharges
- §41701 Restricted Discharges
- §42401 Violation of Abatement Order; Civil Penalty

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BOARD MEETING DATE: December 7, 2018

AGENDA NO. 14

REPORT: Civil Filings and Civil Penalties Report

SYNOPSIS: This reports the monthly penalties from October 1, 2018 through October 31, 2018, and legal actions filed by the General Counsel's Office from October 1 through October 31, 2018. An Index of District Rules is attached with the penalty report.

COMMITTEE: Stationary Source, November 16, 2018, Reviewed

RECOMMENDED ACTION:  
Receive and file this report.

Bayron T. Gilchrist  
General Counsel

BTG:ew

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There are no Civil Filings for October 2018

**Attachments**

October 2018 Penalty Report  
Index of District Rules and Regulations

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
General Counsel's Office**

**October 2018 Settlement Penalty Report**

<u><b>Total Penalties</b></u>	
<b>Civil Settlements:</b>	<b>\$174,550.00</b>
<b>Settlements including SEP</b>	<b>\$250,000.00</b>
<b>Self-Reported Settlements:</b>	<b>\$15,000.00</b>
<b>MSPAP Settlements:</b>	<b>\$33,708.00</b>
<b>Total Cash Settlements:</b>	<b>\$223,258.00</b>
<b>Total SEP Value:</b>	<b>\$250,000.00</b>
<b>Fiscal Year through 10 / 2018 Cash Total:</b>	<b>\$1,282,650.00</b>
<b>Fiscal Year through 10 / 2018 SEP Value Only Total:</b>	<b>\$260,000.00</b>

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
<b>Civil Settlements</b>						
5998	ALL AMERICAN ASPHALT	2004 2012 2012 Appen A	10/23/2018	NSF	P66157 P67358	\$8,500.00
800181	CALIFORNIA PORTLAND CEMENT CO	403 1158(d)(8) 2004	10/23/2018	NSF	P64372 P64763 P65378	\$10,000.00
143160	GARDENA OIL	203 203(b)	10/4/2018	SMP	P64988 P64990	\$4,000.00
800066	HITCO CARBON COMPOSITES INC	2004	10/18/2018	BST	P66853	\$2,400.00
21887	KIMBERLY-CLARK WORLDWIDE INC.-FULT. MILL	2004	10/10/2018	SMP	P66105	\$4,500.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
1744	KIRKHILL - TA COMPANY	2004	10/3/2018	DH	P65376	\$4,000.00
800170	LA CITY, DWP HARBOR GENERATING STATION	2004 2012	10/4/2018	NAS	P62063 P62072 P62074 P66102	\$25,000.00
185621	LA LIMITLESS AUTOWORKS	203	10/25/2018	SMP	P65155	\$750.00
185122	NITE LITE SIGNS, INC.	203	10/23/2018	TRB	P60693	\$1,000.00
171109	PHILLIPS 66 COMPANY/LOS ANGELES REFINERY	1173 1176 401 3002 221 2004	10/10/2018	NAS	P34679 P34699 P60456 P60458 P62055	\$19,000.00
105903	PRIME WHEEL	2004 2005 3002	10/25/2018	NSF	P57886	\$5,000.00
25513	SIX FLAGS THEMES PKS INC,SIX FLAGS MAGIC	3002 3003	10/30/2018	NSF	P62166	\$13,000.00
181667	TORRANCE REFINING COMPANY LLC	1176	10/11/2018	DH	P63412 P63413 P63414	\$43,000.00
181667	TORRANCE REFINING COMPANY LLC	401 1178 2004 3002	10/11/2018	DH	P45984 P63407	\$26,900.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
17956	WESTERN METAL DECORATING CO	2004	10/31/2018	NSF	P57097	\$7,500.00
		2012			P57862	
		3002(c)(1)			P57864	
		3003			P57872	

**Total Civil Settlements: \$174,550.00**

**Self-Reported Settlements**

180394	PAC OPERATING LTD PART C/O PROLOGIS		10/25/2018	SH	SRV	\$15,000.00
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**Total Self-Reported Settlements: \$15,000.00**

**MSPAP Settlements**

154194	ARCO #00117- SRR, LLC	461	10/12/2018	GC	P64913	\$1,593.00
		41960				
176650	ARCO #83615	461	10/12/2018	GC	P64974	\$1,200.00
166484	ARCO CENTRAL I	461	10/11/2018	GC	P64970	\$680.00
166484	ARCO CENTRAL I	461	10/11/2018	GC	P64986	\$100.00
185878	D R HORTON	403	10/11/2018	GC	P65568	\$1,800.00
175881	DALLAS BROOKS	461(e)(3)	10/12/2018	GC	P60097	\$560.00
179809	DOUG'S MOBIL SERVICE CENTER	461	10/11/2018	GC	P64921	\$420.00
		41960				
172375	EL CARISO GOLF COURSE, AGC HOLDINGS-EL C	461(c)(3)(Q)	10/17/2018	GC	P71087	\$600.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
176550	EL MONTE GREEN PETROLEUM EL MONTE ARCO	203(a)	10/11/2018	GC	P60098	\$250.00
185123	ELOY'S TREE SERVICE	13 CCR 2453	10/12/2018	GC	P66401	\$300.00
184887	FULLMER CONSTRUCTION	403	10/11/2018	GC	P63136	\$1,800.00
135462	G&M OIL CO #124	461 41960.2	10/12/2018	GC	P65739	\$750.00
143914	G&M OIL CO #140	461	10/12/2018	GC	P65740	\$600.00
182651	GREG HAMMORK ENTERPRISE, INC	201 203(a)	10/26/2018	GC	P65728	\$500.00
123774	HERAEUS PRECIOUS METALS NO. AMERICA, LLC	2004	10/12/2018	GC	P63718	\$450.00
185845	IRVINE COMPANY LOS OLIVOS 2	403(d)(1)	10/12/2018	GC	P64084	\$1,400.00
175025	KEOLIS TRANSIT SERVICES	203(b) 461(e)(2)	10/12/2018	GC	P63919	\$5,880.00
184471	KRISHNA PETROLEUM CO, INC.	203(a) 461	10/26/2018	GC	P65727	\$450.00
184471	KRISHNA PETROLEUM CO, INC.	203(a)	10/26/2018	GC	P65733	\$200.00
148135	L & J REPAIR AUTO BODY	109 203(b)	10/25/2018	TF	P65566	\$500.00
183855	MOLLER RETAIL #6120	461	10/12/2018	TF	P65742	\$800.00
133793	PALM SPRINGS FBO TWO LLC	461	10/12/2018	TF	P63141	\$1,600.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
156686	RERUBBER LLC	203(a)	10/12/2018	TF	P66557	\$700.00
134112	ROBERTSON'S READY MIX	1155 203(b)	10/12/2018	TF	P65057	\$1,600.00
172801	SUPERIOR ENVIRONMENTAL	1403	10/12/2018	TF	P64857	\$3,200.00
186199	SUPERIOR QUALITY SOILS	203(a)	10/12/2018	TF	P66556	\$1,000.00
167888	TRAXX CORPORATION	201 203(a)	10/25/2018	TF	P65385	\$1,200.00
147380	TRINITY BAT CO	203	10/25/2018	TF	P65782	\$800.00
187027	TURNER_PCL, A JOINT VENTURE	403	10/25/2018	TF	P65059	\$375.00
184370	VALLEY CONCRETE PUMPING	203(a)	10/25/2018	GV	P63963	\$800.00
141912	WESTERN OIL SPREADING SERVICES INC	203	10/25/2018	TF	P65157	\$1,600.00

**Total MSPAP Settlements: \$33,708.00**

**Settlements including SEP**

104306	Rainbow Transfer/Recycling, Inc. <i>Contribution of \$250,000 to the District's Fund 75 in settlement of the Writ of Mandate.</i>		10/2/2018	NAS	BS171620	\$250,000.00
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**Total Settlements including SEP: \$250,000.00**

**DISTRICT'S RULES AND REGULATIONS INDEX  
FOR OCTOBER 2018 PENALTY REPORT**

**REGULATION I - GENERAL PROVISIONS**

Rule 109 Recordkeeping for Volatile Organic Compound Emissions

**REGULATION II - PERMITS**

Rule 201 Permit to Construct

Rule 203 Permit to Operate

Rule 221 Plans

**REGULATION IV - PROHIBITIONS**

Rule 401 Visible Emissions

Rule 403 Fugitive Dust - Pertains to solid particulate matter emitted from man-made activities

Rule 461 Gasoline Transfer and Dispensing

**REGULATION XI - SOURCE SPECIFIC STANDARDS**

Rule 1155 Particulate Matter Control Devices

Rule 1158 Storage, Handling and Transport of Petroleum Coke

Rule 1173 Fugitive Emissions of Volatile Organic Compounds

Rule 1176 Sumps and Wastewater Separators

Rule 1178 Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities

**REGULATION XIV - TOXICS**

Rule 1403 Asbestos Emissions from Demolition/Renovation Activities

**REGULATION XX - REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)**

Rule 2004 Requirements

Rule 2005 New Source Review for RECLAIM

Rule 2012 Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO<sub>x</sub>) Emissions

Appendix A Protocol for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO<sub>x</sub>) Emissions

**REGULATION XXX - TITLE V PERMITS**

Rule 3002 Requirements

Rule 3003 Applications

**CALIFORNIA CODE OF REGULATIONS**

13 CCR 2453 Portable Equipment Application Process

**CALIFORNIA HEALTH AND SAFETY CODE**

41960 Certification of Gasoline Vapor Recovery System

41960.2 Gasoline Vapor Recovery

[↑ Back to Agenda](#)

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 15

REPORT: Lead Agency Projects and Environmental Documents Received By SCAQMD

SYNOPSIS: This report provides, for the Board's consideration, a listing of CEQA documents received by the SCAQMD between October 1, 2018 and October 31, 2018, and those projects for which the SCAQMD is acting as lead agency pursuant to CEQA.

COMMITTEE: Mobile Source, November 16, 2018; Reviewed

RECOMMENDED ACTION:  
Receive and file.

Wayne Natri  
Executive Officer

PF:SN:JW:DG:LW

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**CEQA Document Receipt and Review Logs (Attachments A and B)** – Each month, the SCAQMD receives numerous CEQA documents from other public agencies on projects that could adversely affect air quality. A listing of all documents received and reviewed during the reporting period October 1, 2018 through October 31, 2018 is included in Attachment A. A list of active projects from previous reporting periods for which SCAQMD staff is continuing to evaluate or has prepared comments is included in Attachment B. A total of 102 CEQA documents were received during this reporting period and 15 comment letters were sent. Notable project to highlight in this report include the Port of Los Angeles's Berths 97-109 (China Shipping) Container Terminal Project.

The Intergovernmental Review function, which consists of reviewing and commenting on the adequacy of the air quality analysis in CEQA documents prepared by other lead agencies, is consistent with the Board's 1997 Environmental Justice Guiding Principles and Environmental Justice Initiative #4. As required by the Environmental Justice Program Enhancements for FY 2002-03 approved by the Board in October 2002, each of the attachments notes those proposed projects where the SCAQMD has been contacted regarding potential air quality-related environmental justice concerns.

The SCAQMD has established an internal central contact to receive information on projects with potential air quality-related environmental justice concerns. The public may contact the SCAQMD about projects of concern by the following means: in writing via fax, email, or standard letters; through telephone communication; as part of oral comments at SCAQMD meetings or other meetings where SCAQMD staff is present; or by submitting newspaper articles. The attachments also identify, for each project, the dates of the public comment period and the public hearing date, if applicable. Interested parties should rely on the lead agencies themselves for definitive information regarding public comment periods and hearings as these dates are occasionally modified by the lead agency.

At the January 6, 2006 Board meeting, the Board approved the Workplan for the Chairman's Clean Port Initiatives. One action item of the Chairman's Initiatives was to prepare a monthly report describing CEQA documents for projects related to goods movement and to make full use of the process to ensure the air quality impacts of such projects are thoroughly mitigated. In response to describing goods movement, CEQA documents (Attachments A and B) are organized to group projects of interest into the following categories: goods movement projects; schools; landfills and wastewater projects; airports; general land use projects, etc. In response to the mitigation component, guidance information on mitigation measures were compiled into a series of tables relative to: off-road engines; on-road engines; harbor craft; ocean-going vessels; locomotives; fugitive dust; and greenhouse gases. These mitigation measure tables are on the CEQA webpages portion of the SCAQMD's website at: <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies>. Staff will continue compiling tables of mitigation measures for other emission sources, including airport ground support equipment and other sources.

As resources permit, staff focuses on reviewing and preparing comments for projects: where the SCAQMD is a responsible agency; that may have significant adverse regional air quality impacts (e.g., special event centers, landfills, goods movement, etc.); that may have localized or toxic air quality impacts (e.g., warehouse and distribution centers); where environmental justice concerns have been raised; and those projects for which a lead or responsible agency has specifically requested SCAQMD review. If staff provided written comments to the lead agency as noted in the column "Comment Status," there is a link to the "SCAQMD Letter" under the Project Description. In addition, if staff testified at a hearing for the proposed project, a notation is provided under the "Comment Status." If there is no notation, then staff did not provide testimony at a hearing for the proposed project.

During the period October 1, 2018 through October 31, 2018, the SCAQMD received 102 CEQA documents. Of the total of 119 documents\* listed in Attachments A and B:

- 15 comment letters were sent;
- 25 documents were reviewed, but no comments were made;
- 28 documents are currently under review;
- 19 documents did not require comments (e.g., public notices);
- 0 documents were not reviewed; and
- 32 documents were screened without additional review.

\* These statistics are from October 1, 2018 to October 31, 2018 and may not include the most recent “Comment Status” updates in Attachments A and B.

Copies of all comment letters sent to lead agencies can be found on the SCAQMD’s CEQA webpage at the following internet address:

<http://www.aqmd.gov/home/regulations/ceqa/commenting-agency>.

**SCAQMD Lead Agency Projects (Attachment C)** – Pursuant to CEQA, the SCAQMD periodically acts as lead agency for stationary source permit projects. Under CEQA, the lead agency is responsible for determining the type of CEQA document to be prepared if the proposal is considered to be a “project” as defined by CEQA. For example, an Environmental Impact Report (EIR) is prepared when the SCAQMD, as lead agency, finds substantial evidence that the proposed project may have significant adverse effects on the environment. Similarly, a Negative Declaration (ND) or Mitigated Negative Declaration (MND) may be prepared if the SCAQMD determines that the proposed project will not generate significant adverse environmental impacts, or the impacts can be mitigated to less than significance. The ND and MND are written statements describing the reasons why proposed projects will not have a significant adverse effect on the environment and, therefore, do not require the preparation of an EIR.

Attachment C to this report summarizes the active projects for which the SCAQMD is lead agency and is currently preparing or has prepared environmental documentation. As noted in Attachment C, the SCAQMD continued working on the CEQA documents for four active projects during October.

### **Attachments**

- A. Incoming CEQA Documents Log
- B. Ongoing Active Projects for Which SCAQMD Has or Will Conduct a CEQA Review
- C. Active SCAQMD Lead Agency Projects







**ATTACHMENT A  
INCOMING CEQA DOCUMENTS LOG  
October 01, 2018 to October 31, 2018**

<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>Airports</i> <b>SBC181018-01</b> Eastgate Building 1 Project	The proposed project consists of construction of a 655,746-square-foot warehouse, and two maintenance and service buildings totaling 50,000 square feet on 101.52 acres. The project is located on the southwest corner of Perimeter Road and Hangar Way in the City of San Bernardino. Reference SBC181017-02, SBC180904-03, and SBC180719-04 <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/eastgate-building-100918.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/eastgate-building-100918.pdf</a>  Comment Period: N/A Public Hearing: 10/29/2018	Public Hearing	San Bernardino International Airport Authority	Document does not require comments
<i>Industrial and Commercial</i> <b>LAC181002-01</b> Berths 206-209 Matson Buildings Demolition	The proposed project consists of demolition of four existing structures totaling 28,000 square feet for future development on 86 acres. The proposed project is located at Port of Los Angeles Berths 206-209 on the northwest corner of New Dock Street and South Henry Ford Avenue.  Comment Period: 9/27/2018 - 10/26/2018 Public Hearing: N/A	Notice of Intent to Adopt a Negative Declaration	City of Los Angeles Harbor Department	Document reviewed - No comments sent
<i>Industrial and Commercial</i> <b>LAC181002-13</b> City Yards Master Plan Project	The proposed project consists of demolition, removal, and redevelopment of 16 existing buildings totaling 65,348 square feet, and construction of 51,013 square feet of new industrial buildings on 14.2 acres. The project is located at 2500 Michigan Avenue on the southeast corner of Michigan Avenue and 24th Street. Ref LAC171117-06  Comment Period: 10/2/2018 - 11/16/2018 Public Hearing: N/A	Draft Environmental Impact Report	City of Santa Monica	Under review, may submit written comments
<i>Industrial and Commercial</i> <b>LAC181009-04</b> Berths 118 and 119 (Kinder Morgan) Wharf Repair Project	The proposed project consists of construction of berthing and structural repairs including repair of wharf-support timber piles and wharf deck, and installation of new wharf-support and fender piles. The project is located southeast of the John S. Gibson Boulevard and West Harry Bridges Boulevard intersection. Reference LAC180814-11 <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/mndberths118and119-091218.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/mndberths118and119-091218.pdf</a>  Comment Period: N/A Public Hearing: 10/18/2018	Response to Comments	City of Los Angeles Harbor Department	Document reviewed - No comments sent

# - Project has potential environmental justice concerns due to the nature and/or location of the project.  
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.









**ATTACHMENT A  
INCOMING CEQA DOCUMENTS LOG  
October 01, 2018 to October 31, 2018**

<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>Utilities</i> <b>RVC181002-06</b> Riverside Transmission Reliability Project	The proposed project consists of construction of two miles of 230-kV underground double-circuit duct bank, refinements to the proposed overhead 230-kV transmission line and route, relocation of existing overhead distribution lines or a different overhead location to accommodate the new 230-kV transmission line, and temporary use of two marshalling yards to store construction materials. The project is bordered to the north by State Route 60 and existing Mira Loma-Vista transmission lines and to the west by Interstate 15 within the cities of Jurupa Valley, Norco, and Riverside. Reference RVC180330-04, RVC170124-01, RVC150512-02 <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/dseirrivsidetransmission-051518.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/dseirrivsidetransmission-051518.pdf</a>  Comment Period: N/A	Notice of Availability of a Final Subsequent Environmental Impact Report	Public Utilities Commission	Document reviewed - No comments sent
<i>Transportation</i> <b>SBC181023-06</b> Mount Vernon Avenue Bridge Project	The proposed project consists of replacement of bridge over Burlington Northern Santa Fe rail yard. The project is located near the southwest corner of West 5th Street and H Street in the City of San Bernardino. Reference SBC180605-07 <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/deamountvernon-062918.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/deamountvernon-062918.pdf</a>  Comment Period: N/A	Findings of No Significance	California Department of Transportation	Document reviewed - No comments sent
<i>Institutional (schools, government, etc.)</i> <b>LAC181002-08</b> Malibu Schools Alignment Project	The proposed project consists of expansion of the Point Dume campus in two phases. Phase 1 consists of construction of ten portable buildings totaling 10,080 square feet. Phase 2 consists of construction of two buildings, totaling 17,500 square feet and subsequent removal of the portable buildings. The project is located at 6955 Fernhill Drive on the southwest corner of Grayfox Street and Fernhill Drive in the City of Santa Monica.  Comment Period: 9/28/2018 - 10/18/2018	Mitigated Negative Declaration	Santa Monica-Malibu Unified School District	Document reviewed - No comments sent

# - Project has potential environmental justice concerns due to the nature and/or location of the project.  
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.











**ATTACHMENT A  
INCOMING CEQA DOCUMENTS LOG  
October 01, 2018 to October 31, 2018**

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>General Land Use (residential, etc.)</i> <b>LAC181017-01</b> ENV-2016-3631-SCPE	The proposed project consists of demolition of a 43,077-square-foot store and construction of a 230,987-square-foot building with 232 residential units and subterranean parking on 0.89 acres. The project is located at 6400 West Sunset Boulevard on the southwest corner of Sunset Boulevard and Ivar Avenue in the community of Hollywood. Reference LAC170809-06 <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/nop-6400sunsetblvd-090717.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/nop-6400sunsetblvd-090717.pdf</a>  Comment Period: N/A <span style="float: right;">Public Hearing: 10/30/2018</span>	Notice of Public Hearing	City Los Angeles	Document does not require comments
<i>General Land Use (residential, etc.)</i> <b>LAC181019-01</b> 8555 Santa Monica Boulevard Mixed-Use Project	The proposed project consists of demolition of three buildings totaling 27,338 square feet and three single-family homes, and the construction of a mixed-use building with 97 apartment units and subterranean parking on 1.27 acres. The project is located on the northwest corner of Santa Monica Boulevard and Knoll Drive. Reference LAC170707-04 and LAC130416-08  Comment Period: N/A <span style="float: right;">Public Hearing: N/A</span>	Final Environmental Impact Report	City of West Hollywood	Document reviewed - No comments sent
<i>General Land Use (residential, etc.)</i> <b>LAC181030-01</b> Alexan Specific Plan and General Plan/Zoning Code Amendment	The proposed project consists of construction of 436 dwelling units and an eight-story parking structure on 6.77 acres. The project is located at 1625 South Magnolia Avenue on the West Evergreen Avenue and South Magnolia Avenue.  Comment Period: 10/22/2018 - 11/26/2018 <span style="float: right;">Public Hearing: N/A</span>	Notice of Preparation	City of Monrovia	Under review, may submit written comments
<i>General Land Use (residential, etc.)</i> <b>LAC181030-13</b> AVE Project	The proposed project consists of construction of 118 multi-family dwelling units, 40,890 square feet of retail use, 8,910 square feet of office space, and a 120-room 70,000 square foot hotel on 12.37 acres. The project is located on the southeast corner of Kanan Road and Agoura Road.  Comment Period: 10/19/2018 - 11/16/2018 <span style="float: right;">Public Hearing: 11/13/2018</span>	Notice of Preparation	City of Agoura Hills	SCAQMD staff commented on 11/14/2018

# - Project has potential environmental justice concerns due to the nature and/or location of the project. Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.







**ATTACHMENT A  
INCOMING CEQA DOCUMENTS LOG  
October 01, 2018 to October 31, 2018**

<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>Plans and Regulations</i>  <b>SBC181011-06</b> City of Fontana General Plan Update (Fontana Forward General Plan)	The proposed project consists of updates to the General Plan land use element, community and neighborhoods, housing element, health and wellness element, conservation element, public and community services element, community mobility and circulation element, infrastructure and green element, noise and safety element, sustainability and resilience element, economic development element, downtown area plan, and stewardship and implementation plan. Reference SBC180904-01, SBC180814-04, SBC180612-10 and SBC160301-02  Comment Period: N/A	Notice of Public Hearing	City of Fontana	Document does not require comments

# - Project has potential environmental justice concerns due to the nature and/or location of the project.  
 Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.









**ATTACHMENT C  
ACTIVE SCAQMD LEAD AGENCY PROJECTS  
THROUGH OCTOBER 31, 2018**

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
<p>The Phillips 66 (formerly ConocoPhillips) Los Angeles Refinery Ultra Low Sulfur Diesel project was originally proposed to comply with federal, state and SCAQMD requirements to limit the sulfur content of diesel fuels. Litigation against the CEQA document was filed. Ultimately, the California Supreme Court concluded that the SCAQMD had used an inappropriate baseline and directed the SCAQMD to prepare an EIR, even though the project has been built and has been in operation since 2006. The purpose of this CEQA document is to comply with the Supreme Court's direction to prepare an EIR.</p>	<p>Phillips 66 (formerly ConocoPhillips), Los Angeles Refinery</p>	<p>Environmental Impact Report (EIR)</p>	<p>The Notice of Preparation/Initial Study (NOP/IS) was circulated for a 30-day public comment period on March 26, 2012 to April 26, 2012. The consultant submitted the administrative Draft EIR to SCAQMD in late July 2013. The Draft EIR was circulated for a 45-day public review and comment period from September 30, 2014 to November 13, 2014. Two comment letters were received and the consultant has prepared responses to comments which are undergoing SCAQMD review.</p>	<p>Environmental Audit, Inc.</p>
<p>Quemetco is proposing to modify existing SCAQMD permits to allow the facility to recycle more batteries and to eliminate the existing daily idle time of the furnaces. The proposed project will increase the rotary feed drying furnace feed rate limit from 600 to 750 tons per day and increase the amount of total coke material allowed to be processed. In addition, the project will allow the use of petroleum coke in lieu of or in addition to calcined coke, and remove one existing emergency diesel-fueled internal combustion engine (ICE) and install two new emergency natural gas-fueled ICEs.</p>	<p>Quemetco</p>	<p>Environmental Impact Report (EIR)</p>	<p>A Notice of Preparation/Initial Study (NOP/IS) was released for a 56-day public review and comment period from August 31, 2018 to October 25, 2018, and 154 comment letters were received. Two CEQA scoping meetings were held on September 13, 2018 and October 11, 2018. SCAQMD staff is reviewing the comment letters.</p>	<p>Trinity Consultants</p>

**ATTACHMENT C  
ACTIVE SCAQMD LEAD AGENCY PROJECTS  
THROUGH OCTOBER 31, 2018**

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
<p>Southern California Edison (SCE) is proposing to modify the air pollution control system for the Barre Peaker unit to repair current and prevent future water damage by: 1) decreasing the water-injection rate into the turbine’s combustor; 2) replacing the oxidation catalyst and increasing the overall area of catalyst beds in the selective catalytic reduction (SCR) unit; 3) replacing the ammonia injection grid to improve the deliverability of ammonia to the catalyst; and, 4) increasing the concentration of the aqueous ammonia that is delivered to the facility, stored on-site, and injected into the SCR unit from 19% to 29%. In addition, SCE is proposing to revise its SCAQMD Title V Operating Permit to allow the turbine to generate power over its full operating range, from less than one megawatt (MW) to full load (e.g., 45 MW net), while continuing to meet the emission limits in the current permit.</p>	<p>Southern California Edison</p>	<p>Addendum to the April 2007 Final Mitigated Negative Declaration for the Southern California Edison Barre Peaker Project in Stanton</p>	<p>This project was approved on October 30, 2018.</p>	<p>Yorke Engineering, LLC</p>
<p>Southern California Edison (SCE) is proposing to modify the air pollution control system for the Mira Loma Peaker unit to repair current and prevent future water damage by: 1) decreasing the water-injection rate into the turbine’s combustor; 2) replacing the oxidation catalyst and increasing the overall area of catalyst beds in the Selective Catalytic Reduction (SCR) unit; 3) replacing the ammonia injection grid to improve the deliverability of ammonia to the catalyst; and, 4) increasing the concentration of the aqueous ammonia that is delivered to the facility, stored on-site, and injected into the SCR unit from 19% to 29%. In addition, SCE is proposing to revise its SCAQMD Title V Operating Permit to allow the turbine to generate power over its full operating range, from less than one megawatt (MW) to full load (e.g., 45 MW net), while continuing to meet the emission limits in the current permit.</p>	<p>Southern California Edison</p>	<p>Addendum to the April 2007 Final Mitigated Negative Declaration for the Southern California Edison Mira Loma Peaker Project in Ontario</p>	<p>SCAQMD staff has provided revisions to the Draft Addendum for the consultant to incorporate.</p>	<p>Yorke Engineering, LLC</p>

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 16

REPORT: Annual Audited Financial Statements for FY Ended June 30, 2018

SYNOPSIS: This item transmits the annual audited financial statements of the SCAQMD. The SCAQMD has received an unmodified opinion (the highest obtainable) on its financial statements.

COMMITTEE: Administrative, November 9, 2018; Reviewed

**RECOMMENDED ACTION:**

Receive and file the SCAQMD's Comprehensive Annual Financial Report (CAFR) and Single Audit Reports for the FY ended June 30, 2018.

Wayne Nastri  
Executive Officer

SJ:av

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**Background**

The audit of the SCAQMD financial statements, along with the Single Audit Reports for the Fiscal Year ended June 30, 2018, have been completed by BCA Watson Rice, LLP. SCAQMD has received an unmodified opinion on its financial statements. An unmodified opinion is the highest obtainable, assuring interested parties that SCAQMD's financial statements fairly present the agency's financial position.

**Attachments**

- The Comprehensive Annual Financial Report (CAFR), which includes the Independent Auditor's Report, was previously provided to Board Members and is available for public viewing at SCAQMD's library or website at <http://www.aqmd.gov/home/about/finance>.
- Single Audit Reports that include Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of the Financial Statements Performed in Accordance with Government Auditing Standards, Independent Auditor's Report on Compliance with Each Major Federal Program; Report on Internal Control over Compliance; and Report on Schedule of Expenditures of Federal Awards Required by the Uniform Guidance. Copies were previously provided to Board Members and are available in SCAQMD's library for public viewing.



# Comprehensive Annual Financial Report

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Year Ended  
June 30, 2018

South Coast Air Quality Management District  
Diamond Bar, California



## **MISSION STATEMENT**

SCAQMD's mission is to clean the air and protect the health of all residents in the South Coast Air District through practical and innovative strategies.

*South Coast*  
*Air Quality Management District*

Diamond Bar, California

Comprehensive Annual Financial Report  
Year Ended June 30, 2018

Prepared by:  
Finance Office  
Sujata Jain, Assistant Deputy Executive Officer

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***SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT***

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Comprehensive Annual Financial Report  
Year Ended June 30, 2018

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***SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT***

***GOVERNING BOARD***

*June 30, 2018*

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

*DR. CLARK E. PARKER, SR.*  
*Vice Chair*  
*Senate Rules Committee Appointee*

*MARION ASHLEY*  
*County of Riverside Representative*

*JUDITH MITCHELL*  
*County of Los Angeles*  
*Cities Representative*  
*Western Region*

*JOE BUSCAINO*  
*City of Los Angeles Representative*

*MICHAEL A. CACCIOTTI*  
*County of Los Angeles*  
*Cities Representative*  
*Eastern Region*

*SHAWN NELSON*  
*County of Orange Representative*

*HILDA L. SOLIS*  
*County of Los Angeles Representative*

*BEN BENOIT*  
*County of Riverside*  
*Cities Representative*

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

*DWIGHT ROBINSON*  
*County of Orange*  
*Cities Representative*

*LARRY MCCALLON*  
*County of San Bernardino*  
*Cities Representative*

*JANICE RUTHERFORD*  
*County of San Bernardino Representative*

*WAYNE NASTRI*  
*Executive Officer*



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • www.aqmd.gov

October 12, 2018

Chairman, Governing Board and Residents  
Of the South Coast Air Quality Management District

State law requires that local governments publish within nine months of the close of each fiscal year a complete set of audited financial statements presented in conformity with generally accepted accounting principles (GAAP) and audited in accordance with generally accepted auditing standards by a firm of licensed certified public accountants. This report is published to fulfill that requirement for the fiscal year ended June 30, 2018.

This report consists of management's representations concerning the finances of the South Coast Air Quality Management District (SCAQMD), Diamond Bar, California. Management assumes full responsibility for the completeness and reliability of all of the information presented in this report, based upon a comprehensive framework of internal control that it has established for this purpose. Because the cost of internal control should not exceed anticipated benefits, the objective is to provide reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements. As management, we assert that, to the best of our knowledge and belief, this financial report is complete and reliable in all material respects.

SCAQMD's financial statements have been audited by BCA Watson Rice LLP, Certified Public Accountants. The goal of the independent audit is to provide reasonable assurance that the financial statements of SCAQMD for the fiscal year ended June 30, 2018 are free of material misstatements. The independent auditors concluded, based upon the audit, that there was a reasonable basis for rendering an unmodified (clean) opinion that SCAQMD's financial statements for the fiscal year ended June 30, 2018 are fairly presented in conformity with accounting principles generally accepted in the United States. The independent auditor's report is located at the front of the financial section of this report.

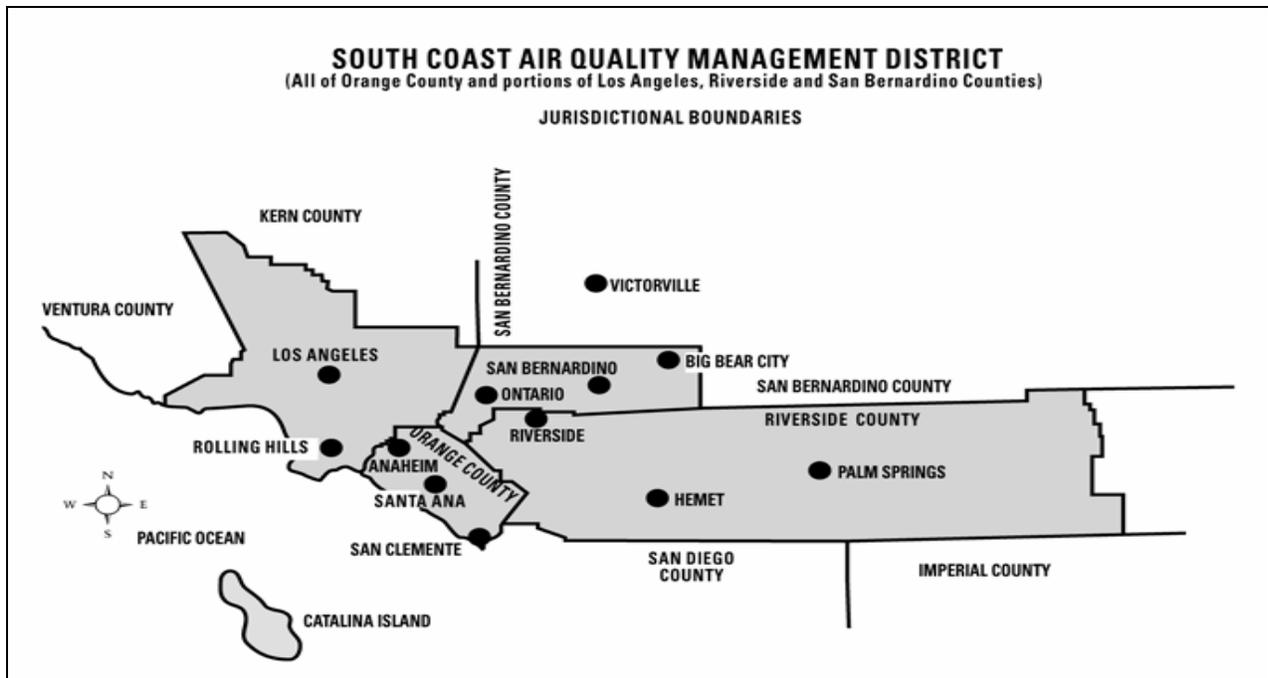
The independent audit of the financial statements of SCAQMD was part of a broader, federally mandated "Single Audit" designed to meet the special needs of Federal grantor agencies. The standards governing Single Audit engagements require the independent

auditor to report not only on the fair presentation of the financial statements, but also on the audited government's internal controls and compliance with special emphasis on internal controls and compliance with federal statutes, regulations, and terms and conditions involving the administration of Federal awards. These reports are available in SCAQMD's separately issued Single Audit Report.

Management's Discussion and Analysis (MD&A) immediately follows the independent auditor's report and provides a narrative introduction, overview, and analysis of the basic financial statements. MD&A complements this letter of transmittal and should be read in conjunction with it.

### ***Profile of the South Coast Air Quality Management District***

The South Coast Air Quality Management District began operation on February 1, 1977 as a regional governmental agency established by the California Legislature pursuant to the Lewis Air Quality Management Act. SCAQMD encompasses all of Orange County and parts of Los Angeles, San Bernardino and Riverside Counties, representing over 17 million residents. It succeeded the Southern California Air Pollution Control District and its predecessor four county air pollution control districts, of which the Los Angeles County Air Pollution Control District was the oldest in the nation, having been formed in 1947.



SCAQMD's Governing Board is composed of 13 members, including four members appointed by the Boards of Supervisors of the four counties in SCAQMD's jurisdiction, six members appointed by cities in SCAQMD's jurisdiction and three members appointed by the Governor, the Speaker of the State Assembly and the Rules Committee of the State Senate, respectively. The members appointed by the various Boards of Supervisors and cities consist of one member of the Board of Supervisors of Los Angeles, Orange, Riverside, and San Bernardino Counties, respectively, and a mayor or member of the city council of a city within Orange, Riverside and San Bernardino Counties. Los Angeles County cities have three representatives, one each from the western and eastern portions of the county and one member representing the City of Los Angeles. Each Board member serves a four year term. The Board appoints the agency's Executive Officer and General Counsel. The Executive Officer in turn appoints the heads of the various agency departments.

Southern California has the most serious air quality problem in the country. A combination of poor atmospheric ventilation, a capping temperature inversion, bordering mountains and sunny days act to enhance smog formation and effectively trap pollutants in the Basin. SCAQMD is responsible for monitoring air pollution within the Basin and for developing and administering programs to reduce air pollution levels below the health-based standards established by the state and federal governments.

SCAQMD provides a full range of air pollution control activities, including permitting, site inspection, air quality attainment planning, rule making, air quality monitoring and technology advancement. Government Accounting Standards Board Statement No. 61 requires that certain separate but related component units be included with SCAQMD for reporting purposes. This report includes the South Coast Air Quality Management District Building Corporation (Corporation) as a blended component unit. SCAQMD may impose its will on the component unit, including the ability to appoint, hire, reassign or dismiss management. There are also financial benefit/burden relationships between SCAQMD and the Corporation. For additional information, see Note 1 to the financial statements.

The annual budget serves as the foundation for SCAQMD's financial planning and control. The Governing Board is required to adopt an annual budget by July 1 of each fiscal year. SCAQMD's annual appropriated budgets are adopted for the General Fund. Budgets are adopted on a budgetary basis that includes encumbrances as expenditures. All annual appropriations lapse at fiscal year end to the extent they have not been expended or encumbered. Amendments to increase the budget must be approved by the Governing Board. Budgets for Special Revenue Funds are not adopted due to the narrow focus (advance technology demonstration projects/emission reduction projects) and limited life of many of these special revenues. Expenditures from the Special Revenue Funds require Governing Board approval and are primarily related to contractual obligations with vendors and grantees. Administrative expenditures related to managing

and accounting for Special Revenue Fund projects are appropriated within the General Fund budget.

SCAQMD maintains budgetary controls through both signature authority and automated budget checking. The objective of these controls is to ensure compliance with specific special revenue fund appropriations and the annual appropriated budget approved by the Governing Board. SCAQMD maintains an encumbrance accounting system of purchase orders and contracts at the fund level as a means of accomplishing budgetary control. Open encumbrances are reported as committed fund balance at the end of the fiscal year. Purchase orders and contracts are reviewed to ensure that funds are available and that requests are properly authorized prior to being released or executed.

The accounting principles applied in reporting budgetary expenditures differ in some respects from the generally accepted accounting principles applied in the reporting of the financial statements. Reconciliation of these differences is presented in the Required Supplementary Information section of this report.

As reflected in the statements and schedules included in the financial section of this report, SCAQMD continues to meet its responsibility for sound financial management.

### ***Factors Affecting Financial Condition***

SCAQMD is a fee-supported agency and does not receive sales or property tax support. Approximately 75% of its General Fund revenue is derived from permit evaluation fees, annual permit renewal fees, emission fees, Hearing Board fees, Area Sources, Toxic Hot Spots, penalties and settlements, interest earnings, and other revenues. The remaining 25% of its General Fund revenue is derived from federal grants, state grants, California Air Resources Board (CARB) subvention funds, and motor vehicle fees.

To meet its program commitments, despite new federal and state mandates, increased workload complexity, and ongoing cost containment efforts, SCAQMD continues to streamline many of its operations. Compared to the fiscal year 1991-92 General Fund budget, the fiscal year 2017-18 General Fund budget reflects funded staffing levels that are approximately 25% below the 1991-92 level. The budgeted General Fund expenditures, when adjusted for inflation, are approximately 15% less than the 1991-92 period.

Government-wide revenues during this fiscal year decreased by 8.3% as compared to the prior fiscal year, primarily due to the winding down of Proposition 1B Goods Movement program and subsequent decrease in the revenue. General Fund revenues increased by 6.5% as compared to the prior fiscal year, primarily due to an increase in Title V and Non-title V fees by 10.67% and 4% respectively and CPI fee adjustment of 2.5%. Future changes in government-wide revenue are highly dependent on the timing of receipts and

continuation of state and federal grant funding, while General Fund revenues are expected to continue to remain generally stable through the following fiscal year due to the strengthening of the economic environment.

Government-wide expenses remained flat when compared to the prior fiscal year. General Fund expenditures increased by 5.3% as compared to the prior fiscal year, due to increased employee retirement plan contributions and slight salary increases. Future changes in government-wide expenses are highly dependent on the timing of receipts and continuation of state and federal grant funding, while General Fund expenditures are expected to increase through the following fiscal year due to the continued increases in employee retirement plan contributions.

### ***Long-term Financial Planning***

In addressing long-term program costs, SCAQMD has pursued actions over the past several years including legislative changes to the employee retirement plan, labor negotiations, and the use of one-time revenues to lower its long-term retirement costs and economically defease a portion of its current debt service. As part of the annual budget process, SCAQMD prepares a five year financial plan that demonstrates the commitment to meet future financial challenges and uncertainties while continuing to protect the health of the residents within the SCAQMD boundaries and remaining sensitive to business. During the current fiscal year and beyond, SCAQMD continues to look for cost savings and operational efficiencies as a means of balancing revenues and expenditures to ensure long term financial sustainability.

### ***Relevant Financial Policies***

In recent years, SCAQMD's Governing Board has made several policy decisions to meet future financial challenges and uncertainties while continuing to protect the health of the residents within the SCAQMD boundaries and remaining sensitive to business. These policy decisions include reducing debt, negotiating reductions in the cost of pensions, and reviewing and revising fee policies. In fiscal year 2012-13, debt associated with the Headquarters building was eliminated, while additional funds were set aside in fiscal year 2013-14 to pay for outstanding debt related to pension obligation bonds. Starting fiscal year 2017-18 employer pick-up of employee retirement plan contributions has been completely phased out and the entire employee contribution portion of the pension cost is picked up by employees. This was eliminated at the direction of the Governing Board and was part of a three-year labor agreement. Over the past decade and continuing, changes and reductions in pension benefits and costs have been successfully negotiated with the employees of SCAQMD as a means of curbing the cost of pensions and associated liabilities.

In fiscal year 2010-11, SCAQMD's Governing Board approved a rule which provides that certain fees be automatically adjusted effective July 1 of each year by the California Consumer Price Index for the preceding calendar year unless the Governing Board by rule decides not to implement such fee increase for a given year, either for all fees or for a specified fee or fees.

To more fully recover costs for certain SCAQMD activities, in fiscal year 2017-18 there was a 2.5% fee increase due to CPI. In June 2017, the Board approved fee increases for three fiscal years starting in FY 2017-18 through FY 2019-20. This approval included a Title V fee increase of 10.67% annually for the next three years, for an overall increase of 32%; and a non-Title V fee increase of 4% annually for the next two years, for an overall increase of 8%.

Additionally, the Governing Board adopted a fund balance policy for the General Fund so that an amount equal to at least 20% of General Fund revenues is maintained in the combination of Assigned and Unassigned General Fund Balance. The policy serves to mitigate current and future risks related to potential revenue shortfalls and/or unanticipated expenditures.

### ***Major Initiatives***

The mission of SCAQMD is to protect public health from air pollution with sensitivity to the impacts of its actions on the community, public agencies and businesses. To carry out this mission, SCAQMD has developed the following goals:

- I. Achieve clean air standards.
- II. Enhance public education and equitable treatment for all communities.
- III. Operate efficiently and transparently.

During fiscal year 2017-18, SCAQMD advanced many projects which were particularly important to achieving our mission and goals, including: emissions reductions as specified in the 2016 Air Quality Management Plan; conduct monitoring of at least ten facilities and reduce emissions from those found to have high toxics risk to the community; and support development of Cleaner Advanced Technology, development of enhanced emissions/ambient monitoring capabilities, increased communication between SCAQMD and all stakeholders, and internal business process improvement such as reducing the number of pending permit applications in the backlog.

### ***Awards and Acknowledgements***

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the South Coast Air Quality Management District for its Comprehensive Annual Financial Report

(CAFR) for the fiscal year ended June 30, 2017. The Certificate of Achievement is a prestigious national award recognizing conformance with the highest standards for preparation of state and local government financial reports. In order to be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized Comprehensive Annual Financial Report, whose contents conform to program standards. The Comprehensive Annual Financial Report must satisfy both generally accepted accounting principles and applicable legal requirements. The Certificate of Achievement is valid for a period of one year only. We believe our current report continues to meet the Certificate of Achievement program requirements, and we are submitting it to GFOA to determine its eligibility for another certificate.

The preparation of our comprehensive annual financial report was made possible by the dedicated services of the accounting, financial services, and management staff of the Finance Office. These members have our sincere appreciation for the contribution made in the preparation of this report.

Recognition is also given to the Governing Board for their leadership and support and to all employees of SCAQMD who continue their work to accomplish SCAQMD's mission of protecting public health from air pollution with sensitivity to the impacts of its actions on the community and businesses.

Respectfully submitted,



Wayne Nastri  
*Executive Officer*



Sujata Jain, CPA  
*Assistant Deputy Executive Officer, Finance*



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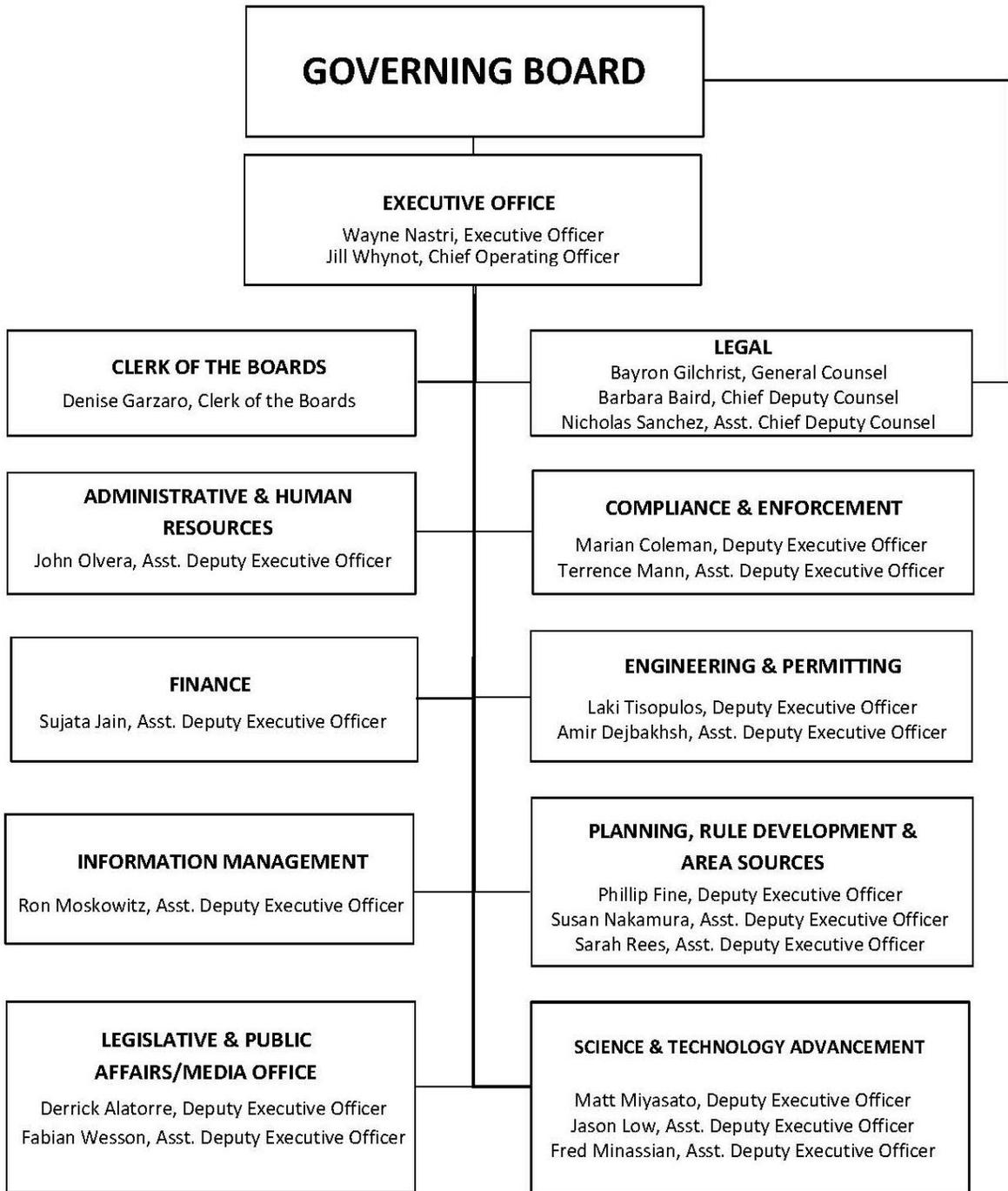
For its Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended

**June 30, 2017**

*Christopher P. Morill*

Executive Director/CEO

**South Coast Air Quality Management District, California  
Organizational Chart  
June 30, 2018**



## INDEPENDENT AUDITOR'S REPORT

The Governing Board of  
South Coast Air Quality Management District

### **Report on the Basic Financial Statements**

We have audited the accompanying basic financial statements of the governmental activities, the business-type activities, the blended component unit, each major fund, and the aggregate remaining fund information of the South Coast Air Quality Management District (SCAQMD), as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise the SCAQMD's basic financial statements as listed in the table of contents.

### ***Management's Responsibility for the Financial Statements***

SCAQMD's management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### ***Auditor's Responsibility***

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the basic financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the basic financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the basic financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the basic financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

## *Opinions*

In our opinion the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, the blended component unit, each major fund, and the aggregate remaining fund information of the SCAQMD, as of June 30, 2018, and the respective changes in financial position, and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

## *Emphasis of Matter*

As discussed in note 1F to the financial statements, SCAQMD adopted Governmental Accounting Standards Board (GASB) Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* and Statement No. 85, *Omnibus 2017* for the year ended June 30, 2018. Our opinion is not modified with respect to this matter.

## *Other Matters*

### *Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the required supplementary information on pages 4-20 and 76-82, respectively, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

### *Other Information*

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the SCAQMD's basic financial statements. The introductory section, combining and individual nonmajor fund financial statements, and statistical section are presented for the purposes of additional analysis and are not a required part of the basic financial statements.

The combining and individual nonmajor fund financial statements are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with the auditing standards generally accepted in the United States of America. In our opinion, the combining and individual nonmajor fund financial statements are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introductory and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

**Other Reporting Required by *Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated October 12, 2018 on our consideration of the SCAQMD's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the SCAQMD's internal control over financial reporting and compliance.

*BCA Watson Rice, LLP*

Torrance, California  
October 12, 2018

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
MANAGEMENT'S DISCUSSION AND ANALYSIS  
June 30, 2018**

As management of the South Coast Air Quality Management District (SCAQMD), we offer readers of SCAQMD's financial statements this narrative overview and analysis of the financial activities of SCAQMD for fiscal year ended June 30, 2018. Please read it in conjunction with the accompanying transmittal letter, the basic financial statements, and the accompanying notes to those financial statements.

**A. Financial Highlights**

- Total assets and deferred outflows of resources of SCAQMD exceeded its total liabilities and deferred inflows of resources at the close of the most recent fiscal year by \$582.9 million (net position). Of this amount, the unrestricted net position is a deficit of \$129.7 million primarily due a net pension liability of \$214.1 million.
- SCAQMD's total restated net position increased from the prior year by \$83.1 million. Total revenues from all sources were \$331.1 million and total expenses for all functions/programs were \$248.0 million.
- As of the close of the fiscal year, SCAQMD's governmental funds reported combined ending fund balances of \$742.9 million, an increase of \$83.0 million in comparison to the prior year. Of the \$742.9 million combined ending fund balances, \$66.1 million represents the fund balance of the General Fund.
- Out of the general fund balance of \$66.1 million at the end of the fiscal year, \$56,684 was nonspendable, \$11.2 million was committed, \$7.2 million was assigned and \$47.5 million was unassigned, which is 32.1% of the general fund expenditures.
- SCAQMD's capital assets decreased by \$370,835 from the prior year.
- SCAQMD's long-term debt decreased by \$4.4 million or 10.6% of the long term debt outstanding.

**B. Overview of the Financial Statements**

This discussion and analysis is intended to serve as an introduction to SCAQMD's basic financial statements. SCAQMD's basic financial statements have three components: 1) Government-wide Financial Statements; 2) Fund Financial Statements; and 3) Notes to the Basic Financial Statements. This report also contains supplementary information in addition to the basic financial statements.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
MANAGEMENT’S DISCUSSION AND ANALYSIS  
June 30, 2018**

In general, the purpose of financial reporting is to provide the external parties that read financial statements with information that will help them make decisions or draw conclusions about an entity. In order to address the needs of as many parties as reasonably possible, SCAQMD, in accordance with required reporting standards, presents government-wide financial statements and fund financial statements.

**Government-wide Financial Statements**

The focus of government-wide financial statements is on the overall financial position and activities of SCAQMD. These financial statements are constructed around the concept of a primary government and its component unit, excluding fiduciary funds. The financial statements of SCAQMD’s fiduciary funds are not included in the government-wide financial statements because these funds cannot be used to finance SCAQMD’s activities.

The government-wide financial statements are designed to provide readers with a broad overview of SCAQMD’s finances in a manner similar to a private sector business. These financial statements include the Statement of Net Position and the Statement of Activities.

The Statement of Net Position reports all assets and deferred outflows of resources held and liabilities and deferred inflows of resources owed by SCAQMD using the accrual basis of accounting which is similar to the accounting method used by most private sector companies. The difference between assets and liabilities is reported as net position. Over time increases or decreases in net position serve as a useful indicator of whether SCAQMD’s financial position is improving or deteriorating.

The Statement of Activities presents information showing how SCAQMD’s net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows. Thus, revenues and expenses are reported in this statement for some items that will only result in cash flows in future fiscal periods such as earned but unused vacation leave.

**Fund Financial Statements**

A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. SCAQMD, like other state and local governments, uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. All of the funds of SCAQMD can be divided into three categories: governmental funds, proprietary funds, and fiduciary funds.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
MANAGEMENT'S DISCUSSION AND ANALYSIS  
June 30, 2018**

**Governmental Funds**

Governmental funds are used to account for essentially the same functions reported as governmental activities in the government-wide financial statements. However, unlike the government-wide financial statements, governmental fund financial statements focus on current sources and uses of spendable resources, as well as on balances of spendable resources available at the end of the fiscal year. Non-financial assets such as land and building and long-term liabilities such as pension obligation bonds payable or long term liabilities that will not be paid with current assets are excluded. Such information on available spendable resources may be useful in evaluating SCAQMD's near-term financing requirements. The Basic Governmental Fund Statements can be found under the Fund Financial Statements section of this report.

Because the focus of governmental funds is narrower than that of the government-wide financial statements, it is useful to compare the information presented for governmental funds with similar information presented for governmental activities in the Government-wide Financial Statements. By doing so, readers may better understand the long-term impact of SCAQMD's near-term financing decisions. Information from the Governmental Funds Balance Sheet and the Governmental Funds Statement of Revenues, Expenditures and Changes in Fund Balances is used to facilitate the comparison between governmental funds and governmental activities. The reconciliation between the Governmental Funds Balance Sheet and the Government-wide Statement of Net Position can be found under the Fund Financial Statements section. The reconciliation of the total change in fund balances for all governmental funds to the change in net position can also be found under that same section.

SCAQMD maintains 50 individual special revenue funds, one debt service fund, one capital projects fund, and a blended component unit in addition to the General Fund. Three of the special revenue funds are considered major funds. The information for the major special revenue funds is presented separately in the Governmental Fund Balance Sheet and in the Governmental Fund Statement of Revenues, Expenditures and Changes in Fund balances. Data for the other 47 non-major special revenue funds, debt service fund, capital projects fund and blended component unit are combined into a single, aggregated presentation. Individual fund data for each of the 47 non-major governmental funds, debt service fund, capital projects fund, and blended component unit, is reported in the Other Supplementary Information section of this report.

SCAQMD adopts an annual appropriated budget for its General Fund. A budgetary comparison statement has been provided for the General Fund to demonstrate compliance with this budget. This is presented in the Required Supplementary Information (RSI) section of this report. Also, presented in RSI are SCAQMD's

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
MANAGEMENT'S DISCUSSION AND ANALYSIS  
June 30, 2018**

schedule of proportionate share of net pension liability, schedule of proportionate share of net OPEB liability, and schedules of contributions for pensions and OPEB.

**Proprietary Funds**

When SCAQMD charges for Compressed Natural Gas (CNG) fuel, whether to outside customers or within SCAQMD, the transactions are reported in proprietary funds. Proprietary funds are reported in the same way that all activities are reported in the government-wide financial statements only in more detail. A statement of cash flows, for instance, is presented at the fund financial statement level for proprietary funds but no equivalent statement is presented in the government-wide financial statements for either governmental activities or business-type activities.

SCAQMD's Proprietary Fund Financial Statements for the CNG Fueling Station are presented under the Fund Financial Statements section.

**Fiduciary Funds**

Fiduciary Funds represent Agency Funds and Retirement Benefit Trust Fund which are custodial in nature and do not involve measurement of results of operations. SCAQMD's fiduciary activities are reported in separate Statements of Fiduciary Net Position. These statements are excluded from SCAQMD's other financial statements because the resources of fiduciary funds, by definition, cannot be used to support SCAQMD's own programs. SCAQMD is responsible for ensuring that the assets reported in these funds are used for their intended purposes. The accounting used for fiduciary funds is much like that used for proprietary funds.

SCAQMD's Fiduciary Fund Financial Statements for the Agency Funds and Retirement Benefit Trust Fund are presented under the Fund Financial Statements section.

**Notes to the Basic Financial Statements**

The Notes to the Basic Financial Statements provide additional information that is essential to the reader for a full understanding of the data provided in the Government-wide and fund financial statements.

**Other Information**

In addition to the basic financial statements and accompanying notes, this report also presents a RSI section concerning the General Fund's budgetary comparison schedule and budgetary reconciliation. Also included in RSI are SCAQMD's schedule of proportionate share of net pension liability, schedule of proportionate share of net OPEB liability, and schedules of contributions for pensions and OPEB.

Individual fund data for each of the non-major governmental funds is included in the Other Supplementary Information section.

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The Statistical section provides readers with information covering financial trends, revenue capacity, debt capacity, demographic and economic information, and operating information.

**C. Government-wide Financial Analysis**

Our analysis focuses on the net position and changes in net position of SCAQMD's governmental and business-type activities.

The schedule below presents a condensed Statement of Net Position as of June 30, 2018 compared with the prior fiscal year.

**Net Position**  
(amounts expressed in thousands)

	Governmental Activities		Business-Type Activities		TOTAL	
	<u>FY 2017-18</u>	<u>FY 2016-17</u>	<u>FY 2017-18</u>	<u>FY 2016-17</u>	<u>FY 2017-18</u>	<u>FY 2016-17</u>
Current and other assets	\$ 802,067	\$ 706,197	\$ -	\$ 1,253	\$ 802,067	\$ 707,450
Capital assets	35,756	36,127	-	-	35,756	36,127
Total assets	<u>837,823</u>	<u>742,324</u>	<u>-</u>	<u>1,253</u>	<u>837,823</u>	<u>743,577</u>
Deferred outflow of resources-pension	101,723	98,386	-	-	101,723	98,386
Deferred outflow of resources-OPEB	233	-	-	-	232	-
Total deferred outflow of resources	<u>101,956</u>	<u>98,386</u>	<u>-</u>	<u>-</u>	<u>101,956</u>	<u>98,386</u>
Other liabilities	61,954	49,092	-	-	61,954	49,092
Long-term liabilities	254,938	241,341	-	-	254,938	241,341
Total liabilities	<u>316,892</u>	<u>290,433</u>	<u>-</u>	<u>-</u>	<u>316,892</u>	<u>290,433</u>
Deferred inflow of resources-pension	39,614	48,253	-	-	39,614	48,253
Deferred inflow of resources-OPEB	360	-	-	-	360	-
Total deferred inflow of resources	<u>39,974</u>	<u>48,253</u>	<u>-</u>	<u>-</u>	<u>39,974</u>	<u>48,253</u>
Net Position:						
Net investment in capital assets	35,757	36,127	-	-	35,757	36,127
Restricted for:						
Restricted for long-term emission-reduction projects	676,857	607,439	-	-	676,857	607,439
Unrestricted	(129,701)	(141,541)	-	1,253	(129,701)	(140,288)
Total net position	<u>\$ 582,913</u>	<u>\$ 502,025</u>	<u>\$ -</u>	<u>\$ 1,253</u>	<u>\$ 582,913</u>	<u>\$ 503,278</u>

Note: Net position of fiscal year 2016-17 has not been restated to reflect the changes related to the implementation of GASB Statement No. 75 because certain information is not available.

As noted earlier, net position may serve over time as a useful indicator of SCAQMD's financial position. At the close of the most recent fiscal year, SCAQMD's assets exceeded liabilities by \$582.9 million.

The largest portion of SCAQMD's net position, \$676.9 million, represents resources that are subject to external restrictions on how they may be used. The revenue in special revenue funds is restricted to expenditures for specific purposes. Approximately \$35.8 million of SCAQMD's net position reflect its investment in

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capital assets used by SCAQMD (e.g. land, buildings, equipment, and vehicles) less any related debt used to acquire those assets that is still outstanding. SCAQMD uses these capital assets in carrying out its mission of protecting public health while being sensitive to the economic needs of local businesses. Consequently, these assets are not available for future spending. Although SCAQMD's investment in its capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources since the capital assets themselves cannot be used to liquidate these liabilities. The debt service installment schedules for the 1995 and 2004 Pension Obligation Bonds will be fully paid by fiscal years 2022 and 2024, respectively.

The remaining portion of SCAQMD's net position of governmental activities, a deficit of \$129.7 million, is unrestricted. The deficit is mainly due to the net pension liability. At the end of the current fiscal year, SCAQMD had a negative balance in the unrestricted categories of net position and positive fund balance in restricted and net investment in capital asset category. The net position has a zero balance in the business-type activities.

The net position for governmental activities increased by \$84.4 million compared with the prior fiscal year. Most of the increase was due to revenues in long-term emission-reduction projects.

Program revenues decreased by approximately \$32.7 million, 9.5% change from the prior year. These are largely due to decrease of approximately \$44.6 million in state grants and \$4.2 million in federal grants of special revenue funds. These decreases were offset by increases of \$8.9 million in mobile sources/clean fuels of special revenue funds and \$6.1 million of stationary sources. General revenue increased by \$2.7 million, compared with the prior fiscal year, which is primarily attributed to an increase in penalties and settlements.

Expenses increased by \$7.5 million largely due to a higher amount paid for fiscal year 2017-18 develop rules to achieve clean air, monitoring air quality and timely review of permits as compared to fiscal year 2016-17.

A condensed Schedule of Changes in Net Position for the fiscal year ending June 30, 2018 compared with the prior fiscal year can be found on the following page.

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**Changes in Net Position  
(amounts expressed in thousands)**

	<u>Governmental Activities</u>		<u>Business-type Activities</u>		<u>TOTAL</u>	
	<u>FY 2017-18</u>	<u>FY 2016-17</u>	<u>FY 2017-18</u>	<u>FY 2016-17</u>	<u>FY 2017-18</u>	<u>FY 2016-17</u>
Revenues:						
Program Revenues:						
Fees and charges – stationary sources	\$ 100,355	\$ 94,280	\$ -	\$ -	\$ 100,355	\$ 94,280
Fees and charges – mobile sources	26,027	28,087	-	-	26,027	28,087
Operating grants and subventions	185,367	222,070	-	-	185,367	222,070
General Revenues:						
Grants and subventions – not restricted to specific programs	2,880	2,886	-	-	2,880	2,886
Interest	1,041	645	-	-	1,041	645
Penalties and settlements	14,316	11,512	-	-	14,316	11,512
Other revenues	1,154	1,621	-	-	1,154	1,621
CNG fuel sales	-	-	-	18	-	18
Total revenues	<u>331,140</u>	<u>361,101</u>	<u>-</u>	<u>18</u>	<u>331,140</u>	<u>361,119</u>
Expenses:						
Advance clean air technology	9,271	7,826	-	-	9,271	7,826
Ensure compliance with clean air rules	50,528	49,316	-	-	50,528	49,316
Customer service and business assistance	9,743	9,261	-	-	9,743	9,261
Develop programs to achieve clean air	8,637	11,335	-	-	8,637	11,335
Develop rules to achieve clean air	10,013	7,604	-	-	10,013	7,604
Monitoring air quality	20,822	17,857	-	-	20,822	17,857
Timely review of permits	33,302	31,520	-	-	33,302	31,520
Policy support	667	886	-	-	667	886
Interest on long-term debt	3,732	3,907	-	-	3,732	3,907
Long-term emission reduction projects	101,304	101,008	-	-	101,304	101,008
Other expenses	-	-	-	-	-	-
Total expenses	<u>248,019</u>	<u>240,520</u>	<u>-</u>	<u>-</u>	<u>248,019</u>	<u>240,520</u>
Increase/(Decrease) in net position, before transfers	83,121	120,581	-	18	83,121	120,599
Transfers	1,253	-	(1,253)	-	-	-
Increase/(Decrease) in net position	84,374	120,581	(1,253)	18	83,121	120,599
Net position beginning, as previously reported	502,025	381,444	1,253	1,235	503,278	382,679
Restatement of net positions	(3,486)	-	-	-	(3,486)	-
Net position ending, as restated	<u>\$ 582,913</u>	<u>\$ 502,025</u>	<u>\$ -</u>	<u>\$ 1,253</u>	<u>\$ 582,913</u>	<u>\$ 503,278</u>

Note: Net position beginning of fiscal year 2017-18 has been restated to reflect the changes related to the implementation of GASB Statement No. 75. Net position beginning of fiscal year 2016-17 has not been restated to reflect the changes related to the implementation of GASB Statement No. 75 because certain information is not available.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
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**Governmental Activities**

The objective of the statement of activities is to report the full cost of providing government services for that year. The format also permits the reader to ascertain the extent to which each function is either self-financing or draws from the general funds of the government.

The Statement of Activities presents information showing how SCAQMD’s net position changed during fiscal year 2018. All changes in net position are reported as soon as the underlying event occurs regardless of the timing of the cash flows.

The Statement of Activities distinguishes governmental activities from business type activities. Governmental activities of SCAQMD are predominantly supported by fees, grants, state subvention, penalties, and settlements. The penalties and settlements are one-time revenues which are over and above the regular revenues directly related to the programs. The primary governmental activities of SCAQMD are: Advance Clean Air Technology, Ensure Compliance with Clean Air Rules, Customer Service and Business Assistance, Develop Programs to Achieve Clean Air, Develop Rules to Achieve Clean Air, Monitoring Air Quality, Timely Review of Permits, Policy Support, and Long-Term Emission Reduction Projects.

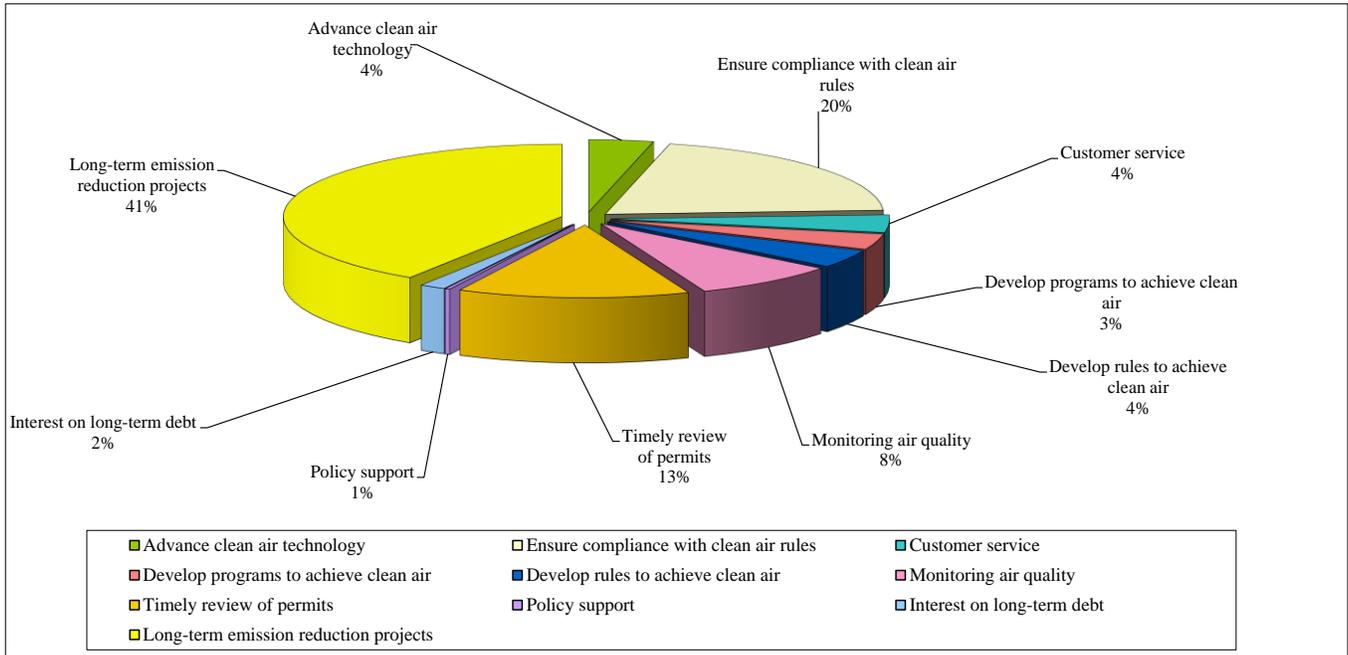
There was a decrease in program revenues in the Operating Grants and Subvention Revenues Sources. The program revenues in this revenue category are made up of revenues from mostly restricted revenue derived from federal and state funds. Following is an explanation of the significant revenue variances from fiscal year 2016-17 to fiscal year 2017-18:

- **Prop 1B Goods Movement Fund** – This fund was set up in fiscal year 2007-08 to receive funds from the voter approved bond funding under Proposition 1B to implement programs that reduce emissions from the movement of freight or “goods” along California’s trade corridors. In fiscal year 2017-18, this fund received \$34.5 million in state grants, a decrease of \$45.4 million as compared to prior year. The decrease was due to no new projects in fiscal year 2017-18 and existing projects were ongoing.

**Business-type Activities**

The Business-type Activities section reports transactions relating to the CNG fueling station. The CNG fueling station expenditures are reported on an accrual basis and are offset by sales. As of June 30, 2018 and 2017, the net position balances were \$0 and \$1,253,178, respectively. This fund being closed in fiscal year 2017-18 and the remaining fund balance were transferred to the capital project fund.

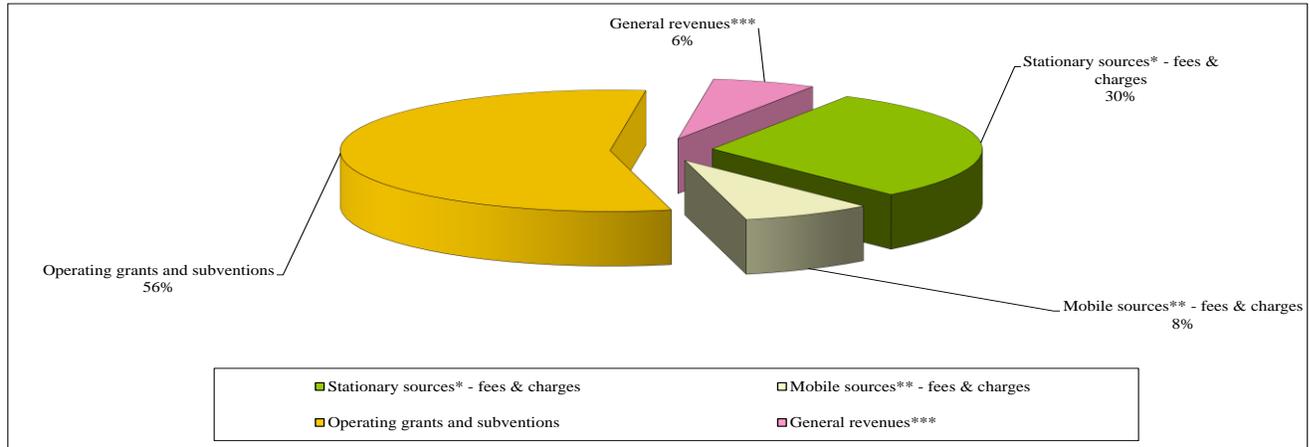
**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
MANAGEMENT'S DISCUSSION AND ANALYSIS  
EXPENSES BY ACTIVITY  
Government Activities  
FY 2017-18**



Activity	FY 17-18	FY 16-17	FY 15-16	FY 14-15	FY 13-14	FY 12-13
Advance clean air technology	\$ 9,271,026	\$ 7,825,599	\$ 7,119,417	\$ 5,539,607	\$ 6,212,087	\$ 6,857,959
Ensure compliance with clean air rules	50,528,522	49,316,129	45,622,680	43,252,162	48,813,991	47,417,956
Customer service	9,743,294	9,260,504	8,337,319	6,124,811	8,332,770	8,169,587
Develop programs to achieve clean air	8,636,784	11,335,498	10,444,147	9,727,624	11,147,303	12,317,470
Develop rules to achieve clean air	10,013,098	7,604,041	7,566,089	7,161,179	7,514,210	7,269,414
Monitoring air quality	20,822,380	17,856,869	16,028,394	13,197,801	14,969,083	14,265,601
Timely review of permits	33,301,565	31,520,083	27,891,070	24,431,059	27,821,032	28,621,527
Policy support	667,046	885,773	511,705	331,652	1,204,588	1,306,054
Interest on long-term debt	3,731,589	3,906,955	3,884,990	4,031,178	4,102,888	4,605,963
Long-term emission reduction projects	101,304,229	101,008,426	87,079,799	210,229,182	154,939,035	155,998,253
<b>Total</b>	<b>\$ 248,019,533</b>	<b>\$ 240,519,877</b>	<b>\$ 214,485,609</b>	<b>\$ 324,026,255</b>	<b>\$ 285,056,987</b>	<b>\$ 286,829,784</b>

Source: FY 2017-18 CAFR Statement of Activities

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
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EXPENSES BY ACTIVITY  
Government Activities  
FY 2017-18**



Source	FY 17-18	FY 16-17	FY 15-16	FY 14-15	FY 13-14	FY 12-13
Stationary sources* - fees & charges	\$ 100,354,910	\$ 94,279,518	\$ 89,264,511	\$ 88,120,829	\$ 87,160,484	\$ 85,439,616
Mobile sources** - fees & charges	26,026,673	28,087,131	25,743,988	24,526,008	24,307,527	23,535,070
Operating grants and subventions	185,367,622	222,070,040	122,424,397	149,766,034	164,053,936	173,309,732
General revenues***	20,644,444	16,664,194	10,148,573	14,043,695	23,570,233	15,202,920
<b>Total</b>	<b>\$ 332,393,649</b>	<b>\$ 361,100,883</b>	<b>\$ 247,581,469</b>	<b>\$ 276,456,566</b>	<b>\$ 299,092,180</b>	<b>\$ 297,487,338</b>

\*Stationary sources consist of refineries, power plants, manufacturing facilities and small businesses.

\*\*Mobile sources are motorized vehicles that typically include automobiles, trucks, aircraft, ships, trains, and self-propelled construction equipment.

\*\*\*General Revenues include Penalties/Settlements, Interest, and dollars that are not restricted to specific stationary source programs.

Source: FY 2017-18 CAFR Statement of Activities

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
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The following schedule presents the cost of each SCAQMD program as well as each program's net cost (total cost less revenues generated by the activities):

**GOVERNMENTAL ACTIVITIES**

**Net (Expense) Revenue  
(amounts expressed in thousands)**

	<u>FY 2017-18</u>	
	<u>Total Cost of Program Activities</u>	<u>Net Cost of Program Activities</u>
Advance clean air technology	\$ 9,271	\$ (1,725)
Ensure compliance with clean air rule	50,528	(1,864)
Customer service and business assistance	9,743	(309)
Develop programs to achieve clean air	8,637	(208)
Develop rules to achieve clean air	10,013	(352)
Monitoring air quality	20,822	(367)
Timely review of permits	33,302	(591)
Policy support	667	(23)
Interest on long-term debt	3,732	(3,732)
Long-term emission reduction projects	101,304	72,901
Total	<u>\$ 248,019</u>	<u>\$ 63,730</u>

The program activities are described as follows:

- **Advance Clean Air Technology** – Identify technologies from anywhere in the world that may have application in reducing emissions from mobile and stationary sources in SCAQMD's jurisdiction. Promote development and assess the use of clean fuels and low-emitting technologies. Implement and administer state- and federal-funded programs for retrofitting, re-powering, or replacing diesel engines with newer and cleaner engines and projects to reduce air pollution associated with freight movement along California's trade corridors.
- **Ensure Compliance with Clean Air Rules** – Perform inspections, source tests, sample collection, the certification of Continuous Emission Monitoring Systems (CEMS), emissions audits, and respond to and resolve public complaints to ensure compliance with SCAQMD rules for existing major and small stationary sources of all pollutants.
- **Customer Service and Business Assistance** – Provide local government, business, and the public with access and input into the regulatory and policy processes of SCAQMD. Assist cities and others with AB 2766 projects. Interact with local, state and federal agencies and others to share air quality information, resolve jurisdictional questions, and implement joint programs. Implement comprehensive public information, legislative and customer service programs.

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- **Develop Programs to Achieve Clean Air** – Develop a regional Air Quality Management Plan (AQMP) to achieve federal and state ambient air quality standards and to meet all other requirements of the federal and California Clean Air Acts. Analyze air quality data and provide an estimate of pollutant emissions by source category. Develop pollutant control strategies and project future air quality using computer models and statistical analysis of alternative control scenarios.
- **Develop Rules to Achieve Clean Air** – Develop emission reduction regulations for sulfur dioxide, nitrogen dioxide, organic gases, particulate matter, toxics, and other pollutants to implement the regional AQMP, Tanner Air Toxics Process (AB 1807), National Emission Standards for Hazardous Air Pollutants (NESHAPS), and Prevention of Significant Deterioration (PSD) requirements.
- **Monitoring Air Quality** – Operate and maintain within SCAQMD's jurisdiction a network of air quality monitoring sites for ozone, nitrogen oxides, sulfur oxides, particulate matter, carbon monoxide and other pollutants to obtain data regarding public exposure to air contaminants. Analyze, summarize, and report air quality information generated from the monitoring sites. Prepare meteorological forecasts and models.
- **Timely Review of Permits** – Ensure timely processing of permits for new sources based on compliance with New Source Review and other applicable local, state and federal air quality rules and regulations.
- **Policy Support** – Provide support staff to the Governing Board, Board committees, and various advisory and other groups as well as ad hoc committees and Rule working groups. Monitor potential changes to state and federal legislation and budgets that may affect SCAQMD.
- **Interest on Long-Term Debt** – Identify the cost of borrowing on Pension Obligation Bonds to partially retire the Unfunded Actuarial Accrued Liability (UAAL) due to San Bernardino County Employees' Retirement Association (SBCERA).
- **Long-term Emission Reduction Projects** – Generate funding for long-term projects that reduce emissions in the South Coast Air Basin. Funding for special funds activities are recognized when received and projects carried out may extend over multiple fiscal years.

**D. Financial Analysis of SCAQMD's Funds**

As noted earlier, SCAQMD uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements.

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**Governmental Funds**

The focus of SCAQMD's governmental funds is to provide information on near-term inflows, outflows, and balances of spendable resources. Such information is useful in assessing SCAQMD's financing requirements. In particular, unassigned fund balance may serve as a useful measure of a government's net resources available for spending at the end of the fiscal year.

As of the end of the fiscal year, SCAQMD's governmental funds reported combined ending fund balances of \$742.9 million, an increase of \$83.0 million in comparison with the prior year. Approximately 91.1% of these fund balances (\$676.9 million) constitutes the portion pertaining to special revenue funds. Expenditures under these funds are restricted for specific purposes. The long-term contractual commitments related to these special fund programs, such as replacement of diesel-fueled trucks, involve multiple-year spending.

- **The General Fund** is the operating fund of SCAQMD. At the end of the fiscal year, the total fund balance of the General Fund was \$66.1 million. The unassigned fund balance was \$47.5 million or 72.0% of the total fund balance; assigned was \$7.2 million or 10.9% of the total fund balance. The assigned amount represents SCAQMD's intended use of the financial resources in future periods. One measure of the General Fund's liquidity is the comparison of both assigned and unassigned fund balance to total expenditures. The assigned and unassigned fund balance represent 37.0% of total General Fund expenditures, while total fund balance represents 44.6% of the total General Fund expenditures. In the General Fund, the assigned and unassigned fund balance may serve as a useful measure of SCAQMD's net resources available for spending at the end of the fiscal year.

General Fund's revenues increased in fiscal year 2017-18 by \$9.6 million. This increase is primarily due to revenue increases from emission fees, annual renewal fees, and one time penalties and settlements.

Overall, General Fund's expenditures increased in fiscal year 2017-18 by \$7.5 million primarily due to higher salaries and employment benefits expenditures as compared to prior fiscal year. This is due primarily to increased retirement plan contribution and efforts to fill vacant positions.

Fund balance changes in other major governmental funds are noted below:

- **Mobile Sources Air Pollution Reduction Fund** – The fund balance increased compared with the prior year by \$5.8 million due to revenues exceeding expenditures in fiscal year 2017-18. Many of the contracts executed in this

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special revenue fund are multi-year and the projects are often long-term and expenditures can vary significantly from year to year.

- **Carl Moyer Program (CMP) AB 923 Fund** – The fund balance increased by \$16.1 million due to revenues exceeding expenditures in fiscal year 2017-18. Many of the contracts executed in this special revenue fund are multi-year and expenditures can vary significantly from year to year.
- **Prop 1B Goods Movement Fund** – This fund was established to account for voter approved transportation bond dollars. The fund balance increased in fiscal year 2017-18 by \$24.3 million due to revenues exceeding expenditures in fiscal year 2017-18. Many of the contracts executed in this special revenue fund are multi-year and expenditures can vary significantly from year to year.

**Proprietary Funds**

As noted earlier, SCAQMD's proprietary fund statements provide the same type of information found in the government-wide financial statements but in more detail. A Statement of Cash Flows is included in the Proprietary Fund Statement.

**E. General Fund Budgetary Highlights**

Overall, the fiscal year 2017-18 adopted budget represented a \$8.4 million (5.9%) increase in expenditures over the fiscal year 2016-17 adopted budget. The fiscal year 2017-18 adopted budget increased due to increases in retirement contribution rates, capital outlays, and contractual costs. In addition, the fiscal year 2017-18 adopted budget increased the funded staffing level by ten positions. On a budgetary basis, actual fiscal year 2017-18 General Fund revenues/transfers in exceeded expenditures/transfers out by \$8.8 million.

SCAQMD adopts an annual operating budget for the General Fund. During budget preparation, SCAQMD estimates its revenues using realistic but conservative methods so as to budget its expenditure appropriations and activities in a prudent manner. As a result, SCAQMD adopts budget amendments during the fiscal year to reflect availability of additional revenues for expansion of existing programs and any budget transfers between major accounts.

The fiscal year 2017-18 amended budget compared to the adopted budget reflected an increase in appropriations of \$14.1 million. The changes to the budget were the result of Governing Board actions that allocated additional funding after the budget was adopted. Also, changes can be attributed to Governing Board approved use of unassigned fund balance for program needs that were unknown at the time the budget was developed.

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Additional funding was appropriated during fiscal year 2017-18 from the following:

EPA - \$2,050,000 for the following programs: Photochemical Assessment Monitoring Stations (PAMS), PM 2.5 Monitoring, Science to Achieve Results (STAR) research grant for low cost air monitoring sensors, the National Air Toxics Monitoring Program, Near Road NO<sub>2</sub> and enhanced particulate monitoring programs.

U.S. Government Enhanced Particulate Monitoring Program - \$281,000 to provide enhanced particulate monitoring support as part of a national monitoring program.

Clean Fuels Fund - \$1,418,000 to assist in conducting the fifth Multiple Air Toxics Exposure Study (MATES V).

Rule 1118 Mitigation Fund - \$2,140,000 to assist in conducting the fifth Multiple Air Toxics Exposure Study (MATES V).

Carl Moyer Program – \$ 562,000 of AB 134 funding for additional staff resources to handle the increased Carl Moyer Program workload.

BP ARCO Fund - \$289,000 for field, lab, air monitoring and analysis equipment, as well as, environmental justice outreach and initiatives.

Rule 1173 Mitigation Fund - \$831,000 for field monitoring and lab equipment.

Rainbow Transfer Recycling Inc. - \$40,000 for an air monitoring study at their facility to measure potential fugitive PM emissions.

Air Toxics Fund - \$79,000 for special monitoring/analysis, lab equipment and field equipment to address the increasing demand for monitoring hexavalent chromium (Cr6+).

AES Settlement Projects Fund - \$84,000 for air monitoring and laboratory analysis equipment.

CARB - \$3,930,000 of AB 617 funding to develop an air monitoring plan for the state and then select the highest priority locations for community air monitoring systems.

Designation for Permit Streamlining - \$975,000 for permitting system automation projects.

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Unassigned Fund Balance - \$1,432,000 for specialized legal services, the development of a legal case management system and legislative consulting.

For fiscal year 2017-18, actual revenues exceeded the final budget by \$5.1 million or 3.4% and expenditure savings were \$11.1 million or 6.8%.

Actual revenue exceeded the final budget primarily due to higher than anticipated Settlements revenue and Emission Fees revenue. The amounts estimated for federal grants and clean fuels/mobile sources were lower due to the timing of the projects and grants that are reimbursed.

The expenditure savings can be primarily attributed to salary savings, which was a result of filling only critical vacant positions throughout the year. Additional significant savings were achieved through prudent purchase decisions and postponing contract work and fixed asset purchases.

## **F. Capital Assets and Debt Administration**

### **Capital Assets**

SCAQMD's investment in capital assets is mostly for its governmental activities. The book value was \$35.8 million (net of accumulated depreciation of \$90.6 million) as of June 30, 2018. This investment in capital assets includes land, buildings, laboratory equipment, air monitoring stations, intangible assets (internally generated software) and SCAQMD fleet vehicles. Depreciation on capital assets is recognized in the Government-wide financial statements.

Additional information on the capital assets can be found in Note V under the Notes to the Basic Financial Statements section.

### **Long-Term Debt**

At the end of the current fiscal year, SCAQMD had total long-term debt outstanding of \$37.3 million, including the current portion of \$5.4 million. The amount of \$22.9 million represents the Pension Obligation Bonds. The 1995 series issued in December 1995 (outstanding balance of \$2.0 million) and the 2004 series issued in June 2004 (outstanding balance of \$20.9 million) retired the Unfunded Actuarial Accrued Liability due to San Bernardino County Employees' Retirement Association as of June 30, 2004. Other long-term debt includes general liability claims and workers' compensation claims payable of \$1.1 million and compensated absences of \$13.3 million.

Additional information on SCAQMD's long-term debt can be found in Note VII under the Notes to the Basic Financial Statements section of this report.

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**G. Economic Factors and Next Year's Budget and Rates**

The fiscal year 2018-19 expenditure budget decreased by 0.8% compared to the fiscal year 2017-18 amended budget. The budget reflects a decrease of \$1.4 million in expenditures from the fiscal year 2017-18 Amended Budget and a \$12.8 million increase from the fiscal year 2017-18 Adopted Budget. The increase in expenditures from the fiscal year 2017-18 Adopted Budget can be mainly attributed to the following: an increase of 51 FTEs for grant funded programs, increases in retirement contribution rates, and cost increases associated with recent labor agreements which expire in December 2020.

In fiscal year 2018-19 revenues are projected to increase by approximately \$15.6 million from the fiscal year 2017-18 adopted budget. The increase in revenue can be attributed to a 3.4% CPI fee increase in most stationary source fees along with an additional fee adjustment to permit processing and annual operating permit renewal fees of 4% for Non-Title V facilities and 10.7% for Title V facilities. Also, the increase in revenue can be attributed additional grant funding for the AB 617 Community Air Protection Program. Nevertheless, in recent years, SCAQMD's revenues have not kept pace with program costs mainly due to increases in retirement rates as the result of market losses to the retirement system's investments.

Moreover, since fiscal year 1991-92, the SCAQMD has reduced staffing and program costs despite increased program requirements. The fiscal year 2018-19 expenditure budget is \$162.6 million and includes 876 authorized positions. Compared to fiscal year 1991-92, this reflects a reduction of 25% in authorized positions. Program costs, however, will exceed the fiscal year 1991-92 budget by \$49.6 million (approximately 44%). Using inflation-adjusted dollars, however, this year's budget request is 15% less than the budget approved in fiscal year 1991-92.

**H. Requests for Information**

This financial report is designed to provide a general overview of SCAQMD's finances for readers of the financial statements. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the Finance Office, South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, CA 91765-4182.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**STATEMENT OF NET POSITION**  
**June 30, 2018**

	Primary Government		
	Governmental Activities	Business-type Activities	Total
<b>ASSETS</b>			
Cash and pooled cash	\$ 718,147,875	\$ -	\$ 718,147,875
Investments	49,801,412	-	49,801,412
Interest receivable	3,812,571	-	3,812,571
Due from other governmental agencies	23,570,822	-	23,570,822
Accounts receivable, net	6,678,107	-	6,678,107
Inventories	56,684	-	56,684
Capital assets not being depreciated:			
Land	8,829,792	-	8,829,792
Capital assets, net of accumulated depreciation:			
Buildings and improvements	12,873,568	-	12,873,568
Intangibles (software)	5,773,777	-	5,773,777
Equipment, vehicles and furniture	8,279,328	-	8,279,328
Total assets	<u>837,823,936</u>	<u>-</u>	<u>837,823,936</u>
<b>DEFERRED OUTFLOWS OF RESOURCES</b>			
Deferred outflow of resources-pension	101,722,762	-	101,722,762
Deferred outflow of resources-OPEB	232,715	-	232,715
Total deferred outflow of resources	<u>101,955,477</u>	<u>-</u>	<u>101,955,477</u>
<b>LIABILITIES</b>			
Accounts payable and accrued liabilities	32,506,567	-	32,506,567
Interest payable	2,799,871	-	2,799,871
Salaries and benefits payable	6,144,533	-	6,144,533
Unearned revenue	20,503,308	-	20,503,308
Long term debt:			
Due within one year	5,353,301	-	5,353,301
Due in more than one year	31,974,359	-	31,974,359
Noncurrent liabilities:			
Net pension liability	214,076,570	-	214,076,570
Net OPEB liability	3,534,000	-	3,534,000
Total liabilities	<u>316,892,509</u>	<u>-</u>	<u>316,892,509</u>
<b>DEFERRED INFLOWS OF RESOURCES</b>			
Deferred inflow of resources-pension	39,614,060	-	39,614,060
Deferred inflow of resources-OPEB	360,000	-	360,000
Total deferred inflow of resources	<u>39,974,060</u>	<u>-</u>	<u>39,974,060</u>
<b>NET POSITION</b>			
Net investment in capital assets	35,756,464	-	35,756,464
Restricted for:			
Long-term emission-reduction projects	676,857,257	-	676,857,257
Unrestricted	(129,700,877)	-	(129,700,877)
Total Net Position	<u>\$ 582,912,844</u>	<u>\$ -</u>	<u>\$ 582,912,844</u>

See accompanying notes to the basic financial statements.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
STATEMENT OF ACTIVITIES  
For the Year Ended June 30, 2018**

Functions/Programs	Program Revenues				Net (Expense) Revenue and Changes in Net Position		
	Expenses	Fees and Charges		Operating Grants and Subventions	Governmental Activities **	Business-Type Activities	Total
		Stationary Sources **	Mobile Sources				
<b>Primary Government:</b>							
<b>Governmental Activities:</b>							
Advance clean air technology	\$ 9,271,026	\$ -	\$ 7,463,855	\$ 82,510	\$ (1,724,661)	\$ -	\$ (1,724,661)
Ensure compliance with clean air rules	50,528,522	42,858,941	3,351,682	2,454,164	(1,863,735)	-	(1,863,735)
Customer service and business assistance	9,743,294	6,359,109	2,466,840	607,948	(309,397)	-	(309,397)
Develop programs to achieve clean air	8,636,784	4,279,183	3,495,353	654,047	(208,201)	-	(208,201)
Develop rules to achieve clean air	10,013,098	7,240,476	1,439,116	981,226	(352,280)	-	(352,280)
Monitoring air quality	20,822,380	7,272,424	7,641,605	5,541,738	(366,613)	-	(366,613)
Timely review of permits	33,301,565	31,869,097	-	841,085	(591,383)	-	(591,383)
Policy support	667,046	475,680	168,222	-	(23,144)	-	(23,144)
Interest on long-term debt	3,731,589	-	-	-	(3,731,589)	-	(3,731,589)
Long-term emission reduction projects *	101,304,229	-	-	174,204,904	72,900,675	-	72,900,675
Total governmental activities	248,019,533	100,354,910	26,026,673	185,367,622	63,729,672	-	63,729,672
<b>Business-type Activities:</b>							
CNG fueling station	31	-	-	-	-	(31)	(31)
Total business-type activities	31	-	-	-	-	(31)	(31)
Total primary government	\$ 248,019,564	\$ 100,354,910	\$ 26,026,673	\$ 185,367,622	63,729,672	(31)	63,729,641
<b>General Revenues **: </b>							
Grants and subventions - not restricted to specific stationary source programs					2,879,520	-	2,879,520
Interest					1,041,333	-	1,041,333
Penalties/ Settlement					14,316,145	-	14,316,145
Subscriptions					436	-	436
Other					1,153,863	-	1,153,863
Transfers					1,253,147	(1,253,147)	-
Total general revenues and transfers					20,644,444	(1,253,147)	19,391,297
Change in net position					84,374,116	(1,253,178)	83,120,938
Net position - July 1, 2017 as restated					498,538,728	1,253,178	499,791,906
Net position - June 30, 2018					\$ 582,912,844	\$ -	\$ 582,912,844

\* Long-term emission reduction projects consist of pass-through and/or one-time or limited duration funding sources that are restricted for specific programs such as Carl Moyer Program Fund, Clean Fuels Program Fund, Mobile Sources Air Pollution Reduction Fund and the Air Quality Investment Fund.

\*\* General Revenue and excess Stationary Source Fees are used to offset a portion of the Permit Processing shortfall.

See accompanying notes to the basic financial statements.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
BALANCE SHEET – GOVERNMENTAL FUNDS  
June 30, 2018**

<u>Assets</u>	General Fund	Mobile Sources Air Pollution Reduction Fund	CMP AB 923 Fund	Prop 1B Goods Movement Fund	Other Governmental Funds	Total
Cash and cash equivalents	\$ 64,042,677	\$ 84,046,954	\$ 147,021,633	\$ 129,045,814	\$ 293,990,797	\$ 718,147,875
Investments	14,950,190	9,979,815	9,940,750	-	14,930,657	49,801,412
Interest receivable	313,575	439,959	777,854	700,333	1,580,850	3,812,571
Due from other governmental agencies	5,578,105	2,831,371	4,718,952	-	10,442,394	23,570,822
Due from other funds	12,550,135	-	400,000	-	6,932,947	19,883,082
Accounts receivable, net	4,309,504	-	-	-	2,368,603	6,678,107
Inventories	56,684	-	-	-	-	56,684
Other assets	-	-	-	-	-	-
Total assets	<u>101,800,870</u>	<u>97,298,099</u>	<u>162,859,189</u>	<u>129,746,147</u>	<u>330,246,248</u>	<u>821,950,553</u>
<u>Deferred Outflow of Resources:</u>						
Deferred outflow of resources	-	-	-	-	-	-
Combined assets and deferred outflow of resources	<u>\$ 101,800,870</u>	<u>\$ 97,298,099</u>	<u>\$ 162,859,189</u>	<u>\$ 129,746,147</u>	<u>\$ 330,246,248</u>	<u>\$ 821,950,553</u>
<u>Liabilities, Deferred Inflow of Resources and Fund Balances</u>						
<u>Liabilities:</u>						
Accounts payable and accrued liabilities	\$ 6,548,385	\$ 1,610,474	\$ 2,786,716	\$ 1,200,000	\$ 20,360,992	\$ 32,506,567
Salaries and benefits payable	6,144,533	-	-	-	-	6,144,533
Due to other funds	2,548,838	743,366	691,864	1,973,625	13,925,389	19,883,082
Unearned revenue	20,503,308	-	-	-	-	20,503,308
Total liabilities	<u>35,745,064</u>	<u>2,353,840</u>	<u>3,478,580</u>	<u>3,173,625</u>	<u>34,286,381</u>	<u>79,037,490</u>
<u>Deferred Inflow of Resources:</u>						
Deferred inflow of resources	-	-	-	-	-	-
<u>Fund Balances:</u>						
Nonspendable	56,684	-	-	-	-	56,684
Restricted	-	94,944,259	159,380,609	126,572,522	83,260,920	464,158,310
Committed	11,237,530	-	-	-	51,447,457	62,684,987
Assigned	7,228,892	-	-	-	161,309,146	168,538,038
Unassigned	47,532,700	-	-	-	(57,656)	47,475,044
Total fund balances	<u>66,055,806</u>	<u>94,944,259</u>	<u>159,380,609</u>	<u>126,572,522</u>	<u>295,959,867</u>	<u>742,913,063</u>
Combined liabilities, deferred inflow of resources and fund balances	<u>\$ 101,800,870</u>	<u>\$ 97,298,099</u>	<u>\$ 162,859,189</u>	<u>\$ 129,746,147</u>	<u>\$ 330,246,248</u>	<u>\$ 821,950,553</u>

See accompanying notes to the basic financial statements.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
RECONCILIATION OF THE GOVERNMENTAL FUNDS BALANCE SHEET  
TO THE GOVERNMENT-WIDE STATEMENT OF NET POSITION  
June 30, 2018**

Total fund balances – total governmental funds \$ 742,913,063

Amounts reported for governmental activities in the Statement of Net Position are different because:

Capital assets used in governmental activities are not current financial resources and therefore are not reported in the Governmental Funds Balance Sheet. These capital assets net of accumulated depreciation are reported in the Statement of Net Position as capital assets of SCAQMD as a whole. 35,756,465

Deferred outflows of resources are not current financial resources and therefore are not reported in the Governmental Fund Balance Sheet. 101,955,477

Interest payable on long-term debt does not require current financial resources. Therefore, interest payable is not reported as a liability in Governmental Funds Balance Sheet. (2,799,871)

Long-term liabilities and deferred inflows are not due and payable in the current period and accordingly are not reported as fund liabilities and deferred inflows. All liabilities and deferred inflows of resources, both current and long-term, are reported in the Statement of Net Position.

Net pension liability	(214,076,570)
Net OPEB liability	(3,534,000)
General liability	(135,000)
Workers' compensation	(960,000)
Compensated absences	(13,355,586)
Pension obligation bonds	(22,877,074)
Deferred inflows of resources related to pension and OPEB	(39,974,060)

Net position of governmental activities \$ 582,912,844

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES**  
**GOVERNMENTAL FUNDS**  
**For the Year Ended June 30, 2018**

	Mobile Sources		CMP	Prop 1B	Other	Total
	General Fund	Air Pollution Reduction Fund	AB 923 Fund	Goods Movement Fund	Governmental Funds	
<b>Revenues:</b>						
Emission fees	\$ 22,786,661	\$ -	\$ -	\$ -	\$ -	\$ 22,786,661
Annual renewal fees	52,182,769	-	-	-	-	52,182,769
Area Sources	2,293,947	-	-	-	-	2,293,947
Permit processing fees	19,538,295	-	-	-	-	19,538,295
Mobile sources/clean fuels	22,015,710	16,394,666	26,632,581	-	9,407,553	74,450,510
Air Toxics "Hot Spots"	2,538,246	-	-	-	-	2,538,246
Transportation programs	845,718	-	-	-	-	845,718
State subvention	3,939,075	-	-	-	-	3,939,075
Federal grant	7,949,213	-	-	-	3,938,120	11,887,333
State grant	5,319,196	-	-	34,493,190	43,289,490	83,101,876
Interest revenue	1,041,334	1,329,059	2,195,665	1,760,568	4,412,963	10,739,589
Lease revenue	147,660	-	-	-	-	147,660
Source test/analysis fees	663,011	-	-	-	-	663,011
Hearing Board fees	351,979	-	-	-	-	351,979
Penalties and settlements	14,316,145	-	-	-	1,485,310	15,801,455
Subscriptions	436	-	-	-	-	436
Other revenues	1,006,204	-	-	-	28,865,739	29,871,943
<b>Total revenues</b>	<b>156,935,599</b>	<b>17,723,725</b>	<b>28,828,246</b>	<b>36,253,758</b>	<b>91,399,175</b>	<b>331,140,503</b>
<b>Expenditures:</b>						
Current:						
Salaries and employee benefits	115,342,430	-	-	-	-	115,342,430
Insurance	1,503,440	-	-	-	-	1,503,440
Rent	550,641	-	-	-	-	550,641
Supplies	3,375,314	-	-	-	-	3,375,314
Contract and special services	9,953,563	11,175,395	8,781,705	11,976,780	67,540,503	109,427,946
Maintenance	1,787,868	-	-	-	-	1,787,868
Travel and auto	1,107,393	-	-	-	-	1,107,393
Utilities	1,520,114	-	-	-	-	1,520,114
Communications	614,018	-	-	-	-	614,018
Uncollectible accounts	410,438	-	-	-	1,746	412,184
Other expenditures	1,172,337	743,366	-	-	80,515	1,996,218
Capital outlay	4,579,695	-	-	-	4,219	4,583,914
Debt service:						
Principal	2,432,798	-	-	-	1,000,000	3,432,798
Interest	3,756,716	-	-	-	-	3,756,716
<b>Total expenditures</b>	<b>148,106,765</b>	<b>11,918,761</b>	<b>8,781,705</b>	<b>11,976,780</b>	<b>68,626,983</b>	<b>249,410,994</b>
Excess (deficiency) of revenues over (under) expenditures before transfers	8,828,834	5,804,964	20,046,541	24,276,978	22,772,192	81,729,509
<b>Other Financing Sources (uses):</b>						
Transfers in	4,985,473	-	-	-	5,728,318	10,713,791
Transfers out	(250,000)	-	(4,000,000)	-	(5,210,644)	(9,460,644)
<b>Total other financing sources (uses)</b>	<b>4,735,473</b>	<b>-</b>	<b>(4,000,000)</b>	<b>-</b>	<b>517,674</b>	<b>1,253,147</b>
Net change in fund balance	13,564,307	5,804,964	16,046,541	24,276,978	23,289,866	82,982,656
Fund balances, July 1, 2017	52,491,499	89,139,295	143,334,068	102,295,544	272,670,001	659,930,407
Fund balances, June 30, 2018	\$ 66,055,806	\$ 94,944,259	\$ 159,380,609	\$ 126,572,522	\$ 295,959,867	\$ 742,913,063

See accompanying notes to the basic financial statements.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
RECONCILIATION OF THE GOVERNMENTAL FUNDS STATEMENT OF  
REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES TO THE  
GOVERNMENT-WIDE STATEMENT OF ACTIVITIES  
For the Year Ended June 30, 2018**

Net change in fund balances – total governmental funds	\$ 82,982,656
Amounts reported for governmental activities in the Statement of Activities are different because:	
Governmental funds report capital outlays as expenditures. However, in the Government-wide Statement of Activities and Changes in Net Position, the cost of those assets is allocated over their estimated useful lives and reported as depreciation expense. This is the amount of capital outlays recorded in the current period.	4,583,915
Depreciation expense on capital assets is reported in the Government-wide Statement of Activities and Changes in Net Position, but they do not require the use of current financial resources. Therefore, depreciation expense is not reported as expenditures in governmental funds.	(4,954,750)
Pension expense is reported in the Government-wide Statement of Activities and Changes in Net Position, but they do not require the use of current financial resources.	(27,852,330)
Pension contribution made by employer in current fiscal year reduce the net pension liability and do not require current resources.	25,341,034
OPEB expense is reported in the Government-wide Statement of Activities and Changes in Net Position, but they do not require the use of current financial resources.	(407,967)
OPEB contribution made by employer in current fiscal year reduce the net OPEB liability and do not require current resources.	232,715
Repayment of bond principal is an expenditure in the governmental funds. For SCAQMD as a whole, principal payments reduce the liabilities in the Government-wide Statement of Net Position and do not result in an expense in the Statement of Activities and Changes in Net Position.	3,432,798
Accrued interest expense on long-term debt is reported in the Government-wide Statement of Activities and Changes in Net Position, but it does not require the use of current financial resources. Therefore, accrued interest expense is not reported as an expenditure in governmental funds. The amount represents the change in accrued interest from the prior year.	25,126
Long-term compensated absences and general liability/workers’ compensation claims are reported in the Government-wide Statement of Activities and Changes in Net Position, but they do not require the use of current financial resources. Therefore, they are not reported as expenditures in governmental funds. The following amounts represent the change from the prior year:	
Compensated absences	282,478
General and auto liability/workers’ compensation claims	708,441
Change in net position of governmental activities	\$ 84,374,116

See accompanying notes to the basic financial statements.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
STATEMENT OF FUND NET POSITION  
PROPRIETARY FUNDS  
JUNE 30, 2018**

		Business-type Activities - Enterprise Funds
		CNG Fueling Station Fund
<u>Assets</u>		
Current Assets:		
Cash and cash equivalents	\$	-
Total current assets		-
Total assets		-
 <u>Liabilities</u>		
Current Liabilities:		
Accounts payable and accrued liabilities		-
Total liabilities		-
 <u>Net Position</u>		
Unrestricted		-
Total net position	\$	-

See accompanying notes to the basic financial statements.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN FUND NET POSITION**  
**PROPRIETARY FUNDS**  
**For the Year Ended June 30, 2018**

	Business-type Activities - Enterprise Funds
	CNG Fueling Station Fund
Operating revenues:	
Interest revenues	\$ -
Total operating revenues	-
Operating expenses:	
Cost of goods and services	31
Total operating expenses	31
Operating loss before transfer	(31)
Transfer out	(1,253,147)
Changes in net position	(1,253,178)
Total net position, July 1, 2017	1,253,178
Total net position, June 30, 2018	\$ -

See accompanying notes to the basic financial statements.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
STATEMENT OF CASH FLOWS  
PROPRIETARY FUNDS  
For the Year Ended June 30, 2018**

		Business-type Activities - Enterprise Funds
		CNG Fueling Station Fund
		<hr/>
<u>Cash Flows from Operating Activities:</u>		
Cash payment for goods and services	\$	(31)
Other operating revenues		<hr/> 8,838
Net cash provided by operating activities		<hr/> 8,807
<u>Cash Flows from Noncapital Financing Activities:</u>		
Transfer to other fund		<hr/> (1,253,147)
Net cash used by noncapital financing activities		<hr/> (1,253,147)
Net decrease in cash and cash equivalents		(1,244,340)
Beginning cash balance, July 1, 2017		<hr/> 1,244,340
Ending cash balance, June 30, 2018	\$	<hr/> <hr/> -
 <u>Reconciliation of Operating Income to Net Cash Provided by Operating Activities:</u>		
Operating income (loss)	\$	<hr/> (31)
Adjustments to reconcile operating income to net cash provided by operating activities		
Decrease (increase) in interest receivable		<hr/> 8,838
Total adjustments		<hr/> 8,838
Net cash provided by operating activities	\$	<hr/> <hr/> 8,807

See accompanying notes to the basic financial statements.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
STATEMENT OF FIDUCIARY NET POSITION  
FIDUCIARY FUNDS  
June 30, 2018**

<u>Assets</u>	<u>Agency Funds</u>	<u>Retirement Benefit Trust Fund</u>
Cash and cash equivalents	\$ 153,423	\$ 28,436
Interest receivable	221	6,139
Due from other funds	-	-
	-	-
Total assets	\$ 153,644	34,575
<u>Liabilities</u>		
Liabilities:		
Accounts payable and accrued liabilities	\$ 153,644	-
	-	-
Total liabilities	\$ 153,644	-
<u>Net Position</u>		
Net position held in trust for retirement benefit		34,575
Total net position		\$ 34,575

See accompanying notes to the basic financial statements.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
STATEMENT OF CHANGES IN FIDUCIARY NET POSITION  
FIDUCIARY FUNDS  
For the Year Ended June 30, 2018**

	<u>Retirement Benefit Trust Fund</u>
<u>Additions:</u>	
Contribution	\$ -
Other revenues	-
Interest revenue	<u>18,370</u>
Total additions	<u>18,370</u>
 <u>Deductions:</u>	
Other expenditures	<u>-</u>
Total deductions	<u>-</u>
Change in net position	<u>18,370</u>
Net position held in trust for retirement benefits, July 1, 2017	<u>16,205</u>
Net position held in trust for retirement benefits, June 30, 2018	<u>\$ 34,575</u>

See accompanying notes to the basic financial statements.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
NOTES TO THE BASIC FINANCIAL STATEMENTS  
June 30, 2018**

**I. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**A. The Financial Reporting Entity**

The South Coast Air Quality Management District (SCAQMD) was established pursuant to the Lewis Air Quality Management Act on February 1, 1977, commencing at Section 40400 of the Health and Safety Code of the State of California. SCAQMD encompasses all of Orange County and parts of Los Angeles, San Bernardino, and Riverside Counties. SCAQMD operates a network of air monitoring stations, analyzes air quality data and establishes maximum emission levels for stationary, commercial, and industrial facilities that are enforced through SCAQMD's permit system.

As defined by generally accepted accounting principles (GAAP) in the United States of America that are established by the Governmental Accounting Standards Board (GASB), the financial reporting entity consists of the primary government and its component units, which are legally separate organizations. The financial statements of SCAQMD are prepared in accordance with GAAP.

The accompanying financial statements present the financial activities of SCAQMD (primary government) and its blended component unit, South Coast Air Quality Management District Building Corporation (Corporation), an entity for which SCAQMD is considered to be financially accountable. Legally separate from SCAQMD and as a tax-exempt entity, the Corporation is reported as a governmental fund.

The Corporation was incorporated as a nonprofit corporation under the laws of the State of California on September 21, 1978. The purpose of the Corporation is to finance the acquisition and improvement of a building complex/headquarters of SCAQMD. SCAQMD Governing Board approves the appointment of the Corporation's Board of Directors. SCAQMD has had significant transactions with the Corporation for the construction and improvement of SCAQMD's headquarters facility. It is legally separate from SCAQMD and a tax-exempt entity under Section 501(c)(4) of the Internal Revenue Code.

Separate financial statements for the Corporation may be obtained from SCAQMD's Finance Office located at 21865 Copley Drive, Diamond Bar, California 91765.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**NOTES TO THE BASIC FINANCIAL STATEMENTS**  
**June 30, 2018**

**B. Measurement Focus, Basis of Accounting, and Financial Statement Presentation**

The basic financial statements of SCAQMD are composed of the following:

- Government-wide financial statements
- Governmental fund financial statements
- Notes to the basic financial statements

**Government-wide Financial Statements**

The government-wide financial statements (Statement of Net Position and Statement of Activities) present summaries of governmental and business-type activities of SCAQMD as a whole, excluding fiduciary activities. These statements are presented using the economic resources measurement focus and the accrual basis of accounting. Accordingly, all of SCAQMD's assets and liabilities including capital assets and long-term liabilities are included in the accompanying Statement of Net Position. Revenues are recognized in the period in which they are earned while expenses are recognized in the period in which the liability is incurred, regardless of the timing of related cash flows.

Amounts paid to acquire capital assets are capitalized as assets in the government-wide financial statements rather than reporting them as expenditures. Proceeds of long-term debt are also recorded in the government-wide financial statements as a liability, rather than as another financing source. Amounts paid to reduce long-term indebtedness of the reporting government are reported as a reduction of the related liability, rather than as an expenditure.

The Statement of Activities demonstrates the degree to which the direct expenses of a given functional activity are offset by program revenues directly related to the functional activity. Direct expenses are those that are clearly identifiable with a specific functional activity.

The types of transactions reported as program revenues are reported in three categories: 1) fees and charges including stationary source fees from permitted facilities and mobile source fees from motor vehicle registrations; 2) operating grants and subventions that are in support of air pollution program activities; and 3) long-term emission reduction projects which include capital grants and contributions which are mostly restricted. Program expenses are subtracted from program revenues to present the net cost of each functional activity. Interest income and other miscellaneous items not properly included among program revenues are reported as general revenues.

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SCAQMD's functional activities are broken down into the following ten categories:

- Advance clean air technology
- Ensure compliance with clean air rules
- Customer service and business assistance
- Develop programs to achieve clean air
- Develop rules to achieve clean air
- Monitoring air quality
- Timely review of permits
- Policy support
- Interest on long-term debt, and
- Long-term emission reduction projects

When both restricted and unrestricted resources are available for use, it is SCAQMD's policy to use restricted resources first within the restricted activities, then use the unrestricted resources as they are needed.

Fund financial statements for the primary government's governmental, proprietary, and fiduciary funds are presented after the government-wide financial statements.

**Governmental Fund Financial Statements**

Governmental fund financial statements include a Balance Sheet and a Statement of Revenues, Expenditures, and Changes in Fund Balances for all major governmental funds and non-major funds aggregated. The funds designated as major funds are determined by a mathematical calculation consistent with GASB Statement No. 34.

SCAQMD has presented all major funds that met those qualifications. These major funds are Mobile Sources Air Pollution Reduction Fund, Carl Moyer Program (CMP) AB 923 Special Revenue Fund, and Prop 1B Goods Movement Fund, in addition to the General Fund.

A reconciliation of the Fund Financial Statements to the Government-wide Financial Statements is provided to explain the differences as a result of the integrated approach of GASB Statement No. 34 reporting.

All governmental funds are accounted for on a spending or current financial resources measurement focus and the modified accrual basis of accounting. Accordingly, only current assets and current liabilities are generally included in the Balance Sheets. The Statement of Revenues, Expenditures, and Changes in

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Fund Balances presents increases (revenues and other financing sources) and decreases (expenditures and other financing uses) in net current assets. Revenues are recognized in the accounting period in which they become measurable and available to finance expenditures of the current period. They are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, SCAQMD considers revenues to be available if they are collected generally within 90 days after year-end to be available to finance the expenditures accrued for the reporting period. The primary revenue sources which have been treated as susceptible to accrual by SCAQMD are as follows: emissions flat fees, permit fees, air toxics “Hot Spots” fees, and source test/analysis fees from stationary sources; clean fuels revenues from stationary sources; federal and state grants under grants and subventions and interest under general revenues. All other revenue items are recorded when received in cash. Expenditures are recognized in the accounting period in which the related fund liability is incurred, if measurable, except for debt service expenditures, as well as expenditures related to compensated absences, which are recognized when payment is due.

Amounts expended to acquire capital assets are recorded as capital outlay expenditures in the year that resources were expended rather than recording them as fund assets. The proceeds of long-term debt are recorded as other financing sources rather than as fund liability. Amounts paid to reduce long-term indebtedness are reported as debt service expenditures.

**Proprietary Fund Financial Statements**

Proprietary Fund financial statements include a Statement of Fund Net Position, a Statement of Revenues, Expenses, and Changes in Fund Net Position, and a Statement of Cash Flows. These funds are accounted for using the economic resources measurement focus and the accrual basis of accounting. Accordingly, all assets and liabilities (whether current or noncurrent) are included on the Statement of Net Position. The Statement of Revenues, Expenses, and Changes in Fund Net Position present increases (revenues) and decreases (expenses) in total net position. Revenues are recognized in the period in which they are earned while expenses are recognized in the period in which the liability is incurred.

Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund’s principal ongoing operations. The principal operating revenues of SCAQMD’s enterprise fund are sales of CNG fuel. In fiscal year 2015-16, SCAQMD sold the CNG station and ceased to operate it. As of June 30, 2018, the remaining cash balances

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were transferred out to the capital project fund and this proprietary fund was closed.

**Fiduciary Fund Financial Statements**

Fiduciary Fund financial statements include a Statement of Fiduciary Net Position and Statement of Changes in Fiduciary Net Position. These funds represent agency funds which are custodial in nature (assets equal liabilities) and do not involve the recording of revenues and expenses or the measurement of results of operations. The reporting focus is upon net position and changes in net position. Fiduciary funds also include the Retirement Benefits Trust Fund for LACERA OPEB (see fund type in Note 1C). These funds are accounted for in the accrual basis of accounting.

**C. Fund Types and Major Funds**

As noted earlier, the funds designated as major funds are determined in accordance with GASB Statement No. 34.

SCAQMD reports the following major governmental funds:

General Fund – This is the primary operating fund of SCAQMD and is used to record transactions relating to its general business operations. It is also used to account for all revenues and expenditures that are not required to be accounted for in another fund.

Special Revenue Funds – These funds are used to record transactions applicable to specific revenue sources that are legally restricted to expenditures for specific purposes. The following are SCAQMD’s major special revenue funds:

- Mobile Sources Air Pollution Reduction Fund – Used to account for 30% of the revenue received by SCAQMD from the motor vehicle registration fees under the provisions of Sections 44243 and 44244 of the California Health and Safety Code. This money is used to provide grants to fund projects for the purpose of reducing air pollution from motor vehicles within the justification of the South Coast Air Quality Management District. Total projects to date amount to over \$441 million and over 14,100 tons of emissions reduced. This special fund was established in fiscal year 1992.
- Carl Moyer Program (CMP) AB 923 Fund - Established in fiscal year 2008 to provide additional funding for the Carl Moyer Program from an adjustment to the tire fee, and authorizes local air districts to increase motor vehicle

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registration fees by up to \$2 for programs to reduce air pollution. AB 923 has expanded the Carl Moyer incentive program to include agricultural sources of air pollution as well as buses, cars and on and off-road equipment. The program targets nitrogen oxide hydrocarbon, and particulate matter pollution reductions. About \$4 million per year in AB 923 funds are used to fund projects as match requirement to the Carl Moyer Program.

- Prop 1B Goods Movement Fund - Established in fiscal year 2008 to account for voter approved transportation bond dollars. A portion of these were allocated to CARB and passed through to SCAQMD to implement programs that reduce emissions from movement of freight or “goods” along California’s trade corridors. Over \$500 million in goods movement projects have been and are being implemented within the SCAQMD.

SCAQMD reports the following major proprietary fund:

- Compressed Natural Gas (CNG) Fueling Station Fund - Established during fiscal year 2002 to administer all activities, transactions, and funding relating to the public and SCAQMD’s use of CNG fueling facilities at SCAQMD’s headquarters. The fueling station helps accommodate the growing number of alternative-fuel vehicle fleets. In fiscal year 2015-16, the CNG Station was sold.

SCAQMD also reports the following fiduciary fund types:

- Agency Funds - Used to account for funds due to others that are not accounted for in the other funds and acts as a temporary custodian.
  - 1) Accounting Agency Fund - Used to account for unidentified payments that require additional research before final disposition.
  - 2) 457 Plan Administration Revenue Sharing Fund - Used to account for funds that, the 457 plan administrator, transfers to SCAQMD as part of a revenue-sharing agreement. After applicable expenses are paid, residual funds are returned to the 457 plan administrator to be distributed among participants based on an approved formula.
- Retirement Benefit Trust Fund - Used to account for funds contributed by SCAQMD and interest earned on its principal for the payment of medical, dental and burial costs upon retirement of SCAQMD employees who are members of the Los Angeles County Employees Retirement Association

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(LACERA). It operates as a cost-sharing multi-employer defined benefit Other Post Employment Benefit plan. Note X contains more information about SCAQMD's OPEB plans.

**D. Assets, Liabilities and Deferred Outflows/Inflows of Resources, and Net Position/Fund Balance**

**1. Cash, Pooled Cash, and Investments**

Cash includes amounts to conduct daily operations of SCAQMD in demand deposits with the Los Angeles County Treasurer and various financial institutions. SCAQMD deposits virtually all of its cash with the Treasurer of the County of Los Angeles. SCAQMD's deposits, along with funds from other local agencies such as the county government, other school districts, and special districts, make up a pool, which the County Treasurer manages for investment purposes. Earnings from the pooled investments are allocated to participating funds based on average investments in the pool during the allocation period.

All SCAQMD-directed investments are to diversify SCAQMD's investments and are in compliance with SCAQMD's investment policy and Los Angeles County Treasury investment guidelines. The guidelines limit specific investments to United States Agency securities. The SCAQMD securities portfolio is held by the County Treasurer. Interest earned on investments is recorded as revenue of the fund from which the investment was made. All SCAQMD investments are stated at fair value based on quoted market prices.

**2. Capital Assets and Depreciation**

Under GASB Statement No. 34, all capital assets, whether owned by governmental activities or business-type activities are recorded and depreciated in the government-wide financial statements. No long-term capital assets or depreciation are shown in the governmental funds financial statements.

Capital assets, which include land, equipment, vehicles, furniture, buildings and improvements, software and other intangible assets are reported at cost unless obtained by donation in which case the assets are recorded at the acquisition value at the date of receipt. Capital asset purchases with values of at least \$5,000 and with an expected useful life of three years or more are capitalized.

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The costs of normal maintenance and repairs that do not add to the value of the capital asset or materially extend capital assets lives are not capitalized. Major improvements are capitalized and depreciated over the remaining useful lives of the related capital assets. Assets disposed of or no longer required for its existing use are removed from the records at actual or estimated cost.

Depreciation is charged as an expense against operations, and accumulated depreciation is reported on the respective balance sheet. Property, plant, equipment, vehicles and furniture of SCAQMD are depreciated using the straight-line method over the following useful lives:

<u>Assets</u>	<u>Years</u>
Buildings and Improvements	15-30
Equipment, vehicles and furniture	5-7
Software and Systems	3-5

**3. Inventories**

Inventories as determined by annual physical counts are valued at cost using the first-in/first-out (FIFO) method. They consist principally of office, computer, cleaning and laboratory supplies. The cost is recorded as an expense as inventory items are consumed.

**4. Compensated Absences**

Regular full-time employees accumulate earned but unused vacation time, sick leave, compensatory time, and other leave time. Certain restrictions apply with respect to the accumulation of leave time and its payment at termination. All vacation, sick leave, compensatory time, and other leave time are accrued when incurred in the government-wide financial statements. A liability for these amounts is reported in governmental funds only if they have matured, for example, as a result of employee resignation and retirement.

**5. Self-Insurance**

SCAQMD is self-insured for general, automobile, and workers' compensation liabilities (See note VIII).

**6. Long-term Obligations**

In the government-wide financial statements, and proprietary fund types in the fund financial statements, long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or proprietary fund type statement of net position. Bond

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premiums and discounts, are deferred and amortized over the life of the bonds using the straight-line method. Bonds payable are reported net of applicable bond premium or discount.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

**7. Deferred Outflows/Inflows of Resources**

In addition to assets, the statement of net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense/expenditure) until then.

In addition to liabilities, the statement of net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time.

**8. Pensions**

For purposes of measuring the net pension liability, deferred outflows of resources, deferred inflows of resources, and pension expense related to pensions, information about the fiduciary net position of the San Bernardino County Employees' Retirement Association (SBCERA) and Los Angeles County Employees' Retirement Association (LACERA) and additions to/deductions from SBCERA's fiduciary net position have been determined on the same basis as they are reported by SBCERA and LACERA. For this purpose, employer and employee contributions are recognized in the period the related salaries are earned and become measurable pursuant to formal commitments, statutory or contractual requirements, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms, and investments are reported at fair value.

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**9. Other Postemployment Benefits (OPEB)**

For purposes of measuring the net OPEB liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expense, information about the fiduciary net position of the LACERA's plan (OPEB Plan) and additions to/deductions from the OPEB Plan's fiduciary net position have been determined on the same basis. For this purpose, benefit payments are recognized when currently due and payable in accordance with the benefit terms. Investments are reported at fair value, which are derived from quoted market prices.

**10. Net Position and Fund Balance Classifications**

Net position represents the difference between assets and deferred outflow of resources, and liabilities and deferred inflow of resources on the government-wide financial statements. Net position is classified in the following categories:

Net Investment in Capital Assets

This category groups all capital assets, including infrastructure and intangibles, into one component of net position. Accumulated depreciation and the outstanding balances of debt that are attributable to the acquisition, construction or improvement of these assets reduce this category.

Restricted Net Position

This category presents external restrictions imposed by creditors, grantors, contributors or laws or regulations of other governments and restrictions imposed by law through constitutional provisions enabling legislation.

Unrestricted Net Position

This category represents the residual net position of SCAQMD in excess of what can properly be classified in one of the other two categories mentioned above.

Fund Balance Classifications

The governmental fund financial statements present fund balances based on classifications that comprise hierarchy that is based primarily on the extent to which SCAQMD is bound to honor constraints on the specific purposes for which amounts can be spent.

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The fund balance classifications used in the governmental fund financial statements are as follows:

*Nonspendable* – amounts that cannot be spent either because they are not in spendable form or because they are legally or contractually required to be maintained intact.

*Restricted* – amounts that can be spent only for specific purposes because of constitutional provisions or enabling legislation or because of constraints that are externally imposed by creditors, grantors, contributors, or the laws or regulations of other governments.

*Committed* – amounts that can be spent only for specific purposes determined by a formal action of the government’s highest level of decision-making authority. The Governing Board, as the highest level of decision-making authority, has the ability to commit fund balances through the adoption of a resolution. These committed amounts cannot be used for any other purpose unless the Governing Board removes or modifies the use through the adoption of a subsequent resolution.

*Assigned* – amounts that do not meet the criteria to be classified as restricted or committed but that are intended to be used for specific purposes. SCAQMD’s adopted policy requires the Board to assign amounts to specific purposes.

*Unassigned* – this classification includes the residual fund balance for the General Fund. It also includes the negative residual fund balance of any other governmental fund that cannot be eliminated by offsetting assigned fund balance amounts.

When both restricted and unrestricted resources are available for use, it is SCAQMD’s policy to use restricted resources first and then unrestricted resources as they are needed. When using unrestricted fund balance amounts, SCAQMD’s Governing Board approved policy is to use committed amounts first, followed by assigned and then unassigned.

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The following schedule shows the details of the fund balances as of June 30, 2018:

**Major Governmental Funds**

	<u>General Fund</u>	<u>Mobile Sources Air Pollution Reduction Fund</u>	<u>CMP AB923 Fund</u>	<u>Prop 1B Goods Movement Fund</u>	<u>Other Governmental Funds</u>	<u>Total</u>
<b>Fund Balance</b>						
<b>Nonspendable:</b>						
Inventory	\$ 56,684	\$ -	\$ -	\$ -	\$ -	\$ 56,684
Total nonspendable	<u>56,684</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>56,684</u>
<b>Restricted:</b>						
Long term emission reduction projects	-	94,944,259	159,380,609	126,572,522	83,260,920	464,158,310
Total restricted	<u>-</u>	<u>94,944,259</u>	<u>159,380,609</u>	<u>126,572,522</u>	<u>83,260,920</u>	<u>464,158,310</u>
<b>Committed:</b>						
Advance clean air technology	662,118	-	-	-	-	662,118
Ensure compliance with clean air rules	2,539,328	-	-	-	-	2,539,328
Customer service and business assistance	894,664	-	-	-	-	894,664
Develop programs to achieve clean air	1,055,116	-	-	-	-	1,055,116
Develop rules to achieve clean air	442,929	-	-	-	-	442,929
Monitoring air quality	3,621,696	-	-	-	-	3,621,696
Timely review of permits	1,389,379	-	-	-	-	1,389,379
Policy support	632,300	-	-	-	-	632,300
Long term emission reduction projects	-	-	-	-	51,447,457	51,447,457
Total committed	<u>11,237,530</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>51,447,457</u>	<u>62,684,987</u>
<b>Assigned:</b>						
Long term emission reduction projects	-	-	-	-	161,309,146	161,309,146
For self insurance	2,000,000	-	-	-	-	2,000,000
For unemployment claims	80,000	-	-	-	-	80,000
For permitstreamlining	1,313,378	-	-	-	-	1,313,378
For enhanced compliance activity	883,018	-	-	-	-	883,018
For OPEB obligations	2,952,496	-	-	-	-	2,952,496
Total assigned	<u>7,228,892</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>161,309,146</u>	<u>168,538,038</u>
<b>Unassigned:</b>						
General Purpose	47,532,700	-	-	-	-	47,532,700
Long term emission reduction projects	-	-	-	-	(57,656)	(57,656)
Total unassigned	<u>47,532,700</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(57,656)</u>	<u>47,475,044</u>
<b>Total fund balances</b>	<u>\$ 66,055,806</u>	<u>\$ 94,944,259</u>	<u>\$ 159,380,609</u>	<u>\$ 126,572,522</u>	<u>\$ 295,959,867</u>	<u>\$ 742,913,063</u>

See accompanying notes to the basic financial statements.

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**E. Use of Estimates**

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the revenues and expenses during the reporting period. Actual results could differ from those estimates.

**F. Adoption of New GASB Pronouncements**

***GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions***

This Statement improves accounting and financial reporting by state and local governments for postemployment benefits other than pensions (other postemployment benefits or OPEB). It also improves information provided by state and local governmental employers about financial support for OPEB that is provided by other entities. This Statement results from a comprehensive review of the effectiveness of existing standards of accounting and financial reporting for all postemployment benefits (pensions and OPEB) with regard to providing decision-useful information, supporting assessments of accountability and inter-period equity, and creating additional transparency. This Statement is effective for fiscal years beginning after June 15, 2017. SCAQMD adopted this statement as of June 30, 2018.

**Restatement due to Change on Accounting Principle**

Net position as of July 1, 2017 has been restated for the implementation of GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. The adjustment to the beginning net position is presented below:

<b>Prior-Period Adjustment</b>	<b>Governmental Activities</b>
Net position, at beginning of year, as previously reported	\$ 502,024,761
Setup of net OPEB liability (measurement date as of June 30, 2016)	(3,721,000)
Deferred outflows—SCAQMD’s contributions made during fiscal year 2017	234,967
Net position, at beginning of year, as restated	\$ 498,538,728

***GASB Statement No. 81, Irrevocable Split-Interest Agreements***

This Statement requires that a government that receives resources pursuant to an irrevocable split-interest agreement recognize assets, liabilities, and deferred inflows of resources at the inception of the agreement. This Statement also requires that a government recognize assets representing its beneficial interests in irrevocable split-interest agreements that are administered by a third party, if the

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government controls the present service capacity of the beneficial interests. This Statement requires that a government recognize revenue when the resources become applicable to the reporting period. The requirements of this Statement are effective for financial statements for periods beginning after December 15, 2016. This Statement did not have an impact on SCAQMD’s financial statements.

**GASB Statement No. 85, *Omnibus 2017***

The objective of this Statement is to address practice issues that have been identified during implementation and application of certain GASB Statements. This Statement addresses a variety of topics including issues related to blending component units, goodwill, fair value measurement and application, and postemployment benefits (pensions and other postemployment benefits). The requirements of this Statement are effective for reporting periods beginning after June 15, 2017. SCAQMD adopted this statement as of June 30, 2018.

**GASB Statement No. 86, *Certain Debt Extinguishment Issues***

This Statement is to improve consistency in accounting and financial reporting for in-substance defeasance of debt by providing guidance for transactions in which cash and other monetary assets acquired with only existing resources—resources other than the proceeds of refunding debt—are placed in an irrevocable trust for the sole purpose of extinguishing debt. This Statement also improves accounting and financial reporting for prepaid insurance on debt that is extinguished and notes to financial statements for debt that is defeased in substance. The requirements of this Statement are effective for reporting periods beginning after June 15, 2017. This Statement did not have an impact on SCAQMD’s financial statements.

**II. CASH, POOLED CASH AND INVESTMENTS**

The following is a summary of the cash, pooled cash, and investments for the primary government (including fiduciary funds) at June 30, 2018:

	Primary Government
Cash on hand	\$ 1,323,739
Cash in bank	271,936
Pooled cash	716,734,059
Investments	49,801,412
Cash, pooled cash, and investments	\$ 768,131,146

**CASH**

At June 30, 2018, the carrying amount of SCAQMD’s bank deposits was \$271,936 and the bank balance was \$351,204. The entire amount was covered by Federal Deposit Insurance Corporation (FDIC). Management believes that SCAQMD is not exposed to

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any significant credit risk related to cash in bank. Cash on hand consists of cash and checks not deposited as of June 30, 2018.

**POOLED CASH**

SCAQMD's pooled cash and investments are held in the Los Angeles County Pooled Surplus Investment Fund Portfolio (PSI), the Los Angeles County Specific Purpose Investment Portfolio (SPI), and the State of California Local Agency Investment Fund (LAIF). Pooled cash and investments are held in accordance with California Government Code, SCAQMD Investment Policy, Los Angeles County Treasurer Investment Policy and LAIF Policies, Goals, and Objectives.

**Los Angeles County Pooled Surplus Investment Fund Portfolio (PSI)**

SCAQMD is a voluntary participant in the Los Angeles County Pooled Surplus Investment Fund Portfolio (PSI), an external investment pool managed by the Los Angeles County Treasurer who reports on a monthly basis to its Board of Supervisors. Its Treasury Oversight Committee reviews and monitors its investment policy. The investment policy is governed by applicable California Government Code. Investments held are stated at fair value. The fair value of pooled cash is determined monthly and is based on current market prices.

**Los Angeles County Specific Purpose Investment Portfolio (SPI)**

The Los Angeles County Specific Purpose Investment Portfolio (SPI) is managed by the Los Angeles County Treasurer and is used to purchase specific investments for SCAQMD. In accordance with California Government Code, SCAQMD adopts an investment policy annually that, among other things, authorizes types and concentrations of investments and maximum investment terms. On June 30, 2018, SPI are reported at fair market value.

The SCAQMD Investment Policy authorizes SCAQMD to invest in:

- U.S. Treasuries
- Federal agencies and U.S. government sponsored enterprises
- Los Angeles County Pooled Surplus Investment Portfolio
- State of California Local Agency Investment Fund
- Obligation of State of California or any other local agency within the state - permitted obligations will include bonds payable solely out of revenues from a revenue producing property owned, controlled or operated by the state or any local agency, or by a department, board, agency or authority of the state or local agency. Obligations of the State of California or other local agencies within the state must be rated in a rating category of "A" or its equivalent, or higher by a Nationally Recognized Statistical Rating Organizations (NRSRO).

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- Shares of money market mutual funds – shall be limited to ratings of “AAA” by two (2) NRSROs or managed by an investment advisor registered with the Securities Exchange Commission with not less than five-years’ experience and with assets under management in excess of \$500 million and such investment may not represent more than 10% of the total assets in the money market fund.
- Bankers’ acceptances – with maximum maturities of 180 days must be issued by national or state-chartered banks or a state-licensed branch of a foreign bank. Eligible banker’s acceptance should have the highest rankings or the highest letter and number rating as provided for by the NRSRO.
- Negotiable certificates of deposit – with maximum maturities of five (5) years must be issued by national or state-chartered banks, a federal or state-licensed branch of a foreign bank, savings associations and state or federal credit unions. Negotiable CDs must be rated in a rating category of “A” or its equivalent by at least one (1) NRSRO.
- Commercial paper – Commercial paper of “prime” quality of the highest ranking or of the highest letter and number rating as provided for by a NRSRO. The entity that issues the commercial paper shall meet all of the following conditions in either paragraph a or paragraph b; and may not represent more than 10% of the outstanding paper of the issuing corporation. Maximum maturities are 270 days.
  - a. The entity meets the following criteria:
    - i. Is organized and operating in the United States as a general corporation.
    - ii. Have total assets in excess of one billion dollars (\$1,000,000,000).
    - iii. Has debt other than commercial paper, if any, that is rated in a rating category of “A” or the equivalent by a NRSRO.
  - b. The entity meets the following criteria:
    - i. Is organized within the United States as a special purpose corporation, trust, or limited liability company.
    - ii. Has program-wide credit enhancements including, but not limited to, over collateralization, letters of credit, or surety bond.
    - iii. Has commercial paper that is rated in a rating category of “A-1”, or the equivalent or higher, by at least two (2) NRSROs.
- Medium term maturity corporate securities – with maximum maturities of five (5) years shall be rated in a rating category of “A” or its equivalent or higher by a NRSRO.
- Mortgage securities or asset-backed securities – with maximum maturities of five (5) years shall be rated “AAA” or its equivalent or better by a nationally recognized rating service and issued by an issuer having a rating in the category of “AA” or its equivalent, or higher by a NRSRO for its long-term debt.
- Repurchase agreements – with maximum maturity of 30 days and must be collateralized by the U.S. Treasuries or Agencies with a market value of 102% for collateral marked to market daily, entered into with broker-dealer which is a

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recognized primary dealer and evidenced by a broker-dealer master purchase agreement signed by County Treasurer and approved by SCAQMD.

- Reverse purchase agreements – are not allowed except as part of investments in the County of Los Angeles Pooled Surplus Investment Portfolio and the State of California Local Agency Investment Fund.
- Variable and floating rate securities – with the maximum security of five (5) years are instruments that have a coupon or interest rate that is adjusted periodically due to changes in a base or benchmark rate. Investments in floating rate securities must utilize commercially available U.S. denominated indices such as U.S. Treasury bills of Federal Funds. Investments in floating rate securities whose reset is calculated using more than one of the above indices are not permitted, i.e. dual index notes. Variable and Floating Rate Securities that are priced based on a single common index are not considered derivative securities.
- Obligations of Supranational Institutions – permitted obligations will include U.S. dollar denominated senior unsecured unsubordinated obligations issued or unconditionally guaranteed by any of the supranational institutions identified in California Government Code Section 53601(q), which are eligible for purchase and sale within the U.S. Obligations of supranational institutions must be rated in a rating category of “AA” or its equivalent, or higher by a NRSRO.
- Derivative securities – not allowed as Special Purpose Investments.

**State of California Local Agency Investment Fund (LAIF)**

SCAQMD is a voluntary participant in the State of California Local Agency Investment Fund (LAIF), an external investment pool that is regulated by California Government Code Section 16429 under the oversight of the Treasurer of the State of California.

LAIF is part of the Pooled Money Investment Account (PMIA) and has oversight provided by the Pooled Money Investment Board (PMIB) and an in-house Investment Committee. The PMIB Board members are the State Treasurer, Director of Finance and the State Controller. Additionally, LAIF has oversight by the Local Investment Advisory Board, which consists of five members, as designated by statute. The Chairman is the State Treasurer, who appoints the other four members to two-year terms.

The fair value of SCAQMD’s investment in this pool is reported in the accompanying financial statements at amounts based upon SCAQMD’s pro-rata share of the fair value provided by LAIF for the entire LAIF portfolio (in relation to the amortized cost of that portfolio). The balance available for withdrawal is based on the accounting records of LAIF, which are recorded on an amortized cost basis.

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The following table summarizes SCAQMD's cash and pooled cash and maturities at June 30, 2018:

	Fair Value	Investment Maturities		
		<1 Year	1-2 Years	2-3 Years
Cash:				
On hand	\$ 1,323,739	\$ -	\$ -	\$ -
In bank	271,936	-	-	-
Total cash	<u>1,595,675</u>	<u>-</u>	<u>-</u>	<u>-</u>
Pooled cash:				
Los Angeles County				
Pooled Surplus Investment (PSI)	678,795,755	335,121,464	343,674,291	-
Local Agency				
Investment Fund (LAIF)	37,938,304	37,938,304	-	-
Total pooled cash	<u>716,734,059</u>	<u>373,059,768</u>	<u>343,674,291</u>	<u>-</u>
Total cash and pooled cash investments	\$ <u>718,329,734</u>	\$ <u>373,059,768</u>	\$ <u>343,674,291</u>	\$ <u>-</u>

**INVESTMENTS**

SCAQMD's investments are comprised of the following as of June 30, 2018:

	Level 1	Level 2	Level 3
Negotiable certificates of deposits	\$ 49,801,412	-	-
Total investments	<u>\$ 49,801,412</u>	<u>-</u>	<u>-</u>

SCAQMD categorized its fair value measurement within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the assets. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 is significant unobservable inputs.

SCAQMD has investments in Federal Farm Credit Banks (FFCB) in the Los Angeles County SPI which are classified as Level 1 as fair market value is determined by observables, unadjusted quoted market price in active or highly liquid and transparent market.

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**Interest Rate Risk**

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment is, the greater the sensitivity of its fair value to changes in interest rates. As a means of limiting its exposure to declines in fair value, the SCAQMD Investment Policy limits its investment portfolio of SPI with the County of Los Angeles to maturities of less than five years at time of purchase and the weighted average maturity of the SPI portfolio may not exceed three years.

**Credit Risk**

Credit risk is the risk of default or the inability of an issuer of an investment to fulfill its obligation to the holder of the investment. SCAQMD mitigates its credit risk in the SPI portfolio generally by following its three primary investment objectives, in order of safety, liquidity, and yield. SCAQMD's Investment Policy further requires only permitted investments with specific credit quality requirements. The Los Angeles County PSI and the State of California LAIF are both unrated as to credit quality. The investments that are represented by SPI are held by the Los Angeles County Treasurer in SCAQMD's name and consist of negotiable certificates of deposits with credit ratings of A (Standard and Poors).

**Concentration of Credit Risk**

Concentration of credit risk is the risk of loss attributed to the magnitude of a investments in a single issuer. SCAQMD's Investment Policy mitigates concentration of credit risk through diversification requirements so that no one type of issuer or issue will have a disproportionate impact on the portfolio. The investments that are represented by SPI consist of negotiable certificates deposit.

**Custodial Credit Risk**

Custodial credit risk for deposits is the risk that, in the event of the failure of a depository financial institution, SCAQMD will not be able to recover its deposits or will not be able to recover collateral securities that are in the possession of an outside party. Custodial credit risk for investments is the risk that SCAQMD will not be able to recover the value of its investment securities that are in the possession of an outside party. SCAQMD's deposits are fully insured by the FDIC, pooled cash with the Los Angeles County PSI and the State of California LAIF are not subject to custodial credit risk, and the investments that are represented by SPI are held by the Los Angeles County Treasurer in the name of SCAQMD.

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**III. DUE FROM OTHER GOVERNMENT AGENCIES AND ACCOUNTS RECEIVABLE**

Due from other government agencies at June 30, 2018 consists of the following:

California Air Resources Board (CARB)	\$ 1,705,084
California Energy Commission (CEC)	2,226,482
Department of Energy	201,142
Department of Homeland Security (DHS)	555,297
Department of Motor Vehicles	
AB 2766, SB 1928, AB 923	16,504,156
Environmental Protection Agency (EPA)	
DERA Bus Administration	3,516
Section 105 Air Grant	1,825,345
STAR Grant	74,379
NEAR Road Monitoring	3,313
National Air Toxics Trend Station (NATTS)	31,243
Section 103 PM 2.5 Grant	255,941
Section 103 Community Scale Air Toxics Grant	135,739
TAS Grant Administration	<u>49,185</u>
Total	<u>\$ 23,570,822</u>

Accounts Receivable consists of the following at June 30, 2018:

Air Toxics "Hot Spots", Emission Fees, Permits, Annuals and Source Testing	\$ 6,247,615
Miscellaneous Receivables	
	<u>1,869,374</u>
Subtotal	8,116,989
Less: Allowance for Doubtful Accounts	<u>(1,438,882)</u>
Total	<u>\$ 6,678,107</u>

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**IV. INTERFUND RECEIVABLES, PAYABLES, AND TRANSFERS**

Due to/from other funds:

<u>Receivable Fund</u>	<u>Amount</u>	<u>Payable Fund</u>	<u>Amount</u>
General Fund	\$ 12,550,135	AB1318 Mitigation Fees Fund	\$ 45,958
		Air Filtration Fund	55,583
		Community Air Protection AB 134 Fund	561,792
		Advanced Technology, Outreach & Education Fund	67,568
		Carl Moyer Program Fund	1,591,620
		Air Quality Investment Fund	18,961
		Prop 1B Goods Movement	1,573,625
		Carl Moyer Program AB 923 Fund	691,864
		Air Toxics Fund	3,002,558
		Mobile Sources Air Poll Reduct. Fund	743,366
		Clean Fuels Program Fund	4,197,240
	<u>\$ 12,550,135</u>		<u>\$ 12,550,135</u>
Clean Fuels Program Fund	\$ 4,638,208	Advanced Technology, Outreach & Education Fund	\$ 500,000
		Advanced Technology Goods Movement Fund	3,407,984
		Air Filtration Fund	476,125
		General Fund	254,099
	<u>\$ 4,638,208</u>		<u>\$ 4,638,208</u>
BP ARCO Settlement Fund	127,067	General Fund	127,067
Rule 1173 Mitigation Fee Fund	662		662
AES Settlement Projects Fund	1,218		1,218
Community Air Protection AB 134 Fund	504,136		504,136
Rule 1118 Mitigation Fund	1,661,656		1,661,656
	<u>\$ 2,294,739</u>		<u>\$ 2,294,739</u>
Carl Moyer Program AB923 Fund	400,000	Prop 1B Goods Movement	400,000
Total Receivables	<u>\$ 19,883,082</u>	Total Payables	<u>\$ 19,883,082</u>

The outstanding balances between funds result mainly from the time lag between the dates that: (1) interfund reimbursable expenditures occur, (2) transactions are recorded in the accounting system, and (3) payments between funds are made.

<u>Fund Transferred From</u>	<u>Fund Transferred To</u>		
	<u>General Fund</u>	<u>Other Governmental Funds</u>	<u>Total</u>
General Fund	\$ -	\$ 250,000	\$ 250,000
Carl Moyer Program AB 923 Fund	-	4,000,000	4,000,000
Other Governmental Fund	4,985,473	225,171	5,210,644
Enterprise Fund	-	1,253,147	1,253,147
	<u>\$ 4,985,473</u>	<u>\$ 5,728,318</u>	<u>\$ 10,713,791</u>

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SCAQMD's Governing Board approved the following:

- Transfer of \$831,000 from the Rule 1173 Mitigation Fee Special Revenue Fund to the General Fund for equipment in support of the emergency response program.
- Transfer \$160,000 from the BP ARCO Settlement Project Fund to the General Fund for services and supplies major object, professional & specialized services account.
- Transfer \$150,000 from the BP ARCO Settlement Project Fund to the General Fund for services and supplies major object, small tools, instruments, equipment account.
- Transfer \$3,485,143 from the Rule 1118 Mitigation Fund to the General Fund to support the MATES V enhanced monitoring program.
- Transfer \$100,000 from the Rule 1118 Mitigation Fund to General Fund for capital outlays major object to amend a contract with a Board-approved software development contractor for the update of the web-based flare event notification system.
- Transfer \$1,446,600 from the Clean Fuels Program Fund to the General Fund to support the MATES V program.
- Transfer \$1,475 from the HEROS II Special Revenue Fund to the General Fund for EFMP marketing and outreach efforts.
- Transfer \$20,000 from the Air Toxics Fund to the General Fund for the purchase of the portable wind systems.
- Transfer \$10,000 from the AES Settlement Projects to the General Fund for services and supplies major object, lab supplies account, to purchase up to 12 summa canisters for shoreline odor issues.
- Transfer \$250,000 from the General Fund to the Air Filtration Fund for supplemental environmental projects.
- Transfer \$4,000,000 from the Carl Moyer Program AB 923 Special Revenue Fund to the Voucher Incentive Program Fund to continue funding truck replacement projects on a first-come, first-served basis.
- Transfer total amount of \$193,000 to the General Fund for the weighing room upgrade and equipment purchases. Of the total amount, \$59,000 from Air Toxics Fund, \$75,000 from AES Settlement Projects Fund, and \$59,000 from BP ARCO Settlement Projects Fund.
- Board authorized to close out the following funds and transfer the residual balances to other funds:

<u>Closed Fund</u>	<u>Transfer Balances to</u>	<u>Amount</u>
Air Qualities Studies Fund	Health Effects Research Fund	\$ 16,533
Asthma and Brain Cancer Research Fund	Health Effects Research Fund	100,953
Clean Fuels Conference Fund	Clean Fuels Program Fund	103,777
Hydrogen Fueling Station	Clean Fuels Program Fund	3,907
CNG Fueling Station Enterprise Fund	Infrastructure Improvement Fund	1,253,147
Prop 1B Lower Emission School Bus Fund	General Fund	232

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**V. CAPITAL ASSETS**

In compliance with GASB Statement No. 34 reporting, SCAQMD has reported all capital assets in the Government-wide Statement of Net Position. Capital asset activities for the year ended June 30, 2018 were as follows:

	Balance June 30, 2017	Increase	Decrease	Balance June 30, 2018
Governmental Activities:				
Capital assets not being depreciated:				
Land	\$ 8,829,792	\$ -	\$ -	\$ 8,829,792
Total capital assets not being depreciated	<u>8,829,792</u>	<u>-</u>	<u>-</u>	<u>8,829,792</u>
Capital Assets being depreciated:				
Buildings and improvements	78,542,243	59,521	-	78,601,764
Intangibles (software)	6,583,293	1,218,005	-	7,801,298
Equipment, vehicles and furniture	28,280,000	3,306,389	(491,854)	31,094,535
Total capital assets being depreciated	<u>113,405,536</u>	<u>4,583,915</u>	<u>(491,854)</u>	<u>117,497,597</u>
Governmental Activities:				
Less Accumulated Depreciation for:				
Buildings and improvements	(63,090,486)	(2,637,710)	-	(65,728,196)
Intangibles (software)	(1,624,654)	(402,867)	-	(2,027,521)
Equipment, vehicles and furniture	(21,392,888)	(1,914,173)	491,854	(22,815,207)
Total accumulated depreciation	<u>(86,108,028)</u>	<u>(4,954,750)</u>	<u>491,854</u>	<u>(90,570,924)</u>
Net capital assets being depreciated	27,297,508	(370,835)	-	26,926,673
Net capital assets, governmental activities	<u>\$ 36,127,300</u>	<u>\$ (370,835)</u>	<u>\$ -</u>	<u>\$ 35,756,465</u>
Business-type Activities:				
Compressed natural gas				
Fueling station	\$ -	\$ -	\$ -	\$ -
Total capital assets being depreciated	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Less accumulated depreciation	-	-	-	-
Net capital assets, business-type activities	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>

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For the year ended June 30, 2018, the depreciation expense of \$4,954,750 was charged to SCAQMD's functions/programs in the governmental activities as follows:

Advance clean air technology	\$ 252,217
Ensure compliance with clean air rules	1,686,663
Customer service and business assistance	354,091
Develop programs to achieve clean air	220,423
Develop rules to achieve clean air	197,197
Monitoring air quality	1,447,805
Timely review of permits	722,290
Policy support	<u>74,064</u>
Total depreciation expense	<u>\$4,954,750</u>

**VI. DEFERRED OUTFLOWS/DEFERRED INFLOWS OF RESOURCES, PENSION, AND OPEB**

The following is a summary of deferred outflows of resources and deferred inflows of resources:

	<b><u>Deferred Outflows of Resources</u></b>	<b><u>Deferred Inflows of Resources</u></b>
Deferred outflows of resources – Pension (SBCERA) (see note IX for details)	\$ 101,681,462	\$ -
Deferred outflows of resources – Pension (LACERA) (see note IX for details)	41,300	-
Deferred inflows of resources – Pension (SBCERA) (see note IX for details)	-	39,614,060
Deferred outflows of resources – OPEB (LACERA) (see note X for details)	232,715	-
Deferred inflows of resources – OPEB (LACERA) (see note X for details)	-	360,000
<b>Total</b>	<b>\$ <u>101,955,477</u></b>	<b>\$ <u>39,974,060</u></b>

The following is a summary of pension and OPEB Balances:

	<b><u>SBCERA</u></b>	<b><u>LACERA</u></b>	<b><u>Total</u></b>
Pension:			
Net Pension liability	\$ 214,076,570	\$ -	\$ 214,076,570
Pension expense	27,845,330	7,000	27,852,330
Pension contributions made in fiscal year 2017-18	25,332,734	8,300	25,341,034
OPEB:			
Net OPEB liability	-	3,534,000	3,534,000
OPEB expense	-	407,967	407,967
OPEB contributions made in fiscal year 2017-18	-	232,715	232,715

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**VII. LONG-TERM DEBT**

The following is a summary of long-term obligation transactions of SCAQMD for the year ended June 30, 2018:

	<u>Balance</u> <u>July 1, 2017</u>	<u>Addition</u>	<u>Reduction</u>	<u>Balance</u> <u>June 30, 2018</u>	<u>Amounts</u> <u>Due Within</u> <u>One Year</u>	<u>Amounts Due</u> <u>in More Than</u> <u>One Year</u>
<b>Governmental Activities:</b>						
Claims payable:						
General liability	\$ 208,571	\$ 97,500	\$ 171,071	\$ 135,000	\$ 75,000	\$ 60,000
Workers' compensation	1,594,870	667,901	1,302,771	960,000	384,176	575,824
Compensated absences	13,638,064	1,402,667	1,685,145	13,355,586	1,341,015	12,014,571
Pension Obligation Bonds	<u>26,309,872</u>	<u>-</u>	<u>3,432,798</u>	<u>22,877,074</u>	<u>3,553,110</u>	<u>19,323,964</u>
Total	\$ <u>41,751,377</u>	\$ <u>2,168,068</u>	\$ <u>6,591,785</u>	\$ <u>37,327,660</u>	\$ <u>5,353,301</u>	\$ <u>31,974,359</u>

In prior years, claims payable and compensated absences have been liquidated primarily by the General Fund.

**1995 Pension Obligation Bonds**

On December 1, 1995, SCAQMD, jointly with the County of San Bernardino, issued bonds to retire the Unfunded Actuarial Accrued Liability (UAAL) due to San Bernardino County Employees' Retirement Association (SBCERA). SCAQMD issued a \$34,261,896 aggregate principal amount to refund its portion of the obligation to SBCERA. The interest rates range from 5.68% to 7.72% with maturity date of August 1, 2021. The purpose of this refunding was to lower the cost to SCAQMD through the issuance of bonds at rates that are lower than those assessed by SBCERA and to restructure its debt service from an ascending to a level-debt-service schedule. At the time of refunding these changes were expected to result in estimated total gross debt service savings of \$20,151,420 through June 30, 2022. During the fiscal year ended June 30, 2018, \$597,798 in principal and \$2,467,202 in interest were paid on the bonds. The principal balance outstanding at June 30, 2018 amounted to \$1,982,074.

The annual payment requirements under the 1995 pension bond obligation are as follows:

<b>Year Ending</b>				
<b><u>June 30</u></b>	<b><u>Principal</u></b>	<b><u>Interest</u></b>	<b><u>Total</u></b>	
2019	\$ 553,110	\$ 2,511,890	\$ 3,065,000	
2020	511,640	2,553,360	3,065,000	
2021	475,443	2,589,557	3,065,000	
2022	<u>441,881</u>	<u>2,623,119</u>	<u>3,065,000</u>	
Total	\$ <u>1,982,074</u>	\$ <u>10,277,926</u>	\$ <u>12,260,000</u>	

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**Series 2004 Pension Obligation Bonds**

On June 29, 2004, SCAQMD issued and sold taxable pension obligation bonds to retire the Unfunded Actuarial Accrued Liability (UAAL) due to the SBCERA. At the time of issuance, it was estimated that the issuance and sale of \$47,030,000 was expected to result in estimated total gross debt service savings of \$22.4 million through August 1, 2023.

The Series 2004 Pension Obligation Bonds are payable on a parity with the 1995 Pension Obligation Bonds. SCAQMD may, from time to time, enter into supplemental indentures without the consent of the Bond Owners of the 1995 Bonds or Series 2004 Bonds for the purpose of providing for the issuance of additional series of Pension Obligation Bonds or to refund any other evidences of indebtedness of SCAQMD arising pursuant to the Retirement Law. The interest rates range from 4.75% to 5.93% with maturity date of August 1, 2023. During the fiscal year ended June 30, 2018, \$2,835,000 in principal and \$1,289,514 in interest were paid on the bonds. The principal balance outstanding at June 30, 2018 amounted to \$20,895,000.

The annual payment requirements under pension bond obligation, Series 2004, are as follows:

<b>Year Ending</b>				
<b><u>June 30</u></b>		<b><u>Principal</u></b>		<b><u>Interest</u></b>
				<b><u>Total</u></b>
2019	\$	3,000,000	\$	1,125,400
2020		3,175,000		950,622
2021		3,365,000		763,549
2022		3,565,000		563,242
2023		3,780,000		348,736
2024		<u>4,010,000</u>		<u>118,897</u>
Total	\$	<u>20,895,000</u>	\$	<u>3,870,446</u>

**Allocation of Interest Expenses**

Total interest expenses on long-term debt for the year ended June 30, 2018 amounted to \$3,731,588. These interest expenses on long-term debt are not meaningfully associated with individual functional activities. Hence, this is considered an indirect expense and should be reported in the Statement of Activities as a separate line.

**VIII. RISK MANAGEMENT**

SCAQMD's risk management program is responsible for purchasing insurance when prudent and cost-effective, self-insuring other exposures to loss when feasible.

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SCAQMD carries \$200 million of all-risk property insurance, with limits of \$100 million on business interruption and \$25 million on earthquake and flood coverage. The limits of liability for general claims is \$10 million. This coverage is supplemented by excess liability policies for boilers & machinery to a limit of \$100 million, and bodily injury/property damage/public officials' errors and emissions/employment practices liability/personal injury to \$15 million. Self-insured retention levels for excess liability is \$250,000. SCAQMD maintains \$25 million excess workers' compensation insurance for losses over \$750,000. In addition, SCAQMD maintains \$1 million automobile liability/physical damage coverage for hybrid and alternate fuel vehicles used for purposes other than fleet services. SCAQMD also maintains policies to protect against some criminal conduct and cyber-attacks.

As of June 30, 2018, \$135,000 and \$960,000, respectively, had been reserved for general liability claims and workers' compensation.

An appropriate amount has been recorded in the General Fund's financial statements to the extent that SCAQMD anticipates that these amounts will be paid from current resources. While the ultimate amount of losses incurred through June 30, 2018 is dependent on future development based upon information from the independent claims' administrator and others involved with the administration of the programs, SCAQMD management believes that the aggregate accrual is adequate to cover such losses.

No significant reduction in insurance coverage occurred during the last three fiscal years. Also, during this period, no claim settlement exceeded insurance coverage.

The following represents changes in the aggregate liabilities for claims of SCAQMD's general liability and workers' compensation for the years ended June 30, 2017 and 2018:

	<u>General Liability</u>	<u>Workers' Compensation</u>	<u>Totals</u>
Claims payable, July 1, 2016	\$ 50,000	\$ 1,266,129	\$ 1,316,129
Current year claims and changes in estimates	159,500	2,760,180	2,919,680
Claims payments	(929)	(2,431,439)	(2,432,368)
Claims payable, June 30, 2017	<u>\$ 208,571</u>	<u>\$ 1,594,870</u>	<u>\$ 1,803,441</u>
Claims payable, July 1, 2017	\$ 208,571	\$ 1,594,870	\$ 1,803,441
Current year claims and changes in estimates	(68,871)	667,901	599,030
Claims payments	(4,700)	(1,302,771)	(1,307,471)
Claims payable, June 30, 2018	<u>\$ 135,000</u>	<u>\$ 960,000</u>	<u>\$ 1,095,000</u>

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**IX. DEFINED BENEFIT PENSION PLANS**

**San Bernardino County Employees' Retirement Association**

**Plan description**

SCAQMD participates in the San Bernardino County Employees' Retirement Association (SBCERA) pension plan - a cost-sharing multiple-employer defined benefit pension plan (the Plan). SBCERA administers the Plan which provides benefits for two membership classifications, General and Safety, and those benefits are tiered based upon date of SBCERA membership. SCAQMD only has general membership. Generally, those who become members prior to January 1, 2013 are Tier 1 members. All other members are Tier 2. An employee who is appointed to a regular position, whose service is greater than fifty percent of the full standard of hours required are members of SBCERA, and are provided with pension benefits pursuant to Plan requirements.

The Plan operates under the provisions of the California County Employees' Retirement Law of 1937 (CERL), the California Public Employees' Pension Reform Act of 2013 (PEPRA), and the regulations, procedures and policies adopted by SBCERA's Board of Retirement (Board). The Plan's authority to establish and amend the benefit terms are set by the CERL and PEPRA, and may be amended by the California state legislature and in some cases require approval by the County of San Bernardino Board of Supervisors and/or the SBCERA Board. SBCERA is a tax qualified plan under Section 401(a) of the Internal Revenue Code.

SBCERA is a legally separate entity from SCAQMD, not a component unit, and there is no financial interdependency with the County of San Bernardino. For these reasons, the SCAQMD's comprehensive annual financial report excludes the SBCERA pension plan as of June 30, 2018. SBCERA publishes its own comprehensive annual financial report that includes its financial statements and required supplementary information, that can be obtained by writing SBCERA at, 348 W. Hospitality Lane, Third Floor, San Bernardino, CA 92415-0014 or visiting the website at: [www.SBCERA.org](http://www.SBCERA.org).

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**Benefits Provided**

SBCERA provides retirement, disability, death and survivor benefits. The CERL and PEPRA establish benefit terms. Retirement benefits are calculated on the basis of age, average final compensation and service credit as follows:

	General – Tier 1	General – Tier 2
<b>Final Average Compensation</b>	Highest 12 months	Highest 36 months
<b>Normal Retirement Age</b>	Age 55	Age 55
<b>Early Retirement: Years of service required and/or age eligible for</b>	Age 70 any years	Age 70 any years
	10 years age 50	5 years age 52
	30 years any age	N/A
<b>Benefit percent per year of service for normal retirement age</b>	2% per year of final average compensation for every year of service credit	2.5% per year of final average compensation for every year of service credit
<b>Benefit adjustments</b>	Reduced before age 55, increased after 55 up to age 65	Reduced before age 67
<b>Final Average Compensation Limitation</b>	Internal Revenue Code section 401(a)(17)	Government Code section 7522.10

An automatic cost of living adjustment is provided to benefit recipients based on changes in the local region Consumer Price Index (CPI) up to a maximum of 2% per year. Any increase greater than 2% is banked and may be used in years where the CPI is less than 2%. There is a one-time 7% increase at retirement for members hired before August 19, 1975. The Plan also provides disability and death benefits to eligible members and their beneficiaries, respectively. For retired members, the death benefit is determined by the retirement benefit option chosen. For all other members, the beneficiary is entitled to benefits based on the members years of service or if the death was caused by employment. General members are also eligible for survivor benefits which are payable upon a member's death.

**Contributions**

Participating employers and active members are required by statute to contribute a percentage of covered salary to the Plan. This requirement is pursuant to Government Code sections 31453.5 and 31454, for participating employers and Government Code sections 31621.6, 31639.25 and 7522.30 for active members. The contribution requirements are established and may be amended by the SBCERA Board pursuant to Article 1 of the CERL, which is consistent with the Plan's actuarial funding policy. The contribution rates are adopted yearly, based on an annual actuarial valuation, conducted by an independent actuary, that requires actuarial assumptions with regard to mortality, expected future service (including age at entry into the Plan, if applicable, and tier), and compensation increases of the members and beneficiaries. The combined active member and employer contribution rates are expected to finance the costs of benefits for employees that are allocated during the year, with an additional amount to finance any unfunded accrued liability. Participating employers may pay a portion of the active members' contributions through negotiations and bargaining agreements.

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Employee contribution rates for the fiscal year ended June 30, 2018 ranged between 8.45% and 14.24% for Tier 1 General members, 30 year General member are not required to pay any employee contribution. For Tier 2 General members, the contribution is 7.66%.

Employer contribution rates for the year ended June 30, 2018 are as follows:

	Employer Contribution Rates		Paid by Employer for Employee	
	Tier 1 Members	Tier 2 Members	Tier 1 Members	Tier 2 Members
<b>Actuarially Determined Required Contribution Percentages</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>
SCAQMD members	34.93%	30.91%	0.00%-5.00%	0.00%

The required employer contributions and the amount paid to SBCERA by the SCAQMD for the year ended June 30, 2018 were \$25,332,734. The SCAQMD's employer contributions were equal to the required employer contributions for the year ended June 30, 2018.

**Pension Liability**

At June 30, 2018, SCAQMD reported a net pension liability of \$214,076,570 for its proportionate share of the SBCERA's net pension liability. The net pension liability was measured as of June 30, 2017, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of June 30, 2017. The SBCERA's publicly available financial report provides details on the change in the net pension liability.

The SCAQMD's proportion of the net pension liability was based on the SCAQMD's contributions received by SBCERA during the measurement period for employer payroll paid dates from July 1, 2016 through June 30, 2017, relative to the total employer contributions received from all of SBCERA's participating employers. At June 30, 2017, the SCAQMD's proportion was 8.123%, which was an increase of 0.037% from its proportion measured as of June 30, 2016.

**Pension Expense and Deferred Outflows/Inflows of Resources**

For the fiscal year ended June 30, 2018, the SCAQMD recognized pension expense of \$27,845,330 for its proportionate share of SBCERA's pension expense. At June 30, 2018, the SCAQMD reported its proportionate share of deferred outflows of resources and deferred inflows of resources related to pensions, from the following sources:

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	<b>Deferred Outflows of Resources*</b>	<b>Deferred Inflows of Resources*</b>
Changes in proportion and differences between SCAQMD contributions and proportionate share of contributions	\$ 13,868,933	\$ 16,712,262
Changes in actuarial assumptions	54,706,890	-
Net difference between projected and actual earnings on pension plan investments	7,772,905	-
Differences between expected and actual experience	-	22,901,798
SCAQMD contributions paid to SBCERA subsequent to the measurement date	25,332,734	-
<b>Total</b>	\$ 101,681,462	\$ 39,614,060

\*See note VI for summary

The \$25,332,734 reported as deferred outflows of resources related to pensions resulting from SCAQMD's contributions to SBCERA subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended June 30, 2018. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to SBCERA pensions will be recognized in pension expense as follows:

<u>Year ended June 30:</u>	
<b>2019</b>	\$ 5,784,629
<b>2020</b>	11,932,963
<b>2021</b>	11,236,266
<b>2022</b>	(1,009,103)
<b>2023</b>	7,245,532
<b>Thereafter</b>	1,544,381

**Actuarial Assumptions and Methods**

The significant actuarial assumptions and methods used to measure the total pension liability are as follows:

Actuarial valuation date	June 30, 2017
Actuarial experience study	3-year period ending June 30, 2016
Actuarial cost method	Entry age actuarial cost method
Actuarial assumptions:	
Investment rate of return <sup>(1)</sup>	7.25%
Inflation	3.00%
Projected Salary increases <sup>(2)</sup>	General: 4.5% to 14.50%
Cost of living adjustments	Contingent upon consumer price index with a 2.00% maximum
Administrative Expenses	0.70% of payroll

(1) Includes inflation of 3.00% and is net of pension investment expenses.

(2) Includes inflation of 3.00% per year, plus "across the board" real salary increases of 0.50% per year.

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The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the three year period of July 1, 2013 – June 30, 2016. Same assumptions are used in the June 30, 2017 and 2016 actuarial valuation.

For General employees, mortality rate is based on the Headcount-Weighted RP 2014 Healthy Annuitant Mortality Table projected generationally using the two-dimensional mortality improvement sale MP-2016.

**Long-term Expected Rate of Return**

The long-term expected rate of return on pension plan investments is 7.25%. SBCERA’s actuary prepares an analysis of the long-term expected rate of return on a triennial basis using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage, by adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocations (approved by the SBCERA Board) and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses, used in the derivation of the long-term expected investment rate of return assumptions are summarized in the following table:

**SBCERA’s Long-Term Expected Real Rate of Return**

		As of June 30, 2017 Valuation Date	
Asset Class	Investment Classification	Target Allocation(1)	Long-Term Expected Real Rate of Return (Arithmetic)
Large Cap U.S. Equity	Domestic Common and Preferred Stock	8.00%	5.61%
Small Cap U.S. Equity	Domestic Common and Preferred Stock	2.00%	6.37%
Developed International Eq	Foreign Common and Preferred Stock	6.00%	6.96%
Emerging Market Equity	Foreign Common and Preferred Stock	6.00%	9.28%
U.S. Core Fixed Income	U.S. Government and Agency/Corporate Bonds	2.00%	1.06%
High Yield/Credit Strategies	Corporate Bonds/Foreign Bonds	13.00%	3.65%
Global Core Fixed Income	Foreign Bonds	1.00%	0.07%
Emerging Market Debt	Emerging Market Debt	6.00%	3.85%
Real Estate	Real Estate	9.00%	4.37%
International Credit	Foreign Alternatives	11.00%	6.75%
Absolute Return	Domestic Alternatives/Foreign Alternatives	13.00%	3.56%
Real Assets	Domestic Alternatives/Foreign Alternatives	5.00%	6.35%
Long/Short Equity	Domestic Alternatives/Foreign Alternatives	0.00%	0.00%
Private Equity	Domestic Alternatives/Foreign Alternative	16.00%	8.47%
Cash & Equivalents	Short-Term Cash Investment Funds	2.00%	(0.17)%
<b>Total</b>		<b><u>100.00%</u></b>	

(1) For actuarial purposes, target allocations only change once every three years based on the triennial actuarial experience study.

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**Discount Rate**

The discount rate used to measure the total pension liability was 7.25%. The projection of cash flows used to determine the discount rate assumed that employee and employer contributions will be made based on the actuarially determined rates based on the SBCERA Board's funding policy, which establishes the contractually required rate based on statute. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

**Sensitivity Analysis**

The following table presents the SCAQMD's proportionate share of the net pension liability calculated using the discount rate of 7.25%, as well as what the SCAQMD's proportionate share of the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current rate.

**Sensitivity of Net Pension Liability to Changes in the Discount Rate  
As of June 30, 2018**

	<b>1% Decrease <u>(6.25%)</u></b>	<b>Current Discount Rate <u>(7.25%)</u></b>	<b>1% Increase <u>(8.25%)</u></b>
SCAQMD's proportionate share of the net pension liability	\$332,228,066	\$214,076,570	\$116,894,198

**Pension Plan Fiduciary Net Position**

Detailed information about the SBCERA's fiduciary net position is available in a separately issued SBCERA comprehensive annual financial report. That report may be obtained on the Internet at [www.SBCERA.org](http://www.SBCERA.org); by writing to SBCERA at 348 W. Hospitality Lane, Third Floor, San Bernardino, CA 92415; or by calling (909) 885-7980 or (877) 722-3721.

**Payables to the Pension Plan**

The amount payable to SBCERA at June 30, 2018 for the legally required contribution is \$2,573,134.

**Los Angeles County Employees' Retirement Association**

**Plan Description**

SCAQMD participates in the Los Angeles County Employees Retirement Association Pension Plan (the plan). (LACERA operates as a cost-sharing multiple-employer defined benefit plan.) As of June 30, 2018, SCAQMD had no

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active members in this plan. For SCAQMD, LACERA is a closed plan which means no new members will be added to the plan. The Los Angeles County Employees' Retirement Association (LACERA) was established on January 1, 1938. It is governed by the California Constitution; the County Employees Retirement Law of 1937 (CERL); and the regulations, procedures, and policies adopted by LACERA's Board of Retirement and Board of Investments. The Los Angeles County (County) Board of Supervisors may also adopt resolutions, as permitted by CERL, which may affect the benefits of LACERA members.

**Benefits Provided**

Vesting occurs when a member accumulates five years' creditable service under contributory plans or accumulates 10 years of creditable service under the general service non-contributory plan. Benefits are based upon 12 or 36 months' average compensation, depending on the plan, as well as age at retirement and length of service as of the retirement date, according to applicable statutory formula. Vested members who terminate employment before retirement age are considered terminated vested (deferred) members. Service-connected disability benefits may be granted regardless of length of service consideration. Five years of service are required for nonservice-connected disability eligibility according to applicable statutory formula. Members of the non-contributory plan, who are covered under separate long-term disability provisions not administered by LACERA, are not eligible for disability benefits provided by LACERA.

**Contributions**

Members and employers contribute to LACERA based on rates recommended by an independent consulting actuary and adopted by the Board of Investments and the Los Angeles County Board of Supervisors. Contributory plan members are required to contribute between approximately 5 percent and 13 percent of their annual covered salary. Member and employer contributions received from the outside districts are considered part of LACERA's pension plan as a whole.

Participating employers are required to contribute the remaining amounts necessary to finance the coverage of their employees (members) through monthly or annual prefunded contributions at actuarially determined rates. Rates for the contributory plan tiers for members who entered the Plan prior to January 1, 2013 are based upon age at entry to the Plan and plan type enrollment.

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**Net Pension Liability**

At June 30, 2018, the proportionate share of SCAQMD's Net Pension Liability was 0%. Updated procedures were used to roll-forward the total pension liability to the measurement dates of June 30, 2017.

**Pension Expense and Deferred Outflows/Inflows of Resources**

For the fiscal year ended June 30, 2018, SCAQMD recognized pension expense of \$7,000 for its proportionate share of LACERA's pension expense. At June 30, 2018, SCAQMD reported its proportionate share of deferred outflows of resources and deferred inflows of resources related to pensions, from the following sources:

	<b>Deferred Outflows of Resources*</b>	<b>Deferred Inflows of Resources*</b>
Changes in proportion and differences between SCAQMD contributions and proportionate share of contributions	\$ 33,000	\$ -
SCAQMD contributions paid to LACERA subsequent to the measurement date	8,300	-
<b>Total</b>	\$ 41,300	\$ -

\*See note VI for summary

The \$8,300 reported as deferred outflows of resources related to pensions resulting from SCAQMD's contributions to LACERA subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended June 30, 2018. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to LACERA pensions will be recognized in pension expense as follows:

<u>Year ended June 30:</u>	
<b>2019</b>	\$7,000
<b>2020</b>	7,000
<b>2021</b>	7,000
<b>2022</b>	4,000
<b>2023</b>	4,000
<b>Thereafter</b>	4,000

**Actuarial Assumptions and Methods**

The actuarial assumptions used in the June 30, 2016 actuarial valuation were based on the results of the actuarial experience study for the period July 1, 2013 to June 30, 2016. LACERA's actuary performs an experience study every three years.

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<u>Description</u>	<u>Method</u>
<b>Valuation Timing</b>	Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which the contributions are reported.
<b>Actuarial Cost Method</b>	Individual Entry Age Normal
<b>Amortization Method</b>	
Level Percent or level dollar	Level percent
Closed, Open, or layered periods	Layered
Amortization Period for each layer	30 years
Amortization Growth Rate	3.25%
<b>Asset Valuation Method</b>	
Smoothing period	5 years
Recognition method	Non-asymptotic
Corridor	None
<b>Inflation</b>	2.75%
<b>Investment Rate of Return</b>	7.38%
<b>Cost of Living Adjustments</b>	As noted in the June 30, 2016 actuarial valuation, with one modification: STAR COLA benefits are assumed to be substantively automatic at the 80% purchasing power level until the STAR reserve is projected to be insufficient to pay further STAR benefits.

The allocation of investment assets within the LACERA Defined Benefit Pension Plan (Plan) investment portfolio is approved by the Board of Investments, as outlined in the LACERA Investment Policy statement. The following table displays the Board of Investments approved asset allocation targets for the fiscal year ended June 30, 2017.

**LACERA's Target Allocation and Long-Term Expected Rate of Return  
For the Year Ended June 30, 2017**

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Weighted Average Long-Term Expected Rate of Return (Geometric)</u>
Global Equity	41.40%	5.70%
Fixed Income	27.80%	2.60%
Real Estate	11.00%	4.60%
Private Equity	10.00%	6.90%
Commodities	2.80%	1.60%
Hedge Funds	5.00%	3.10%
Other Opportunities	0.00%	4.50%
Cash	2.00%	-0.20%
<b>Total</b>	<b>100.00%</b>	<b>7.25%</b>

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**Discount Rate**

The investment rate of return assumption used for actuarial funding was 7.25% for the fiscal year ended June 30, 2017.

GASB 67 requires determination that the Plan’s fiduciary net position is projected to be sufficient to make projected benefit payments. The discount rate used to measure the total pension liability was 7.38%. The projection of cash flows used to determine the discount rate assumed that Plan member contributions will be made at the current contribution rate and that SCAQMD contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the Pension Plan’s Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on Pension Plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

**Sensitivity Analysis**

The following presents the net pension liability, calculated using the discount rate of 7.38%, as well as SCAQMD’s proportionate share of what the net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower (6.38%) or 1 percentage point higher (8.38%) than the current rate (7.38%):

**Sensitivity of Net Pension Liability to Changes in the Discount Rate  
As of June 30, 2017**

	<b>1.00% Decrease (6.38%)</b>	<b>Current Discount Rate (7.38%)</b>	<b>1.00% Increase (8.38%)</b>
SCAQMD’s proportionate share of the net pension liability	\$0	\$0	\$0

**Pension Plan Fiduciary Net Position**

Detailed information about the LACERA's fiduciary net position is available in a separately issued LACERA comprehensive annual financial report. That report may be obtained on the Internet at [www.LACERA.com](http://www.LACERA.com); by writing to LACERA at 300 N. Lake Avenue, Suite 650, Pasadena, CA 91101; or by calling (626) 564-6000.

**X. OTHER POST EMPLOYMENT BENEFITS (OPEB)**

**Plan Description**

SBCERA does not provide any post-employment benefits to SCAQMD retirees. LACERA, however, in addition to providing pension benefits, essentially provides a comprehensive health care benefits program to its retirees that include several medical, dental, vision, and death benefits. LACERA administers a cost-sharing

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multiple-employer defined benefit Other Post Employment Benefits (OPEB) on behalf of Los Angeles County and its participating agencies. SCAQMD is one of the participating agencies.

SCAQMD is subject under the April 20, 1982 agreement between the Los Angeles County and LACERA (County Agreement). In April 1982, the Los Angeles County adopted an ordinance pursuant to the County Employees Retirement Law of 1937 (CERL) that provided for a retiree health insurance program and death/burial benefits for retired employees and their eligible dependents. In 1982, the Los Angeles County and LACERA entered into an agreement whereby LACERA would administer the program subject to the terms and conditions of the agreement. In 1994, the Los Angeles County amended the agreement to continue to support LACERA's retiree insurance benefits program, regardless of the status of the active member insurance. In 2018, this agreement was further updated to specify the sharing of expenses between SCAQMD and LA County for SCAQMD retirees who also had LA County service credit.

LACERA is a closed plan to employees who were hired after December 31, 1979. Currently, there are 51 retirees covered by the benefit terms under the OPEB.

LACERA is a legally separate entity from SCAQMD, not a component unit, and there is no financial interdependency with the Los Angeles County. For these reasons, the SCAQMD's comprehensive annual financial report excludes the LACERA OPEB as of June 30, 2018. LACERA publishes its own comprehensive annual financial report that includes its financial statements and required supplementary information, which can be obtained by writing LACERA at 300 N. Lake, Pasadena, CA 91101 or visiting the website at: [www.LACERA.com](http://www.LACERA.com).

**Benefits Provided**

LACERA OPEB program offers members choice of medical plan as well as dental /vision plans. Medical and dental/vision are provided through third-party insurance carriers with the participant's cost for medical and dental/vision insurance varying according to the years of retirement service credit, the plan selected, and the number of persons covered. There is a one-time lump-sum \$5,000 death/burial benefit payable to the designated beneficiary upon the death of a retiree.

**Contributions**

SCAQMD and/or Los Angeles County and each retired employee participating in the OPEB contributes a portion of the total cost per month of the premium for the plan in which the retiree is enrolled according to the terms of the Retiree Health Care Program under the County Agreement. The portion of the premium to be paid by SCAQMD and/or the Los Angeles County is calculated based on the years of retirement service credit under the terms of the County Agreement, as they may change from time to

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time. LACERA subsidizes the retiree's cost starting at 10 years of service credit and up to a maximum of 100% for a member with 25 years of service credit with the County. LACERA, at its own discretion, may increase the premium to cover additional expenses.

**Net OPEB Liability**

At June 30, 2018, the net OPEB liability for its proportionate share of the collective net OPEB liability amounted to \$3,534,000. SCAQMD's proportion of the collective total OPEB liability was determined by an actuarial valuation as of the valuation date, calculated based on the discount rate and actuarial assumptions and was projected forward to the measurement date. At June 30, 2017, the SCAQMD's proportion was 0.01335%, which was a decrease of 0.00061% from its proportion of 0.01396% measured at June 30, 2016.

**OPEB Expense and Deferred Outflows/Inflows of Resources**

For the fiscal year ended June 30, 2018, the SCAQMD recognized OPEB expense of \$407,967. As of June 30, 2018, SCAQMD's reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	<b>Deferred Outflows of Resources*</b>	<b>Deferred Inflows of Resources*</b>
Differences between projected and actual plan investment earnings	\$ -	\$ 6,000
Changes of assumptions	-	209,000
Changes in proportion	-	145,000
SCAQMD contributions paid to LACERA subsequent to the measurement date	232,715	-
Total	\$ 232,715	\$ 360,000

\*See note VI for summary

The \$232,715 reported as deferred outflows of resources related to OPEB resulting from SCAQMD's contributions to LACERA subsequent to the measurement date will be recognized as a reduction of the net OPEB liability in the fiscal year ended June 30, 2019. Other amounts reported as deferred inflows of resources related to OPEB will be recognized in the OPEB expense as follows:

<b>Year ended June 30:</b>	
<b>2019</b>	\$(46,000)
<b>2020</b>	(46,000)
<b>2021</b>	(46,000)
<b>2022</b>	(46,000)
<b>2023</b>	(44,000)
<b>Thereafter</b>	(132,000)

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**Actuarial Assumptions and Methods**

The significant actuarial assumptions and methods used to measure the total OPEB's liability are as follows:

Actuarial Valuation Date	June 30, 2016
Measurement Date	June 30, 2017
Actuarial Cost Method	Entry age normal, level percent of pay
Inflation	2.75%
Salary Increases	3.25%
Investment Rate of Return	6.66%, net of OPEB plan investment expense, including inflation

Mortality rates were based on the RP-2014 Healthy and Disabled Annuitant mortality tables, and including projection for expected future mortality improvement using the MP-2014 Ultimate Projection Scale.

Healthcare Cost Trend Rates:

	FY 2017 to <u>FY 2018</u>	FY 2018 to <u>FY 2019</u>	<u>Ultimate</u>
LACERA Medical Under 65	4.40%	6.70%	4.50%
LACERA Medical Over 65	4.60%	6.60%	4.50%
Part B Premiums	6.80%	7.70%	4.35%
Dental/Vision	2.00%	3.30%	3.70%
Weighted-average Trend	4.57%	6.50%	4.47%

The OPEB liability figures include the Excise Tax. This is based on the requirements of the Affordable Care Act (ACA) and the Consolidated Appropriations Act of 2016.

The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period from July 1, 2013 to June 30, 2016.

**Long-term Expected Rate of Return**

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected return, net of investment expenses and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target of asset allocation percentage and by adding expected inflation. The target allocation and best estimates of geometric real rates of return for each major asset class are summarized in the following table. The asset class return assumptions are presented on a real basis, after the effects of inflation, and all assumptions incorporate a base inflation rate assumption of 2.75%.

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Asset Class	As of June 30, 2017 Valuation Date		
	Target Allocations	Expected Geometric Nominal Return (30 years)	Expected Geometric Real Return (30 years)
Cash	11.20%	3.05%	0.31%
Short-term U.S. Bonds	7.28%	3.90%	1.14%
U.S. Equity	44.02%	6.44%	3.61%
Foreign Developed Equity	18.75%	6.87%	4.02%
Emerging Markets Equity	18.75%	7.68%	4.82%
<b>Total</b>	<b>100%</b>	<b>6.66%</b>	<b>3.81%</b>

**Discount Rate**

The discount rate used to measure the total OPEB liability was 4.69%. The discount rate was developed using a depletion date projection, which included the following assumptions:

- The employers contribute the amount necessary to pay the current year benefits and the planned contribution amounts to the OPEB Trust, as described in governing board approved funding documents.
- Employees are not required to make contributions.
- Benefit payments are projected based on the actuarial assumptions and the current plan provisions.
- Members are assumed to terminate, retire, become disabled, or die according to the actuarial assumptions used for the July 1, 2016 OPEB valuation.
- All cash flows are assumed to occur on average halfway through the year.
- The employer's funding policies used to determine actuarially determined contributions do not change.
- The calculations include the Affordable Care Act Excise Tax in the liabilities and funding policies.
- The plan provisions do not change except if any material future changes have been agreed upon as of the measurement date.

Based on these assumptions, the OPEB plan's fiduciary net position was projected to not be available to make all projected future benefit payments of current active and inactive employees. Therefore, the discount rate incorporates a municipal bond rate based on the 20-year Bond Buyer Go index (municipal bond rate) as of June 2017, which was 3.58% as of June 30, 2017. The long-term expected rate of return was applied to projected benefit payments from 2017 to 2052 and the municipal bond rate was applied to the remaining periods. The resultant blended discount rate used to measure the total OPEB liability as of June 30, 2017 was 4.69%, an increase of 0.35% compared with 4.34% at June 30, 2016.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
NOTES TO THE BASIC FINANCIAL STATEMENTS  
June 30, 2018**

**Sensitivity of the SCAQMD's Proportionate Share of the Net OPEB Liability to Changes in the Discount Rate**

The following presents the SCAQMD's proportionate share of the net OPEB liability as well as what the SCAQMD's proportionate share of the net OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower (3.69%) or 1-percentage-point higher (5.69%) than the current rate:

	<u>1% Decrease (3.69%)</u>	<u>Current Discount Rate (4.69%)</u>	<u>1% Increase (5.69%)</u>
SCAQMD's proportionate share of net OPEB liability	\$2,962,000	\$3,534,000	\$4,263,000

**Sensitivity of the SCAQMD's Proportionate Share of the Net OPEB Liability to Changes in Healthcare Cost Trend Rates**

The following presents the SCAQMD's proportionate share of the net OPEB liability, calculated using the healthcare cost trend rates as reported on the July 1, 2016 OPEB Actuarial Valuation Health Cost Trend Assumptions with Excise Tax table, as well as what the net OPEB liability would be if it were calculated using the healthcare cost trend rates that are 1-percentage-point lower or 1-percentage-point higher than the current rates:

	<u>1% Decrease</u>	<u>Current Healthcare Cost Trend Rates</u>	<u>1% Increase</u>
SCAQMD's proportionate share of net OPEB liability	\$2,860,000	\$3,534,000	\$4,436,000

**OPEB Plan Fiduciary Net Position**

Detail information about the LACERA's fiduciary net position is available in a separately issued LACERA comprehensive annual financial report. That report may be obtained on the internet at [www.LACERA.com](http://www.LACERA.com); by writing to LACERA at 300 N. Lake, Pasadena, CA 91101; or by calling (626) 564-6000.

**Payable to the OPEB Plan**

The amount payable to LACERA at June 30, 2018 for the legally required contribution is \$21,196. At June 30, 2018, SCAQMD's Retirement Benefit Trust Fund has a balance of \$34,575 to cover the OPEB costs.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
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**June 30, 2018**

**XI. DEFERRED COMPENSATION PLAN**

SCAQMD offers its employees a deferred compensation plan created in accordance with Internal Revenue Code Section 457. The plan permits them to defer a portion of their salary until future years. These funds are not available to employees until termination, retirement, death or unforeseen emergency.

The deferred compensation plan monies are invested in various investment funds as selected by the participating employees. All amounts of compensation deferred under the plan and all income attributed to those amounts are held in trust for the exclusive benefit of plan participants and their beneficiaries.

Effective January 1, 1999, federal legislation requires the Section 457 plan assets to be placed in trust for the exclusive use of the plan participants and their beneficiaries. SCAQMD's deferred compensation administrator, Hartford Life Insurance Co., qualifies as the plan trustee to meet the federal requirements. In accordance with GASB Statement No. 32, SCAQMD no longer reports the plan assets and liabilities in its financial statements. As of June 30, 2018, investments with a fair value of \$178,206,210 are held in a trust.

**XII. HEALTH REIMBURSEMENT ARRANGEMENT PLAN**

On December 4, 2009, SCAQMD's Governing Board approved the establishment of a Health Reimbursement Arrangement (HRA) plan for SCAQMD employees. This allows active employees to save on a tax-free basis for their future post-retirement health care costs. The Hartford serves as SCAQMD's HRA service provider. Currently, both SCAQMD and the SBCERA do not offer a health reimbursement program nor post-retirement health care to help the employees afford health care in retirement.

Initially, the program was made available to non-represented employees with the understanding that it could be expanded to cover represented employees, based on their approval. In compliance with the rules establishing the HRA, each defined group covered by the plan is required to establish its own criteria on what earnings would be contributed. As of June 30, 2018, Executive Officer, General Counsel and Designated Deputies were the eligible employee classifications that were set up and approved by SCAQMD. Contributions are 100% vacation and sick leave payouts at termination and/or compensation payout at termination per existing leave payment policy. Eligibility shall commence upon termination of employment on account of retirement (whether through disability or service).

**XIII. COMMITMENTS**

**Guaranteed Loans**

The Air Quality Assistance Fund (AQAF) was originally established to comply with state legislation which required SCAQMD to allocate a portion of the funds it receives as

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
NOTES TO THE BASIC FINANCIAL STATEMENTS  
June 30, 2018**

penalties and settlements from violators of air pollution regulations and to provide financing assistance to small businesses that require financing in order to comply with SCAQMD requirements. This legislation was repealed on January 1, 1999. In June 2000, the Governing Board authorized staff to continue to use the funds to assist small businesses with an improved program for greater participation. Financing assistance includes guaranteeing or otherwise reducing the financial risks of lenders in providing financial assistance to small businesses. The funds are not used for direct loans to small businesses.

In June 2001, SCAQMD entered into an agreement with the California Pollution Control Financing Authority (CPCFA) to be an “independent contributor” to the California Capital Access Program (CalCAP). SCAQMD transferred \$100,000 to the CPCFA to cover borrower fees on any qualified small business CalCAP loans for air quality-related equipment or processes.

In October 2007, the Governing Board authorized the transfer of \$1 million to the Dry Cleaners Financial Incentives Grant Program to supplement the existing incentive grant programs. This incentive program assists dry cleaners in making early transitions from perchloroethylene (perc) to alternative cleaning technologies. AQAF’s fund balance amounted to \$1,612,311 at fiscal year ended June 30, 2018.

**Operating Leases**

Rental expense for non-cancelable operating leases was \$310,426 for the year ended June 30, 2018. Future minimum lease payments under non-cancelable operating leases of SCAQMD total as follows:

<b>Year Ending June 30:</b>	<b><u>Amount</u></b>
2019	\$264,138
2020	266,594
2021	235,321
2022	<u>93,489</u>
Total	<u>\$859,542</u>

The lease for the office equipment expires in December 2021 while the lease of the South Bay satellite office expires in September 2021.

**XIV. PENDING LITIGATION**

A number of other lawsuits and claims are pending against SCAQMD for alleged damages to persons and property and for other alleged liabilities arising out of its normal operations. SCAQMD’s management believes that any liability that may arise from the ultimate resolution of such legal actions will not have a material adverse impact on the financial position as of June 30, 2018.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
GENERAL FUND - BUDGET AND ACTUAL  
(NON-GAAP BUDGETARY BASIS) SCHEDULE  
For the Year Ended June 30, 2018**

	Budgeted Amounts		Actual Amounts Budgetary Basis	Variance with Final Budget Positive (Negative)
	Original	Final		
<b>Revenues:</b>				
Emission fees	\$ 19,480,550	\$ 19,480,550	\$ 22,786,661	\$ 3,306,111
Annual renewal fees	54,278,320	54,278,320	52,182,769	(2,095,551)
Area Sources	2,152,500	2,152,500	2,293,947	141,447
Permit processing fees	19,595,150	19,595,150	19,538,295	(56,855)
Mobile sources/clean fuels	28,199,250	28,199,250	25,180,955	(3,018,295)
Air toxics "Hot Spots"	2,488,380	2,488,380	2,538,247	49,867
Transportation programs	861,360	861,360	845,718	(15,642)
State subvention	3,945,090	3,945,090	3,939,075	(6,015)
Federal grant	6,452,560	8,783,649	7,949,213	(834,436)
Interest revenue	332,060	332,060	1,041,333	709,273
Lease revenue	136,540	136,540	147,660	11,120
Source test/analysis fees	774,900	774,900	663,011	(111,889)
Hearing Board fees	307,500	307,500	351,979	44,479
Penalties and settlements	5,000,000	5,000,000	14,316,145	9,316,145
Other revenues	920,470	5,469,922	3,160,590	(2,309,332)
Total revenues	\$ 144,924,630	\$ 151,805,171	\$ 156,935,598	\$ 5,130,427
<b>Expenditures:</b>				
Current:				
Salaries and employee benefits	\$ 119,860,494	\$ 123,246,774	\$ 115,425,019	\$ 7,821,755
Insurance	1,317,400	1,560,400	1,518,801	41,599
Rent	498,154	656,685	544,577	112,108
Supplies	1,902,640	2,871,978	2,701,411	170,567
Contract and special services	10,515,792	12,221,057	11,433,310	787,747
Maintenance	1,687,193	2,428,727	2,129,569	299,158
Travel and auto	864,520	1,143,968	1,107,393	36,575
Utilities	2,213,288	1,640,463	1,398,700	241,763
Communications	702,000	738,138	630,003	108,135
Uncollectible accounts	-	-	410,438	(410,438)
Other expenditures	2,177,194	2,554,278	2,077,288	476,990
Capital outlay	1,950,717	8,764,642	7,301,002	1,463,640
Debt service:				
Principal	2,432,798	2,432,798	2,432,798	-
Interest	3,756,716	3,756,716	3,756,716	-
Total expenditures	\$ 149,878,906	\$ 164,016,624	\$ 152,867,025	\$ 11,149,599
Excess (deficiency) of revenues over (under) expenditures	\$ (4,954,276)	\$ (12,211,453)	\$ 4,068,573	\$ 16,280,026
<b>Other Financing Sources (Uses)</b>				
Transfers in	\$ 2,072,190	\$ 6,922,476	\$ 4,985,473	\$ (1,937,003)
Transfers out	-	(250,000)	(250,000)	-
Total other financing sources	\$ 2,072,190	\$ 6,672,476	\$ 4,735,473	\$ (1,937,003)
Net change in budgetary fund balances	\$ (2,882,086)	\$ (5,538,977)	\$ 8,804,046	\$ 14,343,023

See accompanying notes to required supplementary information and independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**Schedule of SCAQMD's Proportionate Share of the Net Pension Liability  
Last 10 Fiscal Years\***

<b><u>SBCERA Pension Plan</u></b>	<b>Measurement Date**</b>				
	<b><u>June 30, 2017</u></b>	<b><u>June 30, 2016</u></b>	<b><u>June 30, 2015</u></b>	<b><u>June 30, 2014</u></b>	<b><u>June 30, 2013</u></b>
SCAQMD's proportion of the net pension liability	8.12%	8.09%	7.79%	6.45%	7.88%
SCAQMD's proportionate share of the net pension liability	\$ 214,076,570	\$ 199,589,723	\$ 151,441,343	\$ 109,655,281	\$ 156,371,863
SCAQMD's covered payroll	\$ 71,657,793	\$ 71,247,083	\$ 68,088,547	\$ 75,623,191	\$ 77,748,408
SCAQMD's proportionate share of the net pension liability as a percentage of its covered payroll	298.75%	280.14%	222.42%	145.00%	201.13%
SBCERA's fiduciary net position as a percentage of the total pension liability	74.94%	74.10%	79.33%	83.74%	76.28%

<b><u>LACERA Pension Plan</u></b>	<b>Measurement Date**</b>				
	<b><u>June 30, 2017</u></b>	<b><u>June 30, 2016</u></b>	<b><u>June 30, 2015</u></b>	<b><u>June 30, 2014</u></b>	<b><u>June 30, 2013</u></b>
SCAQMD's proportion of the net pension liability	0%	0%	0%	0%	0%
SCAQMD's proportionate share of the net pension liability	\$ -	\$ -	\$ -	\$ -	\$ -
SCAQMD's covered payroll	\$ 60,610	\$ 59,557	\$ 59,193	\$ 57,884	\$ 58,597
SCAQMD's proportionate share of the net pension liability as a percentage of its covered payroll	0%	0%	0%	0%	0%
LACERA's fiduciary net position as a percentage of the total pension liability	0%	0%	0%	0%	0%

\* Data for FY's ended June 30, 2008 through 2012 is not available in comparable format.

\*\* GASB Statement No. 68 requires this information to be presented as of the measurement date of the net pension liability, which is not the current fiscal year end.

See accompanying notes to required supplementary information and independent auditor's report.

## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

### Schedule of SCAQMD's Contributions – Pensions Last 10 Fiscal Years\*

	Reporting Date**				
	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
<b><u>SBCERA Pension Plan</u></b>					
Contractually required contribution	\$ 25,332,734	\$ 23,319,256	\$ 21,089,956	\$ 19,384,858	\$ 18,060,910
Contributions in relation to the contractually required contributions	25,332,734	23,319,256	21,089,956	19,384,858	18,060,910
Contributions deficiency (excess)	\$ -	\$ -	\$ -	\$ -	\$ -
SCAQMD's covered payroll***	\$ 73,202,337	\$ 71,657,793	\$ 71,247,083	\$ 68,088,547	\$ 75,623,191
Contributions as a percentage of covered payroll	34.61%	32.54%	29.60%	28.47%	23.89%

	Reporting Date**				
	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
<b><u>LACERA Pension Plan</u></b>					
Contractually required contribution	\$ 8,300	\$ 11,000	\$ 13,000	\$ 14,000	\$ 14,000
Contributions in relation to the contractually required contributions	8,300	11,000	13,000	14,000	14,000
Contributions deficiency (excess)	\$ -	\$ -	\$ -	\$ -	\$ -
SCAQMD's covered payroll***	\$ 48,839	\$ 60,610	\$ 59,557	\$ 59,193	\$ 57,844
Contributions as a percentage of covered payroll	16.99%	18.15%	21.83%	23.65%	24.20%

\* Data for FY's ended June 30, 2009 through 2013 is not available in comparable format.

\*\* GASB Statement No. 68 requires this information to be presented as of the most recent fiscal year end.

\*\*\* Covered payroll is different from that shown in previously issued reports due to updated information.

See accompanying notes to required supplementary information and independent auditor's report.

## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

### Schedule of SCAQMD's Proportionate Share of the Net OPEB Liability Last 10 Fiscal Years\*

	Measurement Date**	
	June 30, 2017	June 30, 2016
<b><u>LACERA OPEB Plan</u></b>		
SCAQMD's proportion of the collective net OPEB liability	0.01335%	0.01396%
SCAQMD's proportionate share of the collective net OPEB liability	\$3,534,000	\$3,721,000
SCAQMD's covered-employee payroll	\$60,610	\$59,557
SCAQMD's proportionate share of the collective net OPEB liability as a percentage of its covered payroll	5830.72%	6247.80%
LACERA's fiduciary net position as a percentage of the total OPEB liability	0%	0%

\* Historical information is required only for measurement periods for which GASB 75 is applicable. Future year's information will be displayed up to 10 years as information becomes available.

\*\* GASB Statement No. 75 requires this information to be presented as of the measurement date of the net OPEB liability, which is not the current fiscal year end.

See accompanying notes to required supplementary information and independent auditor's report.

## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

### Schedule of SCAQMD's Contributions - OPEB Last 10 Fiscal Years\*

<b><u>LACERA OPEB Plan</u></b>	<b>Reporting Date**</b>	
	<b>June 30, 2018</b>	<b>June 30, 2017</b>
Contractually required contribution	\$ 232,715	\$ 234,967
Contributions in relation to the contractually required contributions	(232,715)	(234,967)
Contributions deficiency (excess)	\$ -	\$ -
SCAQMD's covered-employee payroll	\$ 48,839	\$ 60,610
Contributions as a percentage of covered payroll	476.49%	387.67%

\* Historical information is required only for measurement periods for which GASB 75 is applicable. Future year's information will be displayed up to 10 years as information becomes available.

\*\* GASB Statement No. 75 requires this information to be presented as of the most recent fiscal year-end.

See accompanying notes to required supplementary information and independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
NOTES TO REQUIRED SUPPLEMENTARY INFORMATION  
June 30, 2018**

**NOTE 1 – BUDGETS AND BUDGETARY ACCOUNTING**

SCAQMD has a comprehensive annual budget process which establishes goals and objectives and monitors expenditures associated with meeting those goals and objectives.

Up to and including the budget adoption hearing by SCAQMD's Governing Board, the public and the business community have several opportunities to participate in the budget process. These opportunities include: Budget Advisory Committee meetings made up of business and environmental representatives, a public workshop, a Governing Board workshop and a public hearing.

Following input from the public, Budget Advisory Committee, and Governing Board, the draft budget for fiscal year 2017-18 was prepared and subsequently adopted at the May 2017 meeting of the Governing Board. The fiscal year 2017-18 Adopted Budget and the final fee schedules became effective on July 1, 2017.

SCAQMD's annual budget is adopted for the General Fund at the Major Object levels of Salaries and Employee Benefits, Services and Supplies, Capital Outlays, and Building Remodeling. The Governing Board has delegated expenditure authority to the Executive Officer for all budgeted expenditures of \$75,000 or less within a major object. All appropriations to the budget and transfers between major objects must be approved by the Governing Board. Transfers within a major object are delegated to the Executive Officer. Monthly expenditure reports are issued to each Office. The Governing Board receives a General Fund Budget status report on a quarterly basis.

SCAQMD presents a comparison of annual budget to actual results for the General Fund. The budgeted expenditure amounts represent the adopted budget adjusted for Governing Board approved supplemental appropriations. The budgeted revenue amounts represent the adopted budget modified for Governing Board approved adjustments which were based upon new or additional revenue sources. Supplemental expenditure appropriations of \$14,137,718 and revenue adjustments of \$11,730,827 were approved by the Governing Board in fiscal year 2017-18.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
NOTES TO REQUIRED SUPPLEMENTARY INFORMATION  
June 30, 2018**

**NOTE 2 – GENERAL FUND BUDGETARY BASIS RECONCILIATION**

The General Fund Budgetary Basis under Required Supplementary Information presents comparisons of the legally adopted budget with actual data on a budgetary basis. Accounting principles applied for purposes of developing expenditures data on a budgetary basis differ from those used to present financial statements in conformity with Generally Accepted Accounting Principles (GAAP). The basis of budgeting that differs from GAAP is modified accrual basis plus encumbrances. The following is a reconciliation of differences for the fiscal year ended June 30, 2018:

Expenditures and encumbrances (budgetary basis) at June 30, 2018	\$152,867,025
Add: payments on encumbrances open at July 1, 2017	3,700,570
Less: encumbrances open at June 30, 2018	<u>(8,460,830)</u>
Expenditures (GAAP basis) at June 30, 2018	<u>\$148,106,765</u>

A reconciliation of revenue is not presented since budgetary practices and GAAP do not differ with respect to revenue.

**NOTE 3 – USE OF BUDGETARY FUND BALANCE**

When the fiscal year 2017-18 budget was adopted the Governing Board approved a budget that required \$2,882,086 of prior-year revenue from Unassigned Fund Balance. Mid-year adjustments appropriated \$975,000 from Assigned Fund Balance and a net of \$1,681,891 from Unassigned Fund Balance which resulted in a negative net change in budgetary fund balance of \$5,538,977.

**NOTE 4 – FACTORS AFFECTING PENSION TRENDS SCAQMD’S  
PROPORTION**

As of the June 30, 2017 measurement date, SCAQMD’s proportionate share of SBCERA’s total net pension liability increased from 8.09% to 8.12%. The increase is primarily due to an increase in SCAQMD’s staffing levels and associated SBCERA-eligible compensation (“pensionable compensation” and “compensation earnable”) as compared against the net increase in total SBCERA-eligible compensation from all other SBCERA employers, resulting in an increase in proportionate share of net pension liability.

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**Non-major Governmental Funds**

Special Revenue Funds:

- Air Quality Studies Fund - Used to account for contributions made by outside organizations to fund various air quality studies. An independent Planning Review Panel recommends the types of studies to be undertaken and the Executive Officer approves all studies prior to funding. The purpose of the studies is to quantify the cost effectiveness of air pollution control measures.
- Air Toxics Fund - Used to account for fees received from industrial toxic air emitters. These funds are spent on planning and performing health risk evaluations for the purpose of developing a toxic emissions inventory for the South Coast Air Basin.
- Advanced Technology, Outreach and Education Fund - Used to account for monies contributed by companies in lieu of paying fines for violating SCAQMD rules. Contributed amounts must be used to pay costs associated with SCAQMD-sponsored research and development in cleaner burning fuels and other advanced technologies and public outreach and education related to advanced technology and air pollution and its impacts.
- Air Quality Assistance Fund - Used to account for funds set aside for the purpose of underwriting, guaranteeing, or otherwise participating in the provision of financial assistance to small businesses as required by Section 40448.7 of the California Health and Safety Code. (This legislation was repealed by its own terms January 1, 1999). In June 2000, the Governing Board authorized staff to revise the program to increase participation of small businesses. Certain revisions, including participation in the California Capital Access Program (CalCAP) to assist small businesses, were implemented in June 2001.
- Air Quality Improvement Fund - Used to account for 40% of the revenue received by the SCAQMD from motor vehicle registration fees under the provisions of Sections 44243 and 44244 of the California Health and Safety Code. This money is distributed on a quarterly basis to cities and counties within the South Coast Air Basin to implement programs to reduce air pollution from motor vehicles.
- Clean Fuels Conference Fund - Used to account for monies received to fund all Clean Fuels related conferences. These conferences are held to facilitate the development of hydrogen-powered technologies, including motor vehicles, refueling infrastructure, and stationary applications.
- Air Quality Investment Fund – To account for revenue from employers with 250 or more employees at a worksite who are subject to Rule 2202. This revenue is used to

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purchase emissions reductions credits to meet the required target. To date, \$47.9 million in projects have been awarded to purchase over 34,071 tons of emission reductions. Starting April 2017, this fund was used to process rebates for SCAQMD's Residential Electric Lawn Mower Rebate Program. By the end of 2017, \$71,900 rebates were processed. As of June 30, 2018, a total of 636 lawn mowers were exchanged with total emission reductions of 1.54 tons & \$135,650 total fund spent.

- RECLAIM AQIP - Established in fiscal year 2001 to separately account for the generation of NO<sub>x</sub> (Oxides of Nitrogen) credits at stationary and mobile sources for use by certain small or new RECLAIM (Regional Clean Air Incentives Market) participants. AQIP stands for Air Quality Investment Program.
- RECLAIM and Executive Order Mitigation - Established in fiscal year 2001 to account for mitigation fee payments made by power generators in lieu of emission offsets. Proceeds are used to generate RECLAIM Trading Credits (RTCs) to offset excess emissions.
- Rule 1121 Mitigation Fee Program - Established in fiscal year 2004 to issue program announcements for projects under the Rule 1121 Mitigation Fee Program. Under Rule 1121 - Control of Nitrogen Oxides (NO<sub>x</sub>) from Residential Type, Natural Gas Fired Water Heaters, emission mitigation fees are collected from water heater manufacturers to fund stationary and mobile source emission reduction projects targeted at offsetting NO<sub>x</sub> emission.
- Clean Fuels Program Fund - Established as a special revenue fund in fiscal year 2000 to account for contract activities and revenues of the Clean Fuels Program. These are activities associated with implementing Clean Fuels stationary source and mobile source research, development, demonstration and deployment projects approved by the Governing Board. Since 1988, the Clean Fuels Program has provided funds for 1,332 projects totaling \$219 million.
- Carl Moyer Program Fund – Established in fiscal year 1999 to account for activities related to the administration of state funds set aside for the replacement of diesel-powered vehicles with cleaner-technology vehicles. It has funded over 6,700 vehicles and about 30 infrastructure/charging stations, totaling over \$467 million. It provides incentive funds for the replacement of diesel-fueled on- and off-road vehicles such as refuse haulers, heavy duty trucks, transit and school buses, construction equipment, and marine vessels.
- Lower-Emission School Bus Fund – Established in fiscal year 2001 to administer state funds set aside in the South Coast Air Basin for the replacement and retrofit of high-emitting diesel-fueled school buses. Between fiscal years 2000 and 2017, \$280

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million of Lower Emissions School Bus funds were spent on the replacement of school buses, and the retrofit of newer diesel buses with PM traps. In total, nearly 1600 old buses were replaced by brand new, primarily CNG school buses, and nearly 3,400 newer diesel school buses were retrofitted with PM traps.

- Zero Emission Vehicle Incentive Program - Established in fiscal year 2001 to administer the State funds set aside for the implementation of the Zero Emission Vehicle (ZEV) Incentive Program.
- AES Settlement Projects Fund - Established in fiscal year 2001 for the purpose of accounting for the one-time penalty settlement with AES Corporation for air pollution violations.
- Rule 1309.1 Priority Reserve Fund - Established in fiscal year 2001 to account for mitigation fees paid for Particulate Matter  $\leq 10$  microns (PM<sub>10</sub>) credits. Due to the state energy crisis in 2001, Rule 1309.1 was amended to allow new electric generating facilities temporary access to SCAQMD's Priority Reserve Account to offset their PM<sub>10</sub> emission increases provided that they meet specific criteria and pay appropriate mitigation fees.
- CARB ERC Bank Fund - Established in fiscal year 2001 to account for the proceeds from the issuance of the Emission Reduction Credits (ERCs) to natural gas turbine power plant peaker units. CARB established the ERC Bank for peaker power plants that need emission offsets to add new or expanded capacity. Proceeds from the issuance of these ERCs will fund emission reduction programs where the new or expanded facility is located.
- LADWP Settlement Fund - Established in fiscal year 2001 for the purpose of accounting for the monies received from the Los Angeles Department of Water and Power as part of the settlement agreement.
- State-Emissions Mitigation Fund - Established during fiscal year 2002 to account for the funds received from California Air Resources Board (CARB) to fund CARB selected projects on emission reductions within the South Coast Air Basin. This is in response to the Governor's statewide program to mitigate excess emissions from peaker power generation units to alleviate the power crisis in California.
- Natural Gas Vehicle Partnership Fund - Established during fiscal year 2002 for creation of the Natural Gas Vehicle Partnership to facilitate the advancement of natural gas vehicle technology and deployment. The contributions received from participating members are accounted for in this fund as well as the expenditures for activities and projects selected by the Partnership.

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- State Backup Generators (BUG) Program Fund - Established in fiscal year 2003 to account for the funds received from CARB's Diesel-Fueled Electrical Backup Generator Emissions Mitigation Program. This program funds emission related projects as part of an ongoing effort to expeditiously reduce public exposure to air toxics and other pollutants.
- Asthma and Brain Cancer Research Fund - Established in fiscal year 2003 to assist in funding research projects relating to asthma and outdoor air quality and the potential link between air pollution and brain cancer.
- Dry Cleaners Financial Incentives Grant Program - Established in fiscal year 2003 to provide financial incentives to dry cleaners to purchase non-toxic alternative dry cleaning equipment.
- Rule 1173 Mitigation Fee Fund - Established in fiscal year 2004 to account for Rule 1173 mitigation fee payments to be used in funding air quality projects which directly benefit the community surrounding the facility. Amendments in December 2002 to Rule 1173 for Refineries and Chemical Plants established a mitigation fee payment provision relating to the release of Volatile Organic Compound (VOC) from an atmospheric Pressure Relief Device (PRD).
- Communities for Better Environment (CBE)/Our Children's Earth (OCE) Settlement Agreement Fund - Established in FY 2004 as part of the settlement agreement to fund PM<sub>10</sub> (Particulate Matter  $\leq$  10 microns) and/or NO<sub>x</sub> (Oxides of Nitrogen) reduction projects in disproportionately impacted areas.
- BP ARCO Settlement Projects Fund - Established in fiscal year 2005 to account for the \$25 million civil penalties received in 2005 as part of the settlement with BP ARCO for air pollution violations.
- Health Effects Research Fund - The Health Effects Research Fund was established in fiscal year 2008 to receive 20% of all penalty/settlement monies in excess of \$4 million recognized annually in SCAQMD's General Fund beginning in fiscal year 2009, subject to annual Board approval.
- CEQA Green House Gas Mitigation Fund - This fund was established in fiscal year 2009 under Rule 2702 for Green House Gas (GHG) emission reductions. It received \$1.5 million from Chevron Products Company to offset Green House Gas emission as part of its Product Reliability and Optimization (PRO+) Project Mitigation Monitoring Plan.

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- TraPac School Air Filtration Fund - This fund was established in fiscal year 2011 and received \$6,000,000 from City of Los Angeles towards installation and maintenance of air filtration systems for schools in the Wilmington area that were impacted by the expansion of the TraPac Container Terminal Project.
- Emission Reduction and Outreach Fund - This fund was established in fiscal year 2010 due to a \$1,000,000 Supplemental Environmental Project Settlement. These funds are used to enhance compliance of emission reduction policies by providing source education and consumer education.
- Rule 1118 Mitigation Fund - Established in fiscal year 2010 to account for mitigation fees from petroleum refineries that exceed sulfur dioxide emission thresholds from flares and future Rule 1118 mitigation fees and to track the projects funded through these fees.
- Hydrogen Fueling Station Fund - Established in fiscal year 2011 to recognize co-funding from the Department of Energy-National Renewable Energy Laboratory, CARB and CEC, for the maintenance and operation of the City of Burbank hydrogen fueling station and for maintenance and data management services for the hydrogen fueling station at SCAQMD headquarters.
- HEROS II Fund - Established in fiscal year 2011, this fund is used to track funds received and expenditures for SCAQMD's vehicle scrap and replacement program. This voluntary program reduces emissions from high-emitting light and medium-duty vehicles in SCAQMD.
- EL Monte Park Project Settlement Fund - Established in fiscal year 2011 for the purpose of accounting for the monies received from Gregg Industries bankruptcy estate as part of a settlement agreement to finance the construction of park improvements in the City of El Monte.
- AB 1318 Mitigation Fees Fund - Created in fiscal year 2011 to account for revenue of \$53.3 million from a mitigation fee payment for the transfer of emission credits under AB 1318.
- Voucher Incentive Program (VIP) Fund - Established in fiscal year 2012 due to transfer of funds from the Carl Moyer Multidistrict funds originally recorded in Carl Moyer Program Fund, to separately administer the On-Road Heavy-Duty Vehicle Voucher Incentive Program.
- Advanced Technology Goods Movement Fund - Established in fiscal year 2012 to administer funds received through an agreement with Port of Los Angeles and Port of

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Long Beach to fund projects consistent with the development and demonstration of zero emissions goods movement technologies, including the demonstration of Linear Synchronous Motor (LSM) technology to move cargo containers and the development of two discrete hybrid electric drive systems for heavy-duty vehicles.

- Rule 1470 Risk Reduction Fund – Established in fiscal year 2012 to help fund control equipment costs for public agencies, such as cities, counties, and schools, required to install control equipment on new emergency standby engines in order to comply with Rule 1470.
- Hydrogen Fueling Infrastructure Network Fund – Established in fiscal year 2014 to receive state and federal grant revenue earmarked for hydrogen infrastructure upgrades to support the expected role out of fuel cell cars in the next few years. In fiscal year 2014, the SCAQMD received an award for \$6.69 million from the California Energy Commission (CEC) to upgrade and refurbish existing hydrogen stations in the South Coast Air Basin. Three stations in Burbank, LAX and Torrance have been funded for upgrade through this grant, with these upgrades to be completed by mid 2018.
- Rule 1420.1 Special Revenue Fund – Established in fiscal year 2014 to account for monies received from Exide Technologies and Quemetco to finance the Multi-Metals continuous emission monitoring system (CEMS) and continuous Multi-Metals Ambient Air Monitoring Demonstration Programs.
- BP/SCAQMD Public Benefits Oversight Fund – Established to receive remaining unspent \$177,802 from the 2005 BP Settlement Agreement public benefits payments. Funds will continue to be expended through the approval of the BP/SCAQMD Public Benefits Oversight Committee.
- Rule 1304.1 Special Revenue Fund – Established in fiscal year 2016 to track the deposit of fees paid and the withdrawal of funds for approved projects, pursuant to Rule 1304.1 – Electrical Generating Facility Fee for Use of Offset Exemption.
- Green House Gas (GHG) Reduction Projects Special Revenue Fund – Established in fiscal year 2016 to account for the projects funded by CARB’s Low Carbon Transportation Green House Gas Reduction Fund Investments.
- ExxonMobil Settlement Projects Special Revenue Fund – Established in fiscal year 2016 for the purpose of accounting for the monies received pursuant to a settlement agreement with ExxonMobil for Supplemental Environmental Project (SEP).

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- LADWP Variance Special Revenue Fund – Established in fiscal year 2017 to receive environmental fees from the Los Angeles Department of Water and Power as part of an SCAQMD Hearing Board variance. The variance allowed LADWP to burn diesel to 1) recommission and test the turbines, and 2) subsequently to operate them on diesel fuel, only if the natural gas supply to LADWP was curtailed by SoCal Gas.
- Air Filtration Special Revenue Fund – Established in fiscal year 2017, a Supplemental Environmental Project (SEP) agreement was executed between CARB and the Burlington Northern Santa Fe Railway Company (BANSF) to install air filtration systems at schools in an Environmental Justice community in the South Coast region.
- SoCal Gas Settlement Special Revenue Fund – Established in fiscal year 2017 to execute a contract with KORE Infrastructure Inc in an amount not to exceed \$1 million from the SoCal Gas Settlement Special Revenue Fund to cost-share the commercial field test project.
- Community Air Protection AB 134 Fund – Established in fiscal year 2018 to recognize AB 134 revenue from CARB. These funds are part of the \$250 million allocation to CARB from a 2017 Budget Act amendment. The funds are for implementation or pursuant to the Carl Moyer Memorial Air Quality Standards Attainment Program, except that up to 40% of the funds may be used for truck projects meeting the criteria of the Proposition 1B Goods Movement Program.
- Rule 1180 Special Revenue Fund – Established in fiscal year 2018 to account for the Rule 1180 initial and final payments for implementation of the community air monitoring stations near petroleum refineries.
- Prop 1B Funding – Lower Emission School Bus – Established in fiscal year 2010 to account for the cost of replacing and retrofitting public school buses in the South Coast Air Basin. The SCAQMD has spent \$71.2 million in Prop. 1B funds from CARB to purchase 467 Level 3 PM traps (Prop 1B funds only), and replace 470 pre-1987 school buses (Prop 1B and AB923 funds) with primarily new CNG school buses.

Capital Projects Fund

- Infrastructure Improvement Fund – Established in fiscal year 2013 to separately account for large-scale and/or multi-year infrastructure improvement projects.

Debt Service Fund - Established in 2009 to replace the terminated Guaranteed Investment Contract with the Municipal Bond Insurance Association (MBIA, Inc.) due

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to changes in financial markets. This is used for the defeasance of a portion of SCAQMD's debt service on Pension Obligation Bonds.

Component Unit - SCAQMD Building Corporation – Established in fiscal year 1978 for the acquisition and improvement of SCAQMD headquarters. The SCAQMD. Building Corporation is a legally separate entity, but for financial statement purposes, it is shown as a blended component unit in the governmental funds.

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<u>Assets</u>	<u>Special Revenue</u>				
	<u>Air Quality Studies Fund</u>	<u>Air Toxics Fund</u>	<u>Advanced Technology Outreach &amp; Education Fund</u>	<u>Air Quality Assistance Fund</u>	<u>Air Quality Improvement Fund</u>
Cash and cash equivalents	\$ -	\$ 5,919,841	\$ 1,185,481	\$ 1,604,229	\$ 1,969,815
Investments	-	-	-	-	-
Interest receivable	-	26,418	6,574	8,082	15,296
Due from other governmental agencies	-	-	37,759	-	3,775,162
Due from other funds	-	-	-	-	-
Accounts receivable, net	-	710,327	-	-	-
Other assets	-	-	-	-	-
Total assets	<u>\$ -</u>	<u>\$ 6,656,586</u>	<u>\$ 1,229,814</u>	<u>\$ 1,612,311</u>	<u>\$ 5,760,273</u>
<u>Liabilities and Fund Balances</u>					
Liabilities:					
Accounts payable and accrued liabilities	\$ -	\$ 445,259	\$ -	\$ -	\$ 5,744,977
Due to other funds	-	3,002,558	567,568	-	-
Unearned revenue	-	-	-	-	-
Total liabilities	<u>-</u>	<u>3,447,817</u>	<u>567,568</u>	<u>-</u>	<u>5,744,977</u>
Fund Balances:					
Nonspendable	-	-	-	-	-
Restricted	-	-	662,246	-	15,296
Committed	-	476,410	-	-	-
Assigned	-	2,732,359	-	1,612,311	-
Unassigned	-	-	-	-	-
Total fund balances	<u>-</u>	<u>3,208,769</u>	<u>662,246</u>	<u>1,612,311</u>	<u>15,296</u>
Total liabilities and fund balances	<u>\$ -</u>	<u>\$ 6,656,586</u>	<u>\$ 1,229,814</u>	<u>\$ 1,612,311</u>	<u>\$ 5,760,273</u>

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**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING BALANCE SHEET  
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<u>Assets</u>	Special Revenue					
	Clean Fuels Conference Fund	Air Quality Investment Fund	Clean Fuels Program Fund	Carl Moyer Program Fund	Lower-Emission School Bus Fund	Zero Emission Vehicle Incentive Fund
Cash and cash equivalents	\$ -	\$ 57,671,512	\$ 51,087,685	\$ 44,628,540	\$ 8,776,841	\$ 676,524
Investments	-	-	9,940,750	-	-	-
Interest receivable	-	290,238	249,228	244,102	48,190	3,706
Due from other governmental agencies	-	-	4,723,247	-	-	-
Due from other funds	-	-	4,638,208	-	-	-
Accounts receivable, net	-	48,276	600,000	-	-	-
Other assets	-	-	-	-	-	-
<b>Total assets</b>	<b>\$ -</b>	<b>\$ 58,010,026</b>	<b>\$ 71,239,118</b>	<b>\$ 44,872,642</b>	<b>\$ 8,825,031</b>	<b>\$ 680,230</b>
 <u>Liabilities and Fund Balances</u>						
<b>Liabilities:</b>						
Accounts payable and accrued liabilities	\$ -	\$ 498	\$ 1,689,556	\$ 218,865	\$ -	\$ -
Due to other funds	-	18,961	4,197,240	1,591,620	-	-
Unearned revenue	-	-	-	-	-	-
<b>Total liabilities</b>	<b>-</b>	<b>19,459</b>	<b>5,886,796</b>	<b>1,810,485</b>	<b>-</b>	<b>-</b>
 <b>Fund Balances:</b>						
Nonspendable	-	-	-	-	-	-
Restricted	-	-	-	43,062,157	8,825,031	680,230
Committed	-	3,508,730	21,990,591	-	-	-
Assigned	-	54,481,837	43,361,731	-	-	-
Unassigned	-	-	-	-	-	-
<b>Total fund balances</b>	<b>-</b>	<b>57,990,567</b>	<b>65,352,322</b>	<b>43,062,157</b>	<b>8,825,031</b>	<b>680,230</b>
<b>Total liabilities and fund balances</b>	<b>\$ -</b>	<b>\$ 58,010,026</b>	<b>\$ 71,239,118</b>	<b>\$ 44,872,642</b>	<b>\$ 8,825,031</b>	<b>\$ 680,230</b>

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COMBINING BALANCE SHEET  
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<u>Assets</u>	Special Revenue				
	AES Settlement Projects Fund	Rule 1309.1 Priority Reserve Fund	CARB ERC Bank Fund	LADWP Settlement Fund	State-Emissions Mitigation Fund
Cash and cash equivalents	\$ 895,922	\$ 5,965,782	\$ 602,678	\$ 401,621	\$ 4,514,468
Investments	-	-	-	-	-
Interest receivable	5,053	36,479	3,301	2,200	24,728
Due from other governmental agencies	-	-	-	-	-
Due from other funds	1,218	-	-	-	-
Accounts receivable, net	-	-	-	-	-
Other assets	-	-	-	-	-
<b>Total assets</b>	<b>\$ 902,193</b>	<b>\$ 6,002,261</b>	<b>\$ 605,979</b>	<b>\$ 403,821</b>	<b>\$ 4,539,196</b>
 <b><u>Liabilities and Fund Balances</u></b>					
<b>Liabilities:</b>					
Accounts payable and accrued liabilities	\$ 15,000	\$ 30,000	\$ -	\$ -	\$ -
Due to other funds	-	-	-	-	-
Unearned revenue	-	-	-	-	-
<b>Total liabilities</b>	<b>15,000</b>	<b>30,000</b>	<b>-</b>	<b>-</b>	<b>-</b>
 <b>Fund Balances:</b>					
Nonspendable	-	-	-	-	-
Restricted	-	-	-	-	4,539,196
Committed	11,200	1,402,039	-	-	-
Assigned	875,993	4,570,222	605,979	403,821	-
Unassigned	-	-	-	-	-
<b>Total fund balances</b>	<b>887,193</b>	<b>5,972,261</b>	<b>605,979</b>	<b>403,821</b>	<b>4,539,196</b>
<b>Total liabilities and fund balances</b>	<b>\$ 902,193</b>	<b>\$ 6,002,261</b>	<b>\$ 605,979</b>	<b>\$ 403,821</b>	<b>\$ 4,539,196</b>

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<u>Assets</u>	<u>Special Revenue</u>				
	<u>Natural Gas Vehicle Partner Fund</u>	<u>State BUG Program Fund</u>	<u>Asthma &amp; Brain Cancer Research Fund</u>	<u>Dry Cleaners Financial Incentives Grant Program Fund</u>	<u>Rule 1173 Mitigation Fee Fund</u>
Cash and cash equivalents	\$ 434,397	\$ 358,478	\$ -	\$ 488,771	\$ 2,794,445
Investments	-	-	-	-	-
Interest receivable	2,540	1,964	-	2,816	15,644
Due from other governmental agencies	-	-	-	-	-
Due from other funds	-	-	-	-	662
Accounts receivable, net	10,000	-	-	-	-
Other assets	-	-	-	-	-
<b>Total assets</b>	<b>\$ 446,937</b>	<b>\$ 360,442</b>	<b>\$ -</b>	<b>\$ 491,587</b>	<b>\$ 2,810,751</b>
 <u>Liabilities and Fund Balances</u>					
<b>Liabilities:</b>					
Accounts payable and accrued liabilities	\$ -	\$ -	\$ -	\$ 15,000	\$ -
Due to other funds	-	-	-	-	-
Unearned revenue	-	-	-	-	-
<b>Total liabilities</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>15,000</b>	<b>-</b>
 <b>Fund Balances:</b>					
Nonspendable	-	-	-	-	-
Restricted	-	360,442	-	-	-
Committed	30,000	-	-	-	-
Assigned	416,937	-	-	476,587	2,810,751
Unassigned	-	-	-	-	-
<b>Total fund balances</b>	<b>446,937</b>	<b>360,442</b>	<b>-</b>	<b>476,587</b>	<b>2,810,751</b>
<b>Total liabilities and fund balances</b>	<b>\$ 446,937</b>	<b>\$ 360,442</b>	<b>\$ -</b>	<b>\$ 491,587</b>	<b>\$ 2,810,751</b>

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**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING BALANCE SHEET  
NON-MAJOR GOVERNMENTAL FUNDS  
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<u>Assets</u>	Special Revenue				
	CBE / OCE Settlement Agreement Fund	BP ARCO Settlements Project Fund	Health Effects Research Fund	CEQA Green House Gas Mitigation Fund	TraPac School Air Filtration Fund
Cash and cash equivalents	\$ 223,320	\$ 11,774,915	\$ 916,727	\$ 126,490	\$ 1,354,507
Investments	-	-	-	-	-
Interest receivable	-	67,370	5,028	715	7,419
Due from other governmental agencies	-	-	-	-	-
Due from other funds	-	127,067	-	-	-
Accounts receivable, net	-	-	-	-	-
Other assets	-	-	-	-	-
<b>Total assets</b>	<b>\$ 223,320</b>	<b>\$ 11,969,352</b>	<b>\$ 921,755</b>	<b>\$ 127,205</b>	<b>\$ 1,361,926</b>
 <u>Liabilities and Fund Balances</u>					
Liabilities:					
Accounts payable and accrued liabilities	\$ -	\$ 117,791	\$ -	\$ -	-
Due to other funds	-	-	-	-	-
Unearned revenue	-	-	-	-	-
<b>Total liabilities</b>	<b>-</b>	<b>117,791</b>	<b>-</b>	<b>-</b>	<b>-</b>
 Fund Balances:					
Nonspendable	-	-	-	-	-
Restricted	-	-	-	-	1,361,926
Committed	-	616,576	-	-	-
Assigned	223,320	11,234,985	921,755	127,205	-
Unassigned	-	-	-	-	-
<b>Total fund balances</b>	<b>223,320</b>	<b>11,851,561</b>	<b>921,755</b>	<b>127,205</b>	<b>1,361,926</b>
<b>Total liabilities and fund balances</b>	<b>\$ 223,320</b>	<b>\$ 11,969,352</b>	<b>\$ 921,755</b>	<b>\$ 127,205</b>	<b>\$ 1,361,926</b>

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**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING BALANCE SHEET  
NON-MAJOR GOVERNMENTAL FUNDS  
June 30, 2018**

<u>Assets</u>	Special Revenue				
	Emission Reduction and Outreach Fund	Rule 1118 Mitigation Fund	Hydrogen Fueling Station Fund	HEROS II Fund	El Monte Park Project Settlement Fund
Cash and cash equivalents	\$ 908	\$ 19,351,286	\$ -	\$ 8,007,983	\$ 903,071
Investments	-	-	-	-	-
Interest receivable	14	112,987	-	46,736	4,969
Due from other governmental agencies	-	-	-	-	-
Due from other funds	-	1,661,656	-	-	-
Accounts receivable, net	-	-	-	-	-
Other assets	-	-	-	-	-
<b>Total assets</b>	<b>\$ 922</b>	<b>\$ 21,125,929</b>	<b>\$ -</b>	<b>\$ 8,054,719</b>	<b>\$ 908,040</b>
 <u>Liabilities and Fund Balances</u>					
Liabilities:					
Accounts payable and accrued liabilities	\$ -	\$ -	\$ -	\$ 552,798	\$ 8,160
Due to other funds	-	-	-	-	-
Unearned revenue	-	-	-	-	-
<b>Total liabilities</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>552,798</b>	<b>8,160</b>
 Fund Balances:					
Nonspendable	-	-	-	-	-
Restricted	-	-	-	7,501,921	-
Committed	-	-	-	-	881,272
Assigned	922	21,125,929	-	-	18,608
Unassigned	-	-	-	-	-
<b>Total fund balances</b>	<b>922</b>	<b>21,125,929</b>	<b>-</b>	<b>7,501,921</b>	<b>899,880</b>
<b>Total liabilities and fund balances</b>	<b>\$ 922</b>	<b>\$ 21,125,929</b>	<b>\$ -</b>	<b>\$ 8,054,719</b>	<b>\$ 908,040</b>

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**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING BALANCE SHEET  
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<u>Assets</u>	Special Revenue				
	AB 1318 Mitigation Fees Fund	Voucher Incentive Program VIP Fund	Advanced Technology Goods Movement Fund	Rule 1470 Risk Reduction Fund	Hydrogen Fueling Infrastructure Fund
Cash and cash equivalents	\$ 16,984,837	\$ 1,919,301	\$ 5,964,333	\$ 2,481,854	\$ 5,340,968
Investments	4,989,907	-	-	-	-
Interest receivable	102,136	9,958	41,410	13,594	33,034
Due from other governmental agencies	-	-	201,142	-	-
Due from other funds	-	-	-	-	-
Accounts receivable, net	-	-	1,000,000	-	-
Other assets	-	-	-	-	-
<b>Total assets</b>	<b>\$ 22,076,880</b>	<b>\$ 1,929,259</b>	<b>\$ 7,206,885</b>	<b>\$ 2,495,448</b>	<b>\$ 5,374,002</b>
 <u>Liabilities and Fund Balances</u>					
Liabilities:					
Accounts payable and accrued liabilities	\$ 2,793,548	\$ 185,000	\$ 493,352	\$ -	\$ 2,469,921
Due to other funds	45,958	-	3,407,984	-	-
Unearned revenue	-	-	-	-	-
<b>Total liabilities</b>	<b>2,839,506</b>	<b>185,000</b>	<b>3,901,336</b>	<b>-</b>	<b>2,469,921</b>
 Fund Balances:					
Nonspendable	-	-	-	-	-
Restricted	-	1,744,259	-	-	2,904,081
Committed	16,632,397	-	1,877,140	-	-
Assigned	2,604,977	-	1,428,409	2,495,448	-
Unassigned	-	-	-	-	-
<b>Total fund balances</b>	<b>19,237,374</b>	<b>1,744,259</b>	<b>3,305,549</b>	<b>2,495,448</b>	<b>2,904,081</b>
<b>Total liabilities and fund balances</b>	<b>\$ 22,076,880</b>	<b>\$ 1,929,259</b>	<b>\$ 7,206,885</b>	<b>\$ 2,495,448</b>	<b>\$ 5,374,002</b>

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**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
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<u>Assets</u>	<u>Special Revenue</u>				
	Rule 1420.1 Special Revenue Fund	BP/SCAQMD Public Benefits Oversight Fund	Rule 1304.1 Special Revenue Fund	GHG Reduction Projects Special Revenue Fund	ExxonMobil Settlement Projects Special Revenue Fund
Cash and cash equivalents	\$ 91,069	\$ 146,026	\$ 7,521,194	\$ 5,512,442	\$ 2,829,285
Investments	-	-	-	-	-
Interest receivable	499	835	40,857	30,583	15,493
Due from other governmental agencies	-	-	-	1,705,084	-
Due from other funds	-	-	-	-	-
Accounts receivable, net	-	-	-	-	-
Other assets	-	-	-	-	-
<b>Total assets</b>	<b>\$ 91,568</b>	<b>\$ 146,861</b>	<b>\$ 7,562,051</b>	<b>\$ 7,248,109</b>	<b>\$ 2,844,778</b>
 <u>Liabilities and Fund Balances</u>					
<b>Liabilities:</b>					
Accounts payable and accrued liabilities	\$ -	\$ -	\$ -	\$ 5,576,337	\$ -
Due to other funds	-	-	-	-	-
Unearned revenue	-	-	-	-	-
<b>Total liabilities</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5,576,337</b>	<b>-</b>
 <b>Fund Balances:</b>					
Nonspendable	-	-	-	-	-
Restricted	91,568	146,861	7,562,051	1,671,772	-
Committed	-	-	-	-	406,420
Assigned	-	-	-	-	2,438,358
Unassigned	-	-	-	-	-
<b>Total fund balances</b>	<b>91,568</b>	<b>146,861</b>	<b>7,562,051</b>	<b>1,671,772</b>	<b>2,844,778</b>
<b>Total liabilities and fund balances</b>	<b>\$ 91,568</b>	<b>\$ 146,861</b>	<b>\$ 7,562,051</b>	<b>\$ 7,248,109</b>	<b>\$ 2,844,778</b>

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**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING BALANCE SHEET  
NON-MAJOR GOVERNMENTAL FUNDS  
June 30, 2018**

<u>Assets</u>	Special Revenue				
	LADWP Variance Special Revenue Fund	Air Filtration Special Revenue Fund	SoCal Gas Settlement Special Revenue Fund	Community Air Protection AB 134 Revenue Fund	Rule 1180 Special Revenue Fund
Cash and cash equivalents	\$ 1,525,516	\$ 2,127,091	\$ 1,187,571	\$ -	\$ 1,716,312
Investments	-	-	-	-	-
Interest receivable	8,342	14,187	6,426	-	-
Due from other governmental agencies	-	-	-	-	-
Due from other funds	-	-	-	504,136	-
Accounts receivable, net	-	-	-	-	-
Other assets	-	-	-	-	-
<b>Total assets</b>	<b>\$ 1,533,858</b>	<b>\$ 2,141,278</b>	<b>\$ 1,193,997</b>	<b>\$ 504,136</b>	<b>\$ 1,716,312</b>
 <u>Liabilities and Fund Balances</u>					
<b>Liabilities:</b>					
Accounts payable and accrued liabilities	\$ -	\$ -	\$ -	\$ -	-
Due to other funds	-	531,708	-	561,792	-
Unearned revenue	-	-	-	-	-
<b>Total liabilities</b>	<b>-</b>	<b>531,708</b>	<b>-</b>	<b>561,792</b>	<b>-</b>
 <b>Fund Balances:</b>					
Nonspendable	-	-	-	-	-
Restricted	-	-	-	-	-
Committed	-	1,114,387	175,000	-	-
Assigned	1,533,858	495,183	1,018,997	-	1,716,312
Unassigned	-	-	-	(57,656)	-
<b>Total fund balances</b>	<b>1,533,858</b>	<b>1,609,570</b>	<b>1,193,997</b>	<b>(57,656)</b>	<b>1,716,312</b>
<b>Total liabilities and fund balances</b>	<b>\$ 1,533,858</b>	<b>\$ 2,141,278</b>	<b>\$ 1,193,997</b>	<b>\$ 504,136</b>	<b>\$ 1,716,312</b>

See independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING BALANCE SHEET  
NON-MAJOR GOVERNMENTAL FUNDS  
June 30, 2018**

<u>Assets</u>	<u>Special Revenue</u>		<u>Capital Project</u>		Component Unit SCAQMD Building Corporation	Total
	Prop 1B Lower Emission School Bus Fund	Infrastructure Improvement Fund	Debt Service Fund	-		
Cash and cash equivalents	\$ -	\$ 3,694,785	\$ 2,120,157	\$ -	\$ 191,819	\$ 293,990,797
Investments	-	-	-	-	-	14,930,657
Interest receivable	-	19,973	11,726	-	-	1,580,850
Due from other governmental agencies	-	-	-	-	-	10,442,394
Due from other funds	-	-	-	-	-	6,932,947
Accounts receivable, net	-	-	-	-	-	2,368,603
Other assets	-	-	-	-	-	-
<b>Total assets</b>	<b>\$ -</b>	<b>\$ 3,714,758</b>	<b>\$ 2,131,883</b>	<b>\$ -</b>	<b>\$ 191,819</b>	<b>\$ 330,246,248</b>
 <u>Liabilities and Fund Balances</u>						
<b>Liabilities:</b>						
Accounts payable and accrued liabilities	\$ -	\$ -	\$ -	\$ -	\$ 4,930	\$ 20,360,992
Due to other funds	-	-	-	-	-	13,925,389
Unearned revenue	-	-	-	-	-	-
<b>Total liabilities</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4,930</b>	<b>34,286,381</b>
 <b>Fund Balances:</b>						
Nonspendable	-	-	-	-	-	-
Restricted	-	-	2,131,883	-	-	83,260,920
Committed	-	2,325,295	-	-	-	51,447,457
Assigned	-	1,389,463	-	-	186,889	161,309,146
Unassigned	-	-	-	-	-	(57,656)
<b>Total fund balances</b>	<b>-</b>	<b>3,714,758</b>	<b>2,131,883</b>	<b>-</b>	<b>186,889</b>	<b>295,959,867</b>
<b>Total liabilities and fund balances</b>	<b>\$ -</b>	<b>\$ 3,714,758</b>	<b>\$ 2,131,883</b>	<b>\$ -</b>	<b>\$ 191,819</b>	<b>\$ 330,246,248</b>

See independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND  
CHANGES IN FUND BALANCE  
NON-MAJOR GOVERNMENTAL FUNDS  
For the Year Ended June 30, 2018**

	Special Revenue				
	Air Quality Studies Fund	Air Toxics Fund	Advanced Technology Outreach & Education Fund	Air Quality Assistance Fund	Air Quality Improvement Fund
<b>Revenues:</b>					
Emission fees	\$ -	\$ -	\$ -	\$ -	\$ -
Mobile sources/clean fuels	-	-	-	-	-
Air Toxics "Hot Spots"	-	-	-	-	-
Federal grant	-	-	1,147,246	-	-
State grant	-	-	-	-	-
Interest revenue	62	52,330	19,034	23,228	42,983
Penalties and settlements	-	-	-	-	-
Other revenues	-	-	-	-	-
<b>Total revenues</b>	<u>62</u>	<u>52,330</u>	<u>1,166,280</u>	<u>23,228</u>	<u>42,983</u>
<b>Expenditures:</b>					
Salaries and employee benefits	-	-	-	-	-
Insurance	-	-	-	-	-
Rent	-	-	-	-	-
Supplies	-	-	-	-	-
Contract and special services	-	30,671	1,209,824	-	89,210
Maintenance	-	-	-	-	-
Travel and auto	-	-	-	-	-
Utilities	-	-	-	-	-
Communications	-	-	-	-	-
Uncollectible accounts	-	1,746	-	-	-
Other expenditures	-	23,629	-	-	-
Capital outlay	-	-	-	-	-
Debt Service					
Principal	-	-	-	-	-
Interest	-	-	-	-	-
<b>Total expenditures</b>	<u>-</u>	<u>56,046</u>	<u>1,209,824</u>	<u>-</u>	<u>89,210</u>
Excess (deficiency) of revenues over (under) expenditures before transfers	<u>62</u>	<u>(3,716)</u>	<u>(43,544)</u>	<u>23,228</u>	<u>(46,227)</u>
<b>Other financing sources (uses)</b>					
Transfers in	-	-	-	-	-
Transfers out	<u>(16,533)</u>	<u>(543,529)</u>	<u>(9,000)</u>	<u>-</u>	<u>-</u>
<b>Total other financing sources (uses)</b>	<u>(16,533)</u>	<u>(543,529)</u>	<u>(9,000)</u>	<u>-</u>	<u>-</u>
<b>Net change in fund balances</b>	<u>(16,471)</u>	<u>(547,245)</u>	<u>(52,544)</u>	<u>23,228</u>	<u>(46,227)</u>
Fund balances, July 1, 2017	<u>16,471</u>	<u>3,756,014</u>	<u>714,790</u>	<u>1,589,083</u>	<u>61,523</u>
Fund balances, June 30, 2018	<u>\$ -</u>	<u>\$ 3,208,769</u>	<u>\$ 662,246</u>	<u>\$ 1,612,311</u>	<u>\$ 15,296</u>

See independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND  
CHANGES IN FUND BALANCE  
NON-MAJOR GOVERNMENTAL FUNDS  
For the Year Ended June 30, 2018**

	Special Revenue					
	Clean Fuels Conference Fund	Air Quality Investment Fund	Clean Fuels Program Fund	Carl Moyer Program Fund	Lower-Emission School Bus Fund	Zero Emission Vehicle Incentive Fund
Revenues:						
Emission fees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Mobile sources/clean fuels	-	-	9,407,553	-	-	-
Air Toxics "Hot Spots"	-	-	-	-	-	-
Federal grant	-	-	418,040	-	104,000	-
State grant	-	-	3,469,470	23,845,075	-	-
Interest revenue	-	715,582	895,164	593,651	135,294	10,300
Penalties and settlements	-	-	-	-	-	-
Other revenues	-	22,467,173	1,520,045	-	-	-
<b>Total revenues</b>	<b>-</b>	<b>23,182,755</b>	<b>15,710,272</b>	<b>24,438,726</b>	<b>239,294</b>	<b>10,300</b>
Expenditures:						
Salaries and employee benefits	-	-	-	-	-	-
Insurance	-	-	-	-	-	-
Rent	-	-	-	-	-	-
Supplies	-	-	-	-	-	-
Contract and special services	-	869,935	6,943,850	15,128,148	351,680	-
Maintenance	-	-	-	-	-	-
Travel and auto	-	-	-	-	-	-
Utilities	-	-	-	-	-	-
Communications	-	-	-	-	-	-
Uncollectible accounts	-	-	-	-	-	-
Other expenditures	-	-	-	-	-	-
Capital outlay	-	-	-	-	-	-
Debt Service						
Principal	-	-	-	-	-	-
Interest	-	-	-	-	-	-
<b>Total expenditures</b>	<b>-</b>	<b>869,935</b>	<b>6,943,850</b>	<b>15,128,148</b>	<b>351,680</b>	<b>-</b>
Excess (deficiency) of revenues over (under) expenditures before transfers	-	22,312,820	8,766,422	9,310,578	(112,386)	10,300
Other financing sources (uses)						
Transfers in	-	-	107,684	-	-	-
Transfers out	(103,777)	-	(1,192,501)	-	-	-
<b>Total other financing sources (uses)</b>	<b>(103,777)</b>	<b>-</b>	<b>(1,084,817)</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Net change in fund balances</b>	<b>(103,777)</b>	<b>22,312,820</b>	<b>7,681,605</b>	<b>9,310,578</b>	<b>(112,386)</b>	<b>10,300</b>
Fund balances, July 1, 2017	103,777	35,677,747	57,670,717	33,751,579	8,937,417	669,930
Fund balances, June 30, 2018	\$ -	\$ 57,990,567	\$ 65,352,322	\$ 43,062,157	\$ 8,825,031	\$ 680,230

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See independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
 COMBINING STATEMENT OF REVENUES, EXPENDITURES AND  
 CHANGES IN FUND BALANCE  
 NON-MAJOR GOVERNMENTAL FUNDS  
 For the Year Ended June 30, 2018**

	Special Revenue				
	AES Settlement Projects Fund	Rule 1309.1 Priority Reserve Fund	CARB ERC Bank Fund	LADWP Settlement Fund	State-Emissions Mitigation Fund
<b>Revenues:</b>					
Emission fees	\$ -	\$ -	\$ -	\$ -	\$ -
Mobile sources/clean fuels	-	-	-	-	-
Air Toxics "Hot Spots"	-	-	-	-	-
Federal grant	-	-	-	-	-
State grant	-	-	-	-	-
Interest revenue	14,592	110,372	9,176	6,115	68,736
Penalties and settlements	-	-	-	-	-
Other revenues	-	-	-	-	-
<b>Total revenues</b>	<b>14,592</b>	<b>110,372</b>	<b>9,176</b>	<b>6,115</b>	<b>68,736</b>
<b>Expenditures:</b>					
Salaries and employee benefits	-	-	-	-	-
Insurance	-	-	-	-	-
Rent	-	-	-	-	-
Supplies	-	-	-	-	-
Contract and special services	78,000	1,913,382	-	-	-
Maintenance	-	-	-	-	-
Travel and auto	-	-	-	-	-
Utilities	-	-	-	-	-
Communications	-	-	-	-	-
Uncollectible accounts	-	-	-	-	-
Other expenditures	-	-	-	-	-
Capital outlay	-	-	-	-	-
Debt Service					
Principal	-	-	-	-	-
Interest	-	-	-	-	-
<b>Total expenditures</b>	<b>78,000</b>	<b>1,913,382</b>	<b>-</b>	<b>-</b>	<b>-</b>
Excess (deficiency) of revenues over (under) expenditures before transfers	(63,408)	(1,803,010)	9,176	6,115	68,736
<b>Other financing sources (uses)</b>					
Transfers in	-	-	-	-	-
Transfers out	(83,782)	-	-	-	-
<b>Total other financing sources (uses)</b>	<b>(83,782)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Net change in fund balances</b>	<b>(147,190)</b>	<b>(1,803,010)</b>	<b>9,176</b>	<b>6,115</b>	<b>68,736</b>
Fund balances, July 1, 2017	1,034,383	7,775,271	596,803	397,706	4,470,460
Fund balances, June 30, 2018	\$ 887,193	\$ 5,972,261	\$ 605,979	\$ 403,821	\$ 4,539,196

See independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND  
CHANGES IN FUND BALANCE  
NON-MAJOR GOVERNMENTAL FUNDS  
For the Year Ended June 30, 2018**

	Special Revenue				
	Natural Gas Vehicle Partner Fund	State BUG Program Fund	Asthma & Brain Cancer Research Fund	Dry Cleaners Financial Incentives Grant Program Fund	Rule 1173 Mitigation Fee Fund
Revenues:					
Emission fees	\$ -	\$ -	\$ -	\$ -	\$ -
Mobile sources/clean fuels	-	-	-	-	-
Air Toxics "Hot Spots"	-	-	-	-	-
Federal grant	-	-	-	-	-
State grant	-	-	-	-	-
Interest revenue	7,137	5,458	377	8,072	45,625
Penalties and settlements	-	-	-	-	-
Other revenues	62,500	-	-	-	350,000
<b>Total revenues</b>	<b>69,637</b>	<b>5,458</b>	<b>377</b>	<b>8,072</b>	<b>395,625</b>
Expenditures:					
Salaries and employee benefits	-	-	-	-	-
Insurance	-	-	-	-	-
Rent	-	-	-	-	-
Supplies	-	-	-	-	-
Contract and special services	140,800	-	-	70,000	-
Maintenance	-	-	-	-	-
Travel and auto	-	-	-	-	-
Utilities	-	-	-	-	-
Communications	-	-	-	-	-
Uncollectible accounts	-	-	-	-	-
Other expenditures	-	-	-	-	-
Capital outlay	-	-	-	-	-
Debt Service					
Principal	-	-	-	-	-
Interest	-	-	-	-	-
<b>Total expenditures</b>	<b>140,800</b>	<b>-</b>	<b>-</b>	<b>70,000</b>	<b>-</b>
Excess (deficiency) of revenues over (under) expenditures before transfers	(71,163)	5,458	377	(61,928)	395,625
Other financing sources (uses)					
Transfers in	-	-	-	-	-
Transfers out	-	-	(100,953)	-	(830,338)
<b>Total other financing sources (uses)</b>	<b>-</b>	<b>-</b>	<b>(100,953)</b>	<b>-</b>	<b>(830,338)</b>
<b>Net change in fund balances</b>	<b>(71,163)</b>	<b>5,458</b>	<b>(100,576)</b>	<b>(61,928)</b>	<b>(434,713)</b>
Fund balances, July 1, 2017	518,100	354,984	100,576	538,515	3,245,464
Fund balances, June 30, 2018	\$ 446,937	\$ 360,442	\$ -	\$ 476,587	\$ 2,810,751

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See independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND  
CHANGES IN FUND BALANCE  
NON-MAJOR GOVERNMENTAL FUNDS  
For the Year Ended June 30, 2018**

	Special Revenue				
	CBE/OCE Settlement Agreement Fund	BP ARCO Settlements Project Fund	Health Effects Research Fund	CEQA Green House Gas Mitigation Fund	TraPac School Air Filtration Fund
Revenues:					
Emission fees	\$ -	\$ -	\$ -	\$ -	\$ -
Mobile sources/clean fuels	-	-	-	-	-
Air Toxics "Hot Spots"	-	-	-	-	-
Federal grant	-	-	-	-	-
State grant	-	-	-	-	-
Interest revenue	-	190,770	13,481	2,171	20,624
Penalties and settlements	-	-	-	-	-
Other revenues	-	750	-	-	-
	<u>-</u>	<u>191,520</u>	<u>13,481</u>	<u>2,171</u>	<u>20,624</u>
Total revenues	<u>-</u>	<u>191,520</u>	<u>13,481</u>	<u>2,171</u>	<u>20,624</u>
Expenditures:					
Salaries and employee benefits	-	-	-	-	-
Insurance	-	-	-	-	-
Rent	-	-	-	-	-
Supplies	-	-	-	-	-
Contract and special services	-	775,004	-	62,917	-
Maintenance	-	-	-	-	-
Travel and auto	-	-	-	-	-
Utilities	-	-	-	-	-
Communications	-	-	-	-	-
Uncollectible accounts	-	-	-	-	-
Other expenditures	-	-	-	-	-
Capital outlay	-	-	-	-	-
Debt Service					
Principal	-	-	-	-	-
Interest	-	-	-	-	-
Total expenditures	<u>-</u>	<u>775,004</u>	<u>-</u>	<u>62,917</u>	<u>-</u>
Excess (deficiency) of revenues over (under) expenditures before transfers	<u>-</u>	<u>(583,484)</u>	<u>13,481</u>	<u>(60,746)</u>	<u>20,624</u>
Other financing sources (uses)					
Transfers in	-	-	117,486	-	-
Transfers out	-	(241,933)	-	-	-
	<u>-</u>	<u>(241,933)</u>	<u>117,486</u>	<u>-</u>	<u>-</u>
Total other financing sources (uses)	<u>-</u>	<u>(241,933)</u>	<u>117,486</u>	<u>-</u>	<u>-</u>
Net change in fund balances	<u>-</u>	<u>(825,417)</u>	<u>130,967</u>	<u>(60,746)</u>	<u>20,624</u>
Fund balances, July 1, 2017	<u>223,320</u>	<u>12,676,978</u>	<u>790,788</u>	<u>187,951</u>	<u>1,341,302</u>
Fund balances, June 30, 2018	<u>\$ 223,320</u>	<u>\$ 11,851,561</u>	<u>\$ 921,755</u>	<u>\$ 127,205</u>	<u>\$ 1,361,926</u>

See independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND  
CHANGES IN FUND BALANCE  
NON-MAJOR GOVERNMENTAL FUNDS  
For the Year Ended June 30, 2018**

	Special Revenue				
	Emission Reduction and Outreach Fund	Rule 1118 Mitigation Fund	Hydrogen Fueling Station Fund	HEROS II Fund	El Monte Park Project Settlement Fund
<b>Revenues:</b>					
Emission fees	\$ -	\$ -	\$ -	\$ -	-
Mobile sources/clean fuels	-	-	-	-	-
Air Toxics "Hot Spots"	-	-	-	-	-
Federal grant	-	-	-	-	-
State grant	-	-	-	13,205,000	-
Interest revenue	18	331,650	-	106,752	13,916
Penalties and settlements	-	-	-	-	-
Other revenues	-	-	-	1,000	-
<b>Total revenues</b>	<u>18</u>	<u>331,650</u>	<u>-</u>	<u>13,312,752</u>	<u>13,916</u>
<b>Expenditures:</b>					
Salaries and employee benefits	-	-	-	-	-
Insurance	-	-	-	-	-
Rent	-	-	-	-	-
Supplies	-	-	-	-	-
Contract and special services	-	17,818	-	8,983,182	19,850
Maintenance	-	-	-	-	-
Travel and auto	-	-	-	-	-
Utilities	-	-	-	-	-
Communications	-	-	-	-	-
Uncollectible accounts	-	-	-	-	-
Other expenditures	-	-	5,341	-	-
Capital outlay	-	-	-	-	-
Debt Service					
Principal	-	-	-	-	-
Interest	-	-	-	-	-
<b>Total expenditures</b>	<u>-</u>	<u>17,818</u>	<u>5,341</u>	<u>8,983,182</u>	<u>19,850</u>
Excess (deficiency) of revenues over (under) expenditures before transfers	<u>18</u>	<u>313,832</u>	<u>(5,341)</u>	<u>4,329,570</u>	<u>(5,934)</u>
<b>Other financing sources (uses)</b>					
Transfers in	-	-	-	-	-
Transfers out	-	(1,923,487)	(3,907)	(1,475)	-
<b>Total other financing sources (uses)</b>	<u>-</u>	<u>(1,923,487)</u>	<u>(3,907)</u>	<u>(1,475)</u>	<u>-</u>
<b>Net change in fund balances</b>	<u>18</u>	<u>(1,609,655)</u>	<u>(9,248)</u>	<u>4,328,095</u>	<u>(5,934)</u>
Fund balances, July 1, 2017	<u>904</u>	<u>22,735,584</u>	<u>9,248</u>	<u>3,173,826</u>	<u>905,814</u>
Fund balances, June 30, 2018	<u>\$ 922</u>	<u>\$ 21,125,929</u>	<u>\$ -</u>	<u>\$ 7,501,921</u>	<u>\$ 899,880</u>

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See independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND  
CHANGES IN FUND BALANCE  
NON-MAJOR GOVERNMENTAL FUNDS  
For the Year Ended June 30, 2018**

	Special Revenue				
	AB 1318 Mitigation Fees Fund	Voucher Incentive Program VIP Fund	Advanced Technology Goods Movement Fund	Rule 1470 Risk Reduction Fund	Hydrogen Fueling Infrastructure Fund
Revenues:					
Emission fees	\$ -	\$ -	\$ -	\$ -	\$ -
Mobile sources/clean fuels	-	-	-	-	-
Air Toxics "Hot Spots"	-	-	-	-	-
Federal grant	-	-	2,268,834	-	-
State grant	-	-	-	-	-
Interest revenue	363,933	17,893	142,380	37,788	-
Penalties and settlements	-	-	-	-	-
Other revenues	24,401	-	2,723,495	-	-
<b>Total revenues</b>	<b>388,334</b>	<b>17,893</b>	<b>5,134,709</b>	<b>37,788</b>	<b>-</b>
Expenditures:					
Salaries and employee benefits	-	-	-	-	-
Insurance	-	-	-	-	-
Rent	-	-	-	-	-
Supplies	-	-	-	-	-
Contract and special services	8,162,119	3,140,000	8,131,493	-	3,448,372
Maintenance	-	-	-	-	-
Travel and auto	-	-	-	-	-
Utilities	-	-	-	-	-
Communications	-	-	-	-	-
Uncollectible accounts	-	-	-	-	-
Other expenditures	-	-	-	-	46,615
Capital outlay	-	-	-	-	-
Debt Service					
Principal	-	-	-	-	-
Interest	-	-	-	-	-
<b>Total expenditures</b>	<b>8,162,119</b>	<b>3,140,000</b>	<b>8,131,493</b>	<b>-</b>	<b>3,494,987</b>
Excess (deficiency) of revenues over (under) expenditures before transfers	(7,773,785)	(3,122,107)	(2,996,784)	37,788	(3,494,987)
Other financing sources (uses)					
Transfers in	-	4,000,000	-	-	-
Transfers out	(45,958)	-	-	-	-
<b>Total other financing sources (uses)</b>	<b>(45,958)</b>	<b>4,000,000</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Net change in fund balances</b>	<b>(7,819,743)</b>	<b>877,893</b>	<b>(2,996,784)</b>	<b>37,788</b>	<b>(3,494,987)</b>
Fund balances, July 1, 2017	27,057,117	866,366	6,302,333	2,457,660	6,399,068
Fund balances, June 30, 2018	\$ 19,237,374	\$ 1,744,259	\$ 3,305,549	\$ 2,495,448	\$ 2,904,081

See independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND  
CHANGES IN FUND BALANCE  
NON-MAJOR GOVERNMENTAL FUNDS  
For the Year Ended June 30, 2018**

	Special Revenue				
	Rule 1420.1 Special Revenue Fund	BP/SCAQMD Public Benefits Oversight Fund	Rule 1304.1 Special Revenue Fund	GHG Reduction Projects Special Revenue Fund	ExxonMobil Settlement Projects Special Revenue Fund
Revenues:					
Emission fees	\$ -	\$ -	\$ -	\$ -	\$ -
Mobile sources/clean fuels	-	-	-	-	-
Air Toxics "Hot Spots"	-	-	-	-	-
Federal grant	-	-	-	-	-
State grant	-	-	-	2,769,945	-
Interest revenue	1,388	2,553	114,578	86,095	43,079
Penalties and settlements	-	-	-	-	-
Other revenues	-	63	-	-	-
	<u>-</u>	<u>63</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total revenues	<u>1,388</u>	<u>2,616</u>	<u>114,578</u>	<u>2,856,040</u>	<u>43,079</u>
Expenditures:					
Salaries and employee benefits	-	-	-	-	-
Insurance	-	-	-	-	-
Rent	-	-	-	-	-
Supplies	-	-	-	-	-
Contract and special services	-	42,214	-	7,200,364	-
Maintenance	-	-	-	-	-
Travel and auto	-	-	-	-	-
Utilities	-	-	-	-	-
Communications	-	-	-	-	-
Uncollectible accounts	-	-	-	-	-
Other expenditures	-	-	-	-	-
Capital outlay	-	-	-	-	-
Debt Service					
Principal	-	-	-	-	-
Interest	-	-	-	-	-
	<u>-</u>	<u>42,214</u>	<u>-</u>	<u>7,200,364</u>	<u>-</u>
Total expenditures	<u>-</u>	<u>42,214</u>	<u>-</u>	<u>7,200,364</u>	<u>-</u>
Excess (deficiency) of revenues over (under) expenditures before transfers	<u>1,388</u>	<u>(39,598)</u>	<u>114,578</u>	<u>(4,344,324)</u>	<u>43,079</u>
Other financing sources (uses)					
Transfers in	-	-	-	-	-
Transfers out	-	-	-	-	-
	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total other financing sources (uses)	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Net change in fund balances	<u>1,388</u>	<u>(39,598)</u>	<u>114,578</u>	<u>(4,344,324)</u>	<u>43,079</u>
Fund balances, July 1, 2017	<u>90,180</u>	<u>186,459</u>	<u>7,447,473</u>	<u>6,016,096</u>	<u>2,801,699</u>
Fund balances, June 30, 2018	<u>\$ 91,568</u>	<u>\$ 146,861</u>	<u>\$ 7,562,051</u>	<u>\$ 1,671,772</u>	<u>\$ 2,844,778</u>

Continued

See independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND  
CHANGES IN FUND BALANCE  
NON-MAJOR GOVERNMENTAL FUNDS  
For the Year Ended June 30, 2018**

	Special Revenue				
	LADWP Variance Special Revenue Fund	Air Filtration Special Revenue Fund	SoCal Gas Settlement Special Revenue Fund	Community Air Protection AB 134 Revenue Fund	Rule 1180 Special Revenue Fund
Revenues:					
Emission fees	\$ -	\$ -	\$ -	\$ -	\$ -
Mobile sources/clean fuels	-	-	-	-	-
Air Toxics "Hot Spots"	-	-	-	-	-
Federal grant	-	-	-	-	-
State grant	-	-	-	-	-
Interest revenue	23,230	37,328	18,096	-	-
Penalties and settlements	-	1,485,310	-	-	-
Other revenues	-	-	-	-	1,716,312
<b>Total revenues</b>	<b>23,230</b>	<b>1,522,638</b>	<b>18,096</b>	<b>-</b>	<b>1,716,312</b>
Expenditures:					
Salaries and employee benefits	-	-	-	-	-
Insurance	-	-	-	-	-
Rent	-	-	-	-	-
Supplies	-	-	-	-	-
Contract and special services	-	731,670	-	-	-
Maintenance	-	-	-	-	-
Travel and auto	-	-	-	-	-
Utilities	-	-	-	-	-
Communications	-	-	-	-	-
Uncollectible accounts	-	-	-	-	-
Other expenditures	-	-	-	-	-
Capital outlay	-	-	-	-	-
Debt Service					
Principal	-	-	-	-	-
Interest	-	-	-	-	-
<b>Total expenditures</b>	<b>-</b>	<b>731,670</b>	<b>-</b>	<b>-</b>	<b>-</b>
Excess (deficiency) of revenues over (under) expenditures before transfers	23,230	790,968	18,096	-	1,716,312
Other financing sources (uses)					
Transfers in	-	250,000	-	-	-
Transfers out	-	(55,583)	-	(57,656)	-
<b>Total other financing sources (uses)</b>	<b>-</b>	<b>194,417</b>	<b>-</b>	<b>(57,656)</b>	<b>-</b>
<b>Net change in fund balances</b>	<b>23,230</b>	<b>985,385</b>	<b>18,096</b>	<b>(57,656)</b>	<b>1,716,312</b>
Fund balances, July 1, 2017	1,510,628	624,185	1,175,901	-	-
Fund balances, June 30, 2018	<u>\$ 1,533,858</u>	<u>\$ 1,609,570</u>	<u>\$ 1,193,997</u>	<u>\$ (57,656)</u>	<u>\$ 1,716,312</u>

See independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND  
CHANGES IN FUND BALANCE  
NON-MAJOR GOVERNMENTAL FUNDS  
For the Year Ended June 30, 2018**

	Special Revenue		Capital Project		Component Unit SCAQMD Building Corporation	Total
	Prop 1B Lower Emission School Bus Fund		Infrastructure Improvement Fund	Debt Service Fund		
Revenues:						
Emission fees	\$ -	\$ -	\$ -	\$ -	\$ -	-
Mobile sources/clean fuels	-	-	-	-	-	9,407,553
Air Toxics "Hot Spots"	-	-	-	-	-	-
Federal grant	-	-	-	-	-	3,938,120
State grant	-	-	-	-	-	43,289,490
Interest revenue	-	47,474	33,173	1,305	-	4,412,963
Penalties and settlements	-	-	-	-	-	1,485,310
Other revenues	-	-	-	-	-	28,865,739
<b>Total revenues</b>	<b>-</b>	<b>47,474</b>	<b>33,173</b>	<b>1,305</b>	<b>-</b>	<b>91,399,175</b>
Expenditures:						
Salaries and employee benefits	-	-	-	-	-	-
Insurance	-	-	-	-	-	-
Rent	-	-	-	-	-	-
Supplies	-	-	-	-	-	-
Contract and special services	-	-	-	-	-	67,540,503
Maintenance	-	-	-	-	-	-
Travel and auto	-	-	-	-	-	-
Utilities	-	-	-	-	-	-
Communications	-	-	-	-	-	-
Uncollectible accounts	-	-	-	-	-	1,746
Other expenditures	-	-	-	-	4,930	80,515
Capital outlay	-	4,219	-	-	-	4,219
Debt Service						
Principal	-	-	1,000,000	-	-	1,000,000
Interest	-	-	-	-	-	-
<b>Total expenditures</b>	<b>-</b>	<b>4,219</b>	<b>1,000,000</b>	<b>4,930</b>	<b>-</b>	<b>68,626,983</b>
Excess (deficiency) of revenues over (under) expenditures before transfers	-	43,255	(966,827)	(3,625)	-	22,772,192
Other financing sources (uses)						
Transfers in	-	1,253,148	-	-	-	5,728,318
Transfers out	(232)	-	-	-	-	(5,210,644)
<b>Total other financing sources (uses)</b>	<b>(232)</b>	<b>1,253,148</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>517,674</b>
<b>Net change in fund balances</b>	<b>(232)</b>	<b>1,296,403</b>	<b>(966,827)</b>	<b>(3,625)</b>	<b>-</b>	<b>23,289,866</b>
Fund balances, July 1, 2017	232	2,418,355	3,098,710	190,514	-	272,670,001
Fund balances, June 30, 2018	\$ -	\$ 3,714,758	\$ 2,131,883	\$ 186,889	\$ -	\$ 295,959,867

See independent auditor's report.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
COMBINING STATEMENT OF CHANGES IN ASSETS AND LIABILITIES  
AGENCY FUNDS  
June 30, 2018**

	Balance July 1, 2017	Additions	Deductions	Balance June 30, 2018
<u>Accounting agency fund</u>				
<u>Assets</u>				
Cash and cash equivalents	\$ 106,409	\$ 378,570	\$ 346,627	\$ 138,352
Total assets	\$ 106,409	\$ 378,570	\$ 346,627	\$ 138,352
<u>Liabilities</u>				
Accounts payable and accrued liabilities	\$ 106,409	\$ 378,570	\$ 346,627	\$ 138,352
Total liabilities	\$ 106,409	\$ 378,570	\$ 346,627	\$ 138,352
 <u>457 Plan Admin Revenue Sharing Fund</u>				
<u>Assets</u>				
Cash and cash equivalents	\$ 15,026	\$ 70,745	\$ 70,700	\$ 15,071
Interest receivable	159	221	159	221
Total assets	\$ 15,185	\$ 70,966	\$ 70,859	\$ 15,292
<u>Liabilities</u>				
Accounts payable and accrued liabilities	15,185	\$ 70,821	\$ 70,714	\$ 15,292
Total liabilities	\$ 15,185	\$ 70,821	\$ 70,714	\$ 15,292
 <u>Total all agency funds</u>				
<u>Assets</u>				
Cash and cash equivalents	\$ 121,435	\$ 449,315	\$ 417,327	\$ 153,423
Interest receivable	159	221	159	221
Total assets	\$ 121,594	\$ 449,536	\$ 417,486	\$ 153,644
<u>Liabilities</u>				
Accounts payable and accrued liabilities	\$ 121,594	\$ 449,391	\$ 417,341	\$ 153,644
Total liabilities	\$ 121,594	\$ 449,391	\$ 417,341	\$ 153,644

See independent auditor's report.

# STATISTICAL SECTION

This part of SCAQMD's comprehensive annual financial report represents detailed information as a context for understanding what the information in the financial statements, note disclosure, and required supplementary information says about SCAQMD's overall financial health.

## **Contents**

### Financial Trends

Four schedules contain information to help the reader understand how the government's financial performance and well-being have changed over time.

### Revenue Capacity

These schedules contain information to help the reader understand the concentration of SCAQMD's largest emission-based fee payers.

### Debt Capacity

This schedule presents information to help the reader assess the affordability of SCAQMD's current levels of outstanding debt. Please see footnote under Schedule 7.

### Demographic and Economic Information

These schedules offer demographic and economic indicators to help the reader understand the environment within which SCAQMD's financial activities take place.

### Operating Information

These schedules contain data to help the reader understand how the information in SCAQMD's financial report relates to the services SCAQMD provides and the activities it performs.

Source: Unless otherwise noted, the information in these schedules was derived from SCAQMD's comprehensive annual financial reports for the relevant year.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
Schedule 1  
Net Position by Component  
Last Ten Fiscal Years  
(accrual basis of accounting)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Governmental Activities:</b>										
Net investment in capital assets	\$ 16,757,042	\$ 19,695,092	\$ 22,777,709	\$ 25,696,728	\$ 39,667,137	\$ 38,509,847	\$ 36,957,165	\$ 36,178,389	\$ 36,127,300	\$ 35,756,464
Restricted for pension assets	(10,334,764)	-	-	1,361,315	3,031,890	4,437,818	-	-	-	-
Restricted for debt service	-	-	-	-	-	-	-	-	-	-
Restricted for long-term emission-reduction projects	334,362,120	411,358,339	465,789,699	527,549,463	530,540,932	536,617,440	468,946,402	498,119,549	607,438,908	676,857,257
Unrestricted	47,061,292	50,318,195	34,536,706	29,529,812	21,554,913	29,264,960	(157,555,673)	(152,854,184)	(141,541,447)	(129,700,877)
Total governmental activities net position	<u>\$ 387,845,690</u>	<u>\$ 481,371,626</u>	<u>\$ 523,104,114</u>	<u>\$ 584,137,318</u>	<u>\$ 594,794,872</u>	<u>\$ 608,830,065</u>	<u>\$ 348,347,894</u>	<u>\$ 381,443,754</u>	<u>\$ 502,024,761</u>	<u>\$ 582,912,844</u>
<b>Business-type Activities:</b>										
Net investment in capital assets	\$ 51,664	\$ 4,052	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unrestricted	191,356	242,921	370,087	525,078	746,994	875,849	1,123,954	1,235,284	1,253,178	-
Total business-type activities net position	<u>\$ 243,020</u>	<u>\$ 246,973</u>	<u>\$ 370,087</u>	<u>\$ 525,078</u>	<u>\$ 746,994</u>	<u>\$ 875,849</u>	<u>\$ 1,123,954</u>	<u>\$ 1,235,284</u>	<u>\$ 1,253,178</u>	<u>\$ -</u>
<b>Primary Government:</b>										
Net investment in capital assets	\$ 16,808,706	\$ 19,699,144	\$ 22,777,709	\$ 25,696,728	\$ 39,667,137	\$ 38,509,847	\$ 36,957,165	\$ 36,178,389	\$ 36,127,300	\$ 35,756,464
Restricted for pension asset	(10,334,764)	-	-	1,361,315	3,031,890	4,437,818	-	-	-	-
Restricted for debt service	-	-	-	-	-	-	-	-	-	-
Restricted for long-term emission-reduction projects	334,362,120	411,358,339	465,789,699	527,549,463	530,540,932	536,617,440	468,946,402	498,119,549	607,438,908	676,857,257
Unrestricted	47,252,648	50,561,116	34,906,793	30,054,890	22,301,907	30,140,809	(156,431,719)	(151,618,900)	(140,288,269)	(129,700,877)
Total primary government net position	<u>\$ 388,088,710</u>	<u>\$ 481,618,599</u>	<u>\$ 523,474,201</u>	<u>\$ 584,662,396</u>	<u>\$ 595,541,866</u>	<u>\$ 609,705,914</u>	<u>\$ 349,471,848</u>	<u>\$ 382,679,038</u>	<u>\$ 503,277,939</u>	<u>\$ 582,912,844</u>

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**Schedule 2**  
**Changes in Net Position – Last Ten Fiscal Years**  
**(accrual basis of accounting)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Expenses</b>										
<b>Governmental Activities:</b>										
Advance clean air technology	\$ 7,111,931	\$ 6,512,144	\$ 6,398,859	\$ 6,672,977	\$ 6,857,959	\$ 6,212,087	\$ 5,539,607	\$ 7,119,417	\$ 7,825,599	\$ 9,271,026
Ensure compliance with clean air rules	43,823,112	46,154,574	46,877,017	47,026,449	47,417,956	48,813,991	43,252,162	45,622,680	49,316,129	50,528,522
Customer service and business assistance	7,441,806	7,682,897	7,578,813	7,729,015	8,169,587	8,332,770	6,124,811	8,337,319	9,260,504	9,743,294
Develop programs to achieve clean air	10,216,378	10,861,040	11,780,948	12,130,832	12,317,470	11,147,303	9,727,624	10,444,147	11,335,498	8,636,784
Develop rules to achieve clean air	8,433,410	8,436,415	8,826,846	7,286,149	7,269,414	7,514,210	7,161,179	7,566,089	7,604,041	10,013,098
Monitoring air quality	14,067,041	14,239,509	15,093,093	15,930,225	14,265,601	14,969,083	13,197,801	16,028,394	17,856,869	20,822,380
Timely review of permits	26,205,282	28,530,507	28,045,891	27,241,449	28,621,527	27,821,032	24,431,059	27,891,070	31,520,083	33,301,565
Policy support	4,782,531	1,760,038	1,792,208	1,483,613	1,306,054	1,204,588	331,652	511,705	885,773	667,046
Interest on long-term debt	4,325,460	3,871,465	3,277,933	4,691,658	4,605,963	4,102,888	4,031,178	3,884,990	3,906,955	3,731,589
Long-term emission reduction projects	104,277,915	150,362,508	161,904,680	137,800,260	155,998,253	154,939,035	210,229,182	87,079,799	101,008,426	101,304,229
Total government'l activities expenses	<u>\$ 230,684,866</u>	<u>\$ 278,411,097</u>	<u>\$ 291,576,288</u>	<u>\$ 267,992,627</u>	<u>\$ 286,829,784</u>	<u>\$ 285,056,987</u>	<u>\$ 324,026,255</u>	<u>\$ 214,485,609</u>	<u>\$ 240,519,877</u>	<u>\$ 248,019,533</u>
<b>Business-type Activities:</b>										
CNG fueling station	\$ 210,120	\$ 165,557	\$ 150,418	\$ 135,805	\$ 189,518	\$ 264,221	\$ 168,769	\$ 117,675	\$ 128	\$ 31
Total business-type activities expenses	<u>210,120</u>	<u>165,557</u>	<u>150,418</u>	<u>135,805</u>	<u>189,518</u>	<u>264,221</u>	<u>168,769</u>	<u>117,675</u>	<u>128</u>	<u>31</u>
Total primary government expenses	<u>\$ 230,894,986</u>	<u>\$ 278,576,654</u>	<u>\$ 291,726,706</u>	<u>\$ 268,128,432</u>	<u>\$ 287,019,302</u>	<u>\$ 285,321,208</u>	<u>\$ 324,195,024</u>	<u>\$ 214,603,284</u>	<u>\$ 240,520,005</u>	<u>\$ 248,019,564</u>
<b>Program Revenues</b>										
<b>Governmental Activities:</b>										
<b>Fees and Charges</b>										
Stationary sources	\$ 92,703,725	\$ 81,097,647	\$ 81,291,028	\$ 82,624,489	\$ 85,439,616	\$ 87,160,484	\$ 88,120,829	\$ 89,264,511	\$ 94,279,518	\$ 100,354,910
Mobile sources	24,128,436	23,728,238	22,512,790	23,384,894	23,535,070	24,307,527	24,526,008	25,743,988	28,087,131	26,026,673
Operating grants and subventions	141,967,816	252,182,003	216,422,579	213,332,401	173,309,732	164,053,936	149,766,034	122,424,397	222,070,040	185,367,622
Total governmental activities prog. revenues	<u>\$ 258,799,977</u>	<u>\$ 357,007,888</u>	<u>\$ 320,226,397</u>	<u>\$ 319,341,784</u>	<u>\$ 282,284,418</u>	<u>\$ 275,521,947</u>	<u>\$ 262,412,871</u>	<u>\$ 237,432,896</u>	<u>\$ 344,436,689</u>	<u>\$ 311,749,205</u>

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**Schedule 2**

**Changes in Net Position – Last Ten Fiscal Years  
(accrual basis of accounting) (continued)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Business-type Activities:</b>										
CNG fueling station	\$ 169,917	\$ 169,510	\$ 273,531	\$ 290,796	\$ 411,434	\$ 393,076	\$ 416,874	\$ 229,005	\$ 18,022	\$ -
Total business-type activities prog. revenues	<u>169,917</u>	<u>169,510</u>	<u>273,531</u>	<u>290,796</u>	<u>411,434</u>	<u>393,076</u>	<u>416,874</u>	<u>229,005</u>	<u>18,022</u>	<u>-</u>
Total primary government prog. revenues	<u>\$ 258,969,894</u>	<u>\$ 357,177,398</u>	<u>\$ 320,499,928</u>	<u>\$ 319,632,580</u>	<u>\$ 282,695,852</u>	<u>\$ 275,915,023</u>	<u>\$ 262,829,745</u>	<u>\$ 237,661,901</u>	<u>\$ 344,454,711</u>	<u>\$ 311,749,205</u>
<b>Net (Expense) Revenue</b>										
Governmental activities	\$ 28,115,112	\$ 78,596,791	\$ 28,650,109	\$ 51,349,157	\$ (4,545,366)	\$ (9,535,040)	\$ (61,613,384)	\$ 22,947,287	\$ 103,916,812	\$ 63,729,672
Business-type activities	<u>(40,203)</u>	<u>3,953</u>	<u>123,113</u>	<u>154,991</u>	<u>221,916</u>	<u>128,855</u>	<u>248,105</u>	<u>111,330</u>	<u>17,894</u>	<u>(31)</u>
Total primary govnt net (expenses) revenue	<u>\$ 28,074,909</u>	<u>\$ 78,600,744</u>	<u>\$ 28,773,222</u>	<u>\$ 51,504,148</u>	<u>\$ (4,323,450)</u>	<u>\$ (9,406,185)</u>	<u>\$ (61,365,279)</u>	<u>\$ 23,058,617</u>	<u>\$ 103,934,706</u>	<u>\$ 63,729,641</u>
<b>General Revenues and Other Changes in Net Position</b>										
<b>Governmental Activities:</b>										
Grants and subventions not restricted										
to specific stationary source programs	\$ 2,934,513	\$ 2,926,440	\$ 2,918,779	\$ 2,890,117	\$ 2,889,099	\$ 2,889,884	\$ 2,887,831	\$ 2,885,047	\$ 2,885,535	\$ 2,879,520
Interest	1,962,431	976,434	832,444	529,031	343,206	461,444	339,005	435,773	644,574	1,041,333
Lease revenue	379,440	371,104	-	-	-	-	-	-	-	-
Penalties/settlement	9,469,694	10,346,122	7,348,657	4,906,391	11,562,529	17,959,410	8,733,773	5,704,685	11,511,570	14,316,145
Subscriptions	15,519	10,363	7,760	6,095	1,630	3,498	2,136	2,842	1,097	436
Other	34,828	298,683	1,631,518	1,352,418	406,456	2,255,997	2,080,950	1,120,226	1,621,419	1,153,863
Transfers	-	-	-	-	-	-	-	-	-	1,253,147
Total governmental activities	<u>\$ 14,796,424</u>	<u>\$ 14,929,145</u>	<u>\$ 12,739,158</u>	<u>\$ 9,684,052</u>	<u>\$ 15,202,920</u>	<u>\$ 23,570,233</u>	<u>\$ 14,043,695</u>	<u>\$ 10,148,573</u>	<u>\$ 16,664,195</u>	<u>\$ 20,644,444</u>
<b>Business-type Activities</b>										
Interest	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Transfers	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>						
Total business-type activities	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>						
Total primary government revenue	<u>\$ 14,796,424</u>	<u>\$ 14,929,145</u>	<u>\$ 12,739,158</u>	<u>\$ 9,684,052</u>	<u>\$ 15,202,920</u>	<u>\$ 23,570,233</u>	<u>\$ 14,043,695</u>	<u>\$ 10,148,573</u>	<u>\$ 16,664,195</u>	<u>\$ 20,644,444</u>
<b>Change in Net Position</b>										
Governmental activities	\$ 42,911,536	\$ 93,525,936	\$ 41,389,267	\$ 61,033,209	\$ 10,657,554	\$ 14,035,193	\$ (47,569,689)	\$ 33,095,860	\$ 120,581,007	\$ 84,374,116
Business-type activities	<u>(40,203)</u>	<u>3,953</u>	<u>123,113</u>	<u>154,991</u>	<u>221,916</u>	<u>128,855</u>	<u>248,105</u>	<u>111,330</u>	<u>17,894</u>	<u>(1,253,178)</u>
Total primary government	<u>\$ 42,871,333</u>	<u>\$ 93,529,889</u>	<u>\$ 41,512,380</u>	<u>\$ 61,188,200</u>	<u>\$ 10,879,470</u>	<u>\$ 14,164,048</u>	<u>\$ (47,321,584)</u>	<u>\$ 33,207,190</u>	<u>\$ 120,598,901</u>	<u>\$ 83,120,938</u>

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
Schedule 3  
Fund Balances of Governmental Funds  
Last Ten Fiscal Years  
(modified accrual basis of accounting)

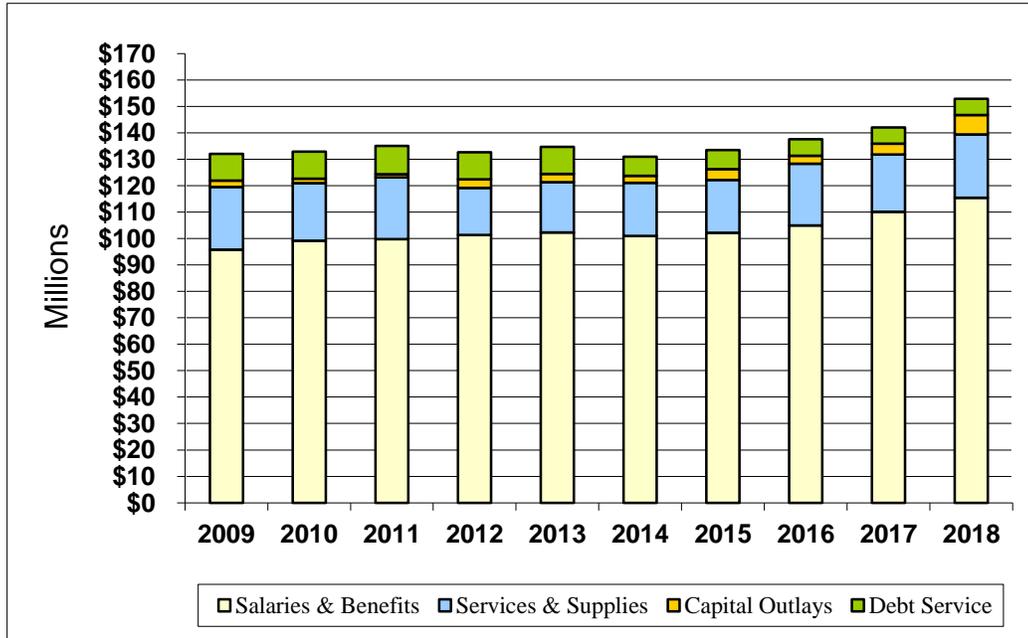
	2009	2010	2011*	2012	2013	2014	2015	2016	2017	2018
<b>General Fund</b>										
Reserved	\$ 7,318,433	\$ 7,575,462	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unreserved	56,309,536	52,814,783	-	-	-	-	-	-	-	-
Nonspendable	-	-	50,315	73,043	71,968	66,703	73,463	65,731	63,688	56,684
Committed	-	-	8,928,629	6,594,167	6,552,287	5,845,485	6,533,505	6,917,075	7,382,453	11,237,530
Assigned	-	-	17,763,384	15,390,753	12,194,651	12,194,650	6,803,899	6,203,899	6,303,899	7,228,892
Unassigned	-	-	25,858,045	24,689,814	19,774,006	27,672,310	34,353,647	31,006,208	38,741,459	47,532,700
<b>Total general fund</b>	<b>\$ 63,627,969</b>	<b>\$ 60,390,245</b>	<b>\$ 52,600,373</b>	<b>\$ 46,747,777</b>	<b>\$ 38,592,912</b>	<b>\$ 45,779,148</b>	<b>\$ 47,764,514</b>	<b>\$ 44,192,913</b>	<b>\$ 52,491,499</b>	<b>\$ 66,055,806</b>
<b>All Other Governmental Funds</b>										
Reserved for encumbrances	\$ 130,688,267	\$ 186,009,142	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Reserved for debt service	-	-	-	-	-	-	-	-	-	-
Unreserved, reported in:										
Special revenue funds	203,673,852	237,563,798	-	-	-	-	-	-	-	-
Restricted	-	-	26,138,656	191,730,455	331,962,118	335,633,672	283,454,187	311,026,727	412,358,550	464,158,310
Committed	-	-	174,297,108	127,200,107	29,141,240	65,757,643	59,667,932	63,076,528	54,549,958	51,447,457
Assigned	-	-	272,132,633	210,588,937	169,437,574	135,253,835	126,111,461	125,654,185	142,085,357	161,309,146
Unassigned	-	-	(6,778,697)	(1,970,036)	-	(27,710)	(287,178)	(3,518,332)	(1,554,957)	(57,656)
<b>Total all other governmental func</b>	<b>\$ 334,362,119</b>	<b>\$ 423,572,940</b>	<b>\$ 465,789,700</b>	<b>\$ 527,549,463</b>	<b>\$ 530,540,932</b>	<b>\$ 536,617,440</b>	<b>\$ 468,946,402</b>	<b>\$ 496,239,108</b>	<b>\$ 607,438,908</b>	<b>\$ 676,857,257</b>

\*Effective fiscal year 2010-11, fund balances are presented to conform with GASB No. 54.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**Schedule 4**  
**Changes in Fund Balances of Governmental Funds**  
**Last Ten Fiscal Years**  
**(modified accrual basis of accounting)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Revenues:</b>										
Emission fees	\$ 24,826,356	\$ 19,663,671	\$ 21,371,061	\$ 19,714,882	\$ 20,540,391	\$ 20,472,379	\$ 19,838,979	\$ 18,984,919	\$ 18,964,371	\$ 22,786,661
Annual renewal fees	43,285,892	41,191,933	41,342,340	42,189,557	43,056,220	44,260,635	45,759,738	47,592,793	48,930,776	52,182,769
Area Sources	1,226,651	1,445,715	2,503,791	2,808,927	2,132,263	2,819,001	2,573,959	2,226,172	2,090,207	2,293,947
Permit processing fees	20,396,188	16,316,076	16,007,058	15,658,916	17,210,640	16,945,777	16,668,485	17,239,759	20,729,207	19,538,295
Mobile sources / Clean fuels	66,087,019	65,843,960	63,704,363	69,689,913	67,441,546	69,688,940	70,953,981	73,011,225	75,104,035	74,450,510
Air Toxics "Hot Spots"	2,026,249	1,977,074	1,824,327	1,833,488	1,917,252	1,954,650	2,039,612	2,373,579	2,645,644	2,538,246
Transportation program	894,440	836,557	885,263	848,829	927,824	877,816	845,236	891,991	840,322	845,718
State subvention	3,994,067	3,986,029	3,978,200	3,949,672	3,948,646	3,949,439	3,947,386	3,944,602	3,945,090	3,939,075
Federal grant	12,544,767	13,620,752	15,543,549	27,508,859	19,468,654	23,713,303	32,939,310	11,521,785	15,399,372	11,887,333
State grant	74,017,124	165,001,635	87,403,616	128,099,308	101,432,241	80,762,239	60,717,715	38,050,172	125,988,646	83,101,876
Interest revenue	10,448,326	6,224,115	6,556,895	4,962,021	3,677,620	3,824,484	3,766,327	4,100,302	6,296,761	10,739,589
Lease revenue	379,440	371,104	380,431	281,284	140,739	133,916	141,878	141,195	156,204	147,660
Source test/analysis fees	579,607	486,075	636,822	759,784	790,824	697,133	746,399	683,328	734,258	663,011
Hearing Board fees	436,385	327,344	201,864	221,709	277,544	342,508	531,879	163,960	187,733	351,979
Penalties and settlements	9,469,694	11,346,122	7,348,657	6,006,391	11,642,529	17,959,410	8,733,773	8,475,935	11,511,570	15,801,455
Subscriptions	15,519	10,363	7,760	6,095	1,630	3,498	2,136	2,842	1,097	436
Other revenues	2,968,677	23,288,416	63,269,554	4,486,199	2,880,775	10,687,052	6,249,773	18,176,910	27,575,590	29,871,943
<b>Total revenues</b>	<b>\$ 273,596,401</b>	<b>\$ 371,936,941</b>	<b>\$ 332,965,551</b>	<b>\$ 329,025,834</b>	<b>\$ 297,487,338</b>	<b>\$ 299,092,180</b>	<b>\$ 276,456,566</b>	<b>\$ 247,581,469</b>	<b>\$ 361,100,883</b>	<b>\$ 331,140,503</b>
<b>Expenditures:</b>										
Salaries and employee benefits	\$ 95,793,414	\$ 99,192,010	\$ 99,773,382	\$ 101,364,885	\$ 102,289,888	\$ 101,023,768	\$ 102,127,845	\$ 104,908,690	\$ 110,044,224	\$ 115,342,430
Insurance	1,228,273	1,024,939	1,039,020	882,871	1,078,546	1,258,577	1,202,650	1,148,390	1,131,980	1,503,440
Rent	524,712	535,733	589,248	532,089	620,723	527,991	556,323	509,395	540,386	550,641
Supplies	3,035,346	2,997,815	2,600,630	2,371,901	2,894,275	2,647,163	2,588,866	2,519,673	3,035,619	3,375,314
Contract and special services	114,897,344	160,153,501	171,344,881	145,316,505	162,672,155	159,679,349	219,251,382	95,288,291	108,413,444	109,427,946
Maintenance	1,423,541	1,152,411	1,273,060	1,183,238	1,425,557	1,445,271	1,270,417	1,712,754	1,287,341	1,787,868
Travel and auto	746,705	694,696	707,050	791,042	753,860	739,784	783,720	703,392	877,137	1,107,393
Utilities	1,713,817	1,483,855	1,495,435	1,342,945	1,405,249	1,637,327	1,809,594	1,717,980	1,411,075	1,520,114
Communications	560,274	598,674	598,958	587,930	580,569	629,542	635,977	679,666	577,753	614,018
Uncollectible accounts	683,945	753,072	891,794	953,792	454,094	1,116,103	7,982	444,485	400,929	412,184
Other expenditures	691,833	1,303,225	2,767,725	2,544,090	2,179,367	4,578,992	1,665,715	3,004,689	2,023,075	1,996,218
Capital outlay	3,670,377	2,835,795	2,170,102	2,051,740	3,261,458	3,351,887	3,050,388	4,032,806	4,669,042	4,583,914
Debt service:										
Principal	8,695,000	9,165,000	10,090,000	10,250,000	18,177,007	3,099,025	3,159,384	3,235,598	3,331,010	3,432,798
Interest	4,442,290	4,073,116	3,540,602	2,945,639	4,857,985	4,094,658	4,031,995	3,954,555	3,863,482	3,756,716
<b>Total expenditures</b>	<b>\$ 238,106,871</b>	<b>\$ 285,963,843</b>	<b>\$ 298,881,886</b>	<b>\$ 273,118,666</b>	<b>\$ 302,650,733</b>	<b>\$ 285,829,437</b>	<b>\$ 342,142,238</b>	<b>\$ 223,860,364</b>	<b>\$ 241,602,497</b>	<b>\$ 249,410,994</b>
Excess (deficiency) of revenues over (under) expenditures	35,489,530	85,973,097	34,083,665	55,907,168	(5,163,395)	13,262,743	(65,685,672)	23,721,105	119,498,386	81,729,509
<b>Other financing sources (uses):</b>										
Transfer in	25,907,899	4,362,357	17,056,936	8,670,107	38,364,134	19,653,981	9,768,512	10,777,488	8,540,141	10,713,791
Transfer out	(25,907,899)	(4,362,357)	(17,056,936)	(8,670,107)	(38,364,134)	(19,653,981)	(9,768,512)	(10,777,488)	(8,540,141)	(9,460,644)
<b>Total other financing sources (uses)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,253,147</b>						
<b>Net change in fund balances</b>	<b>\$ 35,489,530</b>	<b>\$ 85,973,097</b>	<b>\$ 34,083,665</b>	<b>\$ 55,907,168</b>	<b>\$ (5,163,395)</b>	<b>\$ 13,262,743</b>	<b>\$ (65,685,672)</b>	<b>\$ 23,721,105</b>	<b>\$ 119,498,386</b>	<b>\$ 82,982,656</b>
Debt service as a percentage of noncapital expenditures	5.6%	4.7%	4.6%	4.9%	7.7%	2.5%	2.1%	3.3%	3.0%	2.9%

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
 Schedule 5  
 Expenditures by Major Object  
 General Fund (Budgetary Basis)  
 Last Ten Fiscal Years



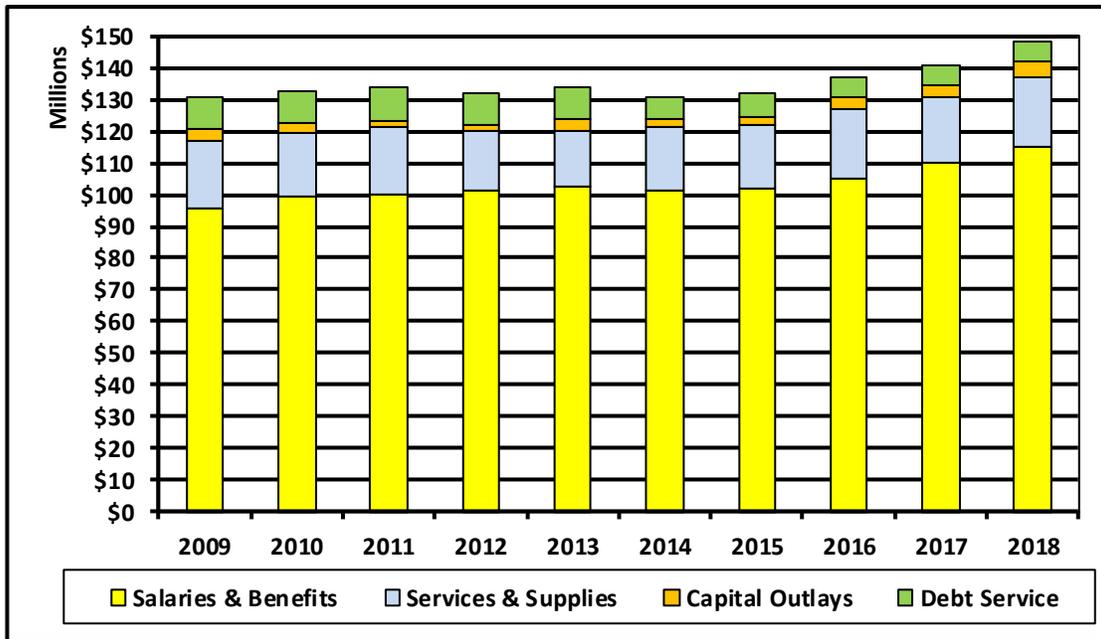
Year	Salaries & Benefits	Services & Supplies	Capital Outlays	Debt Service	Total Expenditures
2009	95,793,414	23,732,428	2,409,605	10,137,290	132,072,737
2010	99,192,009	21,806,505	1,592,415	10,238,116	132,829,044
2011	99,773,382	23,397,710	1,198,178	10,630,602	134,999,872
2012	101,364,885	17,799,716	3,261,876	10,195,639	132,622,116
2013	102,289,888	19,052,813	3,053,754	10,219,978	134,616,433
2014	101,023,768	19,989,096	2,695,286	7,193,683	130,901,833
2015	102,127,842	20,074,713	4,031,026	7,191,379	133,424,960
2016	104,908,689	23,338,580	3,074,374	6,190,153	137,511,796
2017	110,077,989	21,757,613	4,037,890	6,194,492	142,067,984
2018	115,425,019	23,951,490	7,301,002	6,189,514	152,867,025

See Notes Associated with Financial Charts page 123

Source:

South Coast Air Quality Management District Audited Financial Statements

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
 Schedule 6  
 Expenditures by Major Object  
 General Fund (GAAP Basis)  
 Last Ten Fiscal Years



Year	Salaries & Benefits	Services & Supplies	Capital Outlays	Debt Service	Total Expenditures
2009	95,793,414	21,227,874	3,670,377	10,137,290	130,828,955
2010	99,192,009	20,335,515	2,835,795	10,238,116	132,601,435
2011	99,773,382	21,403,118	2,170,102	10,630,602	133,977,204
2012	101,364,885	18,706,143	2,051,740	10,195,639	132,318,407
2013	102,289,888	18,066,145	3,261,458	10,219,978	133,837,469
2014	101,023,768	20,469,780	2,203,171	7,193,683	130,890,402
2015	102,127,845	19,683,561	2,910,271	7,191,379	131,913,056
2016	104,908,690	22,007,495	3,674,227	6,190,153	136,780,565
2017	110,040,224	20,903,669	3,455,686	6,194,492	140,594,071
2018	115,342,430	21,995,126	4,579,695	6,189,514	148,106,765

See Notes Associated with Financial Charts page 123

Source:

South Coast Air Quality Management District Audited Financial Statements

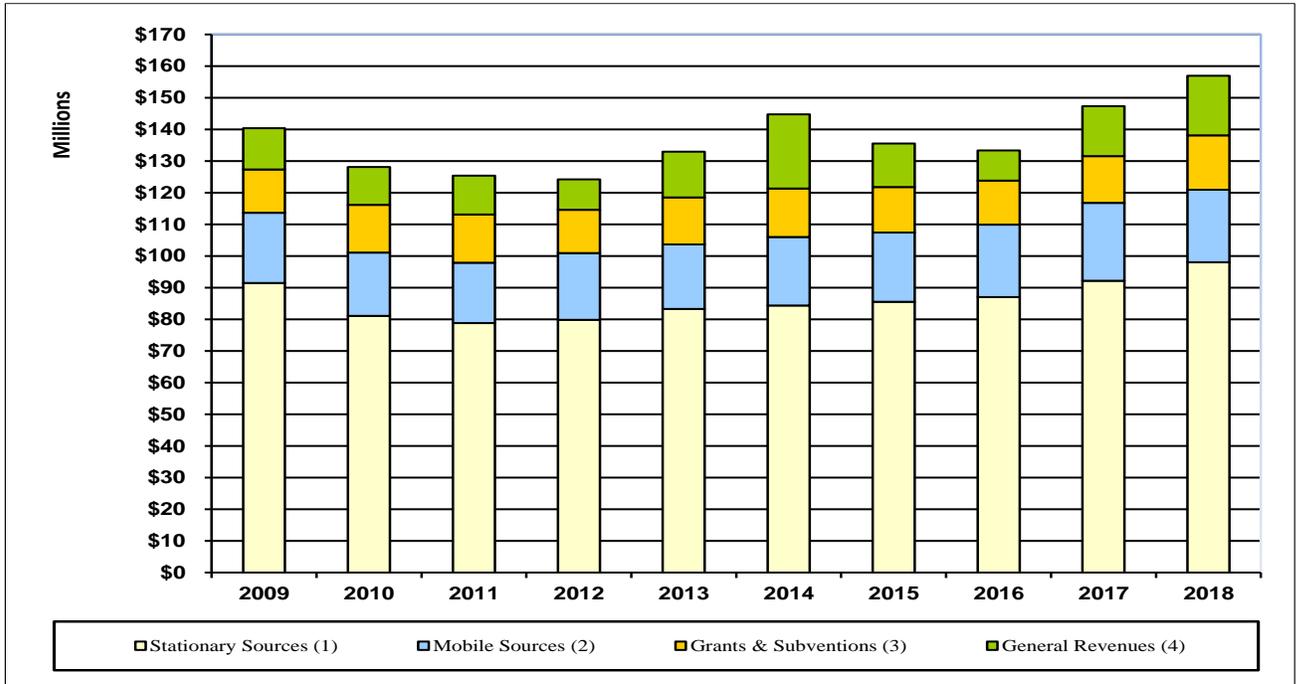
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
Schedule 7  
Debt Capacity  
Ratios of Outstanding Debt by Type  
Last Ten Fiscal Years  
(amounts expressed in thousands)

Fiscal Year	Governmental Activities		Total Primary Government	Percentage of Total Revenues (*)	Number of Customers	Per Customer
	Installment Sale Revenue Bonds	Pension Obligation Bonds				
2009	\$ 30,410	56,407	86,817	61.83%	28	3
2010	25,745	51,907	77,652	60.60%	28	3
2011	20,370	47,192	67,562	53.87%	28	2
2012	15,130	42,182	57,312	46.15%	28	2
2013	-	39,135	39,135	29.48%	28	1
2014	-	36,036	36,036	24.89%	27	1
2015	-	32,876	32,876	24.26%	27	1
2016	-	29,641	29,641	22.23%	27	1
2017	-	26,310	26,310	17.86%	26	1
2018	-	22,877	22,877	14.58%	27	1

The South Coast Air Quality Management District is a regional government and is not authorized to issue long-term debt (General Obligation Bonds). The Pension Obligation Bonds are refunding bonds of outstanding debt owed the San Bernardino County Employees' Retirement Association. The South Coast Air Quality Management District has no long-term debt limits.

(\*) These percentages are calculated using Total Revenues, Schedule 8.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
 Schedule 8  
 Revenues by Major Source  
 General Fund  
 Last Ten Fiscal Years



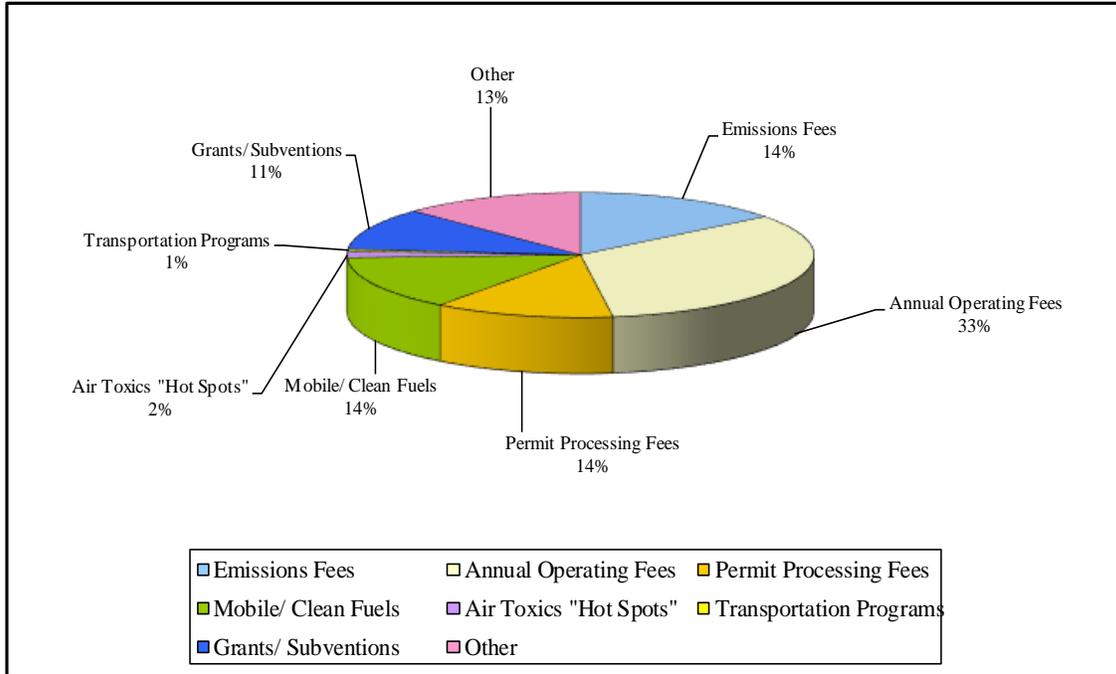
Year	Stationary Sources (1)	Mobile Sources (2)	Grants & Subventions (3)	General Revenues (4)	Total Revenues
2009	91,472,243	22,166,119	13,679,151	13,093,394	140,410,907
2010	81,097,647	19,994,596	15,039,879	12,002,573	128,134,695
2011	78,787,371	19,109,043	15,189,462	12,324,164	125,410,040
2012	79,815,562	21,149,810	13,611,764	9,602,853	124,179,989
2013	83,307,359	20,324,940	14,853,666	14,446,084	132,932,049
2014	84,341,483	21,654,072	15,285,284	23,499,350	144,780,189
2015	85,546,869	21,833,199	14,399,753	13,729,825	135,509,646
2016	87,038,338	22,859,620	13,934,946	9,489,698	133,322,602
2017	92,189,311	24,574,498	14,768,699	15,810,131	147,342,639
2018	98,060,961	22,861,428	17,207,484	18,805,726	156,935,599

- (1) Includes Emissions, Annual Operating, Permit, Air Toxics "Hot Spots," Source Test/Analysis, and Hearing Board fees
- (2) Includes AB2766 Mobile Source, Clean Fuels, and Transportation Programs revenues
- (3) Includes State Subventions, State Grants and Federal Grants
- (4) Includes Area Sources, Penalties & Settlements, Interest, Lease Revenue, Other Revenue and Subscriptions

See Notes Associated with Financial Charts page 124

Source: South Coast Air Quality Management District Audited Financial Statements

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**Schedule 9**  
**Revenues by Fee Source**  
**General Fund**  
**Last Ten Fiscal Years**



Fee Source Revenue									
Year	Emissions Fees	Annual Operating Fees	Permit Processing Fees	Mobile/ Clean Fuels	Air Toxics "Hot Spots"	Transportation Programs	Grants/ Subventions	Other	Total
2009	24,826,356	43,285,892	20,396,188	21,271,679	1,947,813	894,440	13,679,151	14,109,387	140,410,906
2010	19,663,671	41,191,933	16,316,076	19,158,039	1,666,699	836,557	15,039,879	14,261,841	128,134,695
2011	19,246,061	41,342,340	16,007,058	18,223,780	1,353,226	885,263	15,189,462	13,162,850	125,410,040
2012	19,714,882	42,189,557	15,658,916	20,300,981	1,270,714	848,829	13,611,764	10,584,346	124,179,989
2013	20,540,391	43,056,220	17,210,640	19,397,116	1,431,740	927,824	14,853,666	15,514,452	132,932,049
2014	20,472,379	44,260,635	16,945,777	20,776,256	1,623,051	877,816	15,285,284	24,538,991	144,780,189
2015	19,838,979	45,759,738	16,668,485	20,987,963	2,001,389	845,236	14,399,753	15,008,103	135,509,646
2016	18,984,919	47,592,793	17,239,759	21,967,629	2,373,579	891,991	13,934,946	10,336,986	133,322,602
2017	18,964,371	48,930,776	20,729,207	23,734,176	2,642,966	840,322	14,768,699	16,732,122	147,342,639
2018	22,786,661	52,182,769	19,538,295	22,015,710	2,538,246	845,718	17,207,484	19,820,716	156,935,599

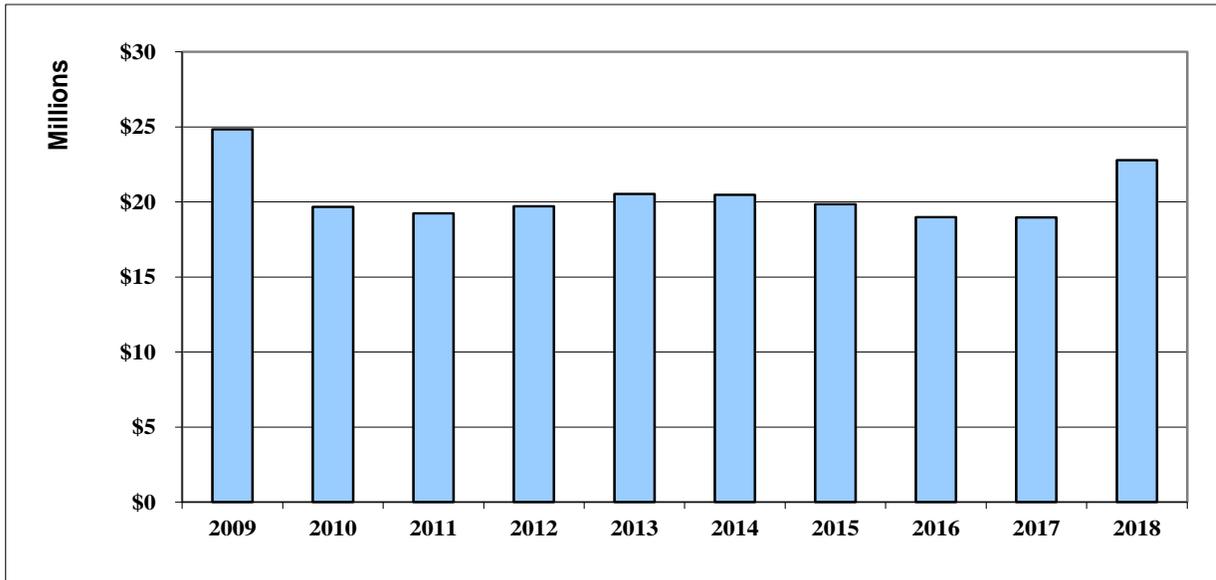
\* Other includes Area Sources, Penalties and Settlements, Interest, Source Test/Analysis Fees, Lease Revenue, Hearing Board, Other Revenue and Subscriptions.

See Notes Associated with Financial Charts page 124

Source:

South Coast Air Quality Management District Audited Financial Statements

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
 Schedule 10  
 Emission Fee Revenues  
 Last Ten Fiscal Years



Year	Emission Fees
2009	24,826,356
2010	19,663,671
2011	19,246,061
2012	19,714,882
2013	20,540,391
2014	20,472,379
2015	19,838,979
2016	18,984,919
2017	18,964,371
2018	22,786,661

See Notes Associated with Financial Charts page 125

Source: South Coast Air Quality Management District Audited Financial Statements

## Notes Associated with Financial Charts

### **Schedule 5 - Expenditures by Major Object (General Fund Budgetary Basis)**

- The increase in 2018 expenditures from 2017 is mainly due to the adding positions for the AB 617 and AB 134 programs and the costs associated with the three year labor agreement and with State Disability Insurance, employer share of unemployment insurance, Social Security and Medicare.
- The increase in 2017 expenditures from 2016 is mainly due to the hiring of some grant funded positions and the contribution rates provided from the San Bernardino County Retirement Association (SBCERA).
- The increase in 2016 expenditures from 2015 includes the costs associated with the three year labor agreement. The rents and leases for equipment also increased. In addition, the professional and special services increased due to new or additional projects for outside building consultants, community outreach, and planning and rule development activities.
- In 2015 the increase in Capital Outlays of approximately \$1.3M is mainly due to large purchases of vehicles and replacements of operational systems.
- The decrease in 2014 expenditures from 2013 is mainly due to a significant reduction in debt. As of June 2013, the 2002 Series Installment Sale Bonds were legally defeased.
- The increase in 2013 expenditures from 2012 is mainly due to the rising retirement and medical insurance costs.
- The decrease in 2012 expenditures is due to a significant reduction in Services and Supplies.
- The increase in 2011 expenditures from 2010 is mainly due to the increase in expenditures for Contract and Special Services.
- The increase in 2010 Salaries & Benefits expenditures from 2009 is mainly due to the hiring of vacant FTEs and rising retirement costs.
- The increase in 2009 expenditures from 2008 is mainly due to the hiring of vacant FTEs and rising retirement costs.

### **Schedule 6 - Expenditures by Major Object (General Fund GAAP Basis)**

- The increase in 2018 expenditures from 2017 is mainly due to the adding positions for the AB 617 and AB 134 programs and the costs associated with the three year labor agreement and with State Disability Insurance, employer share of unemployment insurance, Social Security and Medicare. Also, the increase in Capital Outlays reflects anticipated needs.
- The increase in 2017 expenditures from 2016 is mainly due to the hiring of some grant funded positions and the contribution rates provided from the San Bernardino County Retirement Association (SBCERA).
- The increase in 2016 expenditures from 2015 includes the costs associated with the three year labor agreement. The rents and leases for equipment also increased. In addition, the professional and special services increased due to new or additional projects for outside building consultants, community outreach, and planning and rule development activities.
- The small increase in 2015 expenditures from 2014 is mainly due to the rise in the contribution cost for retirement and purchases of vehicles.
- The decrease in 2014 expenditures from 2013 is mainly due to a significant reduction in debt. As of June 2013, the 2002 Series Installment Sale Bonds were legally defeased.
- The increase in 2013 expenditures from 2012 is mainly due to the rising retirement and medical insurance costs. In addition, Capital Outlays expenditures increased due to the large purchase of CNG vehicles and the replacement of some boilers and associated equipment.
- The decrease in 2012 expenditures is due to a significant reduction in Services and Supplies.
- The increase in 2011 expenditures from 2010 is mainly due to the increase in Contract and Special Services.
- The increase in 2010 expenditures from 2009 is mainly due to the hiring of vacant FTEs and rising retirement costs. In addition, Capital Outlays expenditures decreased due to asset retirements.

- The increase in 2009 expenditures from 2008 is mainly due to the hiring of vacant FTEs and rising retirement costs. In addition, Capital Outlays expenditures increased due to payments on prior year encumbrances.

#### **Schedule 8 - Revenues by Major Source (General Fund)**

- The increase in 2018 revenue reflects emission fees increase under the stationary sources and large penalties/settlements from facilities that were found not to be in compliance with SCAQMD rules and regulations under the General Revenue category.
- The large increase in 2017 revenue reflects large penalties/settlements from facilities that were found not to be in compliance with SCAQMD rules and regulations, which increased the General Revenue category.
- The decrease in 2016 revenue from 2015 is mainly due to the decrease in Penalties & Settlements in the General Revenues category.
- The large decrease in 2015 revenues is mainly due to the decrease in Penalties & Settlements for violations of permit conditions, SCAQMD Rules, or state law.
- Revenues increased significantly in 2014 because the SCAQMD received several large penalties/settlements from facilities that were found to be not in compliance with SCAQMD rules and regulations.
- Revenues increased significantly in 2013 because the SCAQMD received several large penalties/settlements from facilities that were found to be not in compliance with SCAQMD rules and regulations.
- The decrease in 2012 revenue is due to the decrease in Penalties & Settlements in General Revenues, and the reduction in Grants & Subventions.
- In 2011 the decrease in the Stationary Sources and Mobile Sources revenues are mainly due to the decrease in all the fee source revenues.
- The decrease in 2010 revenue is attributable to the economic downturn and declining emissions; however, the overall decline is mitigated by several large, unanticipated one time penalties/settlements.
- The increase in 2009 General Revenue reflects the fact that the number and magnitude of penalties and settlements can vary from year to year.

#### **Schedule 9 - Revenues by Fee Source (General Fund)**

- The increase in 2018 revenue from 2017 is mainly due to the increase of emission fees. Other revenues increased because the SCAQMD received large penalties/settlements from facilities that were found not to be in compliance with SCAQMD rules and regulations, which increased the General Revenue category.
- Other revenues increased significantly in 2017 because the SCAQMD received large penalties/settlements from facilities that were found not to be in compliance with SCAQMD rules and regulations, which increased the General Revenue category.
- The decrease in 2016 revenue from 2015 is mainly due to the decrease in Penalties & Settlements in the Other Revenues category.
- The large decrease in 2015 revenues is mainly due to the decrease in Penalties & Settlements for violations of permit conditions, SCAQMD Rules, or state law.
- Revenues increased significantly in 2014 because the SCAQMD received several large penalties/settlements from facilities that were found to be not in compliance with SCAQMD rules and regulations.
- Other revenues increased significantly in 2013 because the SCAQMD received several large penalties/settlements from facilities that were found to be not in compliance with SCAQMD rules and regulations.
- The decrease in 2012 revenue is due to the decrease in Penalties & Settlements in General Revenues, and the reduction in Grants & Subventions.
- The decrease in 2011 revenue from 2010 is mainly due to the decreases in Mobile Source revenue and Penalties and Settlements revenue.
- In 2010, all fee source revenues declined. The increase in Grants/Subventions revenue is attributable to a full year of administrative cost reimbursement for Prop 1B.

- In 2009, Annual Operating Fees and Permit Fees increased by 10% in 2009.

#### **Schedule 10 – Emission Fee Revenues**

- There was an increase in emission fees revenue in 2018 related to fee increase.
- There was a small decrease in emission fees revenue in 2017 due to gradually decreasing emissions.
- There was a small decrease in emission fees revenue in 2016 due to gradually decreasing emissions.
- There was a small decrease in emission fees revenue in 2015. Emission fees vary with the non-RECLAIM and RECLAIM emissions, and the flat emission fees of active facilities.
- The small increase in 2013 is due to a fee increase that was effective July 1, 2012.
- In 2010, emission fees decreased as a result of reduced emissions at major refineries and large facilities.
- The 2009 emission fees increased due to a 10% fee increase; offset by continued declining emissions.
- There was an increase in emission fees revenue in 2008 related to a 10% fee increase. However, the impact on the revenue is lower than the 10% due to a general decline in emissions.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
Schedule 11  
Revenue Capacity  
Largest Payers of Emission-Based Fees at a Single Location  
Current Year and Ten Years Ago

Payer	FY 2017-2018			FY 2007-2008		
	Payment	Rank	% of Total Emission Fee	Payment	Rank	% of Total Emission Fee
Torrance Refinery Co LLC (Formerly Exxon Mobil Corporation)	\$2,144,077	1	9.4%	\$1,979,605	2	8.6%
Tesoro Refining and Marketing	1,911,260	2	8.4%	2,060,184	1	8.9%
Chevron Products	1,842,021	3	8.1%	1,764,790	3	7.6%
Tesoro Refining and Marketing (Formerly Equilon)	1,316,368	4	5.8%	1,415,106	4	6.1%
Phillips 66 Company (Formerly Conoco and formerly Tosco Refining Co)*	940,282	5	4.1%	1,276,739	5	5.5%
Phillips 66 Company (Formerly Conoco and formerly Tosco Refining Co)*	653,426	6	2.9%	566,655	8	2.5%
Tesoro Refining and Marketing (formerly BP ARCO West Coast Products)*	576,215	7	2.5%			
Ultramar Incorporated	559,977	8	2.5%	848,634	6	3.7%
City of Long Beach, SERRF Project	235,874	9	1.0%	214,328	14	0.9%
Dart Container Corp of California	177,022	10	0.8%	225,240	12	1.0%
Desert View Power	164,882	11	0.7%			
Southern California Edison (Avalon)	145,336	12	0.6%	169,803	17	0.7%
Beta Off Shore	142,122	13	0.6%			
New Indy Ontario LLC	138,793	14	0.6%			
Cal Portland Cement Company	138,543	15	0.6%	771,564	7	3.3%
LA County Sanitation District	136,574	16	0.6%	195,331	16	0.8%
Rexam Beverage Can Company	126,717	17	0.6%			
Tamco	124,492	18	0.5%			
Anheuser-Busch Incorporated	122,118	19	0.5%	157,815	18	0.7%
Equilon Enterprises, LLC, Shell Oil Products US (formerly Texaco Refining)	116,972	20	0.5%			
Paramount Petroleum Company	-	-	-	288,112	9	1.2%
Rhodia Incorporated	-	-	-	262,961	10	1.1%
Mountainview Generating Station				254,833	11	1.1%
BP West Coast Products LLC	-	-	-	222,616	13	1.0%
Southern California Gas Company	-	-	-	209,833	15	0.9%
All American Asphalt				152,581	19	0.7%
Colmac Energy	-	-	-	150,443	20	0.7%
Total Paid by Largest Payers at a Single Location	<u>\$ 11,713,071</u>		51.3%	<u>\$ 13,187,173</u>		57.0%
Total Emissions Based Fees Paid by All Emitters	<u>\$ 22,786,661</u>			<u>\$ 23,100,073</u>		

\*Located at separate sites.

## **KEY AIR QUALITY AND DEMOGRAPHIC INFORMATION REGARDING THE REGION INCLUDED IN THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

The South Coast Air Quality Management District includes all of Orange County and parts of Los Angeles, Riverside and San Bernardino Counties. The section below provides a brief description of each county.

Measuring 4,084 square miles, *Los Angeles County* is one of the nation's largest counties. It is the most populated county in the state of California and contains the most populated city in the state, the City of Los Angeles. Before World War II, Los Angeles County was one of the nation's foremost agricultural producers. As agricultural production declined, the economy has evolved into diverse areas that include trade, transportation, and utilities, government, educational and health services, professional and business services, and manufacturing. Tourism and entertainment as well as international trade also play a vital role in the county's economy. The county is home to the twin seaports of Los Angeles and Long Beach, together the nation's largest, as well as the single largest fixed source of air pollution in the region. The two ports are responsible for more smog-forming nitrogen oxide emissions than 7 million cars.

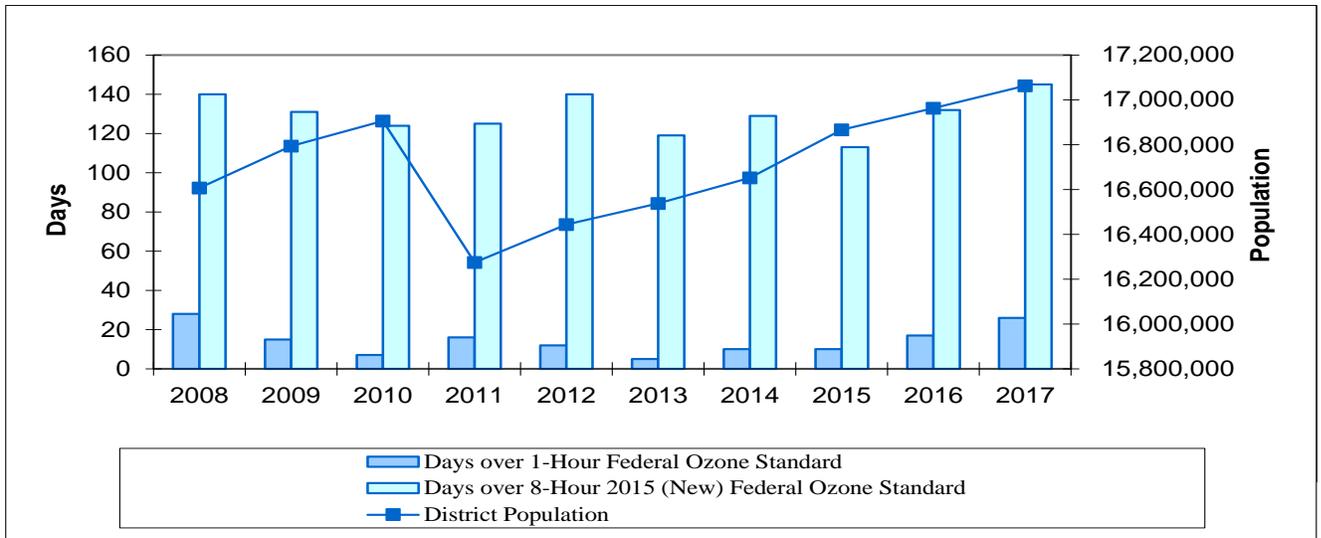
*Orange County* is the third most populated county in the state and lies south of Los Angeles County. When created in 1889, Orange County was named for its abundance of orange groves and thriving agricultural industry. Today, the largest industry employers are trade, transportation, and utilities, professional and business services, and manufacturing.

The varied topography of *Riverside County* is characterized by fertile river valleys to rolling plains and foothills to deserts below sea level and mountain peaks above 10,000 feet. Recent years have brought dramatic population growth to Riverside County. The population is expected to increase by 1.3 percent in 2016. Annual growth in the 2016 - 2021 period is expected to average 1.5 percent. The county's early years were linked to the agriculture industry, but commerce, construction, manufacturing, transportation, and tourism have contributed to the county's substantial growth. The County is also a major distribution center for Southern California and the Pacific Rim.

Roughly 90 percent of *San Bernardino County* is desert and the remaining portion consists of the San Bernardino Valley and San Bernardino Mountains. San Bernardino County and Riverside County are collectively known as the Inland Empire. San Bernardino ranks as the fifth-highest populated county in California from 2016 to 2021, population growth is expected to average 1.0 percent per year. The economy is led by services, government, retail trade, and manufacturing industries. Additionally, the county consistently ranks in the top fifteen agricultural-producing counties in the state.

All four counties within the South Coast Air Quality Management District's jurisdiction have experienced significant population growth in the last few years. The following charts illustrate air pollution, demographic, employment, and motor vehicle information relating to the South Coast Air Quality Management District region.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**Schedule 12**  
**South Coast Air Basin Smog Trend**  
**Last Ten Calendar Years**



Year	Days over 1-Hour Federal Ozone Standard	Days over 8-Hour 2015 (New) Federal Ozone Standard	District Population
2008	28	140	16,607,472
2009	15	131	16,793,784
2010	7	124	16,906,456
2011	16	125	16,274,797
2012	12	140	16,444,162
2013	5	119	16,538,490
2014	10	129	16,652,810
2015	10	113	16,866,350
2016	17	132	16,962,478
2017	26	145	17,063,249

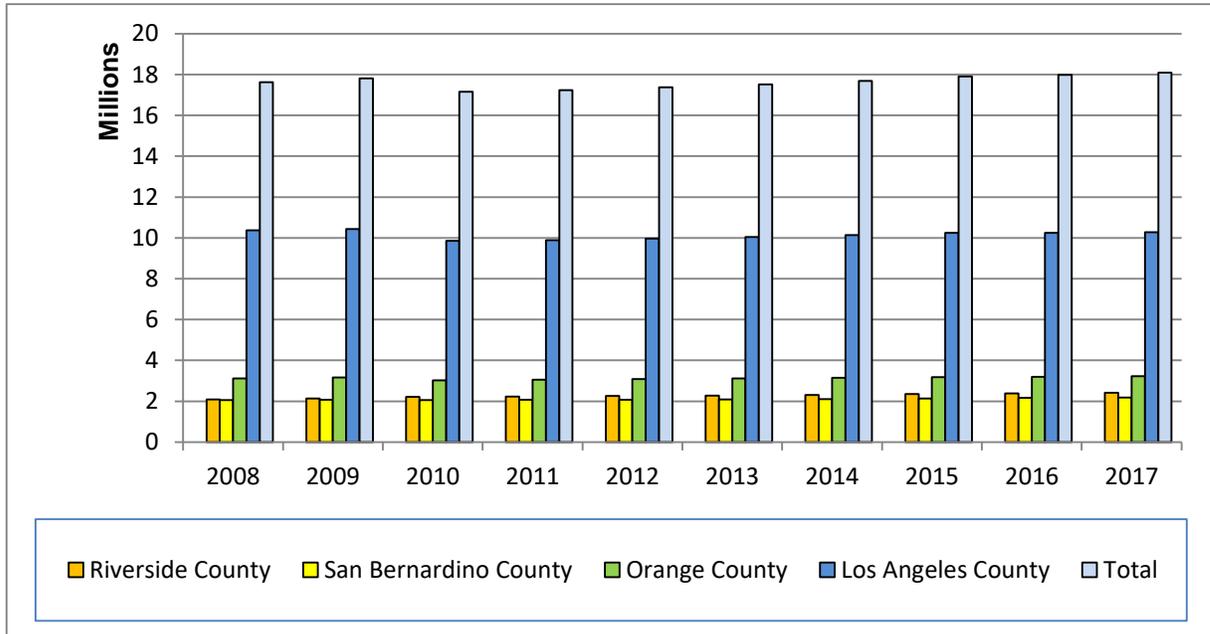
**Notes:**

- The average number of days exceeding the federal ozone standard in the Basin decreased by 54% between the three-year period of 1976-78 and 2011-13.
- Favorable weather conditions and continued implementation of the air pollution control strategy contributed to the significant decrease in Days over the 1-Hour Ozone Standard in the recent decades.
- In 1997, the federal government implemented the 8-hour ozone National Ambient Air Quality Standard. The standard was revised in 2015 from 75 ppb to 70 ppb.

**Source:**

South Coast Air Quality Management District ([www.aqmd.gov](http://www.aqmd.gov)); State Subvention Guidance.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**Schedule 13**  
**Four-County Area Population**  
**Last Ten Calendar Years**



Year	Riverside County	San Bernardino County	Orange County	Los Angeles County	Total	% Increase
2008	2,088,322	2,055,766	3,121,251	10,363,850	17,629,189	1.16%
2009	2,139,535	2,073,149	3,166,461	10,441,080	17,820,225	1.08%
2010	2,217,778	2,052,397	3,029,859	9,858,989	17,159,023	-3.71%
2011	2,227,577	2,063,919	3,055,792	9,884,632	17,231,920	0.42%
2012	2,255,059	2,076,274	3,081,804	9,958,091	17,371,228	0.81%
2013	2,279,967	2,085,669	3,113,991	10,041,797	17,521,424	1.68%
2014	2,308,441	2,104,291	3,147,655	10,136,559	17,696,946	1.00%
2015	2,347,828	2,139,570	3,183,011	10,241,335	17,911,744	1.21%
2016	2,384,783	2,160,256	3,194,024	10,241,278	17,980,341	0.38%
2017	2,415,955	2,174,938	3,221,103	10,283,729	18,095,725	0.64%

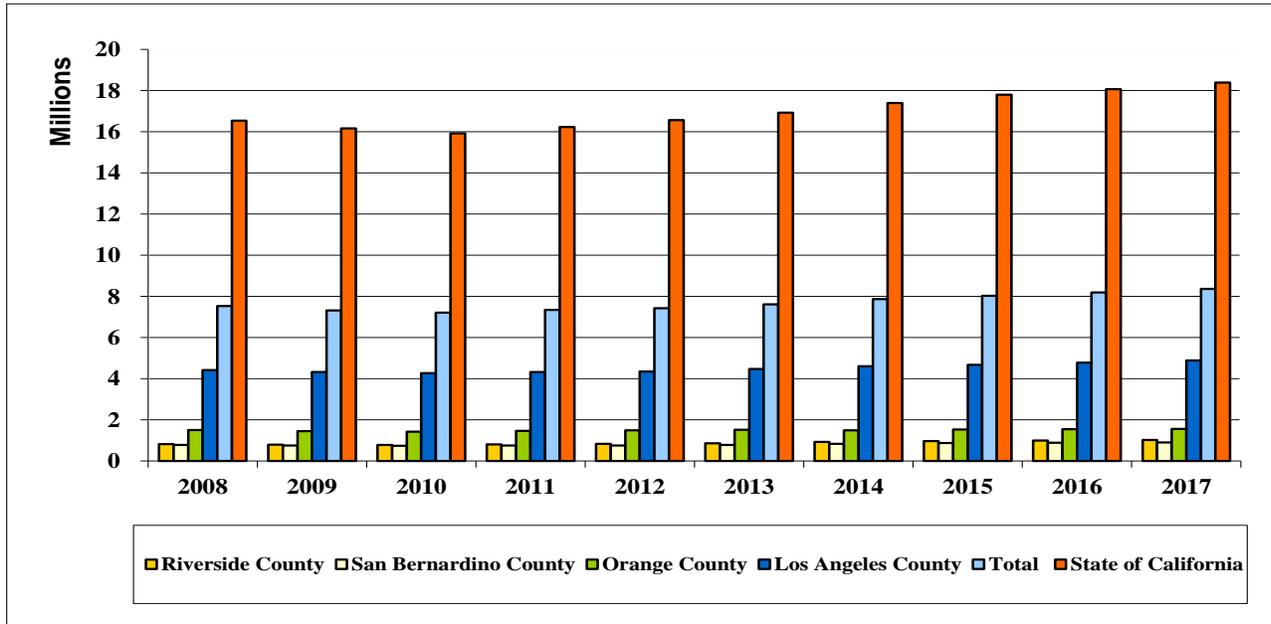
SCAQMD encompasses all of Orange County and parts of the Los Angeles, Riverside, and San Bernardino Counties, representing over 18 million residents.

Source:

California Department of Finance - Demographic Research Unit

[www.dof.ca.gov/budgeting/documents](http://www.dof.ca.gov/budgeting/documents)

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
 Schedule 14  
 Los Angeles, Orange, Riverside, San Bernardino  
 Counties, and State of California Civilian Employment  
 Last Ten Calendar Years



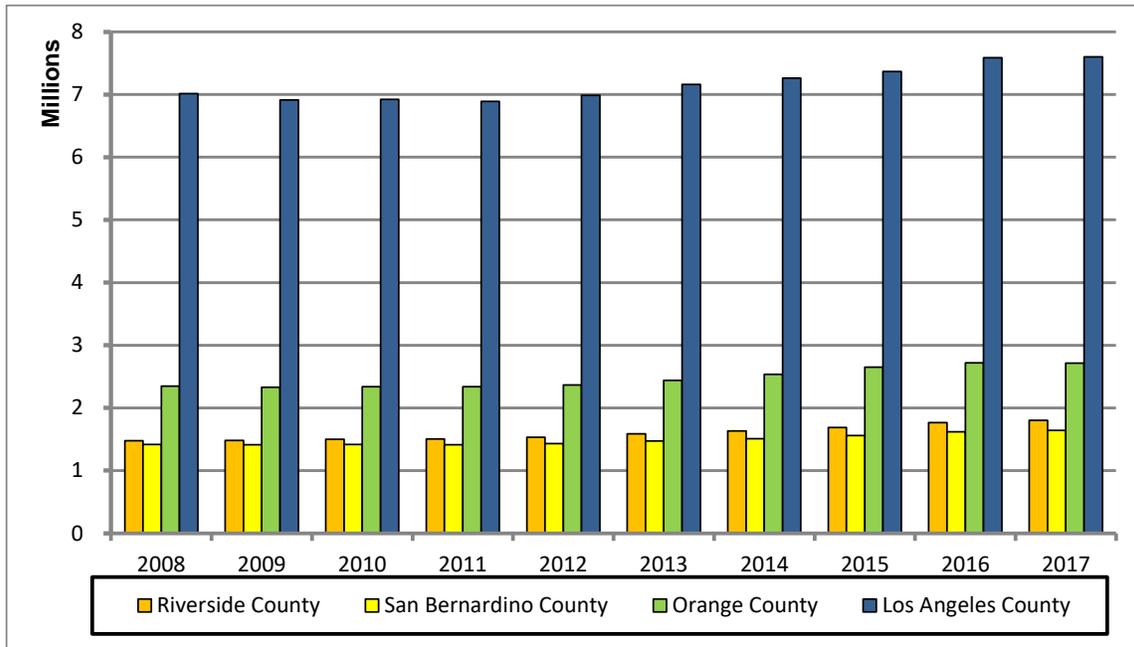
Year	Riverside County	San Bernardino County	Orange County	Los Angeles County	Total	State of California
2008	813,800	781,400	1,507,300	4,422,900	7,525,400	16,531,700
2009	790,000	751,600	1,451,000	4,328,600	7,321,200	16,163,900
2010	779,500	733,800	1,429,700	4,262,300	7,205,300	15,916,300
2011	810,600	747,100	1,464,400	4,318,900	7,341,000	16,226,600
2012	828,800	758,000	1,496,000	4,345,700	7,428,500	16,560,300
2013	855,300	778,100	1,510,600	4,470,700	7,614,700	16,933,300
2014	927,300	836,000	1,489,200	4,610,800	7,863,300	17,397,100
2015	965,500	866,800	1,525,600	4,674,800	8,032,700	17,798,600
2016	988,000	882,200	1,538,000	4,778,800	8,187,000	18,065,000
2017	1,016,200	904,200	1,562,600	4,883,600	8,366,600	18,393,100

Source:

State of California: Employment Development Department

[www.labormarketinfo.edd.ca.gov/cgi/dataanalysis](http://www.labormarketinfo.edd.ca.gov/cgi/dataanalysis)

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**Schedule 15**  
**Vehicle Registrations (Automobiles & Trucks)**  
**For Four County Area**  
**Last Ten Calendar Years**



Year	Riverside County	San Bernardino County	Orange County	Los Angeles County	Total District
2008	1,476,725	1,418,934	2,345,325	7,012,263	12,253,247
2009	1,480,616	1,410,411	2,327,428	6,913,586	12,132,041
2010	1,497,595	1,417,354	2,337,837	6,920,671	12,173,457
2011	1,502,571	1,412,652	2,336,315	6,892,687	12,144,225
2012	1,532,040	1,428,725	2,367,745	6,984,730	12,313,240
2013	1,587,494	1,470,974	2,440,330	7,159,182	12,657,980
2014	1,630,405	1,507,903	2,536,833	7,263,982	12,939,123
2015	1,689,523	1,557,196	2,649,420	7,368,979	13,265,118
2016	1,765,545	1,618,573	2,716,672	7,585,269	13,686,059
2017	1,799,962	1,642,888	2,713,892	7,599,579	13,756,321

SCAQMD encompasses all of Orange County, and parts of Los Angeles, Riverside, and San Bernardino counties.

Source:

California Department of Motor Vehicles - Estimated Vehicles Registered by County

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
Schedule 16  
Full-time Equivalent SCAQMD Employees by Function/Program  
Last Ten Fiscal Years

FUNCTION:	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
Executive Office	9	10	10	10	9	10	8	9	6	5
Clerk of the Boards	5	6	6	6	6	6	6	6	6	5
Legal *	-	-	-	-	-	-	-	-	27	28
District Counsel	13	13	12	11	11	12	12	10	-	-
District Prosecutor	19	19	20	21	18	19	20	19	-	-
Finance	44	45	43	42	41	44	41	40	42	44
Administrative & Human Resources	37	36	34	32	32	31	32	30	33	36
Information Management	49	48	49	48	47	47	46	47	45	47
Planning, Rule Development & Area Area Sources	108	105	103	96	88	85	85	85	94	111
Legislative, Public Affairs & Media	42	42	40	39	40	38	38	41	44	41
Science & Technology Advancement	160	156	146	143	144	144	150	148	145	159
Engineering & Compliance **	310	299	300	286	273	261	259	-	-	-
Engineering & Permitting	-	-	-	-	-	-	-	136	133	133
Compliance & Enforcement	-	-	-	-	-	-	-	110	127	119
<b>Total</b>	<b>796</b>	<b>779</b>	<b>763</b>	<b>734</b>	<b>709</b>	<b>697</b>	<b>697</b>	<b>681</b>	<b>702</b>	<b>728</b>

\* In fiscal year 2013, District Counsel and District Prosecutor merged to become the Legal department.

\*\* In fiscal year 2016, Engineering & Compliance split into two divisions: Engineering & Permitting and Compliance & Enforcement.

Source: Administrative and Human Resources (vacancy and item control reports).

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**Schedule 17**  
**Operating Indicators by Function**  
**Last Ten Fiscal Years**

<b><u>Program Category</u></b>	<b><u>2009</u></b>	<b><u>2010</u></b>	<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>	<b><u>2015</u></b>	<b><u>2016</u></b>	<b><u>2017</u></b>	<b><u>2018</u></b>
<b>Advance Clean Air Technology</b>										
Contracts awarded	292	530	526	556	938	523	1,047	421	403	357
Total Funding awarded	\$ 89,421,125	\$ 180,669,515	\$ 131,399,287	\$ 82,536,619	\$ 207,181,573	\$ 216,085,526	\$ 123,181,473	\$ 153,900,867	\$ 137,406,323	\$ 170,391,084
<b>Ensure Compliance with Clean Air Rules</b>										
Inspections	40,558	33,735	33,560	34,191	32,535	29,501	22,871	24,037	21,419	24,692
Notices of Violations	1,908	1,530	1,254	1,211	965	956	811	499	632	1,626
Hearing Board Orders for Abatement	36	35	47	93	51	46	41	23	27	24
Hearing Board Appeals	19	20	2	7	3	7	-	3	3	1
<b>Customer Service</b>										
Public Information Requests	4,962	3,821	3,410	3,543	3,460	4,505	4,012	4,958	5,282	4,676
Community/Public Meetings attended	198	202	190	274	294	264	217	239	210	156
Small Business Assistance Contacts	2,662	2,578	2,497	2,574	2,266	1,850	1,711	1,865	2,834	4,073
<b>Develop Programs to Achieve Clean Air</b>										
Transportation Plans processed	1,412	1,372	1,385	1,392	1,371	1,333	1,329	1,337	1,348	1,356
Emission Inventory Updates	586	703	521	530	408	460	336	356	244	343
<b>Develop Rules to Achieve Clean Air</b>										
Rules Developed	32	15	40	8	20	24	24	16	15	28
<b>Monitoring Air Quality</b>										
Samples Analyzed by the Laboratory	25,400	29,685	28,915	29,520	32,520	29,340	30,824	32,400	38,541	36,342
Source Testing Analyses/Evaluations/Reviews	718	740	1,030	952	1,035	968	996	936	952	714
<b>Timely Review of Permits</b>										
Applications Processed	11,564	9,627	13,044	12,225	14,153	13,217	9,495	9,482	11,780	10,913
Applications Received-Small Business	627	694	798	732	615	514	629	594	535	605
Applications Received-All Others	10,954	10,941	10,769	11,682	11,709	11,156	9,961	9,894	8,376	9,172
<b>Policy Support</b>										
News Releases	76	69	64	57	61	62	76	89	86	120
Media Calls	334	313	252	520	1,131	774	532	1,450	1,201	-
Media Inquiries Completed	334	313	252	520	1,131	774	532	1,450	1,201	-
News Media Interactions*	-	-	-	-	-	-	-	-	-	1,235

\*Tracking of News Media Interactions began in 2018

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
 Schedule 18  
 Capital Assets Statistics by Function/Program  
 Last Five Fiscal Years

	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
<b><u>Function/Program</u></b>					
<b>Ensure Compliance with Clean Air Rules</b>					
Number of vehicles assigned to field inspection	112	108	100	98	100
<b>Monitoring Air Quality</b>					
Number of air monitoring stations	42	42	42	43	41
Number of air monitoring instruments installed in the air monitoring stations to measure air quality	260	208	223	222	224

# South Coast Air Quality Management District

## Demographic and Miscellaneous Statistics

<b><u>Established:</u></b>	February 1, 1977
<b><u>Area Covered:</u></b>	10,743 Square Miles
<b><u>Counties Included in District:</u></b>	All of Orange County and parts of Los Angeles, Riverside, and San Bernardino Counties
<b><u>Population:</u></b>	17,063,249 (In 2017)
<b><u>Average Unemployment Rate:</u></b>	Los Angeles County (4.7%), Orange (3.5%), Riverside (5.2%), and San Bernardino (4.9%) counties (In 2017)
<b><u>Transportation:</u></b>	Two transcontinental railroads – Burlington Northern Santa Fe and the Union Pacific  Six Commercial Airports – Los Angeles International, Burbank, Long Beach, Ontario International, Orange County, and Palm Springs  Freeways – Three major interstate freeways including four bypass routes, U.S. 101, and nine State freeway routes  Two major adjoining ports – Port of Long Beach and Port of Los Angeles
<b><u>Visitor Destinations:</u></b>	Disneyland, Knott’s Berry Farm, Magic Mountain, motion picture and television studios and the Rose Bowl
<b><u>Number of Registered Vehicles Within SCAQMD Jurisdiction:</u></b>	13,756,321 (In 2017)
<b><u>Average Daily Miles Traveled Per Vehicle:</u></b>	28 (CY 2017 data)
<b><u>Examples of Stationary Sources of Air Pollution Regulated:</u></b>	Oil Refineries, power plants, paint spray booths, incinerators, manufacturing facilities, dry cleaners, and service stations.
<b><u>Number of Sources:</u></b>	26,983 operating locations with 68,732 permits.
<b><u>Number of Air Monitoring Stations:</u></b>	41
<b><u>Full-time Authorized Positions:</u></b>	872
<b><u>Adopted FY 2018-19 Budget:</u></b>	\$162,631,101
<b><u>Key Federal, State, and Local Air Agencies:</u></b>	EPA Region IX (Environmental Protection Agency), CARB (California Air Resources Board), CAPCOA (California Air Pollution Control Officer’s Association), NACAA (National Association of Clean Air Agencies), ALAPCO (Association of Local Air Pollution Control Officials). There are 35 local air pollution control districts in California.

# Air Quality Historical Timeline



Photo courtesy of Los Angeles Times Collection, Department of Special Collections, UCLA Library

First recognized episodes of smog occur in Los Angeles in the summer of 1943.

**1943**

**1950**

Orange County APCD established.



**1966**



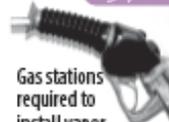
California adopts first automobile tailpipe emission standards in the nation.

**1970**

Federal Clean Air Act is enacted, establishing the basic U.S. program for controlling air pollution.



**1978**



Gas stations required to install vapor recovery "boots" on gas nozzles.

**1947**

Los Angeles County Air Pollution Control District (APCD) established—the first of its kind in the nation.



**1957**

San Bernardino and Riverside County APCDs formed.



**1968**

California Air Resources Board (CARB) holds its first meeting with Dr. Arie J. Haagen-Smit as its first chairman.

**1971**

U.S. EPA, created in 1970, adopts first national air quality standards.

SCAQMD formed through merger of Los Angeles, Orange, Riverside and San Bernardino APCDs.

**1977**

**1984**



California's Smog Check program takes effect.

**1989**

SCAQMD adopts first Air Quality Management Plan to show attainment of clean air standards.



California Global Warming Solutions Act of 2006 (AB 32) enacted to establish first ever comprehensive program to reduce greenhouse gases.

**2006**



**2014-2027**

Projected achievement of current air quality health standards in South Coast air basin.



**2002**

SCAQMD adopts the nation's first phase-out of the toxic chemical perchloroethylene (or "perc") used at dry cleaners.

**2008**

SCAQMD adopts Climate Change Policy.

**1990**

Federal Clean Air Act Amendments of 1990 enacted. Established new programs aimed at curbing urban ozone, toxic emissions, and vehicle emissions.

**1998**

The Carl Moyer Program established to reduce mobile source emissions.

**1993**

RECLAIM (Regional Clean Air Incentives Market) emissions trading program adopted.



**2003**

SCAQMD Mow Down Air Pollution Electric Lawnmower Exchange Program begins.



**2011**

Federal agencies and the State of California establish single timeframe for corporate average fuel economy (CAFE) and greenhouse gas standards for the next generation of cars and light-duty trucks.





**South Coast  
Air Quality Management District**

21865 Copley Drive  
Diamond Bar, CA 91765-4178

[www.aqmd.gov](http://www.aqmd.gov)

**SOUTH COAST AIR QUALITY  
MANAGEMENT DISTRICT**

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**SINGLE AUDIT REPORTS**

**FOR THE YEAR ENDED JUNE 30, 2018  
(With Independent Auditor's Reports Thereon )**



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2355 Crenshaw Blvd. Suite 150 Torrance, CA 90501  
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**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
SINGLE AUDIT REPORTS  
FOR THE YEAR ENDED JUNE 30, 2018  
(With Independent Auditor's Reports Thereon)**

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**INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER  
FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS  
BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN  
ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS***

To the Governing Board of  
South Coast Air Quality Management District  
Diamond Bar, California

We have audited in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of the governmental activities, the business-type activities, the blended component unit, each major fund, and the aggregate remaining fund information of the South Coast Air Quality Management District (SCAQMD) as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise SCAQMD's basic financials statements, and have issued our report thereon dated October 12, 2018.

**Internal Control over Financial Reporting**

In planning and performing our audit of the financial statements, we considered SCAQMD's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of SCAQMD's internal control. Accordingly, we do not express an opinion on the effectiveness of SCAQMD's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit, we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

## **Compliance and Other Matters**

As part of obtaining reasonable assurance about whether SCAQMD's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

## **Purpose of this Report**

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

*BCA Watson Rice, LLP*

Torrance, California  
October 12, 2018

**INDEPENDENT AUDITOR'S REPORT ON COMPLIANCE FOR EACH MAJOR  
FEDERAL PROGRAM; REPORT ON INTERNAL CONTROL OVER COMPLIANCE;  
AND REPORT ON SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS  
REQUIRED BY UNIFORM GUIDANCE**

To the Governing Board of  
South Coast Air Quality Management District  
Diamond Bar, California

**Report on Compliance for Each Major Federal Program**

We have audited the South Coast Air Quality Management District's (SCAQMD) compliance with the types of compliance requirements described in the U.S. *Office of Management and Budget (OMB) Compliance Supplement* that could have a direct and material effect on each of SCAQMD's major federal programs for the year ended June 30, 2018. SCAQMD's major federal programs are identified in the summary of auditor's results section of the accompanying Schedule of Findings and Questioned Costs.

***Management's Responsibility***

Management is responsible for compliance with the requirements of laws, regulations, contracts, and grants applicable to its federal programs.

***Auditor's Responsibility***

Our responsibility is to express an opinion on compliance for each of SCAQMD's major federal programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. Code of Federal Regulations (CFR) Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about SCAQMD's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for each major federal program. However, our audit does not provide a legal determination on SCAQMD's compliance.

### ***Opinion on Each Major Federal Program***

In our opinion, SCAQMD's complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended June 30, 2018.

### **Report on Internal Control over Compliance**

Management of SCAQMD is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered SCAQMD's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program as a basis for designing auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of SCAQMD's internal control over compliance.

*A deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct noncompliance with a type of compliance requirement of a federal program on a timely basis. *A material weakness in internal control over compliance* is a deficiency, or combination of deficiencies in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected on a timely basis. *A significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

### **Report on Schedule of Expenditures of Federal Awards Required by the Uniform Guidance**

We have audited the financial statements of the governmental activities, the business-type activities, the blended component unit, each major fund, the aggregate remaining fund information of SCAQMD as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise SCAQMD's basic financial statements. We issued our report thereon dated October 12, 2018, which contained unmodified opinions on those financial statements. Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the basic financial statements. The accompanying schedule of expenditures of federal awards is presented for purposes of additional analysis as required by the Uniform Guidance and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from

and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Schedule of Expenditure of Federal Awards is fairly stated in all material respects in relation to the basic financial statements as a whole.

*BCA Watson Rice, LLP*

Torrance, CA  
October 12, 2018

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS  
For the Year Ended June 30, 2018**

Federal Grantor/Pass-Through Grantor / Program Title	CFDA Number	Grant Number	Total Expenditures
<u>U.S. Environmental Protection Agency</u>			
<i>Air Pollution Control Program Support:</i>			
EPA Section 105 Air Grant	66.001	A00909416-2	472,800
EPA Section 105 Air Grant	66.001	A00909417-1	1,055,239
EPA Section 105 Air Grant	66.001	A00909418-1	3,723,765
			5,251,804
<i>Surveys, Studies, Research, Investigations, Demonstrations, and Special Purpose Activities Relating to the Clean Air Act:</i>			
PM 2.5 Monitoring	66.034*	PM-00T86701-7	713,466
National Air Toxics Trend Stations	66.034*	XA-99T27601-3	216,072
Near Road Monitoring	66.034*	XA-00T82301-5	3,314
Community Scale Air Toxics Monitoring	66.034*	XA-99T33501-1	165,858
			1,098,710
<i>National Clean Diesel Emissions Reduction Program:</i>			
National Clean Diesel Program	66.039	DE-00T96201-3	181,216
DERA-School Bus Replacement Project	66.039	DE-99T07001-4	104,000
DERA-On Road SH Truck and School Bus	66.039	DE-99T24701-2	966,030
DERA-Locomotive Replacement Project	66.039	DE-99T45901-0	740
DERA-Replace HDDTs	66.039	DE-99T69701-0	2,776
			1,254,762
<i>Congressionally Mandated Projects:</i>			
Targeted Air Shed - Lawn Garden Equipment Exchange	66.202	EM-99T48301-0	56,004
Targeted Air Shed - Yard Tractor Replacement	66.202	EM-99T48501-0	11,564
Targeted Air Shed - School Bus Replacement	66.202	EM-99T71401-0	11,426
			78,994
<i>Science To Achieve Results (STAR) Research Program</i>			
STAR Engage, Educate, and Empower	66.509	RD-83618401-2	201,874
Total U.S. Environmental Protection Agency			7,886,144
<u>U.S. Department of Energy</u>			
<i>Conservation Research and Development:</i>			
Zero Emission Cargo Transport Demo	81.086*	DE-EE0005961-8	20,016
San Pedro Bay Ports FCEV and HEV Demo	81.086*	DE-EE0006874-6	2,248,819
Passed through Newport Partners			
Devel Test Standard-Indoor AQ Sensors	81.086*	N/A	3,405
Total Department of Energy			2,272,240
<u>U.S. Department of Homeland Security</u>			
<i>Homeland Security Biowatch Program</i>			
Biowatch Program	97.091*	2006-ST-091-000013-12	1,657,318
<u>National Aeronautics and Space Administration</u>			
Passed through RTI International			
<i>Science</i>			
Low Cost Sensors-Earth System Data	43.001	1-340-02515780	71,631
Total Federal Expenditures			<b>\$ 11,887,333</b>

\* Major Programs

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**NOTES TO THE SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**For the Year Ended June 30, 2018**

**NOTE 1 – BASIS OF PRESENTATION**

The accompanying schedule of expenditures of federal awards (the Schedule) includes the federal award activity of the South Coast Air Quality Management District (SCAQMD) under programs of the federal government for the year ended June 30, 2018. The information in this Schedule is presented in accordance with the audit requirements of Title 2 U.S. Code of Federal Regulations (CFR) Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Because the Schedule presents only a selected portion of the operations of SCAQMD, it is not intended to and does not present the financial position, changes in net position or cash flows of the SCAQMD.

**NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

Expenditures reported in the Schedule are reported on the modified accrual basis of accounting. Such expenditures are recognized following, as applicable, either the cost principles in *OMB Circular A-87, Cost Principles for State, Local, and Indian Tribal Governments*, or the cost principles contained in the *Uniform Guidance*, wherein certain types of expenditures are not allowable or are limited as to reimbursement.

**NOTE 3– INDIRECT COST RATE**

The SCAQMD has elected not to use the 10-percent de minimis indirect cost rate allowed under the Uniform Guidance.

**NOTE 4– RELATIONSHIP TO COMPREHENSIVE ANNUAL FINANCIAL REPORT**

Amounts reported in the accompanying Schedule agree to amounts reported within the SCAQMD's Comprehensive Annual Financial Report.

**NOTE 5– CONTINGENCIES**

Under the terms of federal and state grants, additional audits may be requested by the grantor agencies and certain costs may be questioned as not being appropriate expenditures under the terms of the grants. Such audits could lead to a request for reimbursement to the grantor agencies.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
SCHEDULE OF FINDINGS AND QUESTIONED COSTS  
For the Year Ended June 30, 2018**

**SECTION I – SUMMARY OF AUDITOR’S RESULTS**

**A - Financial Statements**

- |   |               |
|---|---------------|
| 1) Type of auditor’s report issued:   | Unmodified    |
| 2) Internal control over financial reporting:                                       |               |
| a) Material weakness(es) identified?  | No            |
| b) Significant deficiency(ies) identified not considered to be material weaknesses? | None reported |
| 3) Noncompliance material to financial statements noted?                            | No            |

**B - Federal Awards**

- |   |               |
|---|---------------|
| 1) Type of auditor’s report issued on compliance for major programs:                                  | Unmodified    |
| 2) Internal control over major programs:  |               |
| a) Material weakness(es) identified?  | No            |
| b) Significant deficiency(ies) identified not considered material weakness(es)?                       | None reported |
| 3) Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)? | No            |

4) Identification of major programs:

<u>CFDA No.</u>	<u>Name of Federal Program</u>
66.034	Surveys, Studies, Research, Investigations, Demonstrations, and Special Purpose Activities Relating to the Clean Air Act
81.086	Conservation Research and Development
97.091	Homeland Security Biowatch Program

- |   |           |
|---|-----------|
| 5) Dollar threshold used to distinguish between Type A and Type B programs: | \$750,000 |
| 6) Auditee qualified as low-risk auditee?                                   | Yes       |

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
SCHEDULE OF FINDINGS AND QUESTIONED COSTS  
For the Year Ended June 30, 2018**

**SECTION II – FINANCIAL STATEMENT FINDINGS**

None reported.

**SECTION III – FEDERAL AWARD FINDINGS AND QUESTIONED COSTS**

None reported.

**SECTION IV – STATUS OF PRIOR YEAR FINDINGS AND QUESTIONED COSTS**

None reported.

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 17

REPORT: Status Report on Major Ongoing and Upcoming Projects for Information Management

SYNOPSIS: Information Management is responsible for data systems management services in support of all SCAQMD operations. This action is to provide the monthly status report on major automation contracts and planned projects.

COMMITTEE: Administrative, November 9, 2018, Reviewed

RECOMMENDED ACTION:  
Receive and file.

Wayne Natri  
Executive Officer

RMM:MAH:agg

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### **Background**

Information Management (IM) provides a wide range of information systems and services in support of all SCAQMD operations. IM's primary goal is to provide automated tools and systems to implement Board-approved rules and regulations, and to improve internal efficiencies. The annual Budget specifies projects planned during the fiscal year to develop, acquire, enhance, or maintain mission-critical information systems.

### **Summary of Report**

The attached report identifies each of the major projects/contracts or purchases that are ongoing or expected to be initiated within the next six months. Information provided for each project includes a brief project description and the schedule associated with known major milestones (issue RFP/RFQ, execute contract, etc.).

### **Attachment**

Information Management Status Report on Major Ongoing and Upcoming Projects During the Next Six Months

**ATTACHMENT**  
**December 7, 2018 Board Meeting**  
**Information Management Status Report on Major Ongoing and**  
**Upcoming Projects During the Next Six Months**

<b>Project</b>	<b>Brief Description</b>	<b>Budget</b>	<b>Completed Actions</b>	<b>Upcoming Milestones</b>
Implementation of Enterprise Geographic Information System (EGIS) Phase II	Continue to support accomplishment of the agency's mission through the effective and cost-efficient implementation of EGIS and related technologies		<ul style="list-style-type: none"> <li>• Purchased ESRI extensions for OnBase</li> <li>• Completed two prioritized EGIS projects: <ul style="list-style-type: none"> <li>○ GIS Data Development</li> <li>○ System Documentation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Complete the four prioritized EGIS projects: <ul style="list-style-type: none"> <li>○ Portal / Mobile Development</li> <li>○ OnBase Expansion and GIS Integration</li> <li>○ CLASS GIS Integration</li> <li>○ One-click Site Report</li> </ul> </li> </ul>
Telecommunications Services	Select vendor(s) to provide local, long distance, telemetry, internet, cellular services, and phone system maintenance for a three-year period	\$750,000	<ul style="list-style-type: none"> <li>• Released RFP October 5, 2018</li> </ul>	<ul style="list-style-type: none"> <li>• Request Board Approval January 4, 2019</li> <li>• Execute contract(s) January 31, 2019</li> </ul>
Office 365 Implementation	Acquire and implement Office 365 for SCAQMD staff	\$350,000	<ul style="list-style-type: none"> <li>• Pre-assessment evaluation and planning completed</li> <li>• Board action approved funding on October 5, 2018</li> <li>• Developed implementation and migration plan</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Acquire Office 365 licenses</li> <li>• Implement Office 365 email (Exchange) and migrate all users</li> <li>• Implement Office 365 file storage (OneDrive for Business) and migrate users</li> <li>• Implement Office 365 internal website (SharePoint) and migrate existing content</li> </ul>

Project	Brief Description	Budget	Completed Actions	Upcoming Milestones
Permitting System Automation Phase 1	New Web application to automate the filing of all permit applications with immediate processing and issuance of permits for specific application types: Dry Cleaners, Gas Stations and Automotive Spray Booths	\$694,705	<ul style="list-style-type: none"> <li>• Phase 1 Automated 400A form filing, application processing, and online permit generation for Dry Cleaner module deployed to production</li> <li>• Facility ID Creation Module deployed to production</li> <li>• Phase 1.1 Automated 400A form filing, application processing, and online permit generation for Automotive Spray Booth and Gas Station Modules deployed to production</li> <li>• Upgraded GIS Map integration and enhanced sensitive receptor identification and distance measurement work</li> </ul>	<ul style="list-style-type: none"> <li>• Continue Phase 1.1 project outreach support</li> </ul>
Permitting System Automation Phase 2	Enhanced Web application to automate filing process of Permit Applications, Rule 222 equipment and, registration process for IC Engines; implement electronic permit folder and workflow for internal SCAQMD users	\$525,000	<ul style="list-style-type: none"> <li>• December 2017 Board action approved initial Phase 2 funding</li> <li>• May 2018 Phase 2 project startup and detail planning completed</li> <li>• Business process model approved</li> </ul>	<ul style="list-style-type: none"> <li>• Wireframe and user stories development for Tar Pots/Tar Kettles, Asphalt Day Tankers, and Asphalt Pavement Heaters</li> </ul>

Project	Brief Description	Budget	Completed Actions	Upcoming Milestones
Permitting System Automation Phase 2 (Continued)			<ul style="list-style-type: none"> <li>• Development of Negative Air Machines, Boilers/Water Heaters/Process Heaters, Cooling Towers, Portable Heaters, and Food Ovens filing process completed</li> <li>• October 5, 2018 Board action approved remaining Phase 2 funding</li> </ul>	<ul style="list-style-type: none"> <li>• Code development for Boilers, Heaters, Ovens, Baghouses, and IC Engines Application submittals, and form filing of Char Broilers, Small Boilers, and Oil Wells processing</li> </ul>
Information Technology Review Implementation	Complete Board requested Information Technology review and initiate work on implementation of key recommendations	\$75,000	<ul style="list-style-type: none"> <li>• Initiated Implementation Planning and Resource Requirements for key recommendations</li> <li>• Conducted recruitment process to fill Systems &amp; Programming Supervisor position</li> <li>• Scheduled and completed Microsoft Project Plan training for all IM Managers, Supervisors and Secretaries</li> <li>• Established Information Technology Steering Committee, members and charter</li> <li>• Configured and deployed Project Management software for IM team</li> </ul>	<ul style="list-style-type: none"> <li>• Office 365 deployment planning</li> </ul>

Project	Brief Description	Budget	Completed Actions	Upcoming Milestones
Permit Application Status and Dashboard Statistics	New Web application to allow engineers to update intermediate status of applications; create dashboard display of status summary with link to FIND for external user review	\$100,000	<ul style="list-style-type: none"> <li>• December 2017 Board action approved funding</li> <li>• April 2018 project startup and detail planning completed</li> <li>• June 2018 wireframe and user story approved for Release 1</li> <li>• User story and wireframe approved for application search module</li> <li>• User stories approved and coding completed for Dashboard Data Entry screens</li> </ul>	<ul style="list-style-type: none"> <li>• Code development for Release 1</li> <li>• Code development for application search module</li> <li>• User acceptance testing for data capture module</li> <li>• User Acceptance testing for user Reports</li> </ul>
Agenda Tracking System Replacement	Replace aging custom agenda tracking system with state-of-the-art, cost-effective Enterprise Content Management (ECM) system, which is fully integrated with OnBase, SCAQMD's agency-wide ECM system	\$86,600	<ul style="list-style-type: none"> <li>• Released RFP December 4, 2015</li> <li>• Awarded contract April 1, 2016</li> <li>• Continued parallel testing</li> <li>• Conducted survey of stakeholder satisfaction</li> <li>• As a result of the survey responses, the decision was made to develop a custom user interface for the application</li> <li>• Revised project scope to include custom user interface</li> <li>• Developed plan and schedule for revised scope</li> </ul>	<ul style="list-style-type: none"> <li>• Identify funding source</li> </ul>

<b>Project</b>	<b>Brief Description</b>	<b>Budget</b>	<b>Completed Actions</b>	<b>Upcoming Milestones</b>
Replace Your Ride (RZR)	New Web application to allow residents to apply for incentives to purchase newer, less polluting vehicles	\$301,820	<ul style="list-style-type: none"> <li>• Phase 2 Fund Allocation, Administration and Management Reporting modules deployed and in production</li> <li>• Final Phase 2 user requested enhancements: VIN Number, Case Manager, Auto e-mail and document library updates deployed to production</li> <li>• Phase 3 Data Migration development work completed</li> </ul>	<ul style="list-style-type: none"> <li>• Phase 3 user approval for production</li> <li>• Phase 4 collaboration with air districts for possible statewide RZR implementation</li> <li>• Implementation of Electric Vehicle Service Equipment and alternative mode of transportation in the RZR application</li> </ul>
Mobile Application for iOS devices Phase 2	Enhancement of Mobile application with addition of Enhanced Notifications, Complaint Filing and Facility Information Detail	\$100,000	<ul style="list-style-type: none"> <li>• Project Charter released</li> <li>• Proposal received</li> </ul>	<ul style="list-style-type: none"> <li>• Task order issuance</li> </ul>
Mobile Application for Android devices Phase 1	New mobile application for Android devices which will have the same functionality as the new iOS application	\$75,000	<ul style="list-style-type: none"> <li>• Project Charter released</li> <li>• Proposal received</li> </ul>	<ul style="list-style-type: none"> <li>• Task order issuance</li> </ul>
FIND System Replacement	Update and replace Facility Information Detail (FIND) application	\$148,150	<ul style="list-style-type: none"> <li>• Task order issued, evaluated and awarded</li> <li>• Detail project planning completed</li> <li>• Wireframe approved</li> <li>• Development completed</li> <li>• Automated Testing completed</li> <li>• Beta testing completed</li> </ul>	<ul style="list-style-type: none"> <li>• Move to production</li> </ul>

<b>Project</b>	<b>Brief Description</b>	<b>Budget</b>	<b>Completed Actions</b>	<b>Upcoming Milestones</b>
Legal Division New System Development	Develop new web-based case management system for Legal Division to replace existing JWorks System	\$500,000	<ul style="list-style-type: none"> <li>• Task order issued, evaluated and awarded</li> <li>• Project initiated and project charter finalized</li> <li>• Business Process Model completed</li> </ul>	<ul style="list-style-type: none"> <li>• Functional and system design</li> <li>• Code development for Sprint 1 – NOV tracking and MSPAP case management</li> </ul>
Document Conversion Services	Document Conversion Services to convert paper documents stored at SCAQMD facilities to electronic storage in OnBase	\$83,000	<ul style="list-style-type: none"> <li>• Released RFQ October 5, 2018</li> </ul>	<ul style="list-style-type: none"> <li>• Approve qualified vendors January 4, 2019</li> </ul>
Flare Event Notification – Rule 1118	Develop new web-based application to comply with the Rule 1118 to improve current flare notifications to the public and the compliance team	\$100,000	<ul style="list-style-type: none"> <li>• Vision &amp; Scope issued</li> </ul>	<ul style="list-style-type: none"> <li>• Requirement gathering</li> <li>• Approve proposal</li> </ul>

Projects that have been completed are shown below.

<b>Completed Projects</b>	
<b>Project</b>	<b>Date Completed</b>
Website & Evaluation Improvements	January 6, 2018
Information Technology Review	January 31, 2018
Prequalify Vendor List for PCs, Network Hardware, etc.	February 3, 2018
Renewal of HP Server Maintenance & Support	April 6, 2018
Implementation of Enterprise Geographic Information System (EGIS) Phase I	May 30, 2018
Fiber Cable Network Infrastructure Upgrade	May 30, 2018
Air Quality Index Rewrite and Migration	June 29, 2018
Mobile Application for iOS devices Phase 1	November 2, 2018
CLASS Database Software Licensing and Support	November 30, 2018

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BOARD MEETING DATE: December 7, 2018

AGENDA NO. 19

REPORT: Administrative Committee

SYNOPSIS: The Administrative Committee held a meeting on Friday, November 9, 2018. The following is a summary of the meeting.

RECOMMENDED ACTION:  
Receive and file.

Dr. William A. Burke, Chair  
Administrative Committee

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### **Committee Members**

Present: Dr. William A. Burke/Chair (videoconference)  
Mayor Ben Benoit/Vice Chair  
Mayor Pro Tem Judith Mitchell (videoconference)  
Dr. Clark E. Parker, Sr. (videoconference)

Absent: None

### **Call to Order**

Dr. Burke called the meeting to order at 10:27 a.m.

### **DISCUSSION ITEMS:**

1. **Board Members' Concerns:** None to report.
2. **Chairman's Report of Approved Travel:** As noted on the travel report, Mayor Pro Tem Mitchell will attend the monthly CARB Board meeting as the SCAQMD Board representative in Sacramento on November 15-16, 2018.
3. **Report of Approved Out-of-Country Travel:** None to report.
4. **Review November 2, 2018 Governing Board Agenda:** None to report.
5. **Approval of Compensation for Board Member Assistant(s)/Consultant(s):** None to report.

6. **Annual Audited Financial Statements for FY Ended June 30, 2018:** Assistant Deputy Executive Officer/Finance Sujata Jain introduced Helen Chu, BCA Watson & Rice auditor, who provided an update on the financial statements and single audit results. There were no material weaknesses, or significant deficiencies.
7. **SCAQMD's FY 2018-19 First Quarter ended September 30, budget vs. Actual (Unaudited):** Ms. Jain provided a general overview on the 1<sup>st</sup> Quarter Budget vs. Actual, revenues, expenditures and the updated General Fund Five-Year Projection. Dr. Burke inquired about the FY 2018-19 capital expenditure projection. Ms. Jain responded that the projection was \$1.4 million.
8. **Status Report on Major Ongoing and Upcoming Projects for Information Management:** Assistant Deputy Executive Officer/Information Management Ron Moskowitz reported the new mobile application went into production last week and is now available in the Apple App Store. The Microsoft Office 365 project's implementation plan has been finalized and staff is in the process of securing licensing. Two of the remaining six EGIS milestones have been completed. Dr. Burke inquired about poor wireless reception in the main auditorium. Mr. Moskowitz responded that another test will be conducted to check for dead spots in the auditorium.

#### **ACTION ITEMS:**

9. **Transfer and Appropriate Funds, Recognize Revenue, Approve Positions, Issue Solicitations and Purchase Orders, and Execute Contracts and Agreements for Mid-Year Budget Adjustments, AB 617 Implementation, Volkswagen Mitigation Projects, and China Partnership for Cleaner Shipping; and Amend Salary Resolution:** Chief Operating Officer Jill Whynot reported that this item has three parts. The first is to reinstate items that were cut from the budget and add other items that are necessary to implement important programs such as the initiative with China to get cleaner ships to come to the Ports. With no fiscal impact, it also includes the request to change the title of the Assistant Deputy Executive Officer of Information Management to add Chief Information Officer to the title. The second part is a major adjustment for the second year of AB 617, and the third part is to add resources to implement incentive programs for the VW mitigation program. Dr. Burke inquired about the cost and justification of adding two additional program supervisor positions for the mid-year budget adjustment. Ms. Whynot responded that assistance is needed to augment staff's capabilities for the initiative to partner with China for cleaner ships. The annual cost for the positions include benefits and overhead. Dr. Burke inquired about the funding for AB 617. Ms. Whynot responded that the money is coming from the Greenhouse Gas Fund that funds the AB 617 program and the Board will be asked to recognize the funds, which will come

from CARB. Dr. Parker inquired about expanding the Long Beach field office. Ms. Whynot responded that there are refinery inspectors in the Long Beach field office and additional staff may be added to assist in the AB 617 monitoring and other efforts. Dr. Parker inquired if other field offices are maintained. Ms. Whynot responded not at this time, but that it is under consideration.

Moved by Benoit; seconded by Parker, unanimously approved.

Ayes: Benoit, Burke, Mitchell, Parker  
Noes: None  
Absent: None

10. **Issue RFP for Engineering Consultant to Assess BARCT for Proposed Rule 1109.1 – NO<sub>x</sub> Emission Reductions for Refinery Equipment:** Planning and Rules Manager Michael Krause highlighted the goals of the RFP for Proposed Rule 1109.1 that seeks to select an independent third party consultant with technical expertise with NO<sub>x</sub> control equipment in the refinery industry to review staff's upcoming proposed BARCT analysis including the feasibility of the emission limits, emission reductions, and cost effectiveness of control. Susan Stark, representing Marathon Petroleum Corporation, requested that the Western States Petroleum Association (WSPA) be included in the bid review panel, that site visits be extended to other facilities, and that the contractor be experienced with the equipment and costs to the refining industry.

Moved by Benoit; seconded by Mitchell, unanimously approved.

Ayes: Benoit, Burke, Mitchell, Parker  
Noes: None  
Absent: None

11. **Execute Contract for Operation of Diamond Bar Headquarters Cafeteria:** Assistant Deputy Executive Officer/Administrative & Human Resources John Olvera reported that as a result of an RFP process and with California Dining Services receiving the highest rating, staff recommends entering into a no-cost contract with California Dining Services for a three-year term beginning January 2019.

Moved by Parker; seconded by Mitchell, unanimously approved.

Ayes: Benoit, Burke, Mitchell, Parker  
Noes: None  
Absent: None

12. **Issue RFP for Consultant Services for SCAQMD Environmental Justice Outreach and Initiatives:** Deputy Executive Officer/Legislative, Public Affairs & Media Derrick Alatorre reported that this item is to issue an RFP to seek proposals to augment staff's efforts for environmental justice programs. In addition, the contractor will also assist in the environmental justice community partnership program.

Moved by Mitchell; seconded by Parker, unanimously approved.

Ayes: Benoit, Burke, Mitchell, Parker  
Noes: None  
Absent: None

**WRITTEN REPORT:**

13. **Local Government & Small Business Assistance Advisory Group Minutes for the September 14, 2018 Meeting**  
Mr. Alatorre reported that this item is a written report.

**OTHER MATTERS:**

14. **Other Business**  
There was no other business.
15. **Public Comment**  
Ms. Raleigh Gerber, Clean Energy, invited all to view the low-NOx natural gas truck on display in the SCAQMD's parking lot. Mr. Harvey Eder, Public Solar Power Coalition, expressed his concern in reference to renewable natural gas high methane levels in the atmosphere. Mr. Eder also stated that agendas for committee meetings today were not properly posted. Chief Deputy Counsel Barbara Baird responded that the agenda notices have been properly posted as confirmed by staff. Dr. Burke expressed his concern that Mr. Eder's comments, with respect to emissions from natural gas not being calculated in a manner that is appropriate, have not been addressed. Executive Officer Wayne Nastri responded that he believes that the SCAQMD is evaluating the calculations correctly and the risk is not as high as Mr. Eder implies. Dr. Burke inquired whether an independent third-party has ever been considered to evaluate our determination. Mr. Nastri responded that we rely on U.S. EPA, CARB and other organizations.

16. **Next Meeting Date**

The next regular Administrative Committee meeting is scheduled for December 14, 2018 at 10:00 a.m.

**Adjournment**

The meeting adjourned at 11:09 a.m.

**Attachment**

Local Government & Small Business Assistance Advisory Group Minutes for the September 14, 2018 Meeting



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • www.aqmd.gov

## LOCAL GOVERNMENT & SMALL BUSINESS ASSISTANCE ADVISORY GROUP FRIDAY, SEPTEMBER 14, 2018 MEETING MINUTES

### MEMBERS PRESENT:

Ben Benoit, Mayor Pro Tem, City of Wildomar and LGSBA Chairman  
Felipe Aguirre  
Paul Avila, P.B.A. & Associates  
Geoffrey Blake, Metal Finishers of Southern California  
Bill LaMarr, California Small Business Alliance  
Rita Loof, RadTech International  
Eddie Marquez, URCA Union Roofing Contractors Association

### MEMBERS ABSENT:

Dr. Clark E. Parker, Sr., Senate Rules Committee Appointee  
Janice Rutherford, Supervisor, Second District, San Bernardino County  
Rachelle Arizmendi, Mayor Pro Tempore, City of Sierra Madre  
Todd Campbell, Clean Energy  
LaVaughn Daniel, DancoEN  
John DeWitt, JE DeWitt, Inc.  
Cynthia Moran, Council Member, City of Chino Hills  
David Rothbart, Los Angeles County Sanitation District

### OTHERS PRESENT:

Ruthanne Taylor Berger, Board Member Consultant (*Benoit*)  
Mark Abramowitz, Board Member Consultant (*Lyou*)  
David Czmanske, Board Member Consultant (*Cacciotti*)  
Marc Ang, Asian Industry B2B  
Andy Silva, San Bernardino County

### SCAQMD STAFF:

Jill Whynot, Chief Operating Officer  
Derrick Alatorre, Deputy Executive Officer  
Fabian Wesson, Asst. Deputy Executive Officer/Public Advisor  
Nancy Feldman, Principal Deputy District Counsel  
Naveen Berry, Assistant Deputy Executive Officer  
Vicki White, Technology Implementation Manager  
Kathryn Higgins, Program Supervisor  
Philip Barroca, Program Supervisor  
Elaine-Joy Hills, AQ Inspector II  
Stacy Garcia, Secretary  
Aisha Reyes, Senior Office Assistant

**Agenda Item #1 - Call to Order/Opening Remarks**

Chair Ben Benoit called the meeting to order at 11:33 a.m.

**Agenda Item #2 – Approval of July 13, 2018 Meeting Minutes/Review of Follow-Up/Action Items**

Chair Benoit called for approval of the July 13, 2018 meeting minutes. The minutes were approved unanimously.

Mr. Derrick Alatorre indicated there were no action items that arose out of the July 13, 2018 meeting. Mr. Alatorre announced that the Clean Air Awards are on October 5, 2018.

**Agenda Item #3 – Follow Up/Action Items**

Ms. Rita Loof requested an update on Rule 219, including outreach and a report on activities. Mr. Alatorre indicated that he has asked however, staff is not yet ready, but he'll continue to check.

*Action Item: Check with staff when a presentation on Rule 219 may be provided.*

**Agenda Item #4 – Renewable Fuels Presentation**

Mr. Philip Barroca presented on the status of renewable natural gas and renewable diesel production and use.

Mr. Paul Avila inquired about the status of ethanol use. Mr. Barroca responded that ethanol has not produced the level of NO<sub>x</sub> reductions that are needed in the South Coast basin.

Ms. Loof referred to the chart on slide 8 of Mr. Barroca's presentation and asked how the negative carbon reduction is possible. Mr. Barroca said that not all greenhouse gases are created equal. When you are making the fuel from the high methane sources, you are having a 20:1 type of ratio apply because you are taking methane away, and it produces a fuel that will be used in an internal combustion engine that will, in turn, be producing CO<sub>2</sub>.

Mr. Eddie Marquez asked about carbon sequestration as it applies to methane, and if the same can apply to other renewables such as renewable diesel. Mr. Barroca responded that the feedstocks for renewable diesel are the same type of biomass feedstocks that would also result in methane reduction, and that there would be a carbon sequestering effect.

Mr. Bill LaMarr stated that California has had about a million acres burned because of wildfires, and it was estimated that it released about 10 to 15 million metric tons of carbon. Mr. LaMarr asked if it would make more sense for state and air agencies to explore forest management. Mr. Barroca stated that agriculture and trees are separate forms of biomass. The trees in California represent one of the largest sources of biomass available to convert into a fuel. Mr. LaMarr stated that this year, forest fires have been a major contributor to emissions, including criteria pollutants when considering all the structures that burned. Mr. Naveen Berry indicated that the anaerobic digestion and paralyzer pathways available for renewable natural gas will help assist in dealing with fuel available for forest fires. Chair Benoit added that the conversation regarding forest management is happening in Sacramento.

Mr. Avila asked about Hydrotreated Vegetable Oil (HVO) and Waste Vegetable Oil (WVO) on pages 9-10 of the presentation, specifically if they get manufactured and can be used for commercial purposes. Mr. Berry responded that those are varied feedstocks that are used to make biodiesel and preliminary

assessments show that they may cause an increase in NO<sub>x</sub> emissions. Mr. Avila asked what renewable natural gas was, to which Mr. Barroca explained that it's manufactured from renewable sources. Chair Benoit further added that green waste and food waste would be renewable natural gas.

Ms. Loof commented about stationary sources and how the focus in presentations appears to be more on mobile sources, fuels and NO<sub>x</sub> emission reductions rather than volatile organic compounds (VOCs).

#### **Agenda Item #5 – Update on SCAQMD's Incentive Programs**

Ms. Vicki White presented on the various incentive programs offered and the current levels of usage within the South Coast basin.

Mr. La Marr asked if the new funding in fiscal year 2017/2018 are monies that we actually have. Ms. White responded yes.

Mr. Avila asked if any program covers heavy equipment such as cranes. Ms. White responded that the Carl Moyer Program offers grants for heavy equipment and also includes engine repowering.

Mr. Alatorre stated that in regards to Assembly Bill 134 (AB 134), the Community Air Protection Program, \$250 million was allocated statewide in 2017 and SCAQMD got \$107.5 million. For 2018/2019, \$245 million is being allocated and we are still waiting to see how much SCAQMD will get.

Mr. Avila asked if the purpose of the mitigation trust for the Volkswagen settlement was because there were more Volkswagens sold around this area. Ms. White said that the South Coast basin did have the biggest percentage of vehicles that were in violation, but that it was a nationwide settlement.

Mr. Alatorre confirmed with Ms. White that Volkswagen was able to use some of the settlement money to put in infrastructure, such as charging stations.

Mr. LaMarr asked what is being done with the non-compliant Volkswagen vehicles. Ms. White responded that the vehicles are not allowed to be driven in California unless they were fixed through the recall process.

Ms. Loof asked what the CARB reserve of \$63 million on the Volkswagen Mitigation Program is being used for and how much the administrative costs are. Ms. White said that CARB needs to monitor the progress of the program, and they want to reserve funds to use if needed for other projects to meet the 10 thousand NO<sub>x</sub> commitment. The amount of administrative costs given to the air districts will be 10% and CARB will have 15%. The administrative costs also cover all of the reporting requirements to the trust. SCAQMD is discussing with CARB to hopefully get more support.

Ms. Loof asked what funds are available for stationary sources. Ms. White said that \$245 million from Senate Bill 865 has been set aside for incentives and includes stationary source incentives.

Mr. Berry said that most of the funds were designated for mobile sources; however, there was a request for proposal (RFP) earlier this year to fund stationary projects.

Mr. Geoffrey Blake asked what type of technology SCAQMD is using to improve efficiency in regards to Transport Refrigeration Units (TRUs). Ms. White indicated that TRUs are tractors with refrigerated containers in them. SCAQMD is replacing them with electric motors to provide the cooling, they will need to be plugged in, and funding will be available for the chargers.

Mr. La Marr stated that he recognizes that SCAQMD staff is committed to seeking incentive funding for stationary sources, but wants to hear that SCAQMD has actually secured funding. Mr. Berry responded that the incentive funds are typically for projects for reductions, and that is the way that CARB has structured them. The legislators have provided a strong path for mobile source reduction.

Mr. Alatorre said that in regards to implementing Assembly Bill 617 (AB 617), the first year was mobile sources, but in the upcoming years, there will be a shift from strictly mobile to more stationary sources and there will need to be a mitigation plan.

Ms. Loof commented that once the amendments to Rule 1469 go into effect, businesses will lose the opportunity to get funding.

**Agenda Item #6 –Monthly Report on Small Business Assistance Activities**

No comments.

**Agenda Item #7 - Other Business**

Mr. Avila requested information on the City of Irwindale dropping its lawsuit against Sriracha and why SCAQMD got involved. Mr. Avila also requested a draft of the legislation on the sales tax measure. Mr. Alatorre said there is no draft yet. Mr. Avila requested the poll on the sales tax measure, to which Mr. Alatorre stated that would not be a problem.

*Action Item: Provide Mr. Avila with information regarding the Sriracha case and the poll on the sales tax measure.*

Mr. Avila then introduced Mark Ang from the Asian Industry B2B, who was in the audience.

Chair Benoit mentioned the upcoming Environmental Justice Conference on September 26, 2018.

**Agenda Item #8 - Public Comment**

Mr. Andy Silva announced that on September 27, 2018, CARB will vote on the AB 617 communities. Mr. Alatorre stated that it will be either on September 27<sup>th</sup> or 28<sup>th</sup>, 2018.

**Agenda Item #9 – Next Meeting Date**

The next regular Local Government & Small Business Assistance Advisory Group meeting is scheduled for Friday, October 12, 2018 at 11:30 a.m.

**Adjournment**

The meeting adjourned at 1:03 p.m.

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BOARD MEETING DATE: December 7, 2018

AGENDA NO. 20

REPORT: Investment Oversight Committee

SYNOPSIS: The Investment Oversight Committee held a meeting on Friday, November 16, 2018. The following is a summary of the meeting.

RECOMMENDED ACTION:  
Receive and file.

Michael A. Cacciotti, Chair  
Investment Oversight Committee

SJ:av

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### **Committee Members**

Present: Council Member Michael Cacciotti, Chair (teleconference)  
Dr. Joseph K. Lyou  
Supervisor Shawn Nelson (teleconference)

Committee Member Richard Dixon  
Committee Member Brent Mason  
Committee Member Patrick Pearce

Absent: Dr. William A. Burke, Vice Chair

### **Call to Order**

Chair Cacciotti called the meeting to order at 12:03 p.m.

### **DISCUSSION ITEMS:**

1. *Quarterly Report of Investments:* The Committee reviewed the quarterly investment report that was provided to the Board. For the month of September 2018, the SCAQMD's weighted average yield on total investments of \$806,969,469 from all sources was 1.94%. The allocation by investment type was 89.06% in the Los Angeles County Pooled Surplus Investment Fund (PSI) and 10.94% in the State of California Local Agency Investment Fund (LAIF) and Special Purpose Investments (SPI). The one-year Treasury Bill rate as of September 30, 2018 was 2.59%.

2. Cash Flow Forecast: Sujata Jain, Assistant Deputy Executive Officer/Finance, reported on the cash flows for the current year and the projections for the next three years. SCAQMD Investment Policy limits its Special Purpose Investments to 75% of the minimum amount of funds available for investment during the Cash Flow Horizon. That limit, which includes all funds (General, MSRC, Clean Fuels), is \$131.5 million. Current Special Purpose Investments are well below the maximum limit. Staff is looking at the current increase in interest rates and opportunities for additional interest yield.
3. Financial Market Update: Mr. Richard Babbe from PFM Asset Management provided information on current investment markets, economic conditions, and the overall outlook. He presented market information on potential increases in federal interest rates, Treasury yield curve showing solid increases but flattening, and record corporate profits due to tax cuts. Economic indicators were also presented showing slower third quarter economic growth, inflation firming up to 2%, consumer confidence to an eighteen year high, growth in the labor market, national unemployment rate of 3.7 percent, and with volatility in the market there is anticipation of how the current expansion will play out in 2019. The Committee Members encouraged staff to assess interest rates and report back with any recommendations.

#### **ACTION ITEMS:**

4. Calendar Year 2019 Committee Meeting Dates: For calendar year 2019, quarterly Investment Oversight Committee meeting dates are as follows: Friday, February 15; Friday, May 17; and Friday, November 15. The August quarterly meeting has been cancelled in conjunction with the cancellation of all SCAQMD Board and Committee meetings during the month of August.

Moved by Lyou; seconded by Mason; unanimously approved.

#### **OTHER MATTERS:**

##### **5. Other Business**

There was no other business.

##### **6. Public Comment Period**

There were no public comments.

##### **7. Next Meeting Date**

The next regular meeting of the Investment Oversight Committee is scheduled for February 15, 2019 at noon.

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 21

REPORT: Legislative Committee

SYNOPSIS: The Legislative Committee held a meeting on Friday, November 9, 2018. The following is a summary of the meeting.

Agenda Item	Recommendation/Action
Interview Firms and Recommend Execution of Contract(s) for Legislative Representation in Washington, D.C.	Authorize the Chairman to execute contract(s) with Carmen Group, Inc., Cassidy & Associates, Inc., and Kadesh & Associates for Legislative Representation in Washington, D.C.

**RECOMMENDED ACTION:**

Receive and file this report, and approve agenda item as specified in this letter

Judith Mitchell, Chair  
Legislative Committee

DJA:PFC:LTO:jns

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**Committee Members**

Present: Mayor Pro Tem Judith Mitchell, Chair (videoconference)

Dr. William A. Burke (videoconference)

Dr. Clark E. Parker, Sr. (videoconference)

Supervisor V. Manuel Perez (videoconference)

Supervisor Janice Rutherford

Absent: Council Member Joe Buscaino, Vice Chair

**Call to Order**

Chair Mitchell called the meeting to order at 9:00 a.m.

**ACTION ITEM:**

**1. Interview Firms and Recommend Execution of Contract(s) for Legislative Representative in Washington D.C.**

The Committee members interviewed the following firms:

- Carmen Group, Inc.
- Cassidy & Associates, Inc.
- Kadesh & Associates, Inc.
- The Glover Park Group

**After the interviews were concluded, the Committee Members recommended that the Board authorize the execution of contracts with the Carmen group, Inc., Cassidy & Associates, Inc. and Kadesh & Associates.**

Moved by Parker; seconded by Perez; unanimously approved

Ayes: Burke, Mitchell, Parker, Perez, Rutherford

Noes: None

Abstain: None

Absent: Buscaino

**WRITTEN REPORTS:**

**2. State Legislative Reports**

Please refer to Attachment 2 for written reports on State legislative activities in Sacramento.

**OTHER MATTERS:**

**3. Other Business**

There was no other business.

**4. Public Comment Period**

Mr. Harvey Eder, Public Power Solar Coalition, made comments regarding equitable solar conversion and the need to address climate change.

**5. Next Meeting Date**

The next regular Legislative Committee meeting is scheduled for Friday, December 14, 2018 at 9:00 a.m.

**Adjournment**

The meeting adjourned at 10:24 a.m.

**Attachments**

1. Attendance Record
2. Update on State Legislative Issues – Written Reports

# ATTACHMENT 1

## **SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT LEGISLATIVE COMMITTEE MEETING ATTENDANCE RECORD – November 9, 2018**

Dr. William A. Burke (videoconference).....	SCAQMD Board Member
Mayor Pro Tem Judith Mitchell (videoconference).....	SCAQMD Board Member
Dr. Clark E. Parker, Sr. (videoconference).....	SCAQMD Board Member
Supervisor V. Manuel Perez (videoconference).....	SCAQMD Board Member
Supervisor Janice Rutherford.....	SCAQMD Board Member
Mark Abramowitz.....	Board Consultant (Lyou)
Guillermo Gonzalez.....	Board Consultant (V. Manuel Perez)
Ron Ketcham.....	Board Consultant (McCallon)
Andrew Silva.....	Board Consultant (Rutherford)
Mark Taylor.....	Board Consultant (Rutherford)
Gary Hoitsma.....	Carmen Group, Inc.
Dal Harper.....	Carmen Group, Inc.
Kai Anderson.....	Cassidy & Associates
Amelia Jenkins.....	Cassidy & Associates
Kaleb Froehlich.....	Cassidy & Associates
Mark Kadesh.....	Kadesh & Associates
Chris Kierig.....	Kadesh & Associates
Dave Ramey.....	Kadesh & Associates
Catharine Cyr Ransom.....	The Glover Park Group
Harvey Eder.....	Public Solar Power Coalition
Tom Gross.....	Southern California Edison
Bill LaMarr.....	California Small Business Alliance
Rita Loof.....	RadTech
Susan Stark.....	Marathon Petroleum
Tammy Yamasaki.....	Southern California Edison
Derrick Alatorre.....	SCAQMD Staff
Barbara Baird.....	SCAQMD Staff
BreTania Chase-Young.....	SCAQMD Staff
Philip Crabbe.....	SCAQMD Staff
Gloria Garcia.....	SCAQMD Staff
Stacy Garcia.....	SCAQMD Staff
Elaine Hills.....	SCAQMD Staff
Monika Kim.....	SCAQMD Staff
Matt Miyasato.....	SCAQMD Staff
Ron Moskowitz.....	SCAQMD Staff
Wayne Nastri.....	SCAQMD Staff
Robert Paud.....	SCAQMD Staff
Stacey Pruitt.....	SCAQMD Staff
Sarah Rees.....	SCAQMD Staff
Mary Reichert.....	SCAQMD Staff
Denny Shaw.....	SCAQMD Staff
Jeanette Short.....	SCAQMD Staff
Lisa Tanaka O'Malley.....	SCAQMD Staff
Fabian Wesson.....	SCAQMD Staff
Jill Whynot.....	SCAQMD Staff
Paul Wright.....	SCAQMD Staff

## ATTACHMENT 2



THE  
QUINTANA  
CRUZ  
COMPANY

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October 25, 2018

**TO:** South Coast Air Quality Management District

**FROM:** The Quintana Cruz Company

**RE:** October 2018 Report

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### GENERAL UPDATE:

- The Legislature is out of session
- **January 3<sup>rd</sup>** the Legislature reconvenes

### POLITICAL ITEMS OF NOTE:

- **November 6<sup>th</sup>** is election day
- Current polling for Governor:
  - Gavin Newsom (D): 49%
  - John Cox (R): 38%
- Current polling for US Senate:
  - Dianne Feinstein (D): 43%
  - Kevin de León (D): 27%
- Current polling for Proposition 6:
  - Yes: 41%
  - No: 48%
- Current polling for Proposition 10:
  - Yes: 60%
  - No: 25%

### LEGISLATIVE ITEMS OF NOTE:

- N/A



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# CALIFORNIA ADVISORS, LLC

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SCAQMD Report  
California Advisors, LLC  
November 9, 2018 Legislative Committee Hearing

## **General Update**

At the conclusion of the 2017-18 legislative session on September 30<sup>th</sup>, focus has shifted to the November election. This year, in addition to the election of a new governor, 20 out of 40 state Senate seats and all 80 state Assembly seats are up for election. The democrats currently hold a supermajority plus one (55-25) in the Assembly and are one seat short of a supermajority (26-14) in the Senate.

While it is widely expected that Gavin Newsom will win the election for governor, polls have shown a steady narrowing of the gap between him and John Cox.

In the state Assembly there are eight districts considered to be battleground elections. Of these eight races, three are democrat versus democrat, five are democrat versus republican, with two of the five republicans being incumbents.

In the state Senate there is only one seat, Senate District 39, formerly held by Tony Mendoza, that is considered a battleground election.

## **2018 Legislative Priorities**

### **Sales Tax Ballot Initiative Authorization**

Work has begun on identifying an author and building a coalition of support to seek next year legislation that will authorize the placement on the ballot of a sales tax measure that will substantially fund the AQMP. Thus far California Advisors has facilitated three days of meetings with key Capitol staff as well as multiple interest groups and public organizations that could potentially be supportive of our efforts. Meetings have been positive, with great feedback and suggestions coming from multiple sources.

### **SB 210 (Leyva) Heavy-duty Vehicle Inspection and Maintenance Program**

This bill would authorize the state board to develop and implement a Heavy-Duty Vehicle Inspection and Maintenance Program for non-gasoline heavy-duty on-road motor vehicles.

Status: 10/24/2018 - Senator Leyva hosted a working group to assess the viability of authoring this bill again in 2019-20.



## Joe A. Gonsalves & Son

Anthony D. Gonsalves

Jason A. Gonsalves

Paul A. Gonsalves

PROFESSIONAL LEGISLATIVE REPRESENTATION

925 L ST. · SUITE 250 · SACRAMENTO, CA 95814-3766

916 441-0597 · FAX 916 441-5061

Email: gonsalves@gonsalvi.com

**TO:** South Coast Air Quality Management District

**FROM:** Anthony, Jason & Paul Gonsalves

**SUBJECT:** Legislative Update – October 2018

**DATE:** Friday, October 26, 2018

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The month of October is very quiet in the State Capitol. August 31, 2018 was the last day of session and the Governor had until October 1, 2018 to act on all legislation. Over the past year, the Legislature introduced 2,637 bills; 1,777 in the Assembly and 860 in the Senate. 1,564 of those bills made it to the Governor's desk for his consideration. The remaining 1,073 bills died through the legislative process. Governor Brown signed and chaptered 1363 bills and vetoed 201.

### **AB 2548 (FRIEDMAN) COMMUTE BENEFIT POLICIES: METRO.**

This bill authorizes the Los Angeles County Metropolitan Transportation Authority (Metro) to administer a commute benefit program that requires certain employers to provide a commuter benefit option to their employees.

As you know, the SCAQMD administers an extensive commute benefit program under Rule 2202, which requires employers with over 250 or more employees at a worksite to establish commuter programs to meet designated emission reduction targets. Our firm worked closely with Assemblymember Friedman's office to ensure the new ordinance would only apply to employers that are not currently subject to the regulations established under Rule 2202. In fact, the bill specifically prohibits Metro from approving any commute benefit ordinance that affects the SCAQMD program.

Specifically, AB 2548 would authorize Metro to establish a commuter benefits ordinance in L.A. County that would give commuters the ability to set aside up to \$260 per month of their paycheck pre-tax to cover the cost of ride-sharing, vanpools, and transit. This means that the Metro program would cover employers with 50 to 249 employees at a worksite. However, in the future, the Metro program would have to be updated based on any actions by SCAQMD to raise or lower the number of employers covered by Rule 2022. Metro estimates that 24-26% of the worksites in L.A. County, or 64,000 to 69,000 of approximately 265,000 worksites, have between 50-249 employees.

On August 20, 2018, Governor Brown signed AB 2548 into law, which will take effect on January 1, 2019.

#### **AB 2453 (E. GARCIA) AIR POLLUTION: SCHOOLS.**

Existing law requires CARB to establish Community Emissions Reductions Programs (CERP) for the purposes of reducing emissions of toxic air contaminants and criteria air pollutants. Existing law also establishes school modernization apportionment funds, which may be used for improvements to extend the useful life of, or to enhance the physical environment of, a school, including, but not limited to, maximizing indoor air quality, but may not be used for routine maintenance and repair.

AB 2453 clarifies that a modernization apportionment may be used to limit pupil exposure to harmful air pollutants by updating air filtration systems. Additionally, the bill would permit a school or school district located in a community identified as a qualifying community for a CERP to:

- work with local air districts to identify school sites for air quality adaptation efforts; and
- be eligible for a grant, as a part of a CERP, that implements air quality mitigation efforts, including, but not limited to, air filter upgrades or installations and vegetation buffer planting.

On August 17, 2018, the Senate Appropriations Committee amended AB 2453 to specify that the provision authorizing a school district to be eligible for a CERP grant

shall be implemented only if an appropriation for this purpose is made in the annual Budget Act or other statute. With that amendment, the bill passed out of the Senate Appropriations Committee on a 7-0 vote.

On August 27, 2018, AB 2453 passed off the Senate Floor on a 39-0 vote. Since the bill was amended in the Senate, AB 2453 went back to the Assembly Floor for concurrence in Senate amendments and passed on an 80-0 vote.

On September 23, 2018, Governor Brown signed AB 2453 into law, which will take effect on January 1, 2019.

### **CLEAN VEHICLE ASSISTANCE PROGRAM**

The California Air Resources Board (CARB) recently announced a new statewide grant and loan program to help lower-income consumers across California get into the cleanest new and used cars on the market.

The Clean Vehicle Assistance Program, run by the Oakland-based nonprofit Beneficial State Foundation, was launched with a \$5 million CARB grant from California Climate Investments, a statewide initiative that spends billions of Cap-and-Trade dollars on reducing greenhouse gas emissions, strengthening the economy and improving public health and the environment, especially in low-income and disadvantaged communities.

The Cap-and-Trade program also creates a financial incentive for industries to invest in clean technologies and develop innovative ways to reduce pollution. The program has been up and running since June 2018 and has already received more than 900 applications and awarded 24 grants for cars ranging from a 2018 Nissan Leaf to a 2014 Kia Optima Hybrid.

### **CLEAN TRANSPORTATION INVESTMENT**

On October 25, 2018, CARB approved a \$483 million plan to fund clean car rebates, zero-emission transit and school buses, clean trucks, and other innovative, clean transportation and mobility pilot projects.

The funding plan for Clean Transportation Incentives (CTI), largely funded with cap-and-trade funds, is part of the Legislature's strategy for improving air quality and reducing greenhouse gas (GHG) emissions in the transportation sector. Of the \$483 million total, \$455 million comes from the cap-and-trade program. The remaining \$28 million is from the Air Quality Improvement Program (AQIP). The funding plan prioritizes investments in disadvantaged and low-income communities.

The plan serves as the blueprint for expending funds appropriated to CARB in budget bills passed this year by the Legislature and signed by the Governor. The plan establishes priorities for the funding, describes the projects CARB intends to fund, and sets funding targets for each project.

Highlights of the FY 2018-19 Plan include:

- **\$200 million** for the Clean Vehicle Rebate Project (CVRP), including increased rebates for low-income consumers.
- **\$75 million** for Transportation Equity Projects, including the Enhanced Fleet Modernization Plus-Up/Clean Cars 4 All Program, Financing Assistance for Lower-Income Consumers, Clean Mobility Options, Agricultural Worker Vanpools, Rural School Bus Pilot Project, and the new Clean Mobility in Schools Project.
- **\$180 million** for Clean Truck & Bus Vouchers and the Zero- and Near-Zero Emission Freight Facilities Project.
- **\$28.6 million** for AQIP or AQIP-funded heavy-duty vehicle investments, including the Truck Loan Assistance Program and new Diesel Particulate Filter Retrofit Replacements.

Over the past five years, the Legislature has appropriated nearly \$1.2 billion for low-carbon transportation projects from the cap-and-trade program. These investments are an essential element in the state's transition to a low-carbon economy and meeting 2030 GHG emissions reductions targets of 40% below 1990 levels.

The AQIP has an annual budget of about \$28 million. AQIP supports CVRP, the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP), and has been funding demonstrations for advanced emission reduction vehicle technologies since 2009.

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 22

REPORT: Mobile Source Committee

SYNOPSIS: The Mobile Source Committee held a meeting on Friday, November 16, 2018. The following is a summary of the meeting.

RECOMMENDED ACTION:  
Receive and file.

Dr. Clark E. Parker, Sr., Chair  
Mobile Source Committee

PMF:AF

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### **Committee Members**

Present: Dr. Clark E. Parker, Sr./Chair (videoconference)  
Dr. Joseph Lyou, Vice Chair  
Mayor Larry McCallon  
Supervisor V. Manuel Perez (videoconference)  
Supervisor Hilda L. Solis (videoconference)

Absent: Mayor Pro Tem Judith Mitchell

### **Call to Order**

Chair Dr. Parker called the meeting to order at 9:01 a.m.

### **ACTION ITEM:**

#### **1. Execute Contract to Conduct Preliminary Cost and Economic Impact Analysis of Proposed Warehouse Indirect Source Rule**

Ian MacMillan, Planning and Rules Manager, reported that staff is requesting approval to execute a contract with Industrial Economics, Incorporated to conduct preliminary cost and economic impact analysis of a proposed warehouse indirect source rule in an amount not to exceed \$200,000.

Supervisor Solis asked whether the study will analyze traffic impacts related to warehouse employees commuting to work, and any impacts of the proposed warehouse indirect source rule (ISR) on independent truck owners/operators. Mr. MacMillan replied that the contracted study will examine, under different

hypothetical scenarios, the proposed rule's impact on cargo diversion to warehouses in areas adjacent to SCAQMD's jurisdiction, thus potentially increasing commuting distance for current warehouse workers. The study will also categorize and evaluate various fleet types and warehouse types and how they could be affected by a potential ISR.

Dr. Lyou inquired whether the contracted study will examine any potential cargo diversion from other areas into the South Coast Basin (Basin), for example as a result of San Joaquin Valley Air Pollution Control District's existing ISR. Mr. MacMillan replied that the study will assess industrial real estate markets in the regions adjacent to the Basin, and that this study could evaluate this point. Dr. Lyou then inquired whether the contracted study will identify the parties/industry sectors that will bear the compliance cost under different regulatory scenarios. Mr. MacMillan replied that the structure of the rule may determine which entities would experience higher costs (e.g., truckers vs. beneficial cargo owners), and that hypothetical scenarios could be tailored to evaluate this.

Mayor McCallon suggested that an evaluation of economic impacts on the entire logistics industry is needed, not one just focused on warehousing. Dr. Parker also mentioned a prior decision by this Committee to use a national study co-funded by SCAQMD and industry to quantify truck trips going to warehouses. Mr. MacMillan replied that staff plans to use the best available science such as the study Dr. Parker mentioned, and will evaluate economic impacts on the broader logistics sector both through this current study, and through other ongoing efforts being evaluated in others studies (e.g., the Ports' Clean Truck Program Fee Rate Study).

Mr. Peter Herzog, Assistant Director of Legislative Affairs with NAIOP SoCal (Commercial Real Estate Development Association), commented that the Board-directed economic analysis of the warehouse ISR needs to examine the impacts on the competitiveness of the logistics sector as a whole.

Moved by Perez; seconded by Solis; unanimously approved

Ayes: Lyou, McCallon, Parker, Perez and Solis  
Noes: None  
Absent: Mitchell

### **INFORMATIONAL ITEM:**

#### **2. Warehouse Indirect Source Rule Update**

Mr. MacMillan provided a summary of regulatory options for a potential indirect source rule for warehouses and other related topics discussed with the Warehouse Working Group.

Dr. Lyou commented that facility caps that placed a limit on emissions per facility, or emissions per goods throughput unit seemed very difficult to implement and asked how the voluntary approaches, such as a voluntary fleet certification program, would potentially satisfy mandatory rule requirements. Mr. MacMillan clarified that compliance with rule requirements would be mandatory for warehousing facilities, whereas fleet owners/operators could choose whether or not to participate in a voluntary fleet certification program. Dr. Lyou emphasized that special attention needs to be paid to environmental justice (EJ) considerations, especially when considering approaches such as local government measures, crediting/banking program, and mitigation fees. These programs would need to adequately address localized impacts of air toxics on the communities in close proximity to warehouse-related operations.

Supervisor Solis added that the warehouse ISR should not result in worsened air quality impacts on low-income communities. She then inquired about the available tools to SCAQMD for assisting disadvantage communities, especially regarding enforcement and considering AB 617. Wayne Natri, Executive Officer, mentioned that recent state legislation (e.g., AB 617 and AB 1132) provides SCAQMD with additional monitoring and enforcement authorities and allows actions to be taken promptly to protect communities. Other tools include rulemaking, compliance and enforcement, and coordination with other agencies for broad-based rule enforcement activities. SCAQMD also provides financial incentives that prioritize EJ communities, as well as technical and scientific advice for residents and businesses in those communities. Mr. MacMillan added that many industry and community stakeholders in the working group have expressed how important it is to ensure the proposed warehouse ISR is workable and enforceable so that there is a level playing field for industry and effective air quality reductions for communities.

Dr. Parker commented that the funds collected from the potential mitigation fee program should be used to help the most impacted communities. Moreover, the mitigation fee should be a strong deterrent for generating air pollution. Supervisor Perez stressed the need for outreach and education efforts in the impacted communities. He further inquired about the warehouse ISR rulemaking timeline. Mr. MacMillan replied that staff plans to present the rule package to the Board for consideration in late 2019, and in the interim, staff will provide regular status updates to the Mobile Source Committee.

Mr. Herzog from NAIOP commented that the potential warehouse ISR needs to be based on hard data, real facts, and good analysis, especially given the complexity of the logistics sector.

### **WRITTEN REPORTS:**

**3. Rule 2202 Activity Report: Rule 2202 Summary Status Report**

This item was received and filed.

**4. Monthly Report on Environmental Justice Initiatives: CEQA Document Commenting Update**

Dr. Lyou inquired about the deadline for comment on the China Shipping Container Terminal Project. Ms. Veera Tyagi, Principal Deputy District Counsel, responded that SCAQMD was given a 2-week extension for the comment period, and a copy of staff comments will be provided to Dr. Lyou, per his request.

This item was received and filed.

### **OTHER MATTERS:**

**5. Other Business**

There was no other business.

**6. Public Comment Period**

There were no public comments.

**7. Next Meeting Date:**

The next regular Mobile Source Committee meeting is scheduled for Friday, January 18, 2019.

### **Adjournment**

The meeting adjourned at 10:01 a.m.

### **Attachments**

1. Attendance Record
2. Rule 2202 Activity Report – Written Report
3. Monthly Report on Environmental Justice Initiatives: CEQA Document Commenting Update – Written Report

# ATTACHMENT 1

## **SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT MOBILE SOURCE COMMITTEE MEETING Attendance – November 16, 2018**

Dr. Clark E. Parker, Sr. (videoconference) .....	SCAQMD Board Member
Dr. Joseph Lyou .....	SCAQMD Board Member
Mayor Larry McCallon .....	SCAQMD Board Member
Supervisor V. Manuel Perez (videoconference) .....	SCAQMD Board Member
Supervisor Hilda Solis (videoconference) .....	SCAQMD Board Member
Mark Abramowitz .....	Board Consultant (Lyou)
Guillermo Gonzalez .....	Board Consultant (Perez)
Ron Ketcham .....	Board Consultant (McCallon)
Curt Coleman .....	Southern CA Air Quality Alliance
Peter Herzog .....	NAIOP SoCal (Commercial Real Estate Development Association)
Bill LaMarr .....	California Small Business Alliance
Rongsheng Luo .....	Southern California Association Governments
Bill Pearce .....	Boeing
Peter Whittingham .....	Whittingham Public Affairs
Sam Atwood .....	SCAQMD Staff
Barbara Baird .....	SCAQMD Staff
Arlene Farol .....	SCAQMD Staff
Philip Fine (videoconference) .....	SCAQMD Staff
Carol Gomez .....	SCAQMD Staff
Erika Graham .....	SCAQMD Staff
Sang-Mi Lee .....	SCAQMD Staff
Megan Lorenz .....	SCAQMD Staff
Ian MacMillan .....	SCAQMD Staff
Matt Miyasato .....	SCAQMD Staff
Wayne Nastri (videoconference) .....	SCAQMD Staff
Zorik Pirveysian .....	SCAQMD Staff
Sarah Rees .....	SCAQMD Staff
Elaine Shen .....	SCAQMD Staff
Laki Tisopoulos .....	SCAQMD Staff
Veera Tyagi .....	SCAQMD Staff
Jill Whynot .....	SCAQMD Staff
Paul Wright .....	SCAQMD Staff



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4182  
(909) 396-2000 • www.aqmd.gov

## Rule 2202 Summary Status Report

### Activity for January 1, 2018 to October 31, 2018

Employee Commute Reduction Program (ECRP)	
# of Submittals:	231

Emission Reduction Strategies (ERS)	
# of Submittals:	525

Air Quality Investment Program (AQIP) Exclusively		
County	# of Facilities	\$ Amount
Los Angeles	49	\$ 287,086
Orange	17	\$ 165,354
Riverside	2	\$ 31,075
San Bernardino	6	\$ 32,337
<b>TOTAL:</b>	<b>74</b>	<b>\$ 515,852</b>

ECRP w/AQIP Combination		
County	# of Facilities	\$ Amount
Los Angeles	6	\$ 30,094
Orange	0	\$ 0
Riverside	1	\$ 4,907
San Bernardino	1	\$ 9,253
<b>TOTAL:</b>	<b>8</b>	<b>\$ 44,253</b>

### Total Active Sites as of October 31, 2018

ECRP (AVR Surveys)			TOTAL Submittals w/Surveys	AQIP	ERS	TOTAL
ECRP <sup>1</sup>	AQIP <sup>2</sup>	ERS <sup>3</sup>				
497	17	11	525	106	728	1,359
36.57%	1.25%	0.81%	38.63%	7.8%	53.57%	100% <sup>4</sup>

### Total Peak Window Employees as of October 31, 2018

ECRP (AVR Surveys)			TOTAL Submittals w/Surveys	AQIP	ERS	TOTAL
ECRP <sup>1</sup>	AQIP <sup>2</sup>	ERS <sup>3</sup>				
359,868	5,880	10,972	376,720	16,267	328,592	721,579
49.87%	.81%	1.52%	52.21%	2.25%	45.54%	100% <sup>4</sup>

- Notes:**
1. ECRP Compliance Option.
  2. ECRP Offset (combines ECRP w/AQIP). AQIP funds are used to supplement the ECRP AVR survey shortfall.
  3. ERS with Employee Survey to get Trip Reduction credits. Emission/Trip Reduction Strategies are used to supplement the ECRP AVR survey shortfall.
  4. Totals may vary slightly due to rounding.

BOARD MEETING DATE: December 7, 2018

AGENDA NO.

REPORT: Lead Agency Projects and Environmental Documents Received By SCAQMD

SYNOPSIS: This report provides, for the Board's consideration, a listing of CEQA documents received by the SCAQMD between October 1, 2018 and October 31, 2018, and those projects for which the SCAQMD is acting as lead agency pursuant to CEQA.

COMMITTEE: Mobile Source, November 16, 2018; Reviewed

RECOMMENDED ACTION:  
Receive and file.

Wayne Nastri  
Executive Officer

PF:SN:JW:DG:LW

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**CEQA Document Receipt and Review Logs (Attachments A and B)** – Each month, the SCAQMD receives numerous CEQA documents from other public agencies on projects that could adversely affect air quality. A listing of all documents received and reviewed during the reporting period October 1, 2018 through October 31, 2018 is included in Attachment A. A list of active projects from previous reporting periods for which SCAQMD staff is continuing to evaluate or has prepared comments is included in Attachment B. A total of 103 CEQA documents were received during this reporting period and 15 comment letters were sent. Notable project to highlight in this report include the Port of Los Angeles's Berths 97-109 (China Shipping) Container Terminal Project.

The Intergovernmental Review function, which consists of reviewing and commenting on the adequacy of the air quality analysis in CEQA documents prepared by other lead agencies, is consistent with the Board's 1997 Environmental Justice Guiding Principles and Environmental Justice Initiative #4. As required by the Environmental Justice Program Enhancements for FY 2002-03 approved by the Board in October 2002, each of

the attachments notes those proposed projects where the SCAQMD has been contacted regarding potential air quality-related environmental justice concerns. The SCAQMD has established an internal central contact to receive information on projects with potential air quality-related environmental justice concerns. The public may contact the SCAQMD about projects of concern by the following means: in writing via fax, email, or standard letters; through telephone communication; as part of oral comments at SCAQMD meetings or other meetings where SCAQMD staff is present; or by submitting newspaper articles. The attachments also identify, for each project, the dates of the public comment period and the public hearing date, if applicable. Interested parties should rely on the lead agencies themselves for definitive information regarding public comment periods and hearings as these dates are occasionally modified by the lead agency.

At the January 6, 2006 Board meeting, the Board approved the Workplan for the Chairman's Clean Port Initiatives. One action item of the Chairman's Initiatives was to prepare a monthly report describing CEQA documents for projects related to goods movement and to make full use of the process to ensure the air quality impacts of such projects are thoroughly mitigated. In response to describing goods movement, CEQA documents (Attachments A and B) are organized to group projects of interest into the following categories: goods movement projects; schools; landfills and wastewater projects; airports; general land use projects, etc. In response to the mitigation component, guidance information on mitigation measures were compiled into a series of tables relative to: off-road engines; on-road engines; harbor craft; ocean-going vessels; locomotives; fugitive dust; and greenhouse gases. These mitigation measure tables are on the CEQA webpages portion of the SCAQMD's website at: <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies>. Staff will continue compiling tables of mitigation measures for other emission sources, including airport ground support equipment and other sources.

As resources permit, staff focuses on reviewing and preparing comments for projects: where the SCAQMD is a responsible agency; that may have significant adverse regional air quality impacts (e.g., special event centers, landfills, goods movement, etc.); that may have localized or toxic air quality impacts (e.g., warehouse and distribution centers); where environmental justice concerns have been raised; and those projects for which a lead or responsible agency has specifically requested SCAQMD review. If staff provided written comments to the lead agency as noted in the column "Comment Status," there is a link to the "SCAQMD Letter" under the Project Description. In addition, if staff testified at a hearing for the proposed project, a notation is provided under the "Comment Status." If there is no notation, then staff did not provide testimony at a hearing for the proposed project.

During the period October 1, 2018 through October 31, 2018, the SCAQMD received 103 CEQA documents. Of the total of 120 documents\* listed in Attachments A and B:

- 15 comment letters were sent;
- 25 documents were reviewed, but no comments were made;
- 28 documents are currently under review;
- 18 documents did not require comments (e.g., public notices);
- 0 documents were not reviewed; and
- 33 documents were screened without additional review.

\* These statistics are from October 1, 2018 to October 31, 2018 and may not include the most recent “Comment Status” updates in Attachments A and B.

Copies of all comment letters sent to lead agencies can be found on the SCAQMD’s CEQA webpage at the following internet address:  
<http://www.aqmd.gov/home/regulations/ceqa/commenting-agency>.

**SCAQMD Lead Agency Projects (Attachment C)** – Pursuant to CEQA, the SCAQMD periodically acts as lead agency for stationary source permit projects. Under CEQA, the lead agency is responsible for determining the type of CEQA document to be prepared if the proposal is considered to be a “project” as defined by CEQA. For example, an Environmental Impact Report (EIR) is prepared when the SCAQMD, as lead agency, finds substantial evidence that the proposed project may have significant adverse effects on the environment. Similarly, a Negative Declaration (ND) or Mitigated Negative Declaration (MND) may be prepared if the SCAQMD determines that the proposed project will not generate significant adverse environmental impacts, or the impacts can be mitigated to less than significance. The ND and MND are written statements describing the reasons why proposed projects will not have a significant adverse effect on the environment and, therefore, do not require the preparation of an EIR.

Attachment C to this report summarizes the active projects for which the SCAQMD is lead agency and is currently preparing or has prepared environmental documentation. As noted in Attachment C, the SCAQMD continued working on the CEQA documents for four active projects during October.

### **Attachments**

- A. Incoming CEQA Documents Log
- B. Ongoing Active Projects for Which SCAQMD Has or Will Conduct a CEQA Review
- C. Active SCAQMD Lead Agency Projects































**ATTACHMENT A  
INCOMING CEQA DOCUMENTS LOG  
October 01, 2018 to October 31, 2018**

**DRAFT**

<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>General Land Use (residential, etc.)</i> <b>SBC181003-01</b> Commission Review and Approval No. 904	The proposed project consists of construction of a 75,794-square-foot parking lot for the ESRI campus on 1.74 acres. The project is located on the southwest corner of West Park Ave and Tennessee Street.  Comment Period: 10/1/2018 - 10/22/2018 Public Hearing: N/A	Mitigated Negative Declaration	City of Redlands	Document reviewed - No comments sent
<i>General Land Use (residential, etc.)</i> <b>SBC181009-01</b> Tentative Tract Map SUBTT20140 and Tree Removal Permit DRC2017-00823	The proposed project consists of subdivision of 9.11 acres for future development of 14 residential units. The project is located at 6527 Etiwanda Avenue on the southeast corner of Etiwanda Avenue and Highland Avenue. Reference SBC180911-09 <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/mndTTMsubtt20140-092618.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/mndTTMsubtt20140-092618.pdf</a>  Comment Period: N/A Public Hearing: N/A	Response to Comments	City of Rancho Cucamonga	Document reviewed - No comments sent
<i>General Land Use (residential, etc.)</i> <b>SBC181018-04</b> Tentative Tract Map 18-02; Site and Architectural Review 18-09 and Variance 18-02	The proposed project consist of construction of 12 townhomes totaling 24,746.64 square feet on a 0.80 acre site. The project is located on 11695 Canal Street on the northeast corner of Newport Avenue and Canal Street.	Site Plan	City of Grand Terrace	Document reviewed - No comments sent
<i>Plans and Regulations</i> <b>LAC181003-02</b> Earth Friendly Management Policy	The proposed project consists of development of citywide strategies for pest management, monitoring, and treatment methods that emphasize avoidance of pesticides and chemical applications. Ref LAC180508-07  Comment Period: N/A Public Hearing: 10/8/2018	Notice of Public Hearing	City of Malibu	Document does not require comments

# - Project has potential environmental justice concerns due to the nature and/or location of the project.

\*\* Disposition may change prior to Governing Board Meeting

Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.













**ATTACHMENT C  
ACTIVE SCAQMD LEAD AGENCY PROJECTS  
THROUGH OCTOBER 31, 2018**

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
<p>The Phillips 66 (formerly ConocoPhillips) Los Angeles Refinery Ultra Low Sulfur Diesel project was originally proposed to comply with federal, state and SCAQMD requirements to limit the sulfur content of diesel fuels. Litigation against the CEQA document was filed. Ultimately, the California Supreme Court concluded that the SCAQMD had used an inappropriate baseline and directed the SCAQMD to prepare an EIR, even though the project has been built and has been in operation since 2006. The purpose of this CEQA document is to comply with the Supreme Court's direction to prepare an EIR.</p>	<p>Phillips 66 (formerly ConocoPhillips), Los Angeles Refinery</p>	<p>Environmental Impact Report (EIR)</p>	<p>The Notice of Preparation/Initial Study (NOP/IS) was circulated for a 30-day public comment period on March 26, 2012 to April 26, 2012. The consultant submitted the administrative Draft EIR to SCAQMD in late July 2013. The Draft EIR was circulated for a 45-day public review and comment period from September 30, 2014 to November 13, 2014. Two comment letters were received and the consultant has prepared responses to comments which are undergoing SCAQMD review.</p>	<p>Environmental Audit, Inc.</p>
<p>Quemetco is proposing to modify existing SCAQMD permits to allow the facility to recycle more batteries and to eliminate the existing daily idle time of the furnaces. The proposed project will increase the rotary feed drying furnace feed rate limit from 600 to 750 tons per day and increase the amount of total coke material allowed to be processed. In addition, the project will allow the use of petroleum coke in lieu of or in addition to calcined coke, and remove one existing emergency diesel-fueled internal combustion engine (ICE) and install two new emergency natural gas-fueled ICEs.</p>	<p>Quemetco</p>	<p>Environmental Impact Report (EIR)</p>	<p>A Notice of Preparation/Initial Study (NOP/IS) was released for a 56-day public review and comment period from August 31, 2018 to October 25, 2018, and 154 comment letters were received. Two CEQA scoping meetings were held on September 13, 2018 and October 11, 2018. SCAQMD staff is reviewing the comment letters.</p>	<p>Trinity Consultants</p>

**ATTACHMENT C  
ACTIVE SCAQMD LEAD AGENCY PROJECTS  
THROUGH OCTOBER 31, 2018**

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
<p>Southern California Edison (SCE) is proposing to modify the air pollution control system for the Barre Peaker unit to repair current and prevent future water damage by: 1) decreasing the water-injection rate into the turbine’s combustor; 2) replacing the oxidation catalyst and increasing the overall area of catalyst beds in the selective catalytic reduction (SCR) unit; 3) replacing the ammonia injection grid to improve the deliverability of ammonia to the catalyst; and, 4) increasing the concentration of the aqueous ammonia that is delivered to the facility, stored on-site, and injected into the SCR unit from 19% to 29%. In addition, SCE is proposing to revise its SCAQMD Title V Operating Permit to allow the turbine to generate power over its full operating range, from less than one megawatt (MW) to full load (e.g., 45 MW net), while continuing to meet the emission limits in the current permit.</p>	<p>Southern California Edison</p>	<p>Addendum to the April 2007 Final Mitigated Negative Declaration for the Southern California Edison Barre Peaker Project in Stanton</p>	<p>This project was approved on October 30, 2018.</p>	<p>Yorke Engineering, LLC</p>
<p>Southern California Edison (SCE) is proposing to modify the air pollution control system for the Mira Loma Peaker unit to repair current and prevent future water damage by: 1) decreasing the water-injection rate into the turbine’s combustor; 2) replacing the oxidation catalyst and increasing the overall area of catalyst beds in the Selective Catalytic Reduction (SCR) unit; 3) replacing the ammonia injection grid to improve the deliverability of ammonia to the catalyst; and, 4) increasing the concentration of the aqueous ammonia that is delivered to the facility, stored on-site, and injected into the SCR unit from 19% to 29%. In addition, SCE is proposing to revise its SCAQMD Title V Operating Permit to allow the turbine to generate power over its full operating range, from less than one megawatt (MW) to full load (e.g., 45 MW net), while continuing to meet the emission limits in the current permit.</p>	<p>Southern California Edison</p>	<p>Addendum to the April 2007 Final Mitigated Negative Declaration for the Southern California Edison Mira Loma Peaker Project in Ontario</p>	<p>SCAQMD staff has provided revisions to the Draft Addendum for the consultant to incorporate.</p>	<p>Yorke Engineering, LLC</p>

[↑ Back to Agenda](#)

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 23

REPORT: Refinery Committee

SYNOPSIS: The Refinery Committee held a meeting on Saturday, September 22, 2018 in Wilmington regarding an update on the development of Proposed Rule 1410 - Hydrogen Fluoride Storage and Use at Petroleum Refineries. The following is a summary of the meeting.

RECOMMENDED ACTION:  
Receive and File.

Clark E. Parker, Sr., Chair  
Refinery Committee

PF:SN:ML:MK

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### **Committee Members**

Present: Dr. Clark E. Parker, Sr./Chair  
Mayor Larry McCallon/Vice Chair  
Mayor Ben Benoit  
Dr. Joseph Lyou  
Mayor Pro Tem Judith Mitchell

Dr. William A. Burke was named an Ad Hoc member of the committee for the purpose of this meeting.

Absent: None

### **Call to Order**

Chairman Parker called the meeting to order at 9:05 a.m.

### **Welcome/Opening Remarks**

Dr. Parker opened the Refinery Committee meeting, stating that the past meetings were challenging, informative and provided the community, as well as the Committee, the opportunity to state publicly their positions related to the usage of modified hydrogen fluoride (MHF) in the refinery alkylation process. Dr. Parker introduced the Committee members and briefly summarized what the Committee asked of staff at the April 28, 2018 Refinery Committee meeting.

## **Overview**

Executive Officer Wayne Nastri provided an overview of the meeting agenda.

Dr. Philip Fine, Deputy Executive Officer/Planning, Rule Development and Area Sources, summarized the Committee's past direction to staff and provided an update on staff's efforts to respond and work with stakeholders since the last Committee meeting. Dr. Fine provided an update on the release of confidential documents concerning MHF, other uses of hydrogen fluoride (HF) in the Basin, staff's approach to mitigation measures, challenges to mitigate a large consequential release of MHF, challenges with treatment to HF exposure, and potential implications of a phase-out.

Dr. Fine concluded his presentation with potential options for the Committee's consideration that included: implementation of enhanced mitigation measures; establishing a performance standard with a phase-out if the performance standard could not be met; and implementation of enhanced mitigation with a phase-out of MHF. Any of the approaches could be implemented through either a rule or memorandum of understanding (MOU).

Mr. Bayron Gilchrist, SCAQMD General Counsel, provided information comparing regulatory and MOU approaches as they relate to CEQA and the public process. Dr. Burke asked if staff can prepare an MOU with conditions that if refineries do not act in accordance with the terms of the MOU then the refinery would automatically be subject to the rule. Mr. Gilchrist responded that it is possible if both parties agreed to such a condition in an agreement. Mayor Pro Tem Mitchell mentioned that conducting CEQA after the MOU could generate duplicative work. Mr. Gilchrist agreed and stated that the same amount of consideration is needed for both an MOU with a simultaneous CEQA document, and an MOU with completion of a CEQA document after signing an MOU. For the question regarding enforceability of an MOU, Mr. Gilchrist suggested that incorporating MOU conditions in the Title V permit is probably the best path to pursue. He added that some of the conditions in the MOU with Valero are not currently incorporated in their Title V permit.

The following guest speakers provided presentations on subject matters requested by the Committee at their previous meeting.

Dr. Kenneth Hudnut, U.S. Geological Survey, gave a presentation on the potential earthquake risk for the affected Torrance Refining Company (TORC) and Valero Wilmington Refinery. Mayor Pro Tem Mitchell asked what might be expected in this region if there is an earthquake on the San Andreas Fault. Dr. Hudnut answered that an earthquake on the San Andreas Fault can result in damages to refinery equipment such as piping and tanks.

Dr. Ronald Koopman, retired Manager and Senior Scientist at Lawrence Livermore National Laboratory and currently the Principal of Hazard Analysis Consulting, provided a presentation on HF dispersion and water mitigation testing. Dr. Koopman shared the background, instrument setup, and key results of the 1986 Nevada Goldfish field experiments, as well as findings from testing of water mitigation in the Hawk Study. Dr. Parker asked how to control a large release (e.g., 500 gallons per minute) of HF. Dr. Koopman answered that it depends on the design of the water mitigation systems, but enough water has to be applied to HF until it is completely contained. Dr. Parker also asked whether MHF with six percent of the additive acts the same as pure HF. Dr. Koopman stated that six percent of the additive would have a very small effect on HF. Dr. Burke asked about the number of release points in the Goldfish Study, and Dr. Koopman explained the release of HF was from a single point.

Mr. John Cornwell of Quest Consultants provided a presentation on the previous testing of HF/MHF and consideration for additional MHF testing. Mr. Cornwell emphasized that key parameters (temperature, pressure, and composition of chemicals) for an alkylation acid settler should be reflected in the MHF testing, stating that the past Mobil/Phillips MHF testing did not cover a full range of operating conditions currently in place at these refineries. Dr. Parker inquired if the percent of additive in MHF can indicate the percent of rainout of HF. Mr. Cornwell responded that he is not aware of any published studies revealing that relationship but that it could be tested. In addition, Mr. Cornwell added there are laboratory tests that are not publicly available. Mr. Cornwell also explained that six percent additive by weight is equal to one percent by mole, which would have little effect on HF.

The last presentation was provided by Mr. Michael Mastrangelo, Program Director of Institutional Preparedness at the University of Texas Medical Branch (UTMB), regarding developing HF release preparedness and response, challenges to treating HF exposures, medical countermeasures using calcium gluconate, and concerns that calcium gluconate is on the national shortage list of medications. Mayor Pro Tem Mitchell asked why calcium gluconate is in short supply. Mr. Mastrangelo stated that calcium gluconate is a generic drug, demand is low, and there are not many manufacturers. Dr. Lyou asked staff whether local hospitals and emergency responders have a comparable level of preparedness and training. Ms. Nakamura, Assistant Deputy Executive Officer/Planning, Rule Development and Area Sources, responded that staff contacted the Los Angeles County Preparedness Team who currently has 500 single-treatment vials of calcium gluconate, which can treat about 40 patients if significant inhalation exposure were to occur. By contrast, Texas UTMB has 3,000 vials.

## **Public Comment**

Approximately 70 speakers, including representatives of refineries and the public, provided comments.

Mr. Darren Stroud of TORC spoke on behalf of over 200 refinery employees, business partners and allied groups. Mr. Stroud commented that TORC would like to meet with the Committee in the near future to respond to the information presented by the outside experts. Mr. Stroud commented that TORC can mitigate and contain a large release from the alkylation unit, the proposed safety enhancements will prevent a large off-site release, and that there are various ways to do an MOU without CEQA, making it contractually agreeable and enforceable. Mr. Stroud commented that timing is critical as TORC plans to complete their safety enhancement projects by 2021 during their next turnaround.

Mr. Adam Webb of TORC explained that their existing safety systems are designed to effectively respond to minor and major releases in the MHF alkylation unit. Mr. Webb explained that TORC is now proposing future enhancements, including additional barriers, detectors, and water systems around high acid volumes in the unit to provide protection from external impacts and to promote MHF rainout in the event of release.

Dr. Sally Hayati, president of Torrance Refinery Action Alliance (TRAA) reminded the Committee of the 1984 Union Carbide Bhopal accident for which the plant was designed to be failsafe, with multiple layers of mitigation (e.g., water curtain, storage underground, etc.). All the mitigation measures failed and as a result, 25,000 people died and 500,000 people were permanently injured. Dr. Hayati commented that one additive molecule to 99 HF molecules superheated in the settler tank will flash. Ten million people reside in the 1,330 square miles of combined HF hazard zone.

Following these comments, the general public, including TRAA members, residents and former and current union members, provided testimony on staff recommendations. Some key comments included:

- MHF is not safe. If it is, why would Honeywell not publicize the test results;
- Mitigation does not work. Water would have to be directed at the right location, right amount, right dispersion rate, etc.;
- Schools, communities and hospitals are not prepared for a disaster like an HF release. If an earthquake happens, the challenges would be compounded;
- Support for creating and implementing an MOU that delivers additional safety without jeopardizing the operation of refineries;
- A 2017 U.S. EPA report found that the TORC refinery (i.e., TORC) was not adequately maintaining or testing the safety system they have. The refineries should put safety and lives over profit;

- Safety is the first priority for industry and it is important not to underestimate the amount of safety engineering and safeguards that go into refineries on a daily basis;
- Proceed with an MOU with enhanced safety features and good faith negotiations;
- Potential closure of these refineries will affect families, jobs, local economy, the Southern California gasoline supply
- Net profit in 2017 was \$430 million for TORC and \$2.6 billion for Valero;
- Conversion to safer technology does not have to cost jobs; it may reduce profits.

The public testimony ended with comments from Mr. Rich Walsh of Valero. Mr. Walsh stated that the water mitigation studies were incorporated into their current mitigation system. They designed their mitigation with the ability to go up to a 60:1 water to HF ratio to achieve 90 to 95 percent efficiency, if needed. Mr. Walsh emphasized Valero has multiple layers of water mitigation, added redundancy for their system, and has been designed to withstand earthquakes. Valero had an independent review on a catastrophic scenario and the report will be provided to staff. Mr. Walsh emphasized, however, nothing is absolutely safe. “Failsafe” is designed to be safe even if it fails. They can never guarantee “failsafe,” but it was designed to be safe.

Below is the list of speakers who provided public comments (names and organizations are listed based on information provided on the submitted speaker card at the Committee meeting).

- |   |                                |
|---|--------------------------------|
| 1. Isabel Alvarenga, Communities for a Better Environment | 37. Dr. Lovy H. Ebro           |
| 2. Kendal Asunan, L.A. Area Chamber of Commerce           | 38. David Junco, Fluor Corp.   |
| 3. Ed Barreras, TRAA                                      | 39. Lenore Landis              |
| 4. Linda Bassett, United Teachers Los Angeles             | 40. Ray Lawson, SWRCC          |
| 5. Gary Bernell   | 41. Ed Legler, SBCC            |
| 6. Timothy Beyer, TRAA                                    | 42. Daria Lee                  |
| 7. Ulrich Blaettler                                       | 43. Alejandra Linares          |
| 8. David Boule, TRAA                                      | 44. Catherine Luciano          |
| 9. Marnie Brimmer, Future Ports                           | 45. Mary Matson                |
| 10. Marietta Buzga  | 46. Jesse N. Marquez           |
| 11. Beatriz Carrillo, Wilmington Youth                    | 47. Bridget McCann, WSPA       |
| 12. Sandra Cartier  | 48. Ron Miller, LA/OC Building |
| 13. Melanie Cohen, TRAA                                   | 49. Daniel Perez Miranda, CBE  |
| 14. Maria Coronado, Carpenters Local 661                  | 50. Brandon Molino, CBE        |
| 15. Carlos Cruz, Carpenters Local 562                     | 51. Dr. Dorothy Moore, TRAA    |
| 16. Yolanda De La Torre                                   | 52. Eric Nakano                |
| 17. Steve Dillow  | 53. John Pang, United Way      |
| 18. Donna Duperron, Torrance Area Chamber of Commerce     | 54. Jose Perez                 |
|   | 55. David Poster               |
|   | 56. Rebekah Potter             |
|   | 57. Roger Potter               |

- |   |  |
|---|--|
| 19. Lecibel Escobar, Communities for a Better Environment | 58. Bill Reynolds, TRAA                          |
| 20. Jim Eninger, TRAA                                     | 59. Alicia Rivera, CBE                           |
| 21. Dr. Genghmun Eng                                      | 60. Zaragoza Robles                              |
| 22. Mark Friedman   | 61. Mark Rodriguez                               |
| 23. Ruth Gabriel  | 62. Al Sattler, Sierra Club                      |
| 24. EL Garcia   | 63. Maria Sanchez                                |
| 25. Florence Gharibian, Del Amo Action Committee          | 64. Katherine Schryver                           |
| 26. Amy Grat, Wilmington Chamber of Commerce              | 65. Ardenia Sedio                                |
| 27. Steve Goldsmith, TRAA                                 | 66. Darren Stroud, Torrance Refining Company     |
| 28. Art Gonzalez, Communities for a Better Environment    | 67. Elise Swanson, San Pedro Chamber of Commerce |
| 29. Janet Gunter, San Pedro Peninsula Homeowners United   | 68. Cheryl Tchir, TRAA                           |
| 30. John Hanna, Southwest Carpenters                      | 69. Deon Watson, Local 11 IBEW                   |
| 31. Magali Sanchez-Hall                                   | 70. Sarah Wiltfong, BizFed                       |
| 32. David Hannum, TRAA                                    | 71. Sandra Viera, Torrance Teachers Association  |
| 33. Sally Hayati, TRAA                                    | 72. Rich Walsh, Valero                           |
| 34. Judy Herman, TRAA                                     | 73. Adam Webb, Torrance Refining Company         |
| 35. Clifford Heise  |  |
| 36. Donna Heise, TRAA                                     |  |

Public testimony was followed by comments from the Refinery Committee members.

Dr. Lyou recalled a very recent flare event from a refinery near his residence which resulted in schools sheltering in place, and this event brought to mind concerns about the safety of the people who live close to refineries. He mentioned a cyber attack against a refinery in Saudi Arabia in August 2017, concluding that there are things a refinery can control and protect against and there are things that are beyond a refinery's control. Dr. Lyou was very appreciative of the seriousness that the refineries take regarding their responsibility to protect themselves, workers, and community and the work they have done. At the same time, he emphasized that just because nothing disastrous has happened yet does not mean it will not. Accidents do happen such as the 2015 ExxonMobil explosion. Due to the speed that HF/MHF can move and the dense population nearby, Dr. Lyou supports a phase-out of MHF at these refineries and to move forward with the staff option to implement enhanced mitigation measures and phase-out MHF. He does not believe more testing is needed. He stressed that a phase-out should be crafted such that it does not threaten jobs and workers. He was not sure if sulfuric acid would be the best choice for the community because of increased traffic from acid truck deliveries, and suggested that staff should bring that discussion to the full Board. Dr. Lyou was not fully supportive of a performance standard because he believes there is enough information to support that accidents can happen and the consequences could be disastrous. He also suggested establishing a timeline, either 4–6 years or 10–12 years, for getting this done.

Mayor Pro Tem Mitchell commented that the SCAQMD must make a decision based on good science, and the risk of an HF release is too great to bear, much less manage. With a planned phase-out of MHF, she said it can be implemented in such a way to minimize the impacts. There will be a lot of jobs created during a phase-out. She understood the concern regarding jobs and the economy, but believes our highest priority is public health and safety. She supported rulemaking and a phase-out of MHF, with consideration of what timeline will work best in light of current availability of technologies. Ms. Mitchell concurred sulfuric acid is the only viable substitution we have now, but not the best solution. She stated that time is of the essence, although she would consider new promising alkylation technologies in the future. She suggested staff proceed with rulemaking and continue working with stakeholders.

Mayor McCallon noted that HF and MHF are very dangerous chemicals; however, people deal with dangerous things every day. He said that it is important to know how to mitigate those dangers and do the best we can with those mitigations. He noted that TORC and Valero indicated they are doing whatever is necessary and they will need to increase their mitigation efforts. Mayor McCallon believes it is important for the Southern California economy and the State of California that we not put refineries in a position of potentially shutting down, even for a short period of time. He is in favor of the MOU approach and is not in favor of phasing out MHF.

Mayor Benoit commented that although no system is perfect, he believes engineering and design will make the system as safe as possible and supports keeping the refineries here by creating an MOU and ensuring safe use of MHF. He stated that the goal of the Board is to clean the air and a switch from MHF to sulfuric acid will add air pollution by adding trucks to transport sulfuric acid. He noted that gasoline is the primary source of fuel for citizens living in Riverside County and added costs would be too much. Mayor Benoit emphasized the importance of balance and believes that balance can be achieved with an MOU, along with proper engineering to mitigate hazards.

Dr. Burke instructed staff to gather more information and to continue researching this matter.

Dr. Parker again expressed his disappointment that ExxonMobil has taken the position not to publicly release the results of MHF research. The MHF studies that he has seen would not address the concentration of MHF and additives being used at the refineries today. Dr. Parker commented that it is agreed that water mitigation is effective for small leaks, but there is a disagreement on how much water it would take to mitigate a large release. Dr. Parker supports allowing for the information gathering to continue as Dr. Burke suggested, but stated there is no doubt that both HF and MHF have a great risk. Absent credible scientific evidence, he proposed that staff develop a rulemaking schedule and bring a proposed rule back to the Board for consideration no later than May 2019, and continue with the possibility of an MOU. Dr. Parker recommended that

staff move forward with CEQA as part of the general public process. A proposed rule will state all the mitigation measures that are required to take place in a reasonable timeframe, but if mitigation cannot be implemented in a reasonable timeframe the proposed rule will include an HF phase-out. In the meantime, Honeywell, ExxonMobil and all the entities that control the information have time to provide information. Small amounts of an MHF release can be controlled, but it seems that a large release of MHF, as concluded in the Nevada Goldfish test, cannot be controlled. Dr. Parker suggested that staff bring this information, along with CEQA, back to the Board for the ultimate decision making.

Dr. Burke wanted to make sure that as staff prepares the rule, they also continue to seek information and advice on the development of an MOU when or if new information is made available.

Mr. Nastri stated that the rule could allow flexibility to pivot to an MOU process. Staff will work to bring the information to the full Board no later than May 2019 and report back to the Board sooner for a full briefing.

The meeting was adjourned at approximately 3:45 p.m.

### **Attachments**

Presentations for the Refinery Committee meeting have been posted online and can be accessed from the following webpage: <http://www.aqmd.gov/home/news-events/meeting-agendas-minutes/agenda?title=refinery-committee-meeting--september-22-2018>

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 24

REPORT: Stationary Source Committee

SYNOPSIS: The Stationary Source Committee held a meeting on Friday, November 16, 2018. The following is a summary of the meeting.

RECOMMENDED ACTION:  
Receive and file.

Ben Benoit, Chair  
Stationary Source Committee

LT:rs

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### **Committee Members**

Present: Mayor Ben Benoit/Chair (videoconference/arrived at 10:36 a.m.)  
Dr. Joseph Lyou/Vice Chair  
Supervisor V. Manuel Perez (videoconference)  
Supervisor Janice Rutherford (videoconference/arrived at 10:37 a.m.)  
Supervisor Hilda L. Solis (videoconference)

Absent: Mayor Pro Tem Judith Mitchell

### **Call to Order**

Dr. Lyou called the meeting to order at 10:31 a.m.

### **INFORMATIONAL ITEMS:**

#### **1. Update on Source Testing Efforts for Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations**

Michael Morris, Planning and Rules Manager, presented an update on Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations. Supervisor Solis thanked staff for coming to a compromise. Dr. Lyou asked if the testing included other items in addition to hexavalent chromium emissions. Mr. Morris answered that the testing would include chromium, arsenic, cadmium, nickel, and particulate matter in addition to hexavalent chromium.

## **2. Proposed Amended Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities**

Dr. Sarah L. Rees, Assistant Deputy Executive Officer/Planning, Rule Development and Area Sources, presented a summary of PAR 1403. Dr. Rees discussed the health effects from asbestos exposure, and the objectives of the proposed amendments to clarify existing rule requirements, align with federal requirements where appropriate, and enhance rule enforceability.

Curt Coleman, representing the Southern California Air Quality Alliance (SCAQA), expressed concern about whether the rule is ready to move forward. He stated that there are a number of clarifications that they are waiting to be completed through the frequently asked questions (FAQs) document, and they continue to have concerns with how the rule will be interpreted, which is largely dependent on the FAQs. Natural gas utility companies are essential public services which should be allowed to make an emergency notification under PAR 1403.

Dr. Rees commented that there are certainly circumstances where any disruption of utility service would be considered to constitute an emergency, however it would be a fact specific analysis. A disruption of natural gas service where it is used to power pumps in water emergencies would likely be considered an emergency warranting waiver of the notification period if restoration of the natural gas supply required asbestos work. She clarified that there is no blanket waiver for the notification period for either disruption of power, water, or natural gas. Regarding the FAQs, Dr. Rees clarified that the FAQs aren't specific rule requirements, and that they serve instead to educate stakeholders as to basic rule requirements.

Kris Flaig from the City of the Los Angeles Bureau of Sanitation (LA Sanitation) stated that SCAQMD staff has done a wonderful job; however, there are a few things that need to be addressed before going forward. One of them is clarifying the meaning of secure, stabilize, and survey. Mr. Flaig believes that there needs to be a definition for stabilize, particularly in the case of an emergency. The other item he addressed was an exemption in paragraph (j)(3) and the 100 square feet of surface area. He believes that there is industry-wide confusion and a discussion on this exemption will be helpful. He also believes that the FAQs should be incorporated into the proposed rule or staff report.

Dr. Rees stated that while the FAQs are lengthy, they are mostly in response to questions during the rule development process on current rule language. Staff will continue to add to the FAQs beyond the rule development process to continue to educate stakeholders as questions are received. Dr. Rees clarified that if there were a situation where an asbestos-containing sewer pipe is broken and the utility needed to patch and stabilize the pipe, that situation would likely be considered within the framework of an emergency for purposes of notification. She also noted that the 100-square foot exemption is a minimum threshold for asbestos work that has been

in the rule since initial adoption, and that she was also aware of concerns as to how that exemption applies to pipes.

Daniel McGivney, Environmental Affairs Program Manager from Southern California Gas Company (SoCalGas), is concerned that the FAQs will be used as an enforcement tool, and the FAQs should be reviewable prior to rule adoption. SoCalGas is also concerned that gas utilities would not be given the same status as other utility service companies (e.g. electricity or water) for emergency situations. There is a lot of language within PAR 1403 where reporting or notification are still required when there is an emergency event. SoCalGas requests clarification as to when to stabilize an emergency, when they may complete a fix or patch, and when they must stop and perform a complete survey. They request the Public Hearing be set in February 2019, since it would be difficult to complete these tasks in December with the upcoming holidays.

Jonathan Sanks, Environmental Services Manager from Anaheim Public Utilities, concurred with the previous comments. He said that he submitted a comment letter related to the October 31, 2018 Working Group meeting and requested that the Public Hearing be deferred until they receive a written response from SCAQMD staff. As for the FAQs, he noted that they could contain legislative intent and the contents should be made available for review.

Cindy Parsons, Environmental Affairs from the Los Angeles Department of Water and Power (LADWP), commented that they have been an active participant in the rule development process and their unresolved concern is their availability to deal with an emergency, which includes clean-up of an asbestos containing material spill. LADWP believes a delay before taking the rule to the Board for approval in an effort to resolve this issue is prudent. They also have the same question about stabilization, and agrees that the FAQs should be released prior to the Public Hearing.

Several Committee members commented that they preferred to stay on schedule with the January 4, 2019 hearing, but requested that staff continue to work with stakeholders on any unresolved issues and agree that the FAQs should be provided to the stakeholders.

Mayor Benoit stated that FAQs are critical for the general public to understand a rule. He inquired whether any rule requirements that would affect city operations for building officials are changing, and if the rule changes would also affect the person remodeling their home.

Dr. Rees stated that there is an exemption for homeowners who are doing the work themselves, but applies to everyone else doing asbestos work. She also stated that if a homeowner is hiring a contractor to demolish or renovate a kitchen, that contractor needs to get a survey to evaluate whether there is asbestos and be subject to the

requirements of the regulation. These are all basic requirements of the rule that have been in existence since rule adoption.

Wayne Nastro, Executive Officer, stated that staff will complete and release the FAQs in December and continue an open dialog with stakeholders. He also commented that a response to the letter from SoCalGas is being prepared. The Set Hearing is scheduled for December 7, 2018.

### **3. AB 617 BARCT Implementation Schedule**

Susan Nakamura, Assistant Deputy Executive Officer/Planning, Rule Development and Area Sources, provided a summary of implementation of AB 617 requirements regarding an implementation schedule for Best Available Retrofit Control Technology (BARCT) rules, along with air quality benefits, cost effectiveness analysis, and implementation of measures for attainment of air quality standards. Dr. Lyou wanted confirmation that those sources affected by the BARCT requirement will be able to implement by 2023. Dr. Philip Fine, Deputy Executive Officer/Planning, Rule Development and Area Sources, responded that the goal of the individual rules is to have implementation dates by the end of 2023; however, that deadline might not be feasible for all facilities.

### **4. Proposed Amended Rule 1325 – Federal PM2.5 New Source Review Program**

Michael Krause, Planning and Rules Manager, presented a summary of the proposed amendments to Rule 1325 – Federal PM2.5 New Source Review Program, correcting a minor administrative deficiency identified by U.S. EPA to include specific PM2.5 precursors in a definition.

### **5. RECLAIM Quarterly Report – 3<sup>rd</sup> Update**

Ms. Nakamura provided the quarterly update regarding transitioning the NOx RECLAIM program to a command-and-control regulatory structure, and highlighted recent activities including an update on key New Source Review (NSR) issues. Barbara Baird, Chief Deputy Counsel, also provided clarifications regarding equipment replacements constituting BARCT.

Mike Carroll (Latham & Watkins, representing the Western States Petroleum Association and the Regulatory Flexibility Group) commented that he submitted written comments prior to the November Board meeting expressing more global points regarding the RECLAIM transition. Mr. Carroll also stated that there needs to be a bifurcation of Proposed Rule 1100 - Implementation Schedule for NOx facilities, from the Proposed Amended Rule 1146 series rules in order to have time to address monitoring, reporting, and recordkeeping (MRR) requirements and implementation schedules for facilities that have multiple equipment types.

Ms. Nakamura responded that the purpose of Proposed Rule 1100 is to specify the implementation schedule for all RECLAIM facilities and their equipment subject to BARCT requirements. Proposed Rule 113 - Monitoring, Reporting, and

Recordkeeping (MRR) Requirements for NO<sub>x</sub> and SO<sub>x</sub> Sources, would address MRRs for RECLAIM facilities. She added that the staff report for Proposed Amended Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters, contains an analysis regarding the coordination of the implementation schedule for facilities with other types of equipment. Dr. Philip Fine, Deputy Executive Officer/Planning, Rule Development and Area Sources, added that one of the objectives of Proposed Rule 1100 is to provide the implementation schedules specifically for RECLAIM facilities with multiple types of equipment.

Dr. Lyou asked about staff's upcoming meeting with U.S. EPA regarding NSR. Dr. Fine stated that through multiple conference calls and an in-person meeting, he is hopeful that remaining issues will be resolved as soon as possible. Staff is working with U.S. EPA to schedule an in-person meeting either at the end of November or beginning of December.

## **WRITTEN REPORTS**

### **6. Notice of Violation Summary**

The report was acknowledged by the Committee.

### **7. Home Rule Advisory Group – Bi-Monthly Report and the 2019 Meeting Schedule**

The report was acknowledged by the Committee.

## **OTHER MATTERS:**

### **8. Other Business**

There was no other business.

### **9. Public Comment Period**

There were no public comments.

### **10. Next Meeting Date**

The next Stationary Source Committee meeting is scheduled for Wednesday, December 19, 2018.

## **Adjournment**

The meeting was adjourned at 11:39 a.m.

## **Attachments**

1. Attendance Record
2. Notice of Violation Penalty Summary
3. Home Rule Advisory Group – Bi-Monthly Report and the 2019 Meeting Schedule

**ATTACHMENT 1**

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
STATIONARY SOURCE COMMITTEE  
Attendance – November 16, 2018**

Mayor Ben Benoit (videoconference) .....	SCAQMD Governing Board
Dr. Joseph Lyou.....	SCAQMD Governing Board
Supervisor V. Manuel Perez (videoconference).....	SCAQMD Governing Board
Supervisor Janice Rutherford (videoconference) .....	SCAQMD Governing Board
Supervisor Hilda Solis (videoconference).....	SCAQMD Governing Board
Michael Carroll.....	Latham & Watkins
Cynthia Carter .....	Los Angeles County Sanitation Districts
Curtis Coleman.....	Southern California Air Quality Alliance
Kris Flaig.....	City of Los Angeles Bureau of Sanitation
Bill LaMarr.....	California Small Business Alliance
Rita Loof.....	RadTech
Bridget McCann .....	Western States Petroleum Association
Daniel McGivney .....	SoCalGas
Cindy Parsons.....	Los Angeles Department of Water & Power
Bill Pearce .....	Boeing
John Sank.....	Anaheim Public Utilities
Susan Stark .....	Andeavor
Barbara Baird.....	SCAQMD staff
Amir Dejbakhsh.....	SCAQMD staff
Philip Fine .....	SCAQMD staff
Bayron Gilchrist .....	SCAQMD staff
Michael Krause.....	SCAQMD staff
Terrence Mann.....	SCAQMD staff
Matt Miyasato.....	SCAQMD staff
Michael Morris .....	SCAQMD staff
Susan Nakamura.....	SCAQMD staff
Wayne Nastri .....	SCAQMD staff
Sara Rees .....	SCAQMD staff
Laki Tisopulos .....	SCAQMD staff
Jill Whynot .....	SCAQMD staff

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
General Counsel's Office**

**DRAFT**

**October 2018 Settlement Penalty Report**

<u><b>Total Penalties</b></u>	
<b>Civil Settlements:</b>	<b>\$174,550.00</b>
<b>Settlements including SEP</b>	<b>\$250,000.00</b>
<b>Self-Reported Settlements:</b>	<b>\$15,000.00</b>
<b>MSPAP Settlements:</b>	<b>\$33,708.00</b>
<b>Total Cash Settlements:</b>	<b>\$223,258.00</b>
<b>Total SEP Value:</b>	<b>\$250,000.00</b>
<b>Fiscal Year through 10 / 2018 Cash Total:</b>	<b>\$1,282,650.00</b>
<b>Fiscal Year through 10 / 2018 SEP Value Only Total:</b>	<b>\$260,000.00</b>

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
<b>Civil Settlements</b>						
5998	ALL AMERICAN ASPHALT	2004 2012 2012 Appen A	10/23/2018	NSF	P66157 P67358	\$8,500.00
800181	CALIFORNIA PORTLAND CEMENT CO	403 1158(d)(8) 2004	10/23/2018	NSF	P64372 P64763 P65378	\$10,000.00
143160	GARDENA OIL	203 203(b)	10/4/2018	SMP	P64988 P64990	\$4,000.00
800066	HITCO CARBON COMPOSITES INC	2004	10/18/2018	BST	P66853	\$2,400.00
21887	KIMBERLY-CLARK WORLDWIDE INC.-FULT. MILL	2004	10/10/2018	SMP	P66105	\$4,500.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
1744	KIRKHILL - TA COMPANY	2004	10/3/2018	DH	P65376	\$4,000.00
800170	LA CITY, DWP HARBOR GENERATING STATION	2004 2012	10/4/2018	NAS	P62063 P62072 P62074 P66102	\$25,000.00
185621	LA LIMITLESS AUTOWORKS	203	10/25/2018	SMP	P65155	\$750.00
185122	NITE LITE SIGNS, INC.	203	10/23/2018	TRB	P60693	\$1,000.00
171109	PHILLIPS 66 COMPANY/LOS ANGELES REFINERY	1173 1176 401 3002 221 2004	10/10/2018	NAS	P34679 P34699 P60456 P60458 P62055	\$19,000.00
105903	PRIME WHEEL	2004 2005 3002	10/25/2018	NSF	P57886	\$5,000.00
25513	SIX FLAGS THEMES PKS INC,SIX FLAGS MAGIC	3002 3003	10/30/2018	NSF	P62166	\$13,000.00
181667	TORRANCE REFINING COMPANY LLC	1176	10/11/2018	DH	P63412 P63413 P63414	\$43,000.00
181667	TORRANCE REFINING COMPANY LLC	401 1178 2004 3002	10/11/2018	DH	P45984 P63407	\$26,900.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
17956	WESTERN METAL DECORATING CO	2004	10/31/2018	NSF	P57097	\$7,500.00
		2012			P57862	
		3002(c)(1)			P57864	
		3003			P57872	

**Total Civil Settlements: \$174,550.00**

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
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**Self-Reported Settlements**

180394	PAC OPERATING LTD PART C/O PROLOGIS		10/25/2018	SH	SRV	\$15,000.00
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**Total Self-Reported Settlements: \$15,000.00**

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
<b>MSPAP Settlements</b>						
154194	ARCO #00117- SRR, LLC	461 41960	10/12/2018	GC	P64913	\$1,593.00
176650	ARCO #83615	461	10/12/2018	GC	P64974	\$1,200.00
166484	ARCO CENTRAL I	461	10/11/2018	GC	P64970	\$680.00
166484	ARCO CENTRAL I	461	10/11/2018	GC	P64986	\$100.00
185878	D R HORTON	403	10/11/2018	GC	P65568	\$1,800.00
175881	DALLAS BROOKS	461(e)(3)	10/12/2018	GC	P60097	\$560.00
179809	DOUG'S MOBIL SERVICE CENTER	461 41960	10/11/2018	GC	P64921	\$420.00
172375	EL CARISO GOLF COURSE, AGC HOLDINGS-EL C	461(c)(3)(Q)	10/17/2018	GC	P71087	\$600.00
176550	EL MONTE GREEN PETROLEUM EL MONTE ARCO	203(a)	10/11/2018	GC	P60098	\$250.00
185123	ELOY'S TREE SERVICE	13 CCR 2453	10/12/2018	GC	P66401	\$300.00
184887	FULLMER CONSTRUCTION	403	10/11/2018	GC	P63136	\$1,800.00
135462	G&M OIL CO #124	461 41960.2	10/12/2018	GC	P65739	\$750.00
143914	G&M OIL CO #140	461	10/12/2018	GC	P65740	\$600.00
182651	GREG HAMMORK ENTERPRISE, INC	201 203(a)	10/26/2018	GC	P65728	\$500.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
123774	HERAEUS PRECIOUS METALS NO. AMERICA, LLC	2004	10/12/2018	GC	P63718	\$450.00
185845	IRVINE COMPANY LOS OLIVOS 2	403(d)(1)	10/12/2018	GC	P64084	\$1,400.00
175025	KEOLIS TRANSIT SERVICES	203(b) 461(e)(2)	10/12/2018	GC	P63919	\$5,880.00
184471	KRISHNA PETROLEUM CO, INC.	203(a) 461	10/26/2018	GC	P65727	\$450.00
184471	KRISHNA PETROLEUM CO, INC.	203(a)	10/26/2018	GC	P65733	\$200.00
148135	L & J REPAIR AUTO BODY	109 203(b)	10/25/2018	TF	P65566	\$500.00
183855	MOLLER RETAIL #6120	461	10/12/2018	TF	P65742	\$800.00
133793	PALM SPRINGS FBO TWO LLC	461	10/12/2018	TF	P63141	\$1,600.00
156686	RERUBBER LLC	203(a)	10/12/2018	TF	P66557	\$700.00
134112	ROBERTSON'S READY MIX	1155 203(b)	10/12/2018	TF	P65057	\$1,600.00
172801	SUPERIOR ENVIRONMENTAL	1403	10/12/2018	TF	P64857	\$3,200.00
186199	SUPERIOR QUALITY SOILS	203(a)	10/12/2018	TF	P66556	\$1,000.00
167888	TRAXX CORPORATION	201 203(a)	10/25/2018	TF	P65385	\$1,200.00
147380	TRINITY BAT CO	203	10/25/2018	TF	P65782	\$800.00
187027	TURNER_PCL, A JOINT VENTURE	403	10/25/2018	TF	P65059	\$375.00

<b>Fac ID</b>	<b>Company Name</b>	<b>Rule Number</b>	<b>Settled Date</b>	<b>Init</b>	<b>Notice Nbr</b>	<b>Total Settlement</b>
184370	VALLEY CONCRETE PUMPING	203(a)	10/25/2018	GV	P63963	\$800.00
141912	WESTERN OIL SPREADING SERVICES INC	203	10/25/2018	TF	P65157	\$1,600.00

**Total MSPAP Settlements: \$33,708.00**

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
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**Settlements including SEP**

104306	Rainbow Transfer/Recycling, Inc. <i>Contribution of \$250,000 to the District's Fund 75 in settlement of the Writ of Mandate.</i>		10/2/2018	NAS	BS171620	\$250,000.00
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**Total Settlements including SEP: \$250,000.00**

**DISTRICT'S RULES AND REGULATIONS INDEX  
FOR OCTOBER 2018 PENALTY REPORT**

**REGULATION I - GENERAL PROVISIONS**

Rule 109            Recordkeeping for Volatile Organic Compound Emissions

**REGULATION II - PERMITS**

Rule 201            Permit to Construct  
Rule 203            Permit to Operate  
Rule 221            Plans

**REGULATION IV - PROHIBITIONS**

Rule 401            Visible Emissions  
Rule 403            Fugitive Dust - Pertains to solid particulate matter emitted from man-made activities  
Rule 461            Gasoline Transfer and Dispensing

**REGULATION XI - SOURCE SPECIFIC STANDARDS**

Rule 1155            Particulate Matter Control Devices  
Rule 1158            Storage, Handling and Transport of Petroleum Coke  
Rule 1173            Fugitive Emissions of Volatile Organic Compounds  
Rule 1176            Sumps and Wastewater Separators  
Rule 1178            Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities

**REGULATION XIV - TOXICS**

Rule 1403            Asbestos Emissions from Demolition/Renovation Activities

**REGULATION XX - REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)**

Rule 2004            Requirements  
Rule 2005            New Source Review for RECLAIM  
Rule 2012            Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO<sub>x</sub>) Emissions  
    Appendix A      Protocol for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO<sub>x</sub>) Emissions

**REGULATION XXX - TITLE V PERMITS**

Rule 3002            Requirements  
Rule 3003            Applications

**CALIFORNIA CODE OF REGULATIONS**

13 CCR 2453        Portable Equipment Application Process

**CALIFORNIA HEALTH AND SAFETY CODE**

41960                Certification of Gasoline Vapor Recovery System  
41960.2              Gasoline Vapor Recovery



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4182  
(909) 396-2000 • www.aqmd.gov

## **HOME RULE ADVISORY GROUP**

**Wednesday, September 12, 2018**

### **MEETING MINUTES**

**CHAIR:** Dr. Joseph Lyou, SCAQMD Governing Board Member

#### **MEMBERS PRESENT:**

Mike Carroll (Regulatory Flexibility Group); Curt Coleman (Southern California Air Quality Alliance); Jaclyn Ferlita (Air Quality Consultants); Nan Harrold (Orange County Waste & Recycling); Bill LaMarr (California Small Business Alliance); Bridget McCann (Western States Petroleum Association); Art Montez (AMA International); David Rothbart (Los Angeles County Sanitation District); and TyRon Turner (Dakota Communications).

The following members participated by conference call: Rongsheng Luo (SCAG); and Bill Quinn (California Council for Environmental & Economic Balance);

#### **MEMBERS ABSENT:**

Ben Benoit (SCAQMD Governing Board Member); Michael Downs (Downs Energy); Dan McGivney (Southern California Gas); Dr. Clark Parker (SCAQMD Governing Board Member); Larry Rubio (Riverside Transit Agency); Larry Smith (Cal Portland Cement); Kristen Torres Pawling (County of Los Angeles, Chief Sustainability Office); and Amy Zimpfer (EPA).

#### **OTHER ATTENDEES:**

Mark Abramowitz (Board Consultant to Dr. Lyou); Brian Clerico (CARB); Priscilla Hamilton (Southern California Gas); Rita Loof (RadTech); Susan Stark (Andeavor); and John Ungvarsky (EPA).

#### **SCAQMD STAFF:**

Jill Whynot	Chief Operating Officer
Barbara Baird	Chief Deputy Council
William Wong	Principal Deputy District Counsel
Sarah Rees	Assistant Deputy Executive Officer
Philip Crabbe	Community Relations Manager
Ian MacMillian	Planning & Rules Manager
Pedro Piqueras	Air Quality Specialist
Cristina Lopez	Senior Administrative Secretary

#### **OPENING COMMENTS AND SELF-INTRODUCTIONS**

The meeting was called to order at 10:03 a.m. by Dr. Joseph Lyou (Chairman).

#### **APPROVAL OF JULY 2018 MEETING MINUTES**

Dr. Lyou asked for comments on the July 11, 2018 meeting minutes. Bridget McCann requested the addition of language on page six to reflect her comment that it is difficult to locate the

subscription pages on the AQMD website and staff committed to provide a follow-up. With the language added, the minutes were approved.

*Action Item:* Dr. Lyou requested for the membership to be provided with the link to the subscription page from the SCAQMD website. The following link was provided: <http://www.aqmd.gov/sign-up>

## **EPA AND FEDERAL ACTIVITIES**

John Ungvarsky provided an update on recent U.S. Environmental Protection Agency (EPA) and federal activities.

### **SCAQMD Related Actions**

- Proposed Safer Affordable Fuel Efficient (SAFE) vehicles rule.
- EPA continues to work closely with CARB and SCAQMD on the 2016 AQMP.
- Working with SCAQMD on MOU's for the ports.
- The 2018 Targeted Airshed Grant RFP will be announced soon and it is anticipated that \$40M will be awarded in grant funding nationally.
- The Tribal DERA grant RFP opened on June 5, 2018 and will now close in April 2019.

### **National Update**

- EPA's Lean Management System (ELAM) effort continues to be implemented.
- Proposed implementation rule related to the 2015 Ozone Standard.

### **Discussion**

Dr. Lyou inquired about a possible SAFE hearing in Los Angeles area. Mr. Ungvarsky indicated that at this time the only California hearing will be in Fresno. Barbara Baird indicated that a hearing in Los Angeles has been requested.

Bill Quinn inquired about an update on EPA's proposal to rollback Obama-Era methane regulations. Mr. Ungvarsky indicated that he did not have any updates, but he would look into this and follow-up with a link to this information. The following link was provided: <https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/proposed-improvements-2016-new-source>

Dr. Lyou inquired with staff on EPA's SAFE proposed rule, and if it is adopted as proposed, would it affect SCAQMD attainment plans. Barbara Baird indicated that staff was going to look to see if these rules were included in our SIP demonstration.

## **CARB REGULATORY ACTIVITIES**

Brian Clerico provided updates on items scheduled to go to CARB's Board in September 2018 and recent regulatory activities.

- Global Climate Action Summit, September 12 – 14, 2018 in San Francisco.
- Governor Brown recently signed SB 100 - California Renewables Portfolio Standard Program: emissions of greenhouse gases, which commits California to 100% renewable zero emission electricity and carbon sources by 2045.
- There are currently no updates for CARB's tentative calendar for control measures and selected items.
- On September 21, 2018, at SCAQMD, there is a public workshop for a proposed amendment to the diesel particulate matter control measure for solid waste collection vehicles.

- CARB has selected two Los Angeles County communities for the Study of Neighborhood Air near Petroleum Sources (SNAPS), Baldwin Hills - Inglewood Oil Field and South Los Angeles - La Cienega Oil Field.
- In September 2018, the Clean Vehicle Assistance Program was launched to assist lower-income consumers with the purchase of the cleanest new and used cars available on the market.

Discussion

Dr. Lyou inquired if the SNAPS study would also include an inventory assessment. Mr. Clerico indicated that the study is focused on monitoring.

Bill LaMarr inquired if CARB plans to determine the recent California forest fires emissions impact on attainment goals. Mr. Clerico indicated that he would need to follow-up with their monitoring group. Dr. Lyou commented on the statewide Purple Air sensor network and the spike of PM2.5 levels near the fires. He added that we could potentially have fire season ten months out of the year, every year, and it would then no longer be considered an extraordinary event.

Dr. Lyou commented on a letter sent by the Governor to CARB requesting regulations for public and private fleets in California, and the subsequent September workshop and rule making process. Art Montez inquired whether the fleets locations could be monitored, especially those located near communities of color. Barbara Baird added that in SCAG’s Regional Transportation Plan they look at environmental justice impacts for the transportation network. Rongsheng Luo confirmed that SCAG does track this data. Dr. Lyou mentioned CARB’s AB 617 implementation meeting scheduled for September 27, 2018, and the proposed monitoring for communities.

Rongsheng Luo inquired if SNAPS is part of the AB 617 program. Mr. Clerico indicated that SNAPS is not formally part of AB 617, but it will complement the goals of AB 617. Jill Whynot pointed out that CARB recently adopted an oil and gas regulation, while SCAQMD was also working on a similar regulation, and ultimately SCAQMD put theirs aside because of the similarity between the regulations. Ms. Whynot further explained that the SNAPS program is a regulation follow-up to see if there are leaks and a good understanding of the emissions identified.

**LEGISLATIVE UPDATE**

Philip Crabbe reported on key legislative updates.

There will be an end-of-year summary report on the State legislature & Governor’s Actions for 2018, which will include:

- The State Legislature adjourned on August 31<sup>st</sup> for the 2018 legislative year. The State Assembly and Senate combined, introduced over 2,600 bills in 2018 and sent over 1,500 bills to the Governor for his consideration. The bills to the Governor include some leftover two-year bills from 2017. Bills that did not make it to the Governor’s desk are now dead.
- The Governor has until September 30 to sign into law or veto all bills passed in 2018. Any bills not acted on by the Governor will also become law.
- Specifically for the South Coast region, this was a successful legislative year in several ways, including but not limited to:
  - The securing of \$50 million in statewide funding for local air districts to support implementation of AB 617 (C. Garcia) requirements. This is an increase from last year’s funding level of \$27 million.
  - The securing of \$245 million in statewide funding to local air districts for incentives to help accelerate turnover to clean vehicles, in support of the AQMP.

- SCAQMD's sponsored bill, SB 1502, was signed into law by the Governor. This bill allows local air districts to provide more modern forms of public notice, such as through electronic email; and
- Securing key amendments to SB 1260 (Jackson) - Fire prevention and protection is pending before the Governor. This bill would allow SCAQMD to permit mechanized burner equipment in Los Angeles County and provides for cleaner controlled open burns.

There will be discussions on a new public survey being developed, which relates to a potential sales tax increase ballot measure for air quality funding. The Governing Board approved this as a legislative concept to pursue this on September 7, 2018.

#### Discussion

Bill LaMarr requested clarification on SCAQMD's intentions with the public survey. Philip Crabbe replied that the Governing Board has approved this as a legislative concept to pursue.

Dr. Lyou commented that since SCAQMD's position on bills has to be approved by the Governing Board or the Legislative Committee, the agency is often not in a good position at the end of legislative session. This is because we are unable to react as quickly as needed. He further indicated that SB 750 (Delgado) sailed through legislature and is now before the Governor, and AQMD has not even had an opportunity to take a position on it. Dr. Lyou recommended that this bill be placed on the Legislative Agenda to potentially take a position on it. He further suggested the possibility of a special Legislative Committee meeting to be held the last week of the legislative session, before the end of the 72-hour deadline.

David Rothbart inquired if SCAQMD has a position on SB 1440. Philip Crabbe replied no. Dr. Lyou indicated that there are thousands of bills to consider and the Legislative Committee is unable to address all of the bills being discussed, and only the highest priority bills are addressed.

#### **UPDATE REGARDING LITIGATION ITEMS AND RELATED EPA ACTIONS**

William Wong had no updates to report.

#### Discussion

Barbara Baird reported that both sides in the RECLAIM lawsuit are considering the option to stay the litigation, and to see how the RECLAIM amendments shakeout over the next sixteen months.

#### **FACILITY-BASED MOBILE SOURCE MEASURES**

Dr. Sarah Rees gave an update on the status of the Facility-Based Mobile Source Measures work. She described the activity to date for airports, ports, new and redevelopment, warehouses, and railyards and plans for future working group meetings. Barbara Baird gave a summary of the state and federal regulatory framework regarding mobile sources and the SCAQMD's legal authority to develop indirect source rules.

#### Discussion

Mike Carroll inquired which airports are covered by this measure. Dr. Rees replied Los Angeles, Burbank, John Wayne, Ontario and Long Beach airports.

Mike Carroll inquired about the major development community. Dr. Rees indicated there is an overlap from the Warehouse Working Group, as well as major real estate entities.

Art Montez expressed appreciation of the agency's desire to work with industry and not just to impose a regulatory burden. He also inquired if SCAQMD monitors their regulations to determine

if the desired targets are actually achieved. Dr. Lyou indicated that policies are developed for today's technologies and that the agency does consider changes that occur.

David Rothbart inquired about the status of the goals set for the 2016 AQMP. Dr. Rees outlined the progress achieved, as well as the current regulatory actions on stationary sources. Mr. Rothbart further expressed concern about not reaching attainment. Dr. Lyou commented on the attainment levels that need to be met and the possibility of Section 185.

Bill LaMarr expressed concern about CARB's fleet certifications and the potential liability for small businesses. Dr. Rees expressed that many details are still being worked out. Dr. Lyou indicated that there is a 30 percent non-compliance with existing truck and bus fleet retrofit certifications, and this is why CARB is looking at enforcement.

Mike Carroll inquired about additional information on the SCAQMD's indirect source rules. Dr. Rees indicated that information can be found on our website.

Due to comments expressed at the September Governing Board meeting, and at Dr. Lyou's request, Ms. Baird provided clarity and background on SCAQMD's legal authority to regulate indirect sources.

David Rothbart inquired if the San Joaquin litigation had any discussion on existing versus future sources. Ms. Baird responded no, because discussions applied only to new development.

Nan Harrold inquired about future indirect sources that will be regulated. Dr. Rees responded that the focus is on what we are working on now. Dr. Lyou added that there are still many potentially significant indirect sources that we are leaving off the table at this point.

Dr. Lyou commented that he found SCAQMD's characterization of backstopping the ports to be interesting and the need to not interfere with their incentive money, which would only occur if we adopted regulations. Dr. Rees indicated that SCAQMD does not want to impede their ability to get funding.

Dr. Lyou inquired about the development and re-development ISR economic impacts and what is going to be required of the ports. Dr. Rees indicated that the rulemaking process has not started, but it would probably be modeled according to scenarios. Dr. Lyou reiterated the importance of having a menu on what is being considered, this approach would help determine if the criteria are being met.

Dr. Lyou inquired why SCAQMD's CEQA guidance document has not been updated since 1993. Ms. Whynot indicated that it is due to resources. Ian MacMillian indicated that parts of the guidance have been updated.

## **SUBCOMMITTEE STATUS REPORTS**

### ***A. Freight Sustainability (Dan McGivney)***

Dr. Lyou indicated that CARB has published a list of proposed freight projects.

### ***B. Small Business Considerations (Bill La Marr)***

An update was provided on the following items.

- CARB's criteria pollutants & toxic air contaminants proposed regulation;
- CARB's Clean Air Protection Blueprint;
- RECLAIM Working Group; and

- PAR 1469 discussions with the Metal Finishers Association

**C. Environmental Justice and AB 617 Implementation (Curt Coleman)**

An update was provided on the following item.

- CARB staff has prepared its staff report on the recommendations on which communities will be subject to the initial round of the community air protection plan.

**D. Climate Change (David Rothbart)**

An update was provided on the following items.

- Global Climate Action Summit starts today in the Bay area;
- Governor signed SB 100; and
- Governor signed Executive Order B5518

**REPORT FROM AND TO THE STATIONARY SOURCE COMMITTEE**

Jill Whynot provided a summary of items on the August and September 2018 meeting agendas.

- PAR 1135;
- Status report on Regulation XIII;
- Status update on underfired charboilers;
- PR 1407.1;
- PAR 2001 and 2002; and
- Draft Test Method Guidance Document for Rule 1168.

**OTHER BUSINESS**

There were no comments.

**PUBLIC COMMENT**

There were no comments.

**ADJOURNMENT**

The meeting was adjourned at 11:56 a.m. The next meeting of the Home Rule Advisory Group is scheduled for 10:00 a.m. on November 14, 2018, and will be held at SCAQMD in Conference Room CC-8.

**South Coast Air Quality Management District  
HOME RULE ADVISORY GROUP – Attendance Record – 2018**

	NAME (Term: 1/1/17 - 1/1/2019)	1/10	FEB	3/14	APR	5/9	JUN	7/11	AUG	9/12	OCT	11/14	DEC	
	<b>Board/Member, Business &amp; Community Reps, SCAQMD Staff</b>													
1	<b>Dr. Joseph Lyou, Chair</b>	X	<b>dark</b>	X	<b>dark</b>	X	<b>dark</b>	X	<b>dark</b>	X	<b>dark</b>		<b>dark</b>	
2	<b>Mayor Ben Benoit, Vice Chair</b>									A		A		
3	<b>Dr. Clark E. Parker, Sr., Governing Board Member</b>			A		A		A		A		A		
4	<b>Dr. Philip Fine</b> (Agency Member) - <b>SCAQMD</b>	X		X		X		X		X*		X*		
5	<b>Zimpfer, Amy</b> (Agency Member) - <b>EPA</b> <i>Representing Elizabeth Adams</i>	T		T*		T		T		T		T		T*
6	<b>Raymond, Johnnie</b> (Agency Member) - <b>CARB</b> <i>Representing Richard Corey</i>	T*		T*		T		T		T		T		T*
7	<b>Chang, Ping</b> (Agency Member) - <b>SCAG</b> <i>Alternate – Rongsheng Luo</i>	T*		T*		T*		T*		T*		T*		T*
8	<b>Carroll, Mike</b> (Business Representative) <i>Alternate – Robert Wyman</i>	A		A		A		A		X		X		
9	<b>Coleman, Curtis</b> (Business Representative) <i>Alternate – Susan Stark</i>	X*		X		X		X		A*		X		X
10	<b>McCann, Bridget</b> (Business Representative) <i>Alternate – Patty Senecal</i>	X*		X		X		X		X		X		X
11	<b>La Marr, Bill</b> (Business Representative)	X		X		X		X		X		X		X
12	<b>McGivney, Dan</b> (Business Representative) <i>Alternate – Lauren Nevitt</i>	X		X*		X		X		A*		A*		
13	<b>Roberts, Terry</b> (Environmental Representative)	X		X		A*								
14	<b>Quinn, Bill</b> (Business Representative) <i>Alternate – Janet Whittick</i>	T		T*		T*		T		T		T		
15	<b>Downs, Michael</b> (Community Representative - McCallon)	A		A		A*		A*		A*		A*		
16	<b>Ferlita, Jaclyn</b> (Community Representative - Lyou)	A		A		X		X		A		X		
17	<b>Harrold, Nan</b> (Community Representative - Nelson)	X		A*		X		X		A*		X		
18	<b>Montez, Art</b> (Community Representative - Lyou)	A		A		X		X		X		X		
19	<b>Rothbart, David</b> (Community Representative - Mitchell)	X		A*		A*		X		X		X		
20	<b>Rubio, Larry</b> (Community Representative - Ashley)	A*		T		T		A*		A*		A*		
21	<b>Smith, Larry</b> (Community Representative - Benoit)	X		X		A		X		A		A		
22	<b>Pawling Torres, Kristen</b> (Community Representative - Kuehl)	A		X		A		X		A*		A*		
23	<b>Turner, TyRon</b> (Community Representative - Burke)	A		X		X		X		X		X		

Attendance Codes					
X	Present	T	Teleconference	A	Absence
X*	Alternate in Attendance	T*	Alternate Teleconference Participation	A*	Absence Excused



South Coast

Air Quality Management District

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**HOME RULE ADVISORY GROUP  
PROPOSED 2019 MEETING SCHEDULE**

(MEETINGS ARE THE SECOND WEDNESDAY OF EVERY OTHER MONTH)

All meetings are at 10:00 a.m. and are held in Conference Room CC-8

January 9

March 13

May 8

July 10

September 11

November 13

[↑ Back to Agenda](#)

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 25

REPORT: Technology Committee

SYNOPSIS: The Technology Committee held a meeting on Friday, November 16, 2018. The following is a summary of the meeting.

RECOMMENDED ACTION:  
Receive and file.

Joe Buscaino, Chair  
Technology Committee

MMM:pmk

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### **Committee Members**

Present: Council Member Joe Buscaino/Chair (videoconference/arrived at 12:02 pm)  
Mayor Larry McCallon  
Supervisor V. Manuel Perez (videoconference)  
Council Member Dwight Robinson  
Supervisor Hilda L. Solis (videoconference/arrived at 12:07 pm)

Absent: Mayor Pro Tem Judith Mitchell

### **Call to Order**

Council Member Dwight Robinson called the meeting to order at 12:00 pm as Council Member Buscaino indicated he may be running late.

### **ACTION ITEMS:**

#### **1. Conduct Emissions Study on Use of Alternative Diesel Blends in Off-Road Heavy-Duty Engines and Amend SOON Provision Awards**

CARB has committed to adopting a low emission diesel measure in the State Implementation Plan to reduce NOx and particulate matter (PM) emissions from on-road and off-road vehicles. Renewable diesel and biodiesel with NOx-mitigating additives show a potential for reductions up to 13 percent in NOx and 30 percent in PM. CARB is currently contributing \$932,499 in a \$1,353,499 study by the University

of California Riverside (UCR) CE-CERT testing on- and off-road diesel engines on a wide matrix of test fuels. Additional cost-share is proposed for this comprehensive study as follows: SCAQMD, \$261,000; U.S. EPA, \$150,000; and San Joaquin Valley Air Pollution Control District, \$10,000. This action is to execute a contract with UCR CE-CERT in an amount not to exceed \$261,000 from the Clean Fuels Program Fund (31). In addition, in November 2017 and September 2018, the Board approved SOON Provision awards. This action is to also amend awards under the SOON Provision.

Moved by Robinson; seconded by Perez; unanimously approved.

Ayes: Buscaino, McCallon, Perez, Robinson and Solis

Noes: None

Absent: Mitchell

## **2. Develop and Demonstrate Near-Zero and Zero Emissions Vehicles and Equipment at Ports**

The Port of Long Beach and its project partners have received \$50,000,000 in funding and the Port of Los Angeles and its project partners have received \$41,122,260 under CARB's Low Carbon Transportation Investments grant solicitation to demonstrate near-zero and zero emissions on-road, off-road and marine vehicles and equipment, including battery electric and hydrogen fuel cell trucks and supporting infrastructure. Total anticipated projects costs are \$102,998,742 and \$82,547,024 for the Ports of Long Beach and Los Angeles, respectively. This action is to execute contracts from the Clean Fuels Program Fund (31) with the Port of Long Beach in an amount not to exceed \$500,000 and the Port of Los Angeles in an amount not to exceed \$1,000,000 for SCAQMD's project cost-share.

*Council Member Robinson recused himself from this item and left the room because of a financial interest in Total Transportation Services which is materially affected by this item.*

*Principal Deputy District Counsel Veera Tyagi read the following statement: We are seeking approval of this item pending a decision regarding the necessity of obtaining campaign contribution disclosure forms from certain project partners.*

Moved by Solis; seconded by McCallon; unanimously approved.

Ayes: Buscaino, McCallon, Perez, and Solis

Noes: None

Recused: Robinson

Absent: Mitchell

## **INFORMATION ONLY ITEM**

### **3. Using Unmanned Aerial Vehicles for Air Monitoring Applications (*presentation only*)**

In recent years, there have been significant advances in the technology, performance, and affordability of commercially available Unmanned Aerial Vehicles (UAVs). Although safety and privacy issues have still not been fully addressed by policy makers, the civilian and commercial UAV market in the United States is rapidly expanding. These systems provide a versatile platform for a wide variety of environmental applications including air pollution monitoring. Currently, the commercial use of UAVs is limited by their relatively short flight time, their low carrying capacity, and other technical and FAA restriction issues. However, the use of UAVs could soon become viable tools to monitor air quality over large areas. This presentation discussed the current status of UAVs, important regulations limiting the wide deployment of this technology, and the possibility of using drones to augment SCAQMD's monitoring and emergency response capabilities.

*Supervisor Solis asked a question related to potential privacy issues the SCAQMD should be aware of if deciding to start using drone technology for air pollution monitoring. General Counsel Bayron Gilchrist added that drones will be used in open areas where privacy issues are not likely, but this is an area that is continuing to evolve. Mr. Gilchrist added that there are no rights to privacy regarding solely air pollutants being measured by drones.*

*Council Member Buscaino asked if SCAQMD is interested in using drone technology for enforcement purposes. Staff replied that our main interest is learning more about the technology and its applications and limitations.*

*Supervisor Perez inquired about how long a drone would have to operate to fully characterize air pollution in the Salton Sea. Staff stated the flight time is limited for most commercially available drones, but even 30 minutes to one hour of measurements over the Salton Sea would probably be enough to characterize air pollution in that area.*

*Mayor McCallon inquired about the maximum distance of operation for drones. Staff explained that under FAA rules drones have to be operated within the visual-line-of-sight (probably close to two miles in most environments).*

*Council Member Robinson commented on "geo-fencing" and ways to minimize the risks associated with flying drones around the ports and industrial facilities, and on the importance of conducting periodic visual inspections for small businesses.*

*Mayor McCallon also commented on the importance of knowing the coordinates of a flying drone at all times.*

*Supervisor Solis emphasized the importance of informing and educating the community on future plans to use drones for air pollution monitoring in the Basin.*

*Council Member Buscaino asked what the timeline would be for a technology demonstration project RFP involving the use of sensors and drones. Staff replied that something could be ready within the next three to six months.*

*Alex Spataru (who runs a green technology transfer company) stated that he is working with a Danish company called Explicit that operates drone-based technology to identify ships that do not comply with existing sulfur fuel rules. He also stated that there may be hundreds of marine vessels in the Port of Los Angeles and Long Beach that are likely to violate CARB's existing sulfur fuel rule. In his opinion using drones to identify ships that are in violation of this rule will result in substantial air quality benefits for the community.*

*Susan Stark (Marathon Petroleum Company) commented on the fact that refineries are already watching out for drones flying above their property for safety reasons, and encouraged the SCAQMD to coordinate future drone-related activities with facilities.*

## **OTHER MATTERS:**

### **8. Other Business**

There was no other business.

### **9. Public Comment Period**

There were no public comments.

### **10. Next Meeting Date**

The next regular Technology Committee meeting is scheduled for Friday, January 18, 2019 at noon.

### **Adjournment**

The meeting adjourned at 12:40 p.m.

### **Attachment**

Attendance Record

**ATTACHMENT**

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
TECHNOLOGY COMMITTEE MEETING  
Attendance Record – November 16, 2018**

Council Member Joe Buscaino (videoconference) .....	SCAQMD Board Member
Mayor Larry McCallon .....	SCAQMD Board Member
Supervisor V. Manuel Perez (videoconference) .....	SCAQMD Board Member
Council Member Dwight Robinson .....	SCAQMD Board Member
Supervisor Hilda L. Solis (videoconference) .....	SCAQMD Board Member
David Czamanske .....	Board Consultant (Cacciotti)
Guillermo Gonzalez .....	Board Consultant (Perez)
Susan Stark .....	Marathon Petroleum Company
Naveen Berry .....	SCAQMD Staff
Patrick Chandler .....	SCAQMD Staff
Philip Fine .....	SCAQMD Staff
Bayron Gilchrist .....	SCAQMD Staff
Pat Krayser .....	SCAQMD Staff
Jason Low .....	SCAQMD Staff
Lisa Mirisola .....	SCAQMD Staff
Matt Miyasato .....	SCAQMD Staff
Wayne Nastri .....	SCAQMD Staff
Andrea Polidori .....	SCAQMD Staff
Cynthia Snyder .....	SCAQMD Staff
Veronica Sosa .....	SCAQMD Staff
Veera Tyagi .....	SCAQMD Staff
Vicki White .....	SCAQMD Staff
Robert Wimmer .....	SCAQMD Staff
Paul Wright .....	SCAQMD Staff

[↑ Back to Agenda](#)

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 26

REPORT: California Air Resources Board Monthly Meeting

SYNOPSIS: The California Air Resources Board met on November 15 and 16, 2018 in Sacramento, CA. The following is a summary of the meeting.

RECOMMENDED ACTION:

Receive and file.

Judith Mitchell, Member  
SCAQMD Governing Board

dg

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The California Air Resources Board's (CARB or Board) held a meeting on November 15 and 16, 2018 in Sacramento at the California Environmental Protection Agency Headquarters Building. Key items presented are summarized below.

### **CONSENT ITEMS**

#### **18-9-1: Public Meeting to Consider the Ozone Attainment Plan for Western Nevada County**

The Board adopted the Ozone Attainment Plan for Western Nevada County (Ozone Plan). The Ozone Plan addresses Clean Air Act (Act) requirements that California demonstrate attainment of the 75 part per billion 8-hour ozone national ambient air quality standard in Western Nevada County by 2021. The Ozone Plan also satisfies Act requirements for control measures, air quality modeling analysis, reasonable further progress, transportation conformity, and contingency measures. The Ozone Plan will be submitted to U.S. EPA as a revision to the California State Implementation Plan.

## **DISCUSSION ITEMS**

### **18-9-3: Public Meeting to Hear an Informational Update on the Mobile Source Program: A Vision for Minimizing Real-World Emissions**

The Board heard an informational update on the status of existing programs and the development of future programs to minimize emissions from mobile sources in California. While CARB has made impressive progress reducing pollution and greenhouse gas emissions from vehicles, California still faces the challenges of lowering oxides of nitrogen by an additional 80 percent from today's levels and achieving the Governor's 2030 target of reducing greenhouse gases by 40 percent below 1990 levels. CARB staff presented its vision to ensure that vehicles are designed, built, and operated to minimize emissions throughout the vehicle's life. To achieve these goals, staff is utilizing new approaches and technology to tighten emissions standards for new vehicles and strengthen in-use programs to ensure that vehicles operate as cleanly as possible.

### **18-9-4: Public Hearing to Consider Proposed Revisions to On Board Diagnostic System Requirements, Including the Introduction of Real Emissions Assessment Logging, for Heavy Duty Engines, Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines**

The Board approved amendments to the heavy-duty (HD) On Board Diagnostic (OBD) and medium-duty OBD II requirements. These amendments will update the monitoring requirements for gasoline and diesel vehicles, require more data parameters to be tracked and reported by the engine and vehicle, increase deficiency fines, and clarify and improve the regulation where necessary. The Board also made conforming updates to the associated HD OBD enforcement regulation, and to modify the manufacturer self-testing requirements. The approval includes 15-day changes to clarify the regulatory language.

### **18-9-9 and 18-9-10: Public Hearing to Consider Proposed Amendments to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (agenda item 18-9-9), and to Consider Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation (agenda item 18-9-10)**

The Board heard a combined presentation on the proposed amendments to the Mandatory Reporting of Greenhouse Gas (GHG) Emissions Regulation (MRR), and the proposed amendments to the Cap-and-Trade Regulation. The amendments to the MRR will clarify the existing requirements regarding how entities report their GHG emissions and will ensure the data collected for CARB's climate change programs are complete and accurate. The proposed amendments to the Cap-and-Trade Regulation will conform the Regulation to requirements in Assembly Bill 398 and enhance implementation and

oversight of the Regulation. The amendments also provide transition assistance and additional allowances for minimizing leakage from certain sectors, and revise assistance factors for 2018 to 2020. The amendments also update existing provisions to ensure appropriate allocation for new and covered entities, and make changes to system registration, auction processes, and provisions related to implementation of compliance offsets. In addition, the Regulation amendments propose to de-link from the recently revoked Ontario cap-and-trade program. The Board will consider approval of the amendments to the MRR and Cap-and-Trade Regulation at the December 2018 Board meeting.

#### **18-9-5: Public Meeting to Hear an Informational Update on Reducing Emissions from Small Off-Road Engines: Operator Exposure, Health Risks, and Pathways to Zero Emissions**

The Board heard an informational update on small off-road engines (SORE), which are primarily used in lawn and garden equipment. As the number of these engines increase in California, their ozone forming emissions, if left unchecked, are expected to exceed those of cars by the year 2020. Other health concerns related to emissions from these engines include operator exposure to toxic air pollutants and cancer-forming chemicals. Moving to zero-emission equipment (ZEE) reduces near-source cancer-risk and air toxic exposure for equipment operators, in addition to reducing regional air pollution. The update discussed the increasing availability of ZEE, their current use by businesses, colleges and cities, and incentives to accelerate the deployment of ZEE. To encourage their use, CARB is involved with ZEE demonstrations, collaborations with manufacturers and incentive programs. CARB staff plans to return to the Board in 2020 with lower exhaust and evaporative emissions standards for SORE.

#### **18-9-2: Public Meeting to Hear the 2018 Legislative Update**

The Board heard a review of air quality and climate change legislation in the 2018 Legislative Session. In 2018, CARB staff tracked over 450 bills and resolutions related to air quality and climate, 40 of which were signed by the Governor. These bills addressed a wide range of issues, including climate change and energy, expanding public accessibility to zero emission vehicles, reducing emissions from heavy-duty vehicles, funding for cleaner technology, and lowering air pollution from stationary sources and wildfires.

#### **18-9-8: Public Meeting to Hear an Informational Update on the Natural and Working Lands Implementation Plan**

The Board heard an update on the development of the Natural and Working Lands Implementation Plan (Implementation Plan) and the 2030 intervention-based goal for carbon sequestration and avoided greenhouse gas emissions in the Natural and Working Lands sector. The Implementation Plan follows the Governor's Executive Orders to

manage forests, enhance biodiversity, and achieve carbon neutrality, and is called for by the 2017 Climate Change Scoping Plan to develop near-term actions for meeting the long-term objectives to support lands as a net carbon sink. The 2017 Climate Change Scoping Plan directs the California Air Resources Board, together with the California Environmental Protection Agency, the California Natural Resources Agency, and California Department of Food and Agriculture, to develop the Implementation Plan to evaluate and identify actions to meet California's climate goals.

#### **18-9-6: Public Meeting to Consider Endorsement of the California Tropical Forest Standard**

The Board considered an endorsement of the proposed California Tropical Forest Standard (Standard). The Standard establishes criteria that implementing jurisdictions must meet to enable their sector-based programs reducing greenhouse gas (GHG) emissions from tropical deforestation to align with California regulatory emissions trading systems. The Standard includes requirements for direct participation by indigenous and local communities, and provides a detailed stepwise approach to quantify and track GHG emissions reductions. Endorsement of the Standard would not, however, result in regulatory amendments to the California Cap-and-Trade Regulation, linkage with any jurisdiction, or make tropical forest offset credits eligible for use in the California Cap-and-Trade Program.

#### **18-9-7: Public Meeting to Present the Revised Draft Cap-and-Trade Auction Proceeds Third Investment Plan**

The Board heard a staff update on the Revised Draft Third Investment Plan for Cap-and-Trade Auction Proceeds. The Plan identifies priority investments that will help achieve the State's greenhouse gas reduction goals, invest in disadvantaged and low-income communities, and provide other economic, public health, and environmental benefits. A key recommendation in the Revised Draft Third Investment Plan includes continued investment in successful existing programs that emphasize community engagement and align with legislative priorities. The Plan also recommends providing multi-year funding for additional existing programs to encourage better community engagement and more innovative projects. The Department of Finance will submit the Plan to the Legislature in January 2019, as required by Assembly Bill 1532.

#### **18-9-11: Public Meeting to Consider Electrify America's Cycle 2 Zero Emission Vehicles Investment Plan**

The Board heard a staff presentation and received public comment related to the Board's consideration of approval of Electrify America's Cycle 2 Zero Emission Vehicle (ZEV) Investment Plan. Electrify America, a subsidiary of Volkswagen (VW), is responsible for developing and implementing the ZEV-Investment Commitment required as part of the VW Diesel Settlement. The ZEV Investment Commitment

requires investment in ZEV market support activities like infrastructure and public awareness. The \$200 million Cycle 2 ZEV Investment Plan will include funding for fueling infrastructure in metropolitan areas and highway corridors in addition to ZEV awareness and education. Electrify America will also strive to ensure that at least 35 percent of their Cycle 2 Plan investments benefit low-income and disadvantaged communities and will evaluate heavy-duty hydrogen opportunities. The Board will take a final vote on the Investment Plan at the December meeting.

**Attachment**

CARB November 15 and 16, 2018 Meeting Agenda



## PUBLIC MEETING AGENDA

**Thursday, November 15, 2018  
and  
Friday, November 16, 2018**

### LOCATION:

California Environmental Protection Agency  
California Air Resources Board  
Byron Sher Auditorium, 2nd Floor  
1001 I Street  
Sacramento, California 95814

This facility is accessible by public transit. For transit information, call (916) 321-BUSS, website:

<http://www.sacrt.com>

(This facility is accessible to persons with disabilities.)

**TO SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO:**

<http://www.arb.ca.gov/lispub/comm/bclist.php>

**Thursday  
November 15, 2018  
9:00 a.m.**

### **CONSENT CALENDAR:**

The following item on the consent calendar will be presented to the Board immediately after the start of the public meeting, unless removed from the consent calendar either upon a Board member's request or if someone in the audience wishes to speak.

#### **Consent Item #**

**18-9-1: Public Meeting to Consider the Ozone Attainment Plan for Western Nevada County**

*The Board will consider adopting the Ozone Attainment Plan for Western Nevada County as a revision to the California State Implementation Plan. The revisions address requirements that California demonstrate how Western Nevada County will attain the 2008 75 ppb 8-hour ozone standard by 2021 and satisfy other Clean Air Act requirements for control measures, air quality modeling analysis, reasonable further progress, transportation conformity, and contingency measures.*

### **DISCUSSION ITEMS:**

**Note:** The following agenda items may be heard in a different order at the Board meeting.

#### **Agenda Item #**

**18-9-3: Public Meeting to Hear an Informational Update on The Mobile Source Program: A Vision for Minimizing Real-World Emissions**

*The Board will hear an update on how staff are updating existing programs and developing future programs to better ensure vehicles are designed, built, and operated to minimize emissions throughout the vehicle's life.*

**18-9-4: Public Hearing to Consider Proposed Revisions to On Board Diagnostic System Requirements, Including the Introduction Of Real Emissions Assessment Logging, for Heavy Duty Engines, Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines**

*The Board will consider amendments to the heavy-duty (HD) On Board Diagnostic (OBD) and medium-duty OBD II requirements to update the monitoring requirements for gasoline and diesel vehicles, to require more data parameters to be tracked and reported by the engine/vehicle, and to clarify and improve the regulation where necessary. Staff is also proposing to update the associated HD OBD enforcement regulation to align with the proposed changes to the HD OBD regulation and to modify the manufacturer self-testing requirements.*

**18-9-9: Public Hearing to Consider Proposed Amendments to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions**

*Spanish translation will be provided at the Board Meeting for this item, Item 18-9-9.*

*The Board will hear staff's proposed amendments to the Regulation for the Mandatory Reporting of Greenhouse Gas (GHG) Emissions. The proposed amendments are targeted revisions to clarify the existing regulation related to how entities report their GHG emissions to support the Cap-and-Trade program, and to ensure the data that are collected for CARB's climate change programs are complete and accurate. The public comments for this item will be combined for purposes of the Board hearing with item 18-9-10. This hearing will be the first of two planned Board hearings on this proposal.*

**18-9-10: Public Hearing to Consider the Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation**

*Spanish translation will be provided at the Board Meeting for this item, Item 18-9-10.*

*The Board will hear staff's proposal for Cap-and-Trade Regulation amendments to conform with the requirements in Assembly Bill 398, respond to Board direction in Resolution 17-21, and enhance Program implementation and oversight. Specifically, the proposed amendments include changes to free allocation for minimizing leakage and transition assistance, offsets usage limits and criteria related to direct environmental benefits to the state, and cost containment, among others. The public comments for this item will be combined for purposes of the Board hearing with item 18-9-9. This hearing will be the first of two planned board hearings on this proposal.*

**18-9-5: Public Meeting to Hear an Informational Update on Reducing Emissions from Small Off-Road Engines: Operator Exposure, Health Risks, and Pathways to Zero Emissions**

*The Board will hear an update on small off-road engines, which are primarily used in lawn and garden equipment. The update will discuss incentive programs, case studies, and potential approaches to converting California's small off-road engine fleet to zero-emission equipment. Staff will also present an update on compliance testing results for model year 2015-2017 engines and a summary of findings from a recent exposure study, including estimates of potential maximum incremental cancer risk, underscoring the importance of reducing emissions.*

**18-9-2: Public Meeting to Hear the 2018 Legislative Update**

*The California Air Resources Board Legislative Office will present a review of air quality and climate legislation from the second year of the 2017-2018 Legislative Session.*

**Friday**  
**November 16, 2018**  
**8:30 a.m.**

**18-9-8: Public Meeting to Hear an Informational Update on the Natural and Working Lands Implementation Plan**

*The Board will hear an update on the development of the Natural and Working Lands Implementation Plan and the 2030 intervention-based goal for carbon sequestration and avoided greenhouse gas emissions in the sector. The 2017 Climate Change Scoping Plan identifies a preliminary goal and directs the California Air Resources Board, the California Environmental Protection Agency, the California Natural Resources Agency, and California Department of Food and Agriculture to refine the goal and develop the Implementation Plan to evaluate and identify actions to meet it.*

**18-9-6: Public Meeting to Consider Endorsement of the California Tropical Forest Standard**

**Spanish and Portuguese translation will be provided at the Board Meeting for this item, Item 18-9-6.**

*The Board will consider endorsing a California Tropical Forest Standard that would specify criteria to assess jurisdictional sector-based offset crediting programs that reduce emissions from tropical deforestation. The Standard could be used by jurisdictions that are taking action to reduce Greenhouse Gas emissions from tropical deforestation as well as for potential future inclusion within a Cap-and-Trade Program. Endorsement of the proposed standard would not result in any regulatory amendments to the California Cap-and-Trade Regulation, any immediate linkage with any jurisdiction, or in any tropical forest offset credits being eligible for use in the California Cap-and-Trade Program, without a future regulatory amendment process.*

**18-9-7: Public Meeting to Present the Revised Draft Cap-and-Trade Auction Proceeds Third Investment Plan**

**Spanish translation will be provided at the Board Meeting for this item, Item 18-9-7.**

*The Board will hear the proposed Third Investment Plan for Cap-and-Trade Auction Proceeds. The Plan identifies priority investments for California Climate Investments to help achieve the State's greenhouse gas reduction goals; invest in disadvantaged and low-income communities; and provide other economic, public health, and environmental benefits. The Department of Finance will submit the Plan to the Legislature, as required by Assembly Bill 1532.*

**18-9-11: Public Meeting to Consider Electrify America's Cycle 2 Zero Emission Vehicles Investment Plan**

*Electrify America, a subsidiary of Volkswagen (VW), is responsible for implementing the Zero Emission Vehicle (ZEV) Investment commitment required as part of the VW Diesel Settlement. The ZEV Investment commitment requires investment in ZEV market support activities like infrastructure and public awareness. The Board will hear a staff assessment of Electrify America's Cycle 2 ZEV Investment Plan and decide whether to approve or disapprove it, in whole or in part.*

**CLOSED SESSION**

The Board may hold a closed session, as authorized by Government Code section 11126(e), to confer with, and receive advice from, its legal counsel regarding the following pending or potential litigation, and as authorized by Government Code section 11126(a):

*American Fuels and Petrochemical Manufacturers, et al. v. Jane O’Keeffe, et al.*, U.S. District Court (D. Ore. Portland), Case No. 3:15-CV-00467; Plaintiffs’ appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 15-35834.

*California Air Resources Board v. United States Environmental Protection Agency*, U.S. Court of Appeals, District of Columbia Circuit, Case No. 18-1085.

*Electric Power Supply Association, et al. v. Star, et al.*, U.S. Court of Appeals, Seventh Circuit, Case No. 17-2445.

*POET, LLC, et al. v. California Air Resources Board, et al.*, Fresno County Superior Court, Case No. 09CECG04659; plaintiffs’ appeal, California Court of Appeal, Fifth District, Case No. F064045; California Supreme Court, Case No. S213394 [remanded to trial court]; plaintiff’s appeal of trial court order discharging peremptory writ of mandate, Court of Appeal, Fifth District, Case No. F073340.

*POET, LLC, et al. v. California Air Resources Board, et al.*, Fresno County Superior Court, Case No. 15CECG03380.

*Rocky Mountain Farmers Union, et al. v. Corey*, U.S. District Court (E.D. Cal. Fresno), Case No. 1:09-CV-02234-LJO-DLB; ARB interlocutory appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 12-15131 [remanded to trial court].

*American Fuels and Petrochemical Manufacturers, et al. v. Corey, et al.*, U.S. District Court (E.D. Cal. Fresno), Case No. 1:10-CV-00163-AWI-GSA; ARB’s interlocutory appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 10-CV-00163 [remanded to trial court].

*Sowinski v. California Air Resources Board, et al.*, U.S. District Court, Central District of California, Case No. 8:15-CV-02123; Orange County Superior Court, Case No. 30-2018-00970852-CU-IP-CXC.

*State of California, et al. v. United States Environmental Protection Agency*, U.S. Court of Appeals, District of Columbia Circuit, Case No. 18-1114.

*State of California, et al. v. United States Bureau of Land Management, et al.*, U.S. District Court, Northern District of California Circuit, Case No. 3:17-cv-07186-WHO.

*State of New York, et al. v. United States Environmental Protection Agency*, U.S. District Court, District of Columbia, Case No. 1:18-cv-00773.

*State of North Dakota, et al. v. United States Environmental Protection Agency*, U.S. Court of Appeals, District of Columbia Circuit, Case No. 16-1242.

*State of North Dakota v. United States Environmental Protection Agency*, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1381.

*State of West Virginia et al. v. United States Environmental Protection Agency*, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1363.

*State of Wyoming, et al. v. United States Department of the Interior, et al.*, U.S. District Court, District of Wyoming, Case No. 16-CV-285-SWS.

*The Two Hundred, et al. v. California Air Resources Board, et al.*, Fresno County Superior Court, Case No. 18CECG01494.

*Truck Trailer Manufacturers Association, Inc. v. United States Environmental Protection Agency, et al.*, U.S. Court of Appeals, District of Columbia Circuit, Case No. 16-1430.

*Valero Refining Co. California v. Hearing Board of the Bay Area Air Quality Management District et al.*, Court of Appeal, First Appellate District, Case No. A151004.

*Alliance for California Business v. California Air Resources Board, et al.*, Glenn County Superior Court, Case No. 13CV01232; plaintiffs' appeal, Court of Appeal, Third District, Case No. C082828.

*Alliance for California Business v. California State Transportation Agency, et al.*, Sacramento County Superior Court, Case No. 34-2016-80002491.

*American Coatings Association, Inc. v. State of California and California Air Resources Board*, Sacramento County Superior Court, Case No. 04CS01707.

*Jack Cody dba Cody Transport v. California Air Resources Board, et al.*, Sacramento Superior Court, Case No. 34-2015-80002116; plaintiff's appeal, Court of Appeal, Third District, Case No. C083083.

*Dalton Trucking, Inc. v. United States Environmental Protection Agency*, U.S. Court of Appeals, District of Columbia Circuit, Case No. 13-1283 (dismissed), U.S. Court of Appeals, Ninth Circuit, Case No. 13-74019.

*John R. Lawson Rock & Oil, Inc. et al. v. California Air Resources Board et al.*, Fresno County Superior Court, Case No. 14-CECG01494; ARB's appeal, Court of Appeal, Fifth District, Case No. F074003.

*Murray Energy Corporation v. United States Environmental Protection Agency*, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1385.

*State of California, et al. v. United States Environmental Protection Agency et al.*, U.S. District Court, Northern District of California, Oakland Division, Case No. 4:17-cv-6936-HSG.

*State of New York, et al. v. United States Environmental Protection Agency et al.*, U.S. Court of Appeals, District of Columbia Circuit, Case No. 17-1185.

*California Air Resources Board v. Adam Brothers Farming Inc.*, Santa Barbara County Superior Court, Case No. 16CV01758.

*People v. Southern California Gas Company*, Los Angeles Superior Court, Case No. BC 602973.

*In re: Volkswagen "Clean Diesel" MDL*, United States District Court, Northern District of California, Case No. 15-MD-2672-CRB (JSC).

*Friends of Oceano Dunes, Inc. v. California Coastal Commission, et al.*, San Luis Obispo County Superior Court, Case No. 17CV-0576; U.S. District Court for the Central District of California, Case No. 2:17-cv-8733.

#### **OPPORTUNITY FOR MEMBERS OF THE BOARD TO COMMENT ON MATTERS OF INTEREST**

*Board members may identify matters they would like to have noticed for consideration at future meetings and comment on topics of interest; no formal action on these topics will be taken without further notice.*

**OPEN SESSION TO PROVIDE AN OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD ON SUBJECT MATTERS WITHIN THE JURISDICTION OF THE BOARD**

*Although no formal Board action may be taken, the Board is allowing an opportunity to interested members of the public to address the Board on items of interest that are within the Board's jurisdiction, but that do not specifically appear on the agenda. Each person will be allowed a maximum of three minutes to ensure that everyone has a chance to speak.*

**TO ELECTRONICALLY SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO:**

<https://www.arb.ca.gov/lispub/comm/bclist.php>

(Note: not all agenda items are available for electronic submittals of written comments.)

**PLEASE NOTE:** No outside memory sticks or other external devices may be used at any time with the Board audio/visual system or any CARB computers. Therefore, PowerPoint presentations to be displayed at the Board meeting must be electronically submitted via email to the Clerk of the Board at [cotb@arb.ca.gov](mailto:cotb@arb.ca.gov) no later than noon on the business day prior to the scheduled Board meeting.

**IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT THE CLERK OF THE BOARD:**

**1001 I Street, 23<sup>rd</sup> Floor, Sacramento, California 95814**

**(916) 322-5594**

**CARB Homepage: [www.arb.ca.gov](http://www.arb.ca.gov)**

**SPECIAL ACCOMMODATION REQUEST**

Consistent with California Government Code Section 7296.2, special accommodation or language needs may be provided for any of the following:

- An interpreter to be available at the hearing;
- Documents made available in an alternate format or another language;
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Clerk of the Board at (916) 322-5594 or by facsimile at (916) 322-3928 as soon as possible, but no later than 7 business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Consecuente con la sección 7296.2 del Código de Gobierno de California, una acomodación especial o necesidades lingüísticas pueden ser suministradas para cualquiera de los siguientes:

- Un intérprete que esté disponible en la audiencia
- Documentos disponibles en un formato alternativo u otro idioma
- Una acomodación razonable relacionados con una incapacidad

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al (916) 322-5594 o envíe un fax a (916) 322-3928 lo más pronto posible, pero no menos de 7 días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

**SMOKING IS NOT PERMITTED AT MEETINGS OF THE CALIFORNIA AIR RESOURCES BOARD**

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 27

PROPOSAL: Certify Final Environmental Assessment and Adopt Rule 1118.1 - Control of Emissions from Non-Refinery Flares

*Staff is recommending that the public hearing on this item be continued to the January 4, 2019 Board Meeting.*

SYNOPSIS: Proposed Rule 1118.1 applies to RECLAIM and non-RECLAIM facilities that operate non-refinery flares located at landfills, wastewater treatment plants, oil and gas production facilities, organic liquid loading stations, and tank farms. The proposed rule will implement, in part, the 2016 AQMP Control Measure CMB-03 - Emission Reductions from Non-Refinery Flares and facilitate the transition of the NOx RECLAIM program to a command-and-control regulatory structure. Proposed Rule 1118.1 establishes emission limits for NOx, VOC, and CO for new flares, and a capacity threshold for existing flares. In addition, some new flares at oil and gas production facilities will have additional limitations. Proposed Rule 1118.1 also establishes provisions for source testing, monitoring, reporting, recordkeeping, and provides exemptions for low-use and low-emitting flares. This action is to adopt the Resolution: 1) Certifying the Final Environmental Assessment for Proposed Rule 1118.1 - Control of Emissions from Non-Refinery Flares, and 2) Adopting Proposed Rule 1118.1 - Control of Emissions from Non-Refinery Flares. (Reviewed: Stationary Source Committee, October 19, 2018, and To Be Reviewed: December 19, 2018)

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 28

**PROPOSAL:** Certify Final Subsequent Environmental Assessment and Amend Rules 1146, 1146.1, 1146.2 and Adopt Rule 1100

**SYNOPSIS:** The adoption Resolution of the 2016 AQMP directed staff to achieve additional NOx emission reductions and to transition the RECLAIM program to a command-and-control regulatory structure as soon as practicable. Proposed Amended Rules 1146, 1146.1 and 1146.2 updates NOx emission limits for boilers, heaters, and steam generators applicable to these rules. The revised NOx emission limits represent BARCT and apply to RECLAIM and non-RECLAIM facilities. Proposed Rule 1100 establishes the compliance schedule for equipment at RECLAIM facilities that are subject to Proposed Amended Rules 1146 and 1146.1. PAR 1146.2 includes the compliance schedule for equipment regulated under this rule.

**COMMITTEE:** Stationary Source, April 20 and October 19, 2018, Reviewed

**RECOMMENDED ACTIONS:**

Adopt the attached Resolution:

1. Certifying the Final Subsequent Environmental Assessment for Proposed Amended Rules 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters; 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and Proposed Rule 1100 - Implementation Schedule for NOx Facilities;
2. Amending Rules 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters; 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; and 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and

### 3. Adopting Rule 1100 - Implementation Schedule for NOx Facilities.

Wayne Natri  
Executive Officer

PMF:SN:MK:GQ:KC:SW:LG

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#### **Background**

Regulation XX – Regional Clean Air Incentives Market (RECLAIM) program was adopted in October 1993 and is a market-based program for facilities with more than four tons per year of NOx or SOx emissions. During the adoption of the 2016 AQMP, the adopted Resolution directed staff to modify Control Measure CMB-05 to achieve an additional five tons per day NOx emission reductions as soon as feasible, but no later than 2025, and to transition the NOx RECLAIM program to a command-and-control regulatory structure requiring Best Available Retrofit Control Technology (BARCT) as soon as practicable. California State Assembly Bill (AB) 617, which was approved in July 2017, requires that BARCT be implemented for facilities in the state greenhouse gas cap and trade program by December 31, 2023.

Source-specific rules establishing BARCT emission limits are needed for equipment at RECLAIM facilities as they transition to a command-and-control regulatory program. The PAR 1146 series are “landing rules” for RECLAIM facilities with boilers, process heaters, and steam generators and are needed before facilities can transition out of RECLAIM. Proposed Amended Rules 1146, 1146.1 and 1146.2 (PARs 1146 series) update NOx emission limits for boilers, heaters, and steam generators. The revised NOx emission limits represent BARCT and apply to RECLAIM and non-RECLAIM facilities. Proposed Rule 1100 – Implementation Schedule for NOx Facilities (PR 1100) establishes the compliance schedule for Rule 1146 series facilities exiting the RECLAIM program and monitoring, reporting, and recordkeeping requirements for these RECLAIM facilities.

#### **Public Process**

Development of PARs 1146 series and PR 1100 was conducted through a public process. Staff has held seven working group meetings at the SCAQMD on November 30, 2017, January 16, 2018, March 7, 2018, April 12, 2018, August 2, 2018, August 29, 2018, and October 16, 2018. The Working Group is composed of representatives from the manufacturers, trade organizations, businesses, environmental groups, public agencies, consultants, and other interested parties. Two Public Workshops were held on February 14, 2018 and September 20, 2018. A CEQA scoping meeting, as required pursuant to Public Resources Code Section 21083.9(a)(2), was held in conjunction with the Public Workshop on February 14, 2018. Staff also provided summaries of the PARs 1146 series and PR 1100 to the RECLAIM Working Group on July 13, 2017,

September 14, 2017, October 12, 2017, January 11, 2018, February 8, 2018, March 8, 2018, April 12, 2018, May 9, 2018, June 14, 2018, July 12, 2018, and September 13, 2018. Meetings were also held with numerous individual stakeholders who will be impacted by this rulemaking.

### **Proposed Amendments**

PARs 1146 and 1146.1 apply to boilers, process heaters, and steam generators that are greater than 2 million British Thermal Units per hour (MM Btu/hr). Based on the BARCT assessment, PAR 1146 and 1146.1 will lower the NO<sub>x</sub> emission limits from 9 ppmv to either 5 or 7 ppmv depending on the unit size and the existing unit's current NO<sub>x</sub> emission limit, and lower the NO<sub>x</sub> emission limit for thermal fluid heaters from 30 to 12 ppmv at 3 percent oxygen. The current NO<sub>x</sub> emission limit for the largest units that are over 75 MM Btu/hr will remain at 5 ppmv. PAR 1146 also adds a new ammonia slip requirement of 5 ppm for all units equipped with applicable control equipment. Under Proposed Rule 1100 the compliance date for RECLAIM equipment retrofitting units to meet the NO<sub>x</sub> emission limit is January 1, 2022. An additional year is allowed to encourage facilities to replace existing units with a new unit that meets Best Available Control Technology NO<sub>x</sub> limits. Any RECLAIM or non-RECLAIM equipment near the final emission limits is required to meet the lower NO<sub>x</sub> emission limit within 15 years after rule amendment or during burner replacement, whichever is earlier.

PAR 1146.2 applies to units between 400,000 and 2 MMBtu/hr and requires units to comply with the 30 ppm limit by December 31, 2023, if a technology assessment (to be completed by January 1, 2022) determines that the NO<sub>x</sub> emission limits specified in Rule 1146.2 still represent BARCT.

About 291 units located at 103 RECLAIM facilities and 1,807 units located at 824 non-RECLAIM facilities will be affected by the proposed rule amendments. Emission reductions are estimated to be about 0.27 tons per day of NO<sub>x</sub> by January 1, 2023 and an estimated additional reduction of 0.04 tons per day of NO<sub>x</sub> by 15 years after rule amendment.

During the rulemaking process, representatives from wastewater and landfill facilities commented on challenges that their industry has with meeting lower NO<sub>x</sub> emission limits for units regulated under Rule 1146 and 1146.1 as well as engines regulated under Rule 1110.2. To better address these challenges, staff has decided to address BARCT NO<sub>x</sub> emission limits for boilers, heaters, furnaces, and engines in two new industry specific rules for landfills and publicly owned treatment works. As a result, current NO<sub>x</sub> emission limits will not be revised in Rule 1146 and 1146.1 for units used at these two industry sectors.

## **Key Issues**

Throughout the rulemaking process, staff has worked closely with key stakeholders from various industries and addressed most of their concerns. However, three key issues still remain: 1) Resolution of New Source Review (NSR) issues related to the transition of RECLAIM facilities before BARCT rules are adopted or amended; 2) The availability of burner retrofits that can achieve a NO<sub>x</sub> limit of 7 ppm; and 3) The cost associated with 7 ppm burner retrofits are higher than those of staff's estimates.

### *Resolve New Source Review Issues Prior to Adopting or Amending BARCT Rules*

Regarding New Source Review, some industry stakeholders have requested that BARCT rule amendments should be suspended until NSR issues have been resolved. Staff believes that rulemaking should proceed while NSR issues are being addressed for the following reasons: 1) state law (AB 617) requires implementation of BARCT for facilities in the state greenhouse gas cap and trade program by December 31, 2023, and 2) RECLAIM facilities will be allowed to remain in RECLAIM so that they can more easily fulfill NSR requirements. Specifically, Rule 2002 – Allocations for Oxides of Nitrogen (NO<sub>x</sub>) and Oxides of Sulfur (SO<sub>x</sub>) was amended on October 5, 2018 to provide an option for RECLAIM facilities to remain in the RECLAIM program, until future provisions in Regulation XIII – New Source Review pertaining to RECLAIM are adopted. If an NSR event is triggered while the facilities elected to remain in RECLAIM, the facility will be subject to NSR provisions under Rule 2005 – New Source Review for RECLAIM.

### *Availability of 7 PPM Burners*

Some industry stakeholder have commented on the feasibility for ultra-low NO<sub>x</sub> burner (ULNB) retrofits that will be able to meet the proposed 7 ppm NO<sub>x</sub> concentration limit. Staff has confirmed that three equipment vendors have burner retrofits that can achieve 7 ppm. 708 units within the San Joaquin Air Quality Pollution Control District (SJVAPCD) are currently meeting a 7 ppm NO<sub>x</sub> emission limit. Staff has also reviewed over 740 source test results from both SCAQMD and SJVAPCD that support the feasibility of 7 ppm BARCT.

### *Cost of 7 PPM Burner Retrofitting*

Some industry stakeholders have commented that the price quotations obtained from vendors for burner retrofits are higher than those of staff estimates. Staff's cost estimates are averages provided by five equipment vendors based on conventional equipment and standard installations. Facilities might experience higher than average costs if operators decide to stay with one specific vendor or retrofitting highly specialized units that would require specific engineering.

### **California Environmental Quality Act**

PARs 1146 series and PR 1100 are considered a “project” as defined by the California Environmental Quality Act (CEQA), and the SCAQMD is the designated lead agency. Pursuant to CEQA Guidelines Sections 15252, 15162(b), and 15251(l) (codified in SCAQMD Rule 110), the SCAQMD has prepared a Final Subsequent Environmental Assessment (SEA) for PARs 1146 series and PR 1100 which relies on the March 2017 Final Program Environmental Impact Report (EIR) for the 2016 AQMP, the September 2008 Final Environmental Assessment (EA) for Rule 1146, the September 2008 Final EA for Rule 1146.1, and the May 2006 Final EA for Rule 1146.2. Staff has prepared a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093, and a Mitigation, Monitoring, and Reporting Plan pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097, as required by CEQA, in Attachment F of this package.

### **Socioeconomic Analysis**

There are 103 RECLAIM facilities with at least one boiler that are subject to the PAR 1146 series and PR 1100. Non-RECLAIM facilities are also subject to PAR 1146 but are not required to comply until 15 years after rule adoption or upon burner replacement (except those with thermal fluid heaters), whichever occurs first. The average annual cost of PAR 1146 series ranges from \$5.6 to \$6.8 million between 2020 and 2045. Annual costs of installing SCRs and ULNBs would result in approximately \$4.1 million (74%) to \$5.4 million (78%) of overall annual compliance costs. The largest share of compliance costs for the PAR 1146 series are in the food and beverage sector, textile mills, pipeline transportation, and paper products, while a smaller portion of costs spread across numerous other industries with boiler equipment.

The PAR 1146 series is projected to result in 57 to 72 jobs forgone annually, on average, between 2020 and 2045. The projected job impacts represent 0.0021 percent of the total employment in the four-county region.

Overall cost-effectiveness of PAR 1146 series is estimated at \$26,500 per ton of NO<sub>x</sub> reduced across all groups in the PAR 1146 series. CEQA alternatives annual costs range between \$4.1 million to \$5.7 million with an estimated 39 to 63 average annual jobs foregone.

### **AQMP and Legal Mandates**

Pursuant to Health & Safety Code Section 40460 (a), the SCAQMD is required to adopt an AQMP demonstrating compliance with all federal regulations and standards. The SCAQMD is required to adopt rules and regulations that carry out the objectives of the AQMP. PAR 1146 series is part of a control measure (CMB-05) in the 2016 AQMP and will reduce NO<sub>x</sub> emissions and facilitate the transition of the NO<sub>x</sub> RECLAIM program to a command-and-control regulatory structure.

Implementation of the PARs 1146 series is expected to reduce NOx emissions by 0.27 ton per day by January 1, 2023. State law (AB 617) requires implementation of BARCT for facilities in the state greenhouse gas cap and trade program by December 31, 2023.

### **Resource Impacts**

Existing staff resources are adequate to implement the proposed amendments.

### **Attachments**

- A. Summary of Proposal
- B. Key Issues and Responses
- C. Rule Development Process
- D. Key Contacts List
- E. Resolution
- F. Attachment 1 to the Resolution (Findings, Statement of Overriding Considerations, and Mitigation Monitoring and Reporting Plan)
- G. Proposed Amended Rule 1146
- H. Proposed Amended Rule 1146.1
- I. Proposed Amended Rule 1146.2
- J. Proposed Rule 1100
- K. Final Staff Report
- L. Final Socioeconomic Impact Assessment
- M. Final Subsequent Environmental Assessment
- N. Board Meeting Presentation

## ATTACHMENT A SUMMARY OF PROPOSAL

### **Proposed Amended Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters and Proposed Amended Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters**

#### Applicability

- Applies to boilers, steam generators, and process heaters of equal to or greater than 2 million Btu per hour rated heat input capacity used in all industrial, institutional, and commercial operations
- Applies to RECLAIM, non-RECLAIM, and former RECLAIM facilities

#### Emissions Limits

- Establishes NO<sub>x</sub> emission limits for industrial and commercial boilers, steam generators, and process heaters rated to  $\geq 2$  MMBtu/hr
- Establishes ammonia emission limits for units operating with an air pollution control equipment that results in ammonia emissions in the exhaust
- Establishes new emission limits for low use equipment at the time of burner replacement or 15 years after rule amendment, whichever occurs earlier
- Includes alternative compliance date for equipment near final emission limits
- Municipal sanitation service facilities are not subject to new proposed emission limits

#### Monitoring, Recordkeeping, and Reporting

- Establishes quarterly (annual after four consecutive passes) ammonia source test requirements for applicable equipment

#### Exemptions

- Provision included to exempt any unit at a RECLAIM or former RECLAIM facility from the provisions of this rule that is subject to a NO<sub>x</sub> emission limit in a different industry specific category as defined in Rule 1100
- Provision included for any unit at a municipal sanitation service facility that is subject to a NO<sub>x</sub> emission limit in a different Regulation XI rule
- Provision included for boilers used by electric utilities to generate electricity; or boilers and process heaters with a rated heat input capacity greater than 40 MMBtu/hr used in petroleum refineries; or sulfur plant reaction boilers (PAR 1146)

**Proposed Amended Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters**

Applicability

- Applies to large water heaters and small boilers and process heaters of equal to or less than 2 million BTU per hour rated heat input capacity used in all industrial, institutional, and commercial operations
- Applies to RECLAIM, non-RECLAIM and former RECLAIM facilities

Technology Assessment

- Conduct a BARCT technology assessment for applicable Rule 1146.2 units and report to the Board no later than January 2022

Exemptions

- Provision included for any unit at a RECLAIM or former RECLAIM facility that is subject to a NOx emission limit in a different industry specific category as defined in Rule 1100
- Provision included for any unit at a municipal sanitation service facility that is subject to a NOx emission limit in a different Regulation XI rule

**Proposed Rule 1100 – Implementation Schedule for NOx Facilities**

Applicability

- Applies to RECLAIM or former RECLAIM facilities that own or operate equipment that meets applicability provisions of Rule 1146 and Rule 1146.1

Implementation Schedule

- Establishes a compliance schedule for the owner or operator of a Rule 1146 unit or Rule 1146.1 unit at a RECLAIM or former RECLAIM facility:
  - Submit permit application on or before 12 months after rule adoption
  - Meet applicable NOx concentration limit for a minimum of 75% of the cumulative total heat input of all units on or before January 1, 2021; and remaining units to make up 100% on or before January 1, 2022
  - Operators that elect to replace an existing unit have until January 1, 2023

Monitoring, Reporting and Recordkeeping (MRR) for RECLAIM facilities

- Title V RECLAIM facilities will continue to comply with MRR requirements specified in Rule 2012; and Non-Title V RECLAIM facilities will comply with MRR requirements in the applicable rule(s) on the day the facilities become a former RECLAIM facility

**ATTACHMENT B**  
**Key Issues and Responses**

**Proposed Amended Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters; Proposed Amended Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; Proposed Amended Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and Proposed Rule 1100 – Implementation Schedule for NO<sub>x</sub> Facilities**

**Key Issue #1:** Facilities should not exit and staff should not move forward with BARCT rule amendments until New Source Review (NSR) issues are resolved.

**Response #1:**

- State law (AB 617) requires implementation of BARCT for facilities in the state greenhouse gas cap and trade program by December 31, 2023
- Staff believes that rulemaking should proceed while NSR issues are being addressed
- Rule 2002 provides an option for facilities to remain in RECLAIM for a limited time to utilize RECLAIM NSR until future provisions in Regulation XIII pertaining to NSR are adopted

**Key Issue #2:** Stakeholders expressed concerns on the market availability of 7 ppm burner retrofits

**Response #2:**

- Staff has confirmed equipment vendors have burner retrofits that can achieve 7 ppm
- 708 units (between 5 to 300 MMBtu/hr) located in SJVAPCD are able to comply with 7 ppm limit without use of the mitigation fee option
- More than 740 source test results from both SCAQMD and SJVAPCD support the feasibility of 7 ppm BARCT

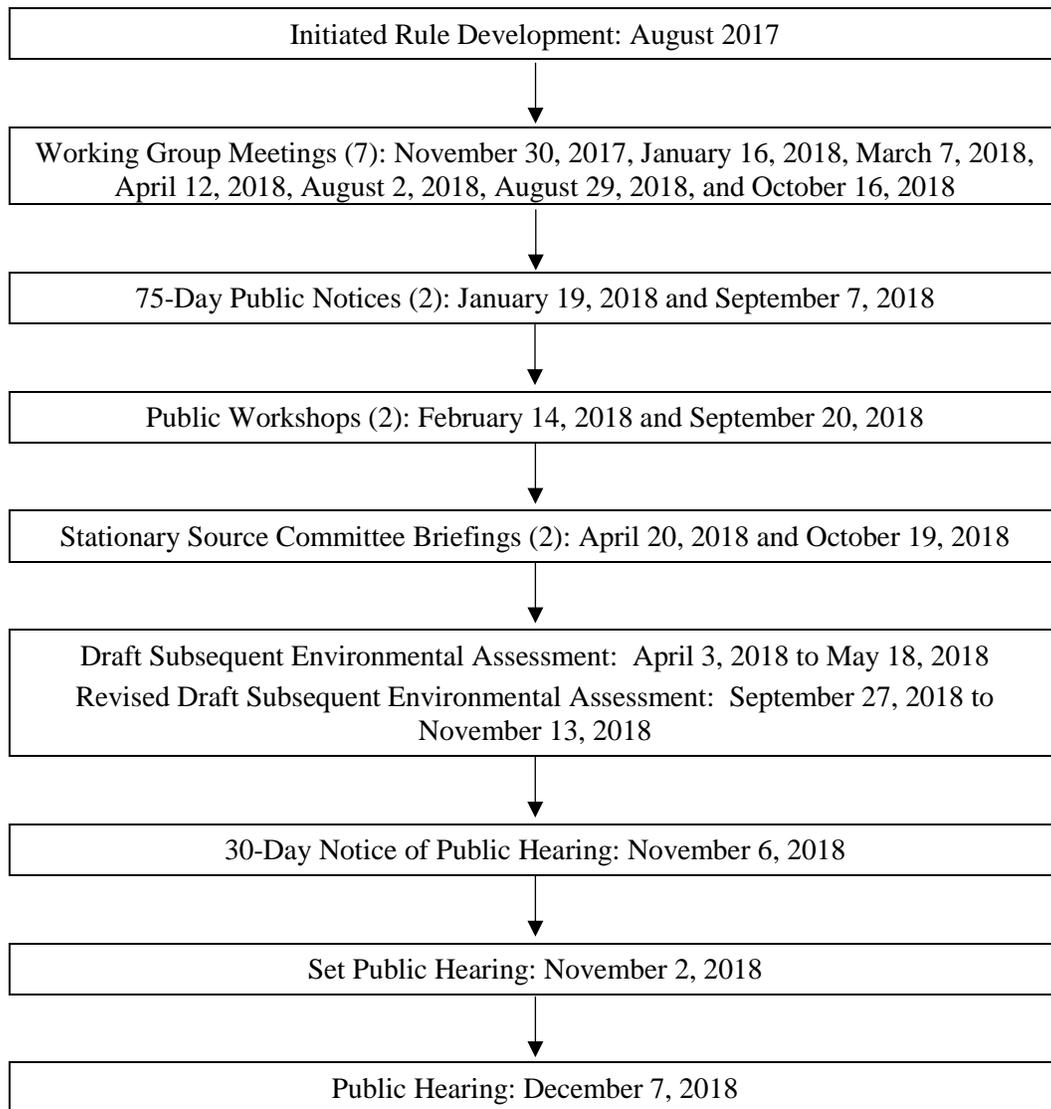
**Key Issue #3:** Stakeholders expressed that their cost quotations obtained are higher than those of staff estimates

**Response #3:**

- Staff cost estimates are averages provided by five equipment vendors based on conventional equipment and standard installations
- Facilities that might experience higher than average costs:
  - Operators that decide to stay with one specific vendor
  - Units that are highly specialized requiring specific engineering

## ATTACHMENT C RULE DEVELOPMENT PROCESS

Proposed Amended Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters; Proposed Amended Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; Proposed Amended Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and Proposed Rule 1100 – Implementation Schedule for NO<sub>x</sub> Facilities



**Sixteen (16) months spent in rule development.**

**Two (2) Public Workshops.**

**Two (2) Stationary Source Committee Meetings.**

**Seven (7) Working Group Meetings.**

## **ATTACHMENT D**

### **KEY CONTACTS LIST**

Proposed Amended Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters; Proposed Amended Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; Proposed Amended Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and Proposed Rule 1100 – Implementation Schedule for NOx Facilities

Alta Environmental  
Boiler Dynamics, Inc  
California Air Resources Board  
California Boiler  
Disneyland  
Earthjustice  
Eastern Municipal Water District  
Heat Transfer Solutions  
Kinder Morgan  
Latham & Watkins LLP  
Marathon Petroleum Corporation  
Montrose Environmental  
Nationwide Boiler Incorporated  
Northrop Grumman  
Orange County Sanitation District  
Parker Boiler Company  
Plains All American  
Plains West Coast Terminals, LLC  
Ramboll  
RF MacDonald  
Sacramento Metropolitan Air Quality Control District  
San Joaquin Air Pollution Control District  
Sanitation Districts of Los Angeles County  
Sempra Utilities  
Southern California Air Quality Alliance (SCAQA)  
Southern California Alliance of Publicly Owned Treatment Works (SCAP)  
The Boeing Company  
US Borax  
U.S. Environmental Protection Agency  
Western States Petroleum Association (WSPA)  
Yorke Engineering

**ATTACHMENT E**

**RESOLUTION NO. 18-\_\_\_\_**

**A Resolution of the Governing Board of the South Coast Air Quality Management District (SCAQMD) certifying the Final Subsequent Environmental Assessment (SEA) for Proposed Amended Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters; Proposed Amended Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; Proposed Amended Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and Proposed Rule 1100 – Implementation Schedule for NOx Facilities.**

**WHEREAS**, the SCAQMD Governing Board finds and determines with certainty that Proposed Amended Rules 1146, 1146.1, and 1146.2, and Proposed Rule 1100 are considered a “project” as defined by the California Environmental Quality Act (CEQA); and

**WHEREAS**, the SCAQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l), and has conducted a CEQA review and analysis of Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 pursuant to such program (SCAQMD Rule 110); and

**WHEREAS**, the SCAQMD Governing Board has determined that the requirements for a Subsequent Environmental Impact Report have been triggered pursuant to its certified regulatory program and CEQA Guidelines Section 15162(b), and that a Subsequent Environmental Assessment (SEA), a substitute document allowed pursuant CEQA Guidelines Section 15252 and SCAQMD’s certified regulatory program, is appropriate; and

**WHEREAS**, the SCAQMD has prepared a Draft SEA and a Revised Draft SEA pursuant to its certified regulatory program and CEQA Guidelines Sections 15251, 15252, and 15162, setting forth the potential environmental consequences of Proposed Amended Rules 1146, 1146.1, and 1146.1 and Proposed Rule 1100 and determined that the proposed project would have the potential to generate significant adverse environmental impacts for the topic of hazards and hazardous materials, after mitigation measures are applied; and

**WHEREAS**, the Draft SEA was circulated for a 45-day public review and comment period from April 3, 2018 to May 18, 2018 and four comment letters were received; and the Revised Draft SEA, which received no comment letter, but included the four comment letters and the responses relative to the Draft SEA, was circulated for a 45-day public review and comment period from September 27, 2018 to November 13, 2018; and

**WHEREAS**, the Revised Draft SEA has been revised so that it is now a Final SEA; and

**WHEREAS**, it is necessary that the SCAQMD Governing Board review the Final SEA prior to its certification, to determine that it provides adequate information on the potential adverse environmental impacts that may occur as a result of adopting Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100, including responses to comments; and

**WHEREAS**, pursuant to CEQA Guidelines Section 15252(a)(2)(A), significant adverse impacts were identified such that alternatives and mitigation measures are required for project approval; thus, a Mitigation Monitoring and Reporting Plan pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097, has been prepared; and

**WHEREAS**, no feasible mitigation measures were identified that would reduce or eliminate the significant adverse hazards and hazardous materials impacts to less than significant levels; and,

**WHEREAS**, it is necessary that the SCAQMD prepare Findings pursuant to CEQA Guidelines Section 15091, and a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093, regarding potentially significant adverse environmental impacts that cannot be mitigated to less than significant levels; and

**WHEREAS**, Findings, a Statement of Overriding Considerations, and a Mitigation, Monitoring, and Reporting Plan have been prepared and are included in Attachment 1 to this Resolution, which is attached and incorporated herein by reference; and

**WHEREAS**, the SCAQMD Governing Board voting to adopt Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 has reviewed and considered the information contained in the Final SEA, including responses to comments, the Mitigation, Monitoring, and Reporting Plan, the Findings, the Statement of Overriding Considerations, and all other supporting documentation, prior to its certification, and has

determined that the Final SEA, including responses to comments received, has been completed in compliance with CEQA; and

**WHEREAS**, Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 and supporting documentation, including but not limited to, the Final SEA, the Final Staff Report, and the Socioeconomic Impact Assessment included in the Final Staff Report, were presented to the SCAQMD Governing Board and the SCAQMD Governing Board has reviewed and considered this information, as well as has taken and considered staff testimony and public comment prior to approving the project; and

**WHEREAS**, the Final SEA reflects the independent judgment of the SCAQMD; and

**WHEREAS**, the SCAQMD Governing Board finds and determines that all changes made in the Final SEA after the public notice of availability of the Revised Draft SEA, were not substantial revisions and do not constitute significant new information within the meaning of CEQA Guidelines Section 15073.5 or 15088.5, because no new or substantially increased significant effects were identified, and no new project conditions or mitigation measures were added, and all changes merely clarify, amplify, or make insignificant modifications to the Revised Draft SEA, and recirculation is therefore not required; and

**WHEREAS**, the SCAQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (codified as Section 30.5(4)(D)(i) of the Administrative Code), that the modifications to Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 since the notice of public hearing was published add clarity that meets the same air quality objective and are not so substantial as to significantly affect the meaning of the proposed amended rules and proposed rule within the meaning of Health and Safety Code Section 40726 because: (a) the changes do not impact emission reductions, (b) the changes do not affect the number or type of sources regulated by the rules, (c) the changes are consistent with the information contained in the notice of public hearing, and (d) the effects of Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 do not exceed the effects of the range of alternatives analyzed in the CEQA document; and

**WHEREAS**, Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 will be submitted for inclusion into the State Implementation Plan; and

**WHEREAS**, the SCAQMD staff conducted a combined Public Workshop and CEQA Scoping regarding Proposed Amended Rules 1146, 1146.1, and 1146.2 and

Proposed Rule 1100 on February 14, 2018 and a Public Workshop on September 20, 2018; and

**WHEREAS**, Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the Final Staff Report; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 are needed to continue with the transition of facilities in the RECLAIM program to a command-and-control regulatory structure by setting BARCT and transition schedule to meet the commitments of Control Measure CMB-05 of the Final 2016 Air Quality Management Plan; and

**WHEREAS**, the SCAQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, and 41508 of the Health and Safety Code; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 are written or displayed so that the meaning can be easily understood by the persons directly affected by it; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 are in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 will not impose the same requirements as any existing state or federal regulations. The amendments are necessary and proper to execute the powers and duties granted to, and imposed upon, SCAQMD; and

**WHEREAS**, the SCAQMD Governing Board, in amending Rules 1146, 1146.1, and 1146.2 and adopting Rule 1100, references the following statutes which the SCAQMD hereby implements, interprets, or makes specific: Assembly Bill 617, Health and Safety Code Sections 39002, 39616, 40001, 40702, 40440(a), and 40725 through 40728.5; and

**WHEREAS**, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment of Proposed Amended Rule 1146 series is consistent with the March 17, 1989 Governing Board Socioeconomic Resolution for rule adoption; and

**WHEREAS**, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment is consistent with the provisions of Health and Safety Code Sections 40440.8, 40728.5, and 40920.6; and

**WHEREAS**, the SCAQMD Governing Board finds that staff's proposed control options for PAR 1146 and 1146.1 is being adopted because they constitute BARCT, as required by AB 617, and that the other control options did not meet BARCT; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 1146 series will result in increased costs to the affected industries, yet are considered to be reasonable, with a total annualized cost as specified in the Socioeconomic Impact Assessment; and

**WHEREAS**, the SCAQMD Governing Board has actively considered the Socioeconomic Impact Assessment and has made a good faith effort to minimize such impacts; and

**WHEREAS**, the SCAQMD specifies that the Planning and Rules Manager of Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 is the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of these proposed amendments is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

**WHEREAS**, a public hearing has been properly noticed in accordance with the provisions of Health and Safety Code Section 40725 and 40440.5; and

**WHEREAS**, the SCAQMD Governing Board has held a public hearing in accordance with all applicable provisions of state and federal law; and

**WHEREAS**, a technology assessment will be conducted to evaluate the feasibility of lowering the NOx concentration limit for units regulated under Rule 1146.2 no later than January 1, 2022

**NOW, THEREFORE, BE IT RESOLVED**, that the SCAQMD Governing Board does hereby certify that the Final SEA for Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100, including responses to comments, and other supporting documentation, was completed in compliance with CEQA and Rule 110

provisions; and finds that the Final SEA was presented to the Governing Board, whose members reviewed, considered, and approved the information therein prior to acting on Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 and finds that the Final SEA reflects the SCAQMD's independent judgment and analysis; and

**BE IT FURTHER RESOLVED**, that the SCAQMD Governing Board does hereby adopt Findings pursuant to CEQA Guidelines Section 15091, a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093, and a Mitigation, Monitoring, and Reporting Plan pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097, as required by CEQA and which are included as Attachment F (Attachment 1 to the Resolution) and incorporated herein by reference; and

**BE IT FURTHER RESOLVED**, that the SCAQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 as set forth in the attached, and incorporated herein by reference; and

**BE IT FURTHER RESOLVED**, that the SCAQMD Governing Board requests that Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 be submitted into the State Implementation Plan; and

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby directed to forward a copy of this Resolution and Proposed Amended Rules 1146, 1146.1, and 1146.2 and Proposed Rule 1100 to the California Air Resources Board for approval and subsequent submittal to the U.S. Environmental Protection Agency for inclusion into the State Implementation Plan.

DATE: \_\_\_\_\_

\_\_\_\_\_  
CLERK OF THE BOARDS

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**Attachment 1 to the Governing Board Resolution for:  
Final Subsequent Environmental Assessment for Proposed Amended Rules 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; and 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and Proposed Rule 1100 – Implementation Schedule for NOx Facilities**

**Findings, Statement of Overriding Considerations, and Mitigation, Monitoring, and Reporting Plan**

**SCAQMD No. 04022018DT/200811127/070108BAR/032206BAR**

**State Clearinghouse No: 2018091051**

**December 2018**

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

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## **INTRODUCTION**

As a result of control measure CMB-05 - Further NO<sub>x</sub> Reductions from RECLAIM Assessment, from the 2016 Air Quality Management Plan (AQMP), the South Coast Air Quality Management District (SCAQMD) Governing Board directed staff to begin the process of transitioning the current regulatory structure for facilities subject to SCAQMD Regulation XX – Regional Clean Air Incentives Market (RECLAIM) for emissions of oxides of nitrogen (NO<sub>x</sub>) from to an equipment-based command-and-control regulatory structure per SCAQMD Regulation XI – Source Specific Standards. SCAQMD staff conducted a programmatic analysis of the NO<sub>x</sub> RECLAIM equipment at each facility to determine if there are appropriate and up-to-date Best Available Retrofit Control Technology (BARCT) NO<sub>x</sub> limits within existing SCAQMD command-and-control rules for all RECLAIM equipment. This analysis concluded that command-and-control rules would need to be adopted and/or amended to reflect current BARCT and provide implementation timeframes for achieving BARCT. Consequently, SCAQMD staff determined that RECLAIM facilities should not exit RECLAIM unless their NO<sub>x</sub> emitting equipment is subject to an adopted BARCT rule.

Thus, SCAQMD has begun this transition process by proposing amendments to Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; and Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters. Proposed Amended Rules (PARs) 1146, 1146.1, and 1146.2 (collectively referred to herein as the PARs 1146 series) is one of the first set of rules to be amended to transition equipment from the NO<sub>x</sub> RECLAIM program to a command-and-control regulatory structure while achieving BARCT. As a result of the BARCT assessment conducted for PARs 1146 and 1146.1, some units at non-RECLAIM facilities will also be affected and will be required to meet BARCT NO<sub>x</sub> emissions equivalency according to the compliance schedule specified in PARs 1146 and 1146.1. Specifically, if adopted, PARs 1146 series would: 1) expand the applicability to include units at NO<sub>x</sub> RECLAIM facilities; 2) require RECLAIM facilities to submit a permit application for each unit that does not currently meet the NO<sub>x</sub> concentration limits in Rules 1146 and 1146.1; 3) extend the compliance date for RECLAIM facilities replacing Rule 1146 or 1146.1 units and require a permit application submittal for unit(s) being replaced; 4) require RECLAIM facilities with Rule 1146.2 units to meet applicable NO<sub>x</sub> emission limits by December 31, 2023, unless a more stringent BARCT limit is subsequently adopted; 5) limit ammonia emissions on new or modified units with applicable air pollution control equipment and require quarterly or annual ammonia source tests if four consecutive quarterly source tests demonstrate compliance; 6) require certain units at non-RECLAIM facilities to meet new NO<sub>x</sub> emission limits according to the compliance schedules specified in Rules 1146 and 1146.1, whichever is earlier; and 7) allow units at municipal sanitation service facilities to maintain existing NO<sub>x</sub> emission limits until a Regulation XI rule is adopted or amended.

In addition, SCAQMD staff has developed Proposed Rule (PR 1100), an administrative rule which establishes the compliance schedule for the Rule 1146 and 1146.1 units at RECLAIM facilities. The compliance schedule for PARs 1146 and 1146.1 will be a two- to four-year period depending on the equipment size, number of affected units at each facility, and based on how the facility will meet the compliance schedule and NO<sub>x</sub> emission limits (e.g., burner retrofit, SCR system installation, or equipment replacement). Further, facilities with multiple units subject to multiple

source-specific landing rules (e.g., SCAQMD rules other than the PARs 1146 series) will also be taken into consideration.

NOx RECLAIM facilities with equipment subject to PARs 1146 and 1146.1 will be required to meet the NOx emission limits in these rules in accordance with the implementation schedule outlined in PR 1100. In addition, a subset of units at non-RECLAIM facilities will be required to meet new NOx emission limits according to the compliance schedule specified in PARs 1146 and 1146.1. Implementation of the proposed project is estimated to reduce NOx emissions by 0.27 ton per day by January 1, 2023.

PARs 1146 series and PR 1100 are considered a “project” as defined by the California Environmental Quality Act (CEQA) (Public Resources Code Sections 21000 et seq.). The SCAQMD, as Lead Agency for the proposed project, prepared a Subsequent Environmental Assessment (SEA) which analyzes the potential adverse environmental impacts that could be generated as a result of the proposed project. Analysis of the proposed project in the SEA indicated that while the project will reduce NOx emissions, complying with PARs 1146 series and PR 1100 may cause some facility operators to make physical modifications to their equipment in order to achieve compliance, and these activities may create secondary adverse environmental impacts. For example, in order to comply with the proposed emission limits, owners/operators may need to retrofit existing equipment by installing selective catalytic reduction (SCR) systems and ultra-low NOx burners on the affected equipment units. The SEA identified and analyzed activities associated with installing new SCR systems or ultra-low NOx burners on the affected equipment units. Thus, the analysis in the SEA concluded that only the topic of hazards and hazardous materials due to the storage and use of aqueous ammonia was identified as having potentially significant adverse impacts if the project is implemented.

Pursuant to CEQA Guidelines Section 15252, mitigation measures are required to avoid or reduce any potential significant adverse impacts that a project might have on the environment. As such, mitigation measures were crafted to reduce the severity of the potentially significant adverse hazards and hazardous materials impacts. However, even after mitigation measures are applied, the potentially significant adverse environmental impacts cannot be fully mitigated to less than significant levels. In addition, because there are remaining significant impacts to the topic of hazards and hazardous materials after mitigation measures are applied, project alternatives are also required. An alternatives analysis was included in the Chapter 5 of the Final SEA; however, no project alternative was identified that would reduce these impacts to insignificance while achieving the project’s goals and objectives. No other environmental topic areas were identified in the SEA as having potentially significant adverse impacts.

A Draft SEA was circulated for a 45-day public review and comment period from April 3, 2018 to May 18, 2018 (referred to herein as the original Draft SEA) and four comment letters were received. Because changes were made to the project description after the comment period for the original Draft SEA ended, SCAQMD staff revised the original Draft SEA and prepared a Revised Draft SEA which included a revised project description, a revised environmental analysis, the comment letters received relative to the original Draft SEA and responses to the comments. The Revised Draft SEA, which superseded the original Draft SEA, was circulated for a 45-day public review and comment period from September 27, 2018 to November 13, 2018; no comment letters were received relative to the Revised Draft SEA. The comment letters and responses relative to the original Draft SEA have been included in Appendix G of the Final SEA.

Subsequent to release of the Revised Draft SEA for public review and comment, minor modifications were made to PARs 1146 and PR 1100. Some of the revisions were made in response to verbal and written comments during the rule development process. The minor modifications include: 1) the addition, revision, and removal of definitions for clarification; 2) rewording and renumbering of rule language; 3) the addition of requirements to conduct either quarterly or annual source tests (after a facility demonstrates compliance with four consecutive quarterly source tests) to demonstrate compliance with the ammonia emissions limit for new or modified air pollution control devices using ammonia; and 4) allowing units at municipal sanitation service facilities to maintain existing NOx emission limits until a Regulation XI is adopted or amended.. Staff has reviewed the modifications to PARs 1146 series and PR 1100 and concluded that none of the revisions: 1) constitute significant new information; 2) constitute a substantial increase in the severity of an environmental impact; or 3) provide new information of substantial importance relative to the Revised Draft SEA. In addition, revisions to PARs 1146 series and PR 100 in response to verbal or written comments during the rule development process would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Revised Draft SEA pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. The Revised Draft SEA has been revised to include the aforementioned modifications such that it is now the Final SEA.

#### **SIGNIFICANT ADVERSE IMPACTS WHICH CAN BE REDUCED BELOW A SIGNIFICANT LEVEL OR WERE CONCLUDED TO BE INSIGNIFICANT**

The Final SEA for PARs 1146 series and PR 1100 relies on the previous CEQA analyses in the September 2008 Final EA for Rule 1146, the September 2008 Final EA for Rule 1146.1, the May 2006 Final EA for Rule 1146.2, and the March 2017 Final Program Environmental Impact Report (EIR) for the 2016 AQMP<sup>1</sup>. As such, the Final SEA relies on the conclusions reached in these documents as evidence for environmental areas where impacts were found not to be significant. Each of these previous CEQA documents reviewed approximately 17 environmental topic areas and analyzed whether the respective projects would create potentially significant adverse impacts. While the analyses in the September 2008 Final EA for Rule 1146.1 and May 2006 Final EA for Rule 1146.2 identified no significant adverse environmental impacts for any environmental topic area, the analysis in the September 2008 Final EA for Rule 1146 identified two environmental topic areas as having significant adverse environmental impacts: 1) air quality; and 2) hazards and hazardous materials.

Also, the analysis in the March 2017 Final Program EIR for the 2016 AQMP concluded that significant and unavoidable adverse environmental impacts from the project are expected to occur after implementing mitigation measures for the following environmental topic areas: 1) aesthetics from increased glare and from the construction and operation of catenary lines and use of bonnet technology for ships; 2) construction air quality and GHGs; 3) energy (due to increased electricity demand); 4) hazards and hazardous materials due to: (a) increased flammability of solvents; (b)

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<sup>1</sup> - September 2008 Final EA for Rule 1146: <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2008/final-environmental-assessment-for-proposed-amended-rule-1146.pdf>

- September 2008 Final EA for Rule 1146.1: <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2008/final-environmental-assessment-for-proposed-amended-rule-1146-1.pdf>

- May 2006 Final EA for Rule 1146.2: <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2006/final-ea-for-proposed-amended-rule-1146-2.doc>

- March 2017 Final Program EIR for the 2016 AQMP: <http://www.aqmd.gov/home/research/documents-reports/lead-agency-scaqmd-projects/scaqmd-projects---year-2017>

storage, accidental release and transportation of ammonia; (c) storage and transportation of liquefied natural gas (LNG); and (d) proximity to schools; 5) hydrology (water demand); 6) construction noise and vibration; 7) solid construction waste and operational waste from vehicle and equipment scrapping; and, 8) transportation and traffic during construction and during operation on roadways with catenary lines and at the harbors. It is important to note, however, that for these environmental topic areas, not all of the conclusions of significance are applicable to this currently proposed project, PARs 1146 series and PR 1100. The following, Table 1, summarizes the significant and unavoidable adverse environmental impacts identified in the March 2017 Final Program EIR and identifies which topic areas apply to the currently proposed project, PARs 1146 series and PR 1100.

**Table 1**  
**Applicability of Significant Impacts Identified in the March 2017 Final Program EIR**  
**to the Currently Proposed Project (PARs 1146 series and PR 1100)**

Environmental Topic Areas Concluded to have Significant Impacts in the March 2017 Final Program EIR	Applicable to/Significant for the Currently Proposed Project?	Explanation
Aesthetics from increased glare and from the construction and operation of catenary lines and use of bonnet technology for ships	No	Neither catenary lines nor the use of bonnet technology for ships are applicable to boilers, process heaters, steam generators and water heaters and the corresponding NOx emission controls (e.g., ultra-low NOx burners and SCR systems) subject to PARs 1146 series or PR 1100.
Construction air quality and GHGs	Yes	The impacts for this environmental topic area are analyzed in the Final SEA because construction activities are expected to occur if the proposed project is implemented.
Energy due to increased electricity demand	No	While the use of SCR systems for 55 boilers will require some electricity to operate, the conclusions in the September 2008 Final EAs for Rules 1146 and 1146.1 have demonstrated that the amount of electricity that would be needed to operate SCR systems would be less than significant. Similarly, the conclusions in the September 2008 Final EAs for Rules 1146 and 1146.1, and the March 2006 Final EA for Rule 1146.2 have also demonstrated that the amount of electricity that would be needed to replace burners with ultra-low NOx burners would also be less than significant.
Hazards and hazardous materials due the increased flammability of solvents	No	Boilers, process heaters, steam generators and water heaters, and the corresponding NOx emission controls (e.g., ultra-low NOx burners and SCR systems) subject to PARs 1146 series or PR 1100 do not utilize solvents for their operation.
Hazards and hazardous materials due to the storage, accidental release and transportation of ammonia	Yes	The impacts for this environmental topic area are analyzed in the Final SEA because SCR systems utilize ammonia.

**Table 1 (concluded)**  
**Applicability of Significant Impacts Identified in the March 2017 Final Program EIR to the Currently Proposed Project (PARs 1146 series and PR 1100)**

Environmental Topic Areas Concluded to have Significant Impacts in the March 2017 Final Program EIR	Applicable to/Significant for the Currently Proposed Project?	Explanation
Hazards and hazardous materials due to the storage and transportation of LNG	No	Boilers, process heaters, steam generators and water heaters, and the corresponding NOx emission controls (e.g., ultra-low NOx burners and SCR systems) subject to PARs 1146 series or PR 1100 do not utilize LNG for their operation.
Hazards and hazardous materials due to proximity to schools	Yes	The impacts for this environmental topic area are analyzed in the Final SEA because some of the affected facilities that will install SCR systems or ultra-low NOx burners are located near schools.
Hydrology (water demand)	No	Boilers, process heaters, steam generators and water heaters, and the corresponding NOx emission controls (e.g., ultra-low NOx burners and SCR systems) subject to PARs 1146 series or PR 1100 do not utilize water for their operation.
Construction noise and vibration	No	While the construction activities associated with installing SCR systems for 55 boilers may create some noise and vibration, the conclusions in the September 2008 Final EAs for Rules 1146 and 1146.1 have demonstrated that the amount of electricity that would be needed to operate SCR systems would be less than significant. Similarly, the conclusions in the September 2008 Final EAs for Rules 1146 and 1146.1, and the March 2006 Final EA for Rule 1146.2 have also demonstrated that the construction noise and vibration that may occur while replacing burners with ultra-low NOx burners would also be less than significant.
Solid construction waste and operational waste from vehicle and equipment scrapping	No	Vehicle scrapping is not applicable to boilers, process heaters, steam generators and water heaters and the corresponding NOx emission controls (e.g., ultra-low NOx burners and SCR systems) subject to PARs 1146 series or PR 1100.
Transportation and traffic during construction and during operation on roadways with catenary lines and at the harbors	No	Catenary lines and the associated transportation and traffic impacts on roadways and at the harbors are not applicable to boilers, process heaters, steam generators and water heaters and the corresponding NOx emission controls (e.g., ultra-low NOx burners and SCR systems) subject to PARs 1146 series or PR 1100.

PAR 1146 is expected to have: 1) significant effects that were not discussed in the previous September 2008 Final EA for Rule 1146 and March 2017 Final Program EIR for the 2016 AQMP (CEQA Guidelines Section 15162(a)(3)(A)); and 2) significant effects that were previously examined will be substantially more severe than what was discussed in the September 2008 Final

EA for Rule 1146 and the March 2017 Final Program EIR for the 2016 AQMP (CEQA Guidelines Section 15162(a)(3)(B)). Similarly, PAR 1146.1 is also expected to have significant effects that were not discussed in the previous September 2008 Final EA for Rule 1146.1 and March 2017 Final Program EIR for the 2016 AQMP (CEQA Guidelines Section 15162(a)(3)(A)). However, PAR 1146.2 is not expected to create new significant effects that were not discussed in the previous May 2006 Final EA for Rule 1146.2 and the March 2017 Final Program EIR for the 2016 AQMP.

As summarized in Table 1, only the environmental topic areas of air quality during construction, and hazards and hazardous materials due to ammonia transportation, storage and use, and hazards and hazardous materials due to facility proximities to schools were identified as germane to the environmental analysis for PARs 1146 series and PR 1100. For this reason, only these three topic areas were analyzed in the Final SEA.

The analysis in the Final SEA concluded that construction air quality impacts can range from less than significant for all criteria air pollutants to significant levels for NO<sub>x</sub>, depending on the number of equipment under construction on a peak day, and whether the construction activities for multiple equipment overlap on a peak day. For example, while the initial construction of one SCR system would result in a temporary increase in construction emissions, the quantity of emissions would not exceed any of the air quality significance thresholds on a peak day and the same is true for the initial construction of one to 10 ultra-low NO<sub>x</sub> burners on a peak day. However, under the circumstance where the construction of five SCR systems overlap construction of 10 ultra-low NO<sub>x</sub> burners, the NO<sub>x</sub> emissions from these overlapping construction activities are shown to exceed the SCAQMD's significance threshold for NO<sub>x</sub>. However, these significant impacts will be reduced to less than significant levels by implementation of the proposed project, by design, because a concurrent operational air quality benefit would result due to the overall NO<sub>x</sub> emissions reductions of 0.20 ton per day (405 pounds per day) that are expected to occur by January 1, 2021, or 0.27 ton per day (540 pounds per day) that are expected to occur by January 1, 2023 as the installation of SCR systems and ultra-low NO<sub>x</sub> burners occur over time. For example, as construction is completed for each SCR system or ultra-low NO<sub>x</sub> burner, there will be immediate, corresponding NO<sub>x</sub> emission reductions from the operation of each new SCR system or ultra-low NO<sub>x</sub> burner, and these NO<sub>x</sub> emission reductions will continue to accumulate and are expected to substantially offset any significant increase of NO<sub>x</sub> emissions to less than significant levels in the event that there are overlapping construction activities of five SCR systems and 10 ultra-low NO<sub>x</sub> burners on a peak day. For these reasons, the Final SEA concluded that the construction air quality impacts would be reduced to less than significant levels from concurrent NO<sub>x</sub> emission reductions.

The Final SEA also concluded that the hazards and hazardous materials impacts due to the transportation of aqueous ammonia would be less than significant.

Finally, the analysis in the Final SEA concluded that the hazards and hazardous materials impacts due to facility proximities to schools was entirely dependent upon whether the affected facilities would be expected to install SCR systems, which in turn would require the storage and use of aqueous ammonia (the hazard of concern). Thus, if a SCR system is installed at a facility that is not located near a school or a sensitive receptor, then the Final SEA concluded that the hazards and hazardous materials impacts due to proximities to schools would be less than significant.

Aside from the topic of hazards and hazardous materials due to the storage and use of aqueous ammonia, the conclusions reached for the other environmental topic areas in the Final SEA are

consistent with the conclusions reached in the previously certified CEQA documents (e.g., the September 2008 Final EAs for Rules 1146 and 1146.1, the May 2006 Final EA for Rule 1146.2, and the March 2017 Final Program EIR for the 2016 AQMP) such that there would be no other significant adverse effects from the implementation of the proposed project. Thus, the proposed project would either have no impact or less than significant direct or indirect adverse effects on the following environmental topic areas:

- aesthetics
- air quality and greenhouse gases
- agriculture and forestry resources
- biological resources
- cultural resources
- energy
- geology and soils
- hydrology and water quality
- land use and planning
- mineral resources
- noise
- population and housing
- public services
- recreation
- solid and hazardous waste
- transportation and traffic

**POTENTIAL SIGNIFICANT ADVERSE IMPACTS THAT CANNOT BE REDUCED BELOW A SIGNIFICANT LEVEL**

The Final SEA identified the topic of hazards and hazardous materials due to the storage and use of aqueous ammonia resulting from the installation of SCR systems as the only area that may be significantly adversely affected by the proposed project. The analysis in the Final SEA also concluded that the hazards and hazardous materials impacts due to facility proximities to schools (as well as other sensitive receptors) was entirely dependent upon whether the affected facilities would be expected to install SCR systems. Further, the number of aqueous ammonia storage tanks to be installed per facility, the location of the tanks to be installed on each property relative to any nearby schools or other sensitive receptors, and the capacity of the storage tanks, all factor into the overarching conclusion of significant for hazards and hazardous materials due to the storage and use of aqueous ammonia needed for SCR systems. A facility could choose to replace their existing unit with a new unit that meets the NO<sub>x</sub> emission limits instead of installing SCR systems; thus, resulting in the elimination of the need to store and use aqueous ammonia.

If significant adverse environmental impacts are identified in a CEQA document, the CEQA document shall describe feasible measures that could minimize or eliminate the impacts of the proposed project. The only air pollution control equipment that is currently available on the market

that is capable of reducing NOx emissions to the levels prescribed in the PARs 1146 series is either SCR systems which requires the use of ammonia or ultra-low NOx burners, which do not require ammonia but may not be capable of achieving as many NOx emission reductions as a SCR system for all unit types. Thus, the Final SEA identified the topic of hazards and hazardous materials due to the storage and use of aqueous ammonia for SCR systems as having potentially significant adverse impacts that cannot be reduced below a significant level.

The Final SEA contains mitigation measures to address these potentially significant adverse impacts. While it is entirely possible that individual facilities installing a SCR system may find that implementing the prescribed mitigation measures will effectively reduce or eliminate the risk of offsite consequences of exposure to aqueous ammonia to less than significant levels at the facility level, because of the varying operational needs and locations of the affected facilities that may install SCR systems and their proximity to sensitive receptors as a result of the proposed project, the Final SEA could not conclusively determine for every facility that installs a SCR system that they would be able to fully eliminate or reduce the significant adverse hazards and hazardous materials impacts for the storage and use of aqueous ammonia to less than significant levels. For this reason, the Final SEA concluded that the hazards and hazardous materials impacts due to the storage and use of aqueous ammonia for SCR systems would remain significant if PARs 1146 series and PR 1100 is implemented, even after mitigation measures are applied.

## **FINDINGS**

Public Resources Code Section 21081 and CEQA Guidelines Section 15091(a) state that no public agency shall approve or carry out a project for which a CEQA document has been completed which identifies one or more significant adverse environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. Additionally, the findings must be supported by substantial evidence in the record. CEQA Guidelines Section 15091(b)]. As stated in the Final SEA and summarized above, the proposed project has the potential to create significant adverse hazards and hazardous materials impacts for the storage and use of aqueous ammonia; therefore, findings are required. The SCAQMD Governing Board, therefore, makes the following findings regarding the proposed project. The findings are supported by substantial evidence in the record as explained in each finding. These findings will be included in the record of project approval and will also be noted in the Notice of Decision. The findings made by the SCAQMD Governing Board are based on the following significant adverse impact identified in the Final SEA.

**Based on the analysis, the potential location(s) of the aqueous ammonia storage tanks at some facilities and their proximity to sensitive receptors could potentially have a significant impact from hazards and hazardous materials that cannot be mitigated to insignificance.**

### Finding and Explanation:

As explained earlier, PARs 1146 series and PR 1100 is concluded to result in significant adverse hazards and hazardous materials impacts for the storage and use of aqueous ammonia near the proximity of sensitive receptors. The Governing Board finds that mitigation measures have been identified, but there are no feasible mitigation measures that would eliminate or reduce the aforementioned significant adverse hazards and hazardous materials impacts to less than significant levels. No other feasible mitigation measures have been identified. CEQA defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of

time, taking into account economic, environmental, social, and technological factors." [Public Resources Code Section 21061.1 and CEQA Guidelines Section 15364].

The Governing Board finds further that the Final SEA considered alternatives pursuant to CEQA Guidelines Section 15126.6, but aside from the No Project Alternative (identified as Alternative A in Chapter 5 of the Final SEA) or having the facilities only install ultra-low NO<sub>x</sub> burners (identified Alternative D in Chapter 5), there are no other alternatives that would reduce to insignificant levels the significant hazards and hazardous materials impacts identified for the proposed project and still achieve the objectives of the proposed project because under Alternative A, no facilities would have equipment meeting BARCT level equivalency and under Alternative D, some facilities would have equipment meeting BARCT level equivalency, but less NO<sub>x</sub> emission reductions would be achieved overall.

### Conclusion

The Governing Board finds that the findings required by CEQA Guidelines Section 15091(a) are supported by substantial evidence in the record. The administrative record for the CEQA document and adoption of PARs 1146 series and PR 1100 is maintained by the Office of Planning, Rule Development and Area Sources. The record of approval for this project may be found in the SCAQMD's Clerk of the Board's Office located at SCAQMD headquarters in Diamond Bar, California.

### **STATEMENT OF OVERRIDING CONSIDERATIONS**

If significant adverse impacts of a proposed project remain after incorporating mitigation measures or no measures or alternatives to mitigate the significant adverse impacts are identified, the lead agency must make a determination that the benefits of the project outweigh the unavoidable adverse environmental effects if it is to approve the project. CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. [CEQA Guidelines Section 15093(a)]. If the specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable." [CEQA Guidelines Section 15093(a)]. Accordingly, a Statement of Overriding Considerations regarding the potentially significant adverse operational NO<sub>x</sub> air quality impacts resulting from the proposed project has been prepared. This Statement of Overriding Considerations is included as part of the record of the project approval for the proposed project. Pursuant to CEQA Guidelines Section 15093(c), the Statement of Overriding Considerations will also be noted in the Notice of Decision for the proposed project.

Despite incorporating mitigation measures into the proposed project, the mitigation measures cannot reduce or eliminate the potentially significant adverse hazards and hazardous material impacts to a level of insignificance; the SCAQMD's Governing Board finds that the following benefits and considerations outweigh the significant unavoidable adverse environmental impacts:

1. The analysis of potential adverse environmental impacts incorporates a "worst-case" approach. This entails the premise that whenever the analysis requires that assumptions be made, those assumptions that result in the greatest adverse impacts are typically chosen. The analysis in the Final SEA contained conservative assumptions that the implementation of PARs 1146

series and PR 1100 would result in multiple facilities installing one or more SCR systems with an accompanying ammonia storage tank even though each facility could consider other factors (e.g., age of the burner, cost, etc.) and instead replace an entire unit with new equipment that is capable of meeting the NOx emission limits without needing a SCR system. The analysis in the Final SEA also assumed that for any facility anticipated to install multiple SCR systems, one ammonia storage tank with a sufficient capacity to service all SCR systems would also be installed. Depending on the quantity of aqueous ammonia that may be needed for each SCR system, the locations of each SCR system and aqueous ammonia tank, the availability of space at each facility, and/or cost, multiple, smaller aqueous ammonia storage tanks could be installed instead of one large ammonia storage tank. However, to conduct a “worst-case” analysis of the potential for creating significant adverse hazards and hazardous materials impacts from the catastrophic failure of an aqueous ammonia storage tank, the largest sized aqueous ammonia tank and the distance of each aqueous ammonia tank to nearby sensitive receptors was relied upon to determine whether the toxic endpoint (calculated using EPA RMP\*Comp) would create a significant offsite consequence. In the analysis, the EPA RMP\*Comp model only has the capability of evaluating the hazard potential of 20 percent aqueous ammonia. Therefore, the potentially significant adverse impacts from the storage and use aqueous ammonia was evaluated based on the 20 percent aqueous ammonia. However, to minimize the hazards associated with using aqueous ammonia, it is the policy of the SCAQMD to require the use of 19 percent by volume aqueous ammonia in air pollution control equipment for the following reasons: 1) 19 percent aqueous ammonia does not travel as a dense gas like anhydrous ammonia; and 2) 19 percent aqueous ammonia is not on any acutely hazardous materials lists unlike anhydrous ammonia or aqueous ammonia at higher percentages. As such, SCAQMD staff does not issue permits for the use of anhydrous ammonia or aqueous ammonia in concentrations higher than 19 percent by volume for use in SCR systems. Thus, the offsite consequence analysis for an aqueous ammonia release at a 20 percent concentration likely overestimates the risk.

2. Although the prescribed mitigation measures may be able to reduce or eliminate the hazards and hazardous impacts to levels of insignificance at some individual facilities, because of the varying operational needs and locations of the affected facilities that may install SCR systems and their proximity to sensitive receptors as a result of the proposed project, the Final SEA could not conclusively determine for every facility that installs a SCR system that each one would be able to fully eliminate or reduce the significant adverse hazards and hazardous materials impacts for the storage and use of aqueous ammonia to less than significant levels. At the time each affected facility submits an application for a Permit to Construct for a SCR system and corresponding aqueous ammonia storage tank in response to the proposed project, SCAQMD staff will evaluate each facility-specific project to determine if the project is covered by the analysis in the Final SEA and whether the mitigation measures, or any other additional mitigation, could reduce or fully eliminate the hazards or hazardous materials impacts to less than significant levels. In the event that the evaluation of the application for a Permit to Construct for a SCR system and corresponding aqueous ammonia storage tank does not conform to the analysis in the Final SEA, an additional facility-specific CEQA analysis may be required.
3. Although the hazards and hazardous materials impacts are shown to be significant from the implementation of PARs 1146 series and PR 1100, only the use and storage of aqueous ammonia for SCR systems within the proximity of sensitive receptors is expected to be

significant. The Final SEA concluded that the potential impacts due to an accidental release of aqueous ammonia from transportation and delivery activities is less than significant.

4. Although the proposed project could result in significant adverse hazards and hazardous materials impacts from the storage and use of aqueous ammonia within the proximity of sensitive receptors, overall implementation of the proposed project will achieve substantial NO<sub>x</sub> emission reductions and improve air quality; thus, providing human health benefits by reducing population exposures to existing NO<sub>x</sub> emissions. Based on regional modeling analyses performed for the 2016 AQMP, implementing control measures contained in the 2016 AQMP, in addition to the air quality benefits of the existing rules, is anticipated to bring the District into attainment with all national and most state ambient air quality standards. The 2016 AQMP is also expected to achieve the ozone 8-hour standard by 2023.
5. The Governor approved Assembly Bill (AB) 617 on July 26, 2017, which addresses non-vehicular air pollution including criteria pollutants and TACs. AB 617 is a companion legislation to approved AB 398, which extends California's cap-and-trade program for reducing GHG emissions from stationary sources. AB 398 requires Air Districts to develop by January 1, 2019 an expedited schedule for the implementation of BARCT by December 31, 2023 for cap-and-trade facilities. A subset of the affected facilities will be subject to the requirements of ABs 617 and 398. The implementation of the proposed project would achieve BARCT level equivalency for these units.

The SCAQMD's Governing Board finds that the aforementioned considerations outweigh the unavoidable significant effects to the environment as a result of the proposed project.

#### **MITIGATION, MONITORING, AND REPORTING PLAN**

Pursuant to CEQA Guidelines Section 15252, mitigation measures are required to avoid or reduce any potential significant adverse impacts that a project might have on the environment. As such, mitigation measures were crafted to reduce the severity of the potentially significant adverse hazards and hazardous materials impacts. When making findings as required by Public Resources Code Section 21081 and CEQA Guidelines Section 15091, the lead agency must adopt a reporting or monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment. [Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097(a)]. Although SCAQMD identified mitigation measures that may be effective in reducing or eliminating the significant adverse impacts from hazards and hazardous materials due to the storage and use of aqueous ammonia at individual facilities, because of the varying operational needs and locations of the affected facilities that may install SCR systems and their proximity to sensitive receptors as a result of the proposed project, the Final SEA could not conclusively determine for every facility that installs a SCR system that they would be able to fully eliminate or reduce the significant adverse hazards and hazardous materials impacts for the storage and use of aqueous ammonia to less than significant levels. For this reason, the Final SEA concluded that the hazards and hazardous materials impacts due to the storage and use of aqueous ammonia needed for operation of SCR systems would remain significant if PARs 1146 series and PR 1100 is implemented, even after mitigation measures are applied. Thus, a mitigation, monitoring, and reporting plan has been developed for PARs 1146 series and PR 1100.

In accordance with CEQA Guidelines Section 15097(a), the lead agency shall adopt a program for monitoring or reporting for the revisions to the project which it has required and the measures it has imposed to mitigate or avoid significant environmental effects. To fulfill this requirement, the SCAQMD has developed this Mitigation, Monitoring, and Reporting Plan to address the mitigation measures required for the significant adverse hazards and hazardous materials impacts that may result from implementing PARs 1146 series and PR 1100. Each operator of any facility required to comply with this Mitigation, Monitoring, and Reporting Plan shall keep records onsite of applicable compliance activities to demonstrate the steps taken to assure compliance with all of the mitigation measures, as applicable.

### **Hazards and Hazardous Materials Impacts Due to Storage and Use of Aqueous Ammonia**

**Impacts Summary:** The ongoing storage and handling of aqueous ammonia at facilities affected by PARs 1146 series and PR 1100 could create a significant adverse hazards and hazardous materials impact to the public due to the possibility for an accidental spill and release of aqueous ammonia, which could create a potential risk for an offsite public and sensitive receptor exposure.

Ammonia, though not a carcinogen, is a chronic and acutely hazardous material. Located on the Material Safety Data Sheet (MSDS) for aqueous ammonia (19 percent by weight), the hazards ratings are as follows: health is rated 3 (highly hazardous), flammability is rated 1 (slight), and reactivity is rated 0 (none). Therefore, an increase in the use of aqueous ammonia in response to the proposed project may increase the current existing risk setting associated with deliveries (i.e., truck and road accidents) and onsite or offsite spills for each facility that currently uses, will begin to use, or will increase the use of ammonia. Exposure to a toxic gas cloud is the potential hazard associated with this type of control equipment. A toxic gas cloud is the release of a volatile chemical such as anhydrous ammonia that could form a cloud and migrate off-site, thus exposing individuals. Anhydrous ammonia is heavier than air such that when released into the atmosphere, it would form a cloud at ground level rather than be dispersed. “Worst-case” conditions tend to arise when very low wind speeds coincide with the accidental release, which can allow the chemicals to accumulate rather than disperse. However, affected facilities would be required to use aqueous ammonia which contains 19 percent by weight so would not form a volatile cloud or be as toxic as anhydrous ammonia release. If released, aqueous ammonia is likely to pool in liquid form and would be captured in a surrounding berm. Any remaining vapor form would be captured by a tertiary containment required under mitigation measure HZ-6. As such, the release impacts of an aqueous ammonia release are not as great as anhydrous ammonia release. In addition, the mitigation measures of secondary and tertiary containment will further reduce, if not eliminate, the exposure to off-site receptors. Possible sources of potential aqueous ammonia releases include aqueous ammonia delivery trucks and aqueous ammonia storage tanks.

In addition, the shipping, handling, storage, and disposal of hazardous materials inherently poses a certain risk of a release to the environment. Thus, the routine transport of hazardous materials, use, and disposal of hazardous materials may increase as a result of implementing the proposed project. Further, if a facility installs air pollution control technology that utilizes ammonia, such as SCR systems, the proposed project may alter the transportation modes for feedstock and products to/from the existing facilities such as aqueous ammonia and catalyst. It is important to note, however, that the Final SEA only identified the storage and use of

aqueous ammonia has having potentially significant adverse hazards and hazardous materials impacts requiring mitigation measures. Further, the Final SEA also concluded that the routine transport and disposal of hazardous materials would have less than significant hazards and hazardous materials impacts, such that mitigation measures were not required for this activity.

To the extent that a facility would need to install a new aqueous ammonia storage tank as part of the proposed project, the implementation of mitigation measures HZ-1 through HZ-6 would be expected to prevent a catastrophic release of aqueous ammonia from leaving a facility's property and exposing offsite sensitive receptors, thus, somewhat reducing a potential significant hazards and hazardous materials impact due to storage and use of aqueous ammonia. The analysis conducted in the Final SEA made a conservative assumption that some of the facilities' affected by the proposed project would likely retrofit their units with a SCR system which would require an ammonia storage tank for operation. However, a facility could instead choose to replace their boiler. Although the mitigation measures would reduce the potential impacts for hazards and hazardous materials for facilities choosing to install a SCR system with an accompanying aqueous ammonia storage tank, without knowing the exact location of each storage tank, number of ammonia storage tanks and/or corresponding size of the ammonia storage tank at each facility; it is still conservatively estimated that the proposed project will result in significant impacts of hazards and hazardous materials through the storage and use of aqueous ammonia.

Current SCAQMD practice typically does not allow the use of anhydrous ammonia for air pollution control equipment. Further, to minimize the hazards associated with using ammonia for air pollution control technology, it is the permitting practice of the SCAQMD to typically require the use of 19 percent by volume aqueous ammonia in air pollution control equipment for the following reasons: 1) 19 percent aqueous ammonia does not travel as a dense gas like anhydrous ammonia; and 2) 19 percent aqueous ammonia is not on any acutely hazardous material lists unlike anhydrous ammonia or aqueous ammonia at higher percentages. As such, SCAQMD staff does not typically issue permits for the use of anhydrous ammonia or aqueous ammonia in concentrations higher than 19 percent by volume for use in SCR systems. As a result, this impact summary focuses on the use of 19 percent by volume aqueous ammonia. Thus, because aqueous ammonia (at 19 percent by weight) would be typically required for any permits issued for the installation of air pollution control equipment that utilize ammonia and because MMHZ-1 requires the use of aqueous ammonia at a concentration less than or equal to 19 percent by volume, hazards from toxic clouds are expected to be lessened when compared to higher concentrations of ammonia. As a practical matter, the actual concentration that is typically utilized is a solution of 19 percent aqueous ammonia, which contains approximately 81 percent water. Due to the high water content, aqueous ammonia is not considered to be flammable. Thus, heat-related hazard impacts such as fires, explosions, and boiling liquid-expanding vapor explosion (BLEVE) are not expected to occur from the increased delivery, storage and use of aqueous ammonia as part of implementing the proposed project.

Further, the accidental release of ammonia from a delivery and use is a localized event (i.e., the release of ammonia would only affect the receptors that are within the zone of the toxic endpoint). The accidental release from offloading aqueous ammonia during a delivery would also be temporally limited in the fact that deliveries are not likely to be made at the same time in the same area and the safety devices required as part of MMHZ-2 further reduce the likelihood of an accidental release. Based on these limitations, it is assumed that an accidental

release would be limited to a single delivery at a single facility at a time. In addition, it is unlikely that an accidental release from both a delivery truck and the stationary storage tank would result in more than the amount evaluated in the catastrophic release of the storage tank because the level of ammonia in the storage tanks would be low or else the delivery trip would not be necessary. In addition, implementation of MMHZ-4 (grating covered trench) and MMHZ-5 (underground gravity drain) would further reduce the impact from an accidental release during the delivery and transfer of aqueous ammonia to the storage tank.

A hazard analysis is dependent on several parameters about the potential hazard such as the capacity of the aqueous ammonia storage tank, the concentration of the aqueous ammonia, meteorological conditions, location of nearest receptor, and the dimensions of secondary containment, if any. If a facility were to install a new aqueous ammonia tank to supply additional aqueous ammonia needed to support to a new SCR system and the effects of an offsite consequence from an accidental release of aqueous ammonia due to a tank rupture was analyzed using the EPA RMP\*Comp (Version 1.07) model which did not result in a significant hazards impact to sensitive receptors, the facility operator would not be required to implement the following feasible mitigation measures. However, if the analysis were to determine a significant hazards impact to sensitive receptors (such as in this Final SEA), the facility operator would be required at a minimum to implement the following feasible mitigation measures to reduce the severity of the impacts and prevent a catastrophic release of aqueous ammonia from leaving a facility's property.

**Mitigation Measures:** Each facility submitting a permit application is required to assess its proximity to sensitive receptors. The following mitigation measures are required for any facility whose operators choose to install a new aqueous ammonia storage tank and the offsite consequence analysis indicates that any sensitive receptor will be located within the toxic endpoint distance. SCAQMD staff will conduct a CEQA evaluation of each facility-specific project proposed in response to the proposed project and determine if the project is covered by the analysis in this Final SEA. In addition, these mitigation measures will be included in a mitigation monitoring and reporting plan as part of issuing SCAQMD permits to construct for the facility-specific project. The mitigation measures will be enforceable by SCAQMD personnel.

#### Hazards and Hazardous Materials

- HZ-1 Require the use of aqueous ammonia at concentrations less than or equal to 19 percent by volume for all facilities regulated by Rules 1146, 1146.1, or 1146.2.
- HZ-2 Install safety devices, including but not limited to: continuous tank level monitors (e.g., high and low level), temperature and pressure monitors, leak monitoring and detection system, alarms, check valves, and emergency block valves.
- HZ-3 Install secondary containment such as dikes and/or berms to capture 110 percent or more of the storage tank volume in the event of a spill.
- HZ-4 Install a grating-covered trench around the perimeter of the delivery bay to passively contain potential spills from the tanker truck during the transfer of aqueous ammonia from the delivery truck to the storage tank.

HZ-5 Equip the truck loading/unloading area with an underground gravity drain that flows to a large on-site retention basin to provide sufficient ammonia dilution to the extent that no hazards impact is possible in the event of an accidental release during transfer of aqueous ammonia.

HZ-6 Install tertiary containment that is capable of evacuating 110 percent or more of the storage tank volume from the secondary containment area.

**Implementing Parties:** The SCAQMD's Governing Board finds that implementing the mitigation measures HZ-1 through HZ-6 is the responsibility of the owner, operator, or agent of each affected facility who submits a permit application to comply with the proposed project.

**Implementation Mechanism:** Mitigation measures HZ-1 through HZ-6 shall be included as a condition in the SCAQMD Permit to Construct and Permit to Operate. Further, all information required as part of this Mitigation, Monitoring, and Reporting Plan shall be provided by the owner, operator or agent of the affected facility at the time when an applicant submits a permit application.

**Monitoring Agency:** The SCAQMD's Governing Board finds that through its discretionary authority to issue and enforce permits for this project and to implement conditions to prevent an air pollution nuisance, the SCAQMD will ensure compliance with mitigation measures HZ-1 through HZ-6. Mitigation, monitoring, and reporting (MMR) will be accomplished as follows:

**MMRHZ-1 All aqueous ammonia used and stored onsite shall be at a concentration of less than 19 percent by volume.**

Each facility operator shall ensure the concentration of aqueous ammonia used and stored onsite is less than 19 percent by volume. The percent by volume of aqueous ammonia shall be posted on the aqueous ammonia tank at all times. The SCAQMD may conduct inspections of the site to verify compliance.

**MMRHZ-2: Safety devices shall be installed on all equipment associated with the use and storage of aqueous ammonia, to the extent feasible.**

At the time of submitting an application for a Permit to Construct for an aqueous ammonia storage tank each facility operator shall submit a list of all safety devices installed. Safety devices may include, but are not limited to: continuous tank level monitors (e.g., high and low level), temperature and pressure monitors, leak monitoring and detection system, alarms, check valves, and emergency block valves. Once the aqueous ammonia storage tank becomes operational, each facility operator shall ensure all safety devices are maintained and are functioning properly. All maintenance records shall be kept onsite from the initiation of operations.

**MMRHZ-3: All facility operators shall install a secondary containment system such as a dike or berm to capture 110 percent or more of the aqueous ammonia storage tank volume in the event of a spill.**

At the time of submitting an application for a Permit to Construct for an aqueous ammonia storage tank each facility operator shall submit plans for a secondary containment system

to capture 110 percent or more of the aqueous ammonia storage tank volume in the event of a spill. Secondary containment systems may include, but are not limited to: a dike or berm. Once the aqueous ammonia storage tank becomes operational, each facility operator shall ensure all secondary containment systems are maintained, free of detritus, and are functioning properly. All maintenance records shall be kept onsite from the initiation of operations.

**MMRHZ-4: All facility operators shall install a grating-covered trench around the perimeter of the aqueous ammonia delivery bay to passively contain potential spills from the tanker truck during the transfer of aqueous ammonia from the delivery truck to the storage tank.**

At the time of submitting an application for a Permit to Construct for an aqueous ammonia storage tank each facility operator shall submit plans for installation of a grating covered trench around the perimeter of the delivery bay to passively contain spills from the tanker truck during the transfer of aqueous ammonia from the delivery truck to the aqueous ammonia storage tank. Once the aqueous ammonia storage tank becomes operational, each facility operator shall ensure the grating-covered trench is maintained, free of detritus, and is functioning properly. All maintenance records shall be kept onsite from the initiation of operations.

**MMRHZ-5: All facility operators shall equip the truck loading/unloading area with an underground gravity drain that flows to a large on-site retention basin to provide sufficient ammonia dilution to the extent that no hazards impact is possible in the event of an accidental release during transfer of aqueous ammonia.**

At the time of submitting an application for a Permit to Construct for an aqueous ammonia storage tank each facility operator shall submit plans for installation of a an underground gravity drain that flows to a large on-site retention basin to provide sufficient ammonia dilution to the extent that no hazards impact is possible in the event of an accidental release during transfer of aqueous ammonia. Once the aqueous ammonia storage tank becomes operational, each facility operator shall ensure the underground gravity drain is maintained, free of detritus, and is functioning properly. All maintenance records shall be kept onsite from the initiation of operations.

**MMRHZ-6: All facility operators shall install a tertiary containment system capable of evacuating 110 percent or more of the aqueous ammonia storage tank volume from the secondary containment area.**

At the time of submitting an application for a Permit to Construct for an aqueous ammonia storage tank each facility operator shall submit plans for a tertiary containment system to capture 110 percent or more of the aqueous ammonia storage tank volume from the secondary containment area in the event of a spill. Once the aqueous ammonia storage tank becomes operational, each facility operator shall ensure all tertiary containment systems are maintained, free of detritus, and are functioning properly. All maintenance records shall be kept onsite from the initiation of operations.

## **CONCLUSION**

Based on a “worst-case” analysis, the potential adverse hazards and hazardous materials impacts from the adoption and implementation of PARs 1146 series and PR 1100 are considered significant and unavoidable. Some feasible mitigation measures have been identified that would reduce the level of significant adverse hazards and hazardous materials impacts associated with implementing the PARs 1146 series and PR 1100; however, the mitigation measures cannot be sure to reduce the entire project to less than significant levels. Further, no project alternatives have been identified that would reduce these impacts to insignificance while achieving the project’s goals and objectives of NOx emissions reductions and BARCT level equivalency.

ATTACHMENT G

(Adopted September 9, 1988)(Amended January 6, 1989)  
(Amended May 13, 1994)(Amended June 16, 2000)  
(Amended November 17, 2000)(Amended September 5, 2008)  
(Amended November 1, 2013)(PAR December 7, 2018)

**PROPOSED AMENDED RULE 1146. EMISSIONS OF OXIDES OF  
NITROGEN FROM INDUSTRIAL, INSTITUTIONAL, AND  
COMMERCIAL BOILERS, STEAM GENERATORS, AND  
PROCESS HEATERS**

(a) Applicability

This rule applies to boilers, steam generators, and process heaters of equal to or greater than 5 million Btu per hour rated heat input capacity used in all industrial, institutional, and commercial operations, ~~with the exception of:~~

- ~~(1) — boilers used by electric utilities to generate electricity; and~~
- ~~(2) — boilers and process heaters with a rated heat input capacity greater than 40 million Btu per hour that are used in petroleum refineries; and~~
- ~~(3) — sulfur plant reaction boilers.~~
- ~~(4) — RECLAIM facilities (NO<sub>x</sub> emissions only)~~

(b) Definitions

- (1) ADSORPTION CHILLER UNIT means any natural gas fired unit that captures and uses waste heat to provide cold water for air conditioning and other process requirements.
- ~~(2) — ANNUAL CAPACITY FACTOR means the ratio of the amount of fuel burned by a unit in a calendar year to the amount of fuel it could have burned if it had operated at the rated heat input capacity for 100 percent of the time during the calendar year.~~
- ~~(3) — ANNUAL HEAT INPUT means the actual amount of heat released by fuels burned in total heat input to a unit during a calendar year.~~
- ~~(4) — ATMOSPHERIC UNIT means any natural gas fired unit with a heat input less than or equal to 10 million Btu per hour with a non-sealed combustion chamber in which natural draft is used to exhaust combustion gases.~~
- ~~(5) — BOILER or STEAM GENERATOR means any combustion equipment fired with liquid and/or gaseous (including landfill and digester gas) and/or solid fossil fuel and used to produce steam or to heat water, and that is not used exclusively to produce electricity for sale. Boiler or Steam Generator does not include any open heated tank, adsorption chiller unit, or waste heat~~

recovery boiler that is used to recover sensible heat from the exhaust of a combustion turbine or any unfired waste heat recovery boiler that is used to recover sensible heat from the exhaust of any combustion equipment.

- (65) BTU means British thermal unit(s).
- (76) COMMERCIAL OPERATION means any office building, lodging place, or similar location designed for tenancy by one or more business entities or residential occupants.
- (7) FIRE-TUBE BOILER means any boiler that passes hot gases from a fire box through one or more tubes running through a sealed container of water. The heat of the gases is transferred through the walls of the tubes by thermal conduction, heating the water and ultimately creating steam.
- (8) FORMER RECLAIM FACILITY means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX, that has received a final determination notification, and is no longer in the RECLAIM program.
- (89) GROUP I UNIT means any unit burning natural gas with a rated heat input capacity greater than or equal to 75 million Btu per hour, excluding thermal fluid heaters and units operated at schools and universities.
- (910) GROUP II UNIT means any unit burning gaseous fuels, excluding digester and landfill gases, with a rated heat input capacity less than 75 million Btu per hour down to and including 20 million Btu per hour, excluding thermal fluid heaters and units operated at schools and universities.
- (4011) GROUP III UNIT means any unit burning gaseous fuels, excluding digester and landfill gases, ~~and thermal fluid heaters~~ with a rated heat input capacity less than 20 million Btu per hour down to and including 5 million Btu per hour, and all units operated at schools and universities greater than or equal to 5 million Btu per hour, excluding atmospheric units and thermal fluid heaters.
- (412) HEALTH FACILITY has the same meaning as defined in Section 1250 of the California Health and Safety Code.
- (4213) HEAT INPUT means the chemical heat released due to ~~fuel~~ assumed complete combustion of fuel in a unit, using the higher heating value of the fuel. This does not include the sensible heat of incoming combustion air.
- (4314) INDUSTRIAL OPERATION means any entity engaged in the production and/or provision of chemicals, foods, textiles, fabricated metal products, real estate, personal services or other kindred or allied products or services.

- (~~14~~15) INSTITUTIONAL OPERATION means any public or private establishment constituted to provide medical, educational, governmental, or other similar services to promote safety, order, and welfare.
- (16) MODIFICATION means any physical change that meets the criteria set forth in Rule 1302 – Definitions.
- (17) MUNICIPAL SANITATION SERVICES means basic sanitation services provided to the residents of a municipality by sewage treatment plants and municipal solid waste landfills.
- (18) NON-RECLAIM FACILITY means a facility, or any of its successors, that was not in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.
- (~~15~~19) NOx EMISSIONS means the sum of nitric oxides and nitrogen dioxides in the flue gas emitted, collectively expressed~~calculated~~ as nitrogen dioxide.
- (~~16~~20) OPEN HEATED TANK means a non-pressurized self-heated tank that may include a cover or doors that can be opened or detached to put in or remove parts, components or other material for processing in the tank. Tanks heated solely by an electric heater, boiler, thermal fluid heater or heat recovered from another process using heat exchangers are excluded from this definition.
- (~~17~~21) PROCESS HEATER means any combustion equipment fired with liquid and/or gaseous (including landfill and digester gas) and/or solid fossil fuel and which transfers heat from combustion gases to water or process streams. Process Heater does not include any kiln or oven used for drying, curing, baking, cooking, calcining, or vitrifying; or any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment.
- (~~18~~22) RATED HEAT INPUT CAPACITY means the heat input capacity as specified by the permit issued by the Executive Officer, or if not specified on the permit, as specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified such that its maximum heat input is different than the heat input capacity specified on the nameplate, the new maximum heat input shall be considered as the rated heat input capacity.
- (23) RECLAIM FACILITY means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.

~~(1924)~~ SCHOOL means any public or private school, including juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including in kindergarten and grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property, but does not include unimproved school property.

~~(20)~~ ~~STANDBY BOILER is a boiler which operates as a temporary replacement for primary steam or hot water while the primary steam or hot water supply unit is out of service.~~

~~(2125)~~ THERM means 100,000 Btu.

~~(2226)~~ THERMAL FLUID HEATER means a natural gas fired process heater ~~PROCESS HEATER~~ in which a process stream is heated indirectly by a heated fluid other than water.

~~(2327)~~ UNIT means any boiler, steam generator, or process heater as defined in paragraph (b)~~(54)~~ or (b)~~(4721)~~ of this subdivision.

(c) Requirements

Notwithstanding the exemptions contained in Rule 2001 – Applicability, Table 1 – Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NOx Emissions If Rule Was Adopted or Amended Prior to October 5, 2018, the owner or operator of any unit(s) subject to this rule shall not operate the unit in a manner that exceeds the applicable emission limits specified in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4).

(1) The owner or operator shall subject all of the units within the facility to the applicable NOx emission limits and schedules specified in Table 1146-1:

Table 1146-1 — ~~Standard NOx Emission Limits and Compliance Schedule Limits and Schedules~~

Rule Reference	Category	Limit <sup>1</sup>	Submit Compliance Plan on or before	Submit Application for Permit to Construct on or before	Unit Shall be in Full Compliance on or before <u>Compliance Schedule for Non-RECLAIM Facilities</u>	<u>Compliance Schedule for RECLAIM and Former RECLAIM Facilities</u>
(c)(1)(A)	All Units Fired on Gaseous Fuels	30 ppm or for natural gas fired units 0.036 lbs/10 <sup>6</sup> Btu	-	-	September 5, 2008	
(c)(1)(B)	Any Units Fired on Non-gaseous Fuels	40 ppm	-	-	September 5, 2008	

Table 1146-1 — ~~Standard NOx Emission Limits and Compliance Schedule Limits and Schedules~~

(c)(1)(C)	Any Units Fired on Landfill Gas	25 ppm	-	-	January 1, 2015	See Rule 1100 – Implementation Schedule for NOx Facilities
(c)(1)(D)	Any Units Fired on Digester Gas	15 ppm	-	-	January 1, 2015	
(c)(1)(E)	Atmospheric Units	12 ppm or 0.015 lbs/10 <sup>6</sup> Btu	<del>January 1, 2010</del>	<del>January 1, 2013</del>	January 1, 2014	
(c)(1)(F)	Group I Units	5 ppm or 0.0062 lbs/10 <sup>6</sup> Btu	-	<del>January 1, 2012</del>	January 1, 2013	
(c)(1)(G)	Group II Units (Fire-tube boilers with a previous NOx limit $\leq$ less than or equal to 942 ppm and $\geq$ greater than 5 ppm prior to [date of amendment]) 75% or more of units (by heat input)	<del>7 ppm or 0.0085 lbs/10<sup>6</sup> Btu</del> 9 ppm or 0.011 lbs/10 <sup>6</sup> Btu	January 1, 2010	January 1, 2011	January 1, 2012 See (c)(7)(A)	
(c)(1)(H)	Group II Units (All others with a previous NOx limit $\leq$ less than or equal to 12 ppm and $\geq$ greater than 5 ppm prior to [date of amendment]) 100% of units (by heat input)	9 ppm or 0.011 lbs/10 <sup>6</sup> Btu	January 1, 2010	January 1, 2013	January 1, 2014 or See (c)(7)(A)	
(c)(1)(I)	Group II Units (All others)	5 ppm or 0.0062 lbs/10 <sup>6</sup> Btu			<i>Date of amendment</i>	
(c)(1)(J)	Group III Units (Fire-tube boilers, excluding units with a previous NOx limit less than or equal to 12 ppm and greater than 9 ppm prior to [date of amendment] only) 75% or more of units (by heat input)	<del>7 ppm or 0.0085 lbs/10<sup>6</sup> Btu</del> 9 ppm or 0.011 lbs/10 <sup>6</sup> Btu	January 1, 2011	January 1, 2012	January 1, 2013 <i>Date of amendment</i> or See (c)(7)(B) for units with a previous NOx limit less than or equal to 9 ppm prior to [date of amendment]	
(c)(1)(K)	Group III Units (All others) 100% of units (by heat input)	9 ppm or 0.011 lbs/10 <sup>6</sup> Btu	January 1, 2011	January 1, 2014	January 1, 2015 or See (c)(7)(B)(8) for units with a previous NOx limit less than or equal to 12 ppm prior to September 5, 2008	

Table 1146-1 — ~~Standard NOx Emission Limits and Compliance Schedule Limits and Schedules~~

(c)(1)(L)	Thermal Fluid Heaters	12 ppm or 0.015 lbs/10 <sup>6</sup> Btu		Date of amendment or See (c)(7)(C) for units with a previous NOx limit <u>≤less than or equal to 20 ppm prior to [date of amendment]</u> or See (e)(2) for units with a previous NOx limit <u>≥greater than 20 ppm prior to [date of amendment]</u>	
<sup>1</sup> All parts per million (ppm) emission limits are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.					

(2) — ~~In lieu of complying with the NOx emission limits and schedules specified in paragraph (c)(1), the owner or operator may elect to subject all of the units within the facility to the requirements specified in Table 1146-2. The owner or operator that fails to submit a Compliance Plan or Application for Permit to Construct pursuant to the schedule specified in Table 1146-1 for any of the Group II units shall be subject to the NOx limits and schedule specified in Table 1146-2.~~

Table 1146-2 — Enhanced Compliance Limits and Schedule

Rule Reference	Category	Limit	Submit Compliance Plan on or before	Submit Application for Permit to Construct on or before	Unit Shall be in Full Compliance on or before
(e)(2)(A)	Group II Units 75% or more of units (by heat input)	5 ppm or 0.0062 lbs/10 <sup>6</sup> Btu	January 1, 2011	January 1, 2013	January 1, 2014
(e)(2)(B)	Group II Units 100% of units (by heat input)		January 1, 2011	January 1, 2015	January 1, 2016

(2) The owner or operator of any unit(s) operating with air pollution control equipment that results in ammonia emissions in the exhaust shall not discharge into the atmosphere ammonia emissions in excess of 5 ppm (referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 60 consecutive minutes), except for units complying with paragraph (c)(89).

- (3) For dual fuel co-fired combustion units a weighted average emission limit calculated by Equation 1146-1 may be used in lieu of the emission limits of Table 1146-1 provided a totalizing fuel flow meter is installed pursuant to paragraph (c)(~~89~~10), for units burning a combination of both fuels.

$$\text{Weighted Limit} = \frac{(CL_A \times Q_A) + (CL_B \times Q_B)}{Q_A + Q_B} \quad \text{Equation 1146-1}$$

**Where:**

CL<sub>A</sub> = compliance limit for fuel A

CL<sub>B</sub> = compliance limit for fuel B

Q<sub>A</sub> = heat input from fuel A

Q<sub>B</sub> = heat input from fuel B

- (4) The owner or operator of any unit(s) with a rated heat input capacity greater than or equal to 5 million Btu per hour shall not discharge into the atmosphere carbon monoxide (CO) emissions in excess of 400 ppm (referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) or for natural gas fired units 0.30 lbs/10<sup>6</sup> Btu.
- (5) In lieu of complying with the applicable emission limits specified in paragraphs (c)(1), (c)(2), (c)(3), ~~and (c)(4)~~, (e)(1), and (e)(2), the owner or operator of any unit(s) in operation prior to September 5, 2008 at non-RECLAIM facilities, or in operation prior to [12 months after date of amendment] at RECLAIM or former RECLAIM facilities with an annual ~~annual~~ heat input less than or equal to 9.0 x 10<sup>9</sup> Btu (90,000 therms) per year, shall:
- (A) operate the unit(s) in a manner that maintains stack gas oxygen concentrations at less than or equal to 3 percent on a dry basis for any 15-consecutive-minute averaging period; or
- (B) tune the unit(s) at least twice per year, (at intervals from 4 to 8 months apart) in accordance with the procedure described in Attachment 1 or the unit manufacturer's specified tune-up

procedure. If a different tune-up procedure from that described in Attachment 1 is used then a copy of this procedure shall be kept on site. The owner or operator of any unit(s) selecting the tune-up option shall maintain records for a rolling twenty four month period verifying that the required tune-ups have been performed. If the unit does not operate throughout a continuous six-month period within a twelve month period, only one tune-up is required for the twelve month period that includes the entire period of non-operation. For this case, the tune-up shall be conducted within thirty (30) days of start-up. No tune-up is required during a rolling twelve month period for any unit that is not operated during that rolling twelve month period; this unit may be test fired to verify availability of the unit for its intended use but once the test firing is completed the unit shall be shutdown. Records of test firings shall be maintained for a rolling twenty four month period, and shall be made accessible to an authorized District representative upon request.

- (6) Notwithstanding the exemptions contained in Rule 2001 – Applicability, Table 1 – Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NOx Emissions If Rule Was Adopted or Amended Prior to October 5, 2018, Any unit(s) with a rated heat input capacity greater than or equal to 40 million Btu per hour and an annual heat input greater than  $200 \times 10^9$  Btu per year shall have a continuous in-stack nitrogen oxides monitor or equivalent verification system in compliance with Rule 218, Rule 218.1, and 40 CFR ~~part~~ Part 60 Appendix B Specification 2. Maintenance and emission records shall be maintained and made accessible for a period of two years to the Executive Officer.
- (7) Notwithstanding paragraph (c)(1), aAn owner or operator that has installed, modified, or has been issued a SCAQMD Permit to Construct or Permit to Operate for the following units prior to *[date of amendment]*, at a non-RECLAIM facility, shall meet the NOx emission limit specified in Table 1146-1 by *[15 years after the date of amendment]* or when 50 percent or more of the unit's burners are replaced, whichever is earlier:~~a Group III natural gas fired unit prior to September 5, 2008 complying with the applicable BACT emission limit of 12 ppm or less of NOx may defer compliance with subparagraphs (e)(1)(I) or (e)(1)(J) until the unit's burner(s) replacement.~~

- (A) Group II fire-tube boilers~~units~~ subject to subparagraph (c)(1)(G) or (e)(1)(H) complying with a previous NOx emission limit that is less than or equal to 9 ppm and greater than 5 ppm; or
- (B) Group III fire-tube boilers~~units~~ subject to subparagraph (c)(1)(J) or (e)(1)(K) complying with a previous NOx emission limit that is less than or equal to 9~~12~~ ppm; or
- (C) Thermal fluid heaters subject to subparagraph (c)(1)(L) complying with a previous NOx emission limit that is less than or equal to 20 ppm.
- (8) Notwithstanding the NOx emission limit specified in Table 1146-1 of paragraph (c)(1), by [15 years after the date of amendment] or when 50 percent or more of the unit's burners are replaced, whichever is earlier, the owner or operator that has installed, modified, or has been issued a SCAQMD Permit to Operate prior to September 5, 2008 for a Group III natural gas fired unit complying with a previous NOx emission limit of 12 ppm or less and greater than 9 ppm shall not operate in a manner that discharges NOx emissions (reference at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) in excess of 9 ppm.
- (89) An owner or operator that has installed, ~~or modified, or has been issued a SCAQMD Permit to Construct or Permit to Operate prior to [date of amendment], at a non-RECLAIM facility for any unit(s) operating with an air pollution control equipment that results in ammonia emissions in the exhaust complying with an ammonia emission limit greater than 5 ppm, as specified in a SCAQMD Permit to Operate, shall meet the ammonia emission limit in (e)(2) when the air pollution control equipment is replaced or modified, the owner or operator shall:~~
- (A) Meet the ammonia emission limit in specified in (c)(2); and
- (B) During the first 12 months of operation, demonstrate compliance according to the schedule specified in paragraph (d)(3).
- (8910) Any owner or operator who chooses the pound per million Btu compliance option specified in paragraph(s) (c)(1) (e)(2), or (c)(4) or chooses the weighted average emission limit using Equation 1146-1 under paragraph (c)(3) shall install a non-resettable totalizing fuel meter to measure the total of each fuel used by each individual unit, as approved by the Executive Officer.

- ~~(9) — The owner or operator of Group II or III units shall submit for the approval of the Executive Officer a compliance plan in accordance with the requirements of Rule 221 — Plans and Rule 306 — Plan Fees by the applicable date specified in Tables 1146-1 or 1146-2. The compliance plan shall include the following information:~~
- ~~(A) — Owner/operator contact information (company name, AQMD facility identification number, contact name, phone number, address, e-mail address).~~
- ~~(B) — Number and size (mmbtu/hr) of Group II and III units located at the facility.~~
- ~~(C) — Selection of the Standard (Table 1146-1) or Enhanced (Table 1146-2) compliance schedule by Group II and III units.~~
- ~~(D) — The owner or operator of more than one unit located within the same facility that have opted to divide the units by heat input for the purpose of separate compliance dates according to Tables 1146-1 or 1146-2 shall indicate which units are categorized 75 percent or more of the heat input and which units make up the remaining 100 percent of the heat input.~~
- (1011) On or after January 1, 2015, a An owner or operator of any landfill or digester gas (biogas) unit co-fired with natural gas shall not operate the unit in a manner that exceeds the emission concentration limits specified in subparagraphs (c)(1)(C) or (c)(1)(D), provided that the facility monthly average biogas usage by the biogas units is 90% or more, based on the higher heating value of the fuels used.
- (A) The Executive Officer may approve the burning of more than 10% natural gas up to:
- (i) 25% natural gas in a biogas fired unit at the 15 ppm (digester gas) or 25 ppm (landfill gas) NO<sub>x</sub> level, when it is necessary, if the only alternative to limiting natural gas to 10% would be shutting down the unit and flaring more biogas.
  - (ii) 50% natural gas in a digester gas-fired unit at the 15 ppm NO<sub>x</sub> level, when it is necessary as specified in clause (c) (1011)(A)(i) and for units installed on or after September 5, 2008 provided the unit has demonstrated compliance with the NO<sub>x</sub> limits in paragraph (c)(1) applicable to units fired exclusively on natural gas.

For units subject to this subparagraph, the percent natural gas usage shall be based on the facility monthly average biogas usage by the biogas units and the higher heating value of the fuels used.

- (B) Any biogas-fired unit burning more than the approved percent natural gas as determined under subparagraph (c)(11)(A) shall comply with the weighted average NO<sub>x</sub> limit specified in paragraph (c)(3).

(112) Notwithstanding the NO<sub>x</sub> emission limits specified in Table 1146-1 of paragraph (c)(1) and paragraph (e)(3), and until a Regulation XI rule referenced in paragraph (f)(5) is adopted or amended and that rule compliance date occurs, an owner or operator shall not operate units at a municipal sanitation service facility in a manner that discharges NO<sub>x</sub> emissions (referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) in excess of:

- (A) 9 ppm for Group II and Group III units; or  
(B) 9 ppm, upon burner replacement, for Group III units that were installed or modified prior to September 5, 2008 complying with a previous NO<sub>x</sub> emission limit of 12 ppm or less shall; or  
(C) 30 ppm for thermal fluid heaters; or  
(D) 30 ppm, upon burner replacement, for any low-fuel use unit complying with paragraph (c)(5).

(d) Compliance Determination

The owner or operator of any unit(s) subject to this rule shall meet the following requirements for determining compliance:

- (1) An owner or operator of any unit(s) shall have the option of complying with either the pound per million Btu or parts per million emission limits specified in paragraphs (c)(1), ~~(e)(2)~~, (c)(3), and (c)(4).
- (2) All emission determinations shall be made in the as-found operating condition, except no compliance determination shall be established during start-up, shutdown, or under breakdown conditions. Start-up and shutdown intervals shall not last longer than is necessary to reach stable conditions. Compliance determination as specified in paragraph (d)(6) shall be conducted at least 250 operating hours, or at least thirty days subsequent to the tuning or servicing of any unit, unless it is an unscheduled repair.

~~(3) All parts per million emission limits specified in subdivision (c) are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.~~

(3) An owner or operator of a unit subject to the ammonia emission limit specified in paragraph (c)(2) shall:

(A) Conduct quarterly a source test to demonstrate compliance with the ammonia emission limit, according to the procedures in District Source Test Method 207.1 for Determination of Ammonia Emissions from Stationary Sources, during the first 12 months of unit operation and thereafter, except that source tests may be conducted annually within 12 months thereafter when four consecutive quarterly source tests demonstrate compliance with the ammonia emission limit. If an annual test is failed, four consecutive quarterly source tests must demonstrate compliance with the ammonia emissions limits prior to resuming annual source tests; or

(B) Utilize an ammonia Continuous Emissions Monitoring System (CEMS) certified under an approved SCAQMD protocol to demonstrate compliance with the ammonia emission limit.

(4) Compliance with the NO<sub>x</sub> and CO emission requirements of paragraphs (c)(1), ~~(e)(2)~~, ~~(c)(3)~~, and ~~(c)(4)~~ and the stack-gas oxygen concentration requirement of subparagraph (c)(5)(A) shall be determined using a District approved contractor under the Laboratory Approval Program according to the following procedures:

(A) District Source Test Method 100.1 - Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling (March 1989), or

(B) District Source Test Method 7.1 - Determination of Nitrogen Oxide Emissions from Stationary Sources (March 1989) and District Source Test Method 10.1 - Carbon Monoxide and Carbon Dioxide by Gas Chromatograph/Non-Dispersive Infrared Detector (GC/NDIR) - Oxygen by Gas Chromatograph-Thermal Conductivity (GC/TCD) (March 1989); or

(C) United States Environmental Protection Agency Conditional Test Method CTM-030, Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers; or

- (D) ASTM D6522-00(2005) Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers
- (E) any other test method determined to be alternative and approved before the test in writing by the Executive Officers of the District and the California Air Resources Board and the Regional Administrator of the United States Environmental Protection Agency, Region IX; or
- (F) a continuous in-stack nitrogen oxide monitor or equivalent verification system as specified in paragraph (c)(6).

Records of all source tests shall be made available to District personnel upon request. Emissions determined to exceed any limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of this rule.

- (5) For any owner or operator who chooses the pound per million Btu of heat input compliance option of paragraph (c)(1), ~~(e)(2)~~, ~~(c)(3)~~, or (c)(4), NO<sub>x</sub> emissions in pounds per million Btu of heat input shall be calculated using procedures in 40 CFR Part 60, Appendix A, Method 19, Sections 2 and 3 and CO emissions in pounds per million Btu of heat input shall be calculated according to the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Units Subject to South Coast Air Quality Management District Rules 1146 and 1146.1.
- (6) Compliance determination with the NO<sub>x</sub> emission requirements in paragraph (d)(4) shall be conducted once:
  - (A) every three years for units with a rated heat input capacity greater than or equal to 10 million Btu per hour, except for units subject to paragraph (c)(6).
  - (B) every five years for units with a rated heat input capacity less than 10 million Btu per hour down to and including 5 million Btu per hour.
- (7) Provided the emissions test is conducted within the same calendar year as the test required in paragraph (d)(6), an owner or operator may use the following emissions tests to comply with paragraph (d)(6):

- (A) Periodic monitoring or testing of a unit as required in a Title V permit pursuant to Regulation XXX, or
  - (B) Relative accuracy testing for continuous emissions monitoring verification pursuant to Rule 218.1 or 40 CFR ~~part~~ Part 60 Appendix B Specification 2.
- (8) Except for units subject to paragraph (c)(6), Any any owner or operator of units subject to this rule shall perform diagnostic emission checks of NOx emissions with a portable NOx, CO<sub>2</sub> and oxygen analyzer according to the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Units Subject to South Coast Air Quality Management District Rules 1146 and 1146.1 according to the following schedule:
- (A) ~~On or after July 1, 2009, t~~The owner or operator of units subject to paragraphs (c)(1), ~~(e)(2), (c)(3), and or (c)(4)~~ shall check NOx emissions at least monthly or every 750 unit operating hours, whichever occurs later. If a unit is in compliance for three consecutive diagnostic emission checks, without any adjustments to the oxygen sensor set points, then the unit may be checked quarterly or every 2,000 unit operating hours, whichever occurs later, until the resulting diagnostic emission check ~~exceeds the applicable limit specified in paragraphs (c)(1), (e)(2), or (c)(3).~~
  - (B) ~~On or after January 1, 2015 or during burner replacement, whichever occurs later, t~~The owner or operator of units subject to~~subject to complying with the requirements specified in~~ paragraph (c)(5) shall check NOx emissions according to the tune-up schedule specified in subparagraph (c)(5)(B).
  - (C) Records of all monitoring data required under subparagraphs (d)(8)(A) and (d)(8)(B) shall be maintained for a rolling twelve month period of two years (5 years for Title V facilities) and shall be made available to District personnel upon request.
  - (D) The portable analyzer diagnostic emission checks required under subparagraph (d)(8)(A) and (d)(8)(B) shall only be conducted by a person who has completed an appropriate District-approved training program in the operation of portable analyzers and has received a certification issued by the District.

- (9) An owner or operator shall comply with the requirements as applied to CO emissions specified in paragraph (d)(8) -and subparagraph:
- (A) (d)(6)(A) for units greater than or equal to 10 million Btu per hour~~mmbtu/hr~~, or
- (B) (d)(6)(B) for units less than 10 million Btu per hour~~mmbtu/hr~~.
- (10) A diagnostic emission check conducted under the requirements specified in paragraph (d)(8) that finds emissions in excess of those allowed by this rule or a permit condition shall not constitute a violation of this rule if the owner or operator corrects the problem and demonstrate compliance with another emission check within 72 hours from the time the owner or operator knew of excess emissions, or reasonably should have known, or shut-down the unit by the end of an operating cycle, whichever is sooner.
- (11) Notwithstanding the requirements specified in paragraph (d)(10) any diagnostic emission check conducted by District staff that finds emissions in excess of those allowed by this rule or a permit condition is a violation.
- (12) An owner or operator may opt to lower the unit's rated heat input capacity. The lowered rated heat input capacity shall not be less than or equal to 2 million Btu per hour and shall be based on manufacturer's identification or rating plate or permit condition.
- (e) Compliance Schedule
- ~~(1) An owner or operator of units subject to paragraph (e)(1) shall comply with the schedule specified in Table 1146-1.~~
- ~~(2) An owner or operator of units subject to paragraph (e)(2) shall comply with the schedule specified in Table 1146-2.~~
- (1) The owner or operator of any unit(s) at a RECLAIM or former RECLAIM facility subject to paragraph (c)(1) shall meet the applicable NOx emission limit in Table 1146-1 in accordance with the schedule specified in Rule 1100 – Implementation Schedule for NOx Facilities.
- (2) An owner or operator of a non-RECLAIM facility with any thermal fluid heaters with a NOx emission limit greater than 20 ppm shall:
- (A) On or before [12 months after date of amendment], submit a complete SCAQMD permit application for each thermal fluid heater that does not currently meet the limit specified in subparagraph (c)(1)(L); and

- (B) On or before January 1, 2022, meet the applicable NOx emission limit in Table 1146-1 for thermal fluid heaters subject to subparagraph (c)(1)(L).
- (3) By ~~On or after January 1, 2015~~ [15 years after the date of amendment] or during burner replacement when 50 percent or more of the unit's burners are replaced, whichever occurs later is earlier, no person shall operate in the District any unit subject to ~~subject to complying with~~ paragraph (c)(5) which that discharges into the atmosphere NOx emissions in excess of 12 ppm (referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) does not meet the emissions limits specified in subparagraph (c)(1)(A) of Table 1146-1.
- (4) Any unit ~~subject to complying with~~ the requirements specified in paragraph (c)(5) that exceeds 90,000 therms of annual heat input from all fuels used in any twelve month period shall constitute a violation of this rule. In addition, the owners or operators shall:
- (A) within 4 months after exceeding 90,000 therms of annual heat input ~~in any twelve month period~~, submit required applications for permits to construct and operate; and
- (B) within 18 months after exceeding 90,000 therms of annual heat input ~~in any twelve month period~~, demonstrate and maintain compliance with all applicable requirements of paragraphs (c)(1), (c)(2), (c)(3), (c)(4), and (c)(6) for the life of the unit.
- (5) The Executive Officer shall grant in writing a time extension to the full compliance date with the applicable NOx compliance limits specified in subparagraphs (c)(1)(E) through (c)(1)(JK) ~~and paragraph (e)(2)~~ for any health facility as defined in writing in Section 1250 of the California Health and Safety Code that can demonstrate that the Office of Statewide Health Planning and Development has approved an extension of time to comply with seismic safety requirements pursuant to Health and Safety Code Sections 130060 and 130061.5. The extension of time granted by the Executive Officer shall be consistent with the time extension granted pursuant to Health and Safety Code Section 130060 but not to exceed January 1, 2015 and shall be consistent with the time extension granted pursuant to Health and Safety Code Section 130061.5 but not to exceed January 1, 2020. Those health facilities granted a time extension shall

submit a compliance plan to the Executive Officer on or before January 1, 2010.

(f) Exemptions

The provisions of this rule shall not apply to:

- (1) boilers used by electric utilities to generate electricity; or
- (2) boilers and process heaters with a rated heat input capacity greater than 40 million Btu per hour that are used in petroleum refineries; or
- (3) sulfur plant reaction boilers; or
- (4) any unit at a RECLAIM or former RECLAIM facility that is subject to a NOx emission limit in a different rule for an industry-specific category defined in Rule 1100 – Implementation Schedule for NOx Facilities; or
- (5) any unit at a municipal sanitation service facility that is subject to a NOx emission limit in a different Regulation XI rule adopted or amended after [date of amendment].

## ATTACHMENT 1

**A. Equipment Tuning Procedure<sup>1</sup> for Forced-Draft Boilers, Steam Generators, and Process Heaters**

Nothing in this Equipment Tuning Procedure shall be construed to require any act or omission that would result in unsafe conditions or would be in violation of any regulation or requirement established by Factory Mutual, Industrial Risk Insurers, National Fire Prevention Association, the California Department of Industrial Relations (Occupational Safety and Health Division), the Federal Occupational Safety and Health Administration, or other relevant regulations and requirements.

Should a different tuning procedure be used, a copy of this procedure should be kept with the unit records for two years and made available to the District personnel on request.

1. Operate the unit at the firing rate most typical of normal operation. If the unit experiences significant load variations during normal operation, operate it at its average firing rate.
2. At this firing rate, record stack gas temperature, oxygen concentration, and CO concentration (for gaseous fuels) or smoke-spot number<sup>2</sup> (for liquid fuels), and observe flame conditions after unit operation stabilizes at the firing rate selected. If the excess oxygen in the stack gas is at the lower end of the range of typical minimum values<sup>3</sup>, and if CO emissions are low and there is not smoke, the unit is probably operating at near optimum efficiency - at this particular firing rate.

However, complete the remaining portion of this procedure to determine whether still lower oxygen levels are practical.

3. Increase combustion air flow to the furnace until stack gas oxygen levels increase by one to two percent over the level measured in Step 2. As in Step 2, record the

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<sup>1</sup> This tuning procedure is based on a tune-up procedure developed by KVB, Inc. for the United States EPA.

<sup>2</sup> The smoke-spot number can be determined with ASTM Test Method D-2156 or with the Bacharach method. ASTM Test Method D-2156 is included in a tuneup kit that can be purchased from the Bacharach Company.

<sup>3</sup> Typical minimum oxygen levels for boilers at high firing rates are:

1. For natural gas: 0.5% - 3%
2. For liquid fuels: 2% - 4%

stack gas temperature, CO concentration (for gaseous fuels) or smoke-spot number (for liquid fuels), and observe flame conditions for these higher oxygen levels after boiler operation stabilizes.

4. Decrease combustion air flow until the stack gas oxygen concentration is at the level measured in Step 2. From this level gradually reduce the combustion air flow, in small increments. After each increment, record the stack gas temperature, oxygen concentration, CO concentration (for gaseous fuels) and smoke-spot number (for liquid fuels). Also observe the flame and record any changes in its condition.
5. Continue to reduce combustion air flow stepwise, until one of these limits is reached:
  - a. Unacceptable flame conditions - such as flame impingement on furnace walls or burner parts, excessive flame carryover, or flame instability.
  - b. Stack gas CO concentrations greater than 400 ppm.
  - c. Smoking at the stack.
  - d. Equipment-related limitations - such as low windbox/furnace pressure differential, built in air-flow limits, etc.
6. Develop an O<sub>2</sub>/CO curve (for gaseous fuels) or O<sub>2</sub>/smoke curve (for liquid fuels) similar to those shown in Figures 1 and 2 using the excess oxygen and CO or smoke-spot number data obtained at each combustion air flow setting.

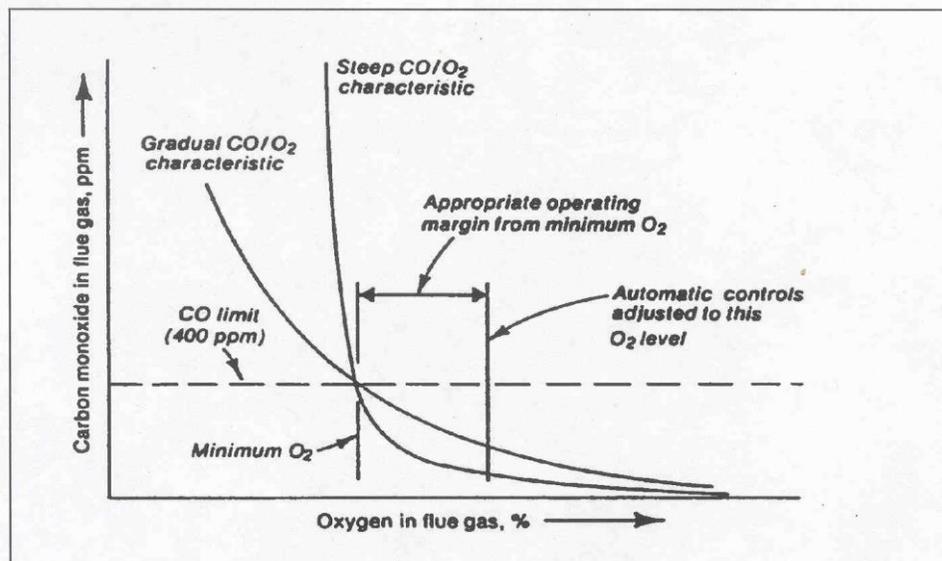


Figure 1 Oxygen/CO Characteristic Curve

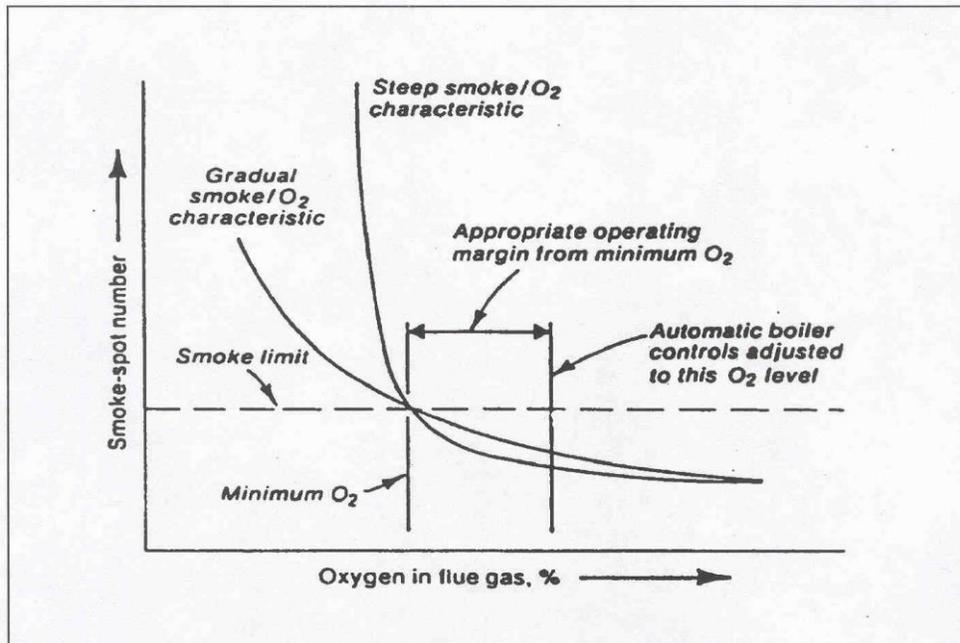


Figure 2 Oxygen/Smoke Characteristic Curve

7. From the curves prepared in Step 6, find the stack gas oxygen levels where the CO emissions or smoke-spot number equal the following values:

<u>Fuel</u>	<u>Measurement</u>	<u>Value</u>
Gaseous	CO Emissions	400 ppm
#1 and #2 oils	smoke-spot number	number 1
#4 oil	smoke-spot number	number 2
#5 oil	smoke-spot number	number 3
Other oils	smoke-spot number	number 4

The above conditions are referred to as the CO or smoke thresholds, or as the minimum excess oxygen level.

Compare this minimum value of excess oxygen to the expected value provided by the combustion unit manufacturer. If the minimum level found is substantially higher than the value provided by the combustion unit manufacturer, burner adjustments can probably be made to improve fuel and air mixing, thereby allowing operation with less air.

8. Add 0.5 to 2.0 percent O<sub>2</sub> to the minimum excess oxygen level found in Step 7 and reset burner controls to operate automatically at this higher stack gas oxygen level. This margin above the minimum oxygen level accounts for fuel variations, variations in atmospheric conditions, load changes, and nonrepeatability or play in automatic controls.

9. If the load of the combustion unit varies significantly during normal operation, repeat Steps 1-8 for firing rates that represent the upper and lower limits of the range of the load. Because control adjustments at one firing rate may affect conditions at other firing rates, it may not be possible to establish the optimum excess oxygen level at all firing rates. If this is the case, choose the burner control settings that give best performance over the range of firing rates. If one firing rate predominates, settings should optimize conditions at that rate.
10. Verify that the new settings can accommodate the sudden load changes that may occur in daily operation without adverse effects. Do this by increasing and decreasing load rapidly while observing the flame and stack. If any of the conditions in Step 5 result, reset the combustion controls to provide a slightly higher level of excess oxygen at the affected firing rates. Next, verify these new settings in a similar fashion. Then make sure that the final control settings are recorded at steady-state operating conditions for future reference.
11. When the above checks and adjustments have been made, record data and attach combustion analysis data to boiler, steam generator, or heater records indicating name and signature of person, title, and date the tuneup was performed.

**B. Equipment Tuning Procedure for Natural Draft-Fired Boilers, Steam Generators, and Process Heaters.**

Nothing in this Equipment Tuning Procedure shall be construed to require any act or omission that would result in unsafe conditions or would be in violation of any regulation or requirement established by Factory Mutual, Industrial Risk Insurers, National Fire Prevention Association, the California Department of Industrial Relations (Occupational Safety and Health Division), the Federal Occupational Safety and Health Administration, or other relevant codes, regulations, and equipment manufacturers specifications and operating manuals.

Should a different tuning procedure be used, a copy of this procedure should be kept with the unit records for two years and made available to the District personnel on request.

**1. PRELIMINARY ANALYSIS**

- a. **CHECK THE OPERATING PRESSURE OR TEMPERATURE.**  
Operate the boiler, steam generator, or heater at the lowest acceptable pressure or temperature that will satisfy the load demand. This will minimize heat and radiation losses. Determine the pressure or temperature

that will be used as a basis for comparative combustion analysis before and after tuneup.

b. **CHECK OPERATING HOURS.**

Plan the workload so that the boiler, steam generator, or process heater operates only the minimum hours and days necessary to perform the work required. Fewer operating hours will reduce fuel use and emissions. For units requiring a tuneup to comply with the rule, a totalizing non-resettable fuel meter will be required for each fuel used and for each boiler, steam generator, and heater to prove fuel consumption is less than the heat input limit in therms per year specified in the rule.

c. **CHECK AIR SUPPLY.**

Sufficient fresh air supply is essential to ensure optimum combustion and the area of air supply openings must be in compliance with applicable codes and regulations. Air openings must be kept wide open when the burner is firing and clear from restriction to flow.

d. **CHECK VENT.**

Proper venting is essential to assure efficient combustion. Insufficient draft or overdraft promotes hazards and inefficient burning. Check to be sure that vent is in good condition, sized properly and with no obstructions.

e. **COMBUSTION ANALYSIS.**

Perform an "as is" combustion analysis (CO, O<sub>2</sub>, etc.) with a warmed up unit at high and low fire, if possible. In addition to data obtained from combustion analysis, also record the following:

- i. Inlet fuel pressure at burner (at high & low fire)
- ii. Draft at inlet to draft hood or barometric damper
  - 1) Draft hood: high, medium, and low
  - 2) Barometric Damper: high, medium, and low
- iii. Steam pressure, water temperature, or process fluid pressure or temperature entering and leaving the boiler, steam generator, or process heater.
- iv. Unit rate if meter is available.

With above conditions recorded, make the following checks and corrective actions as necessary:

**2. CHECKS & CORRECTIONS**

**a. CHECK BURNER CONDITION.**

Dirty burners or burner orifices will cause boiler, steam generator, or process heater output rate and thermal efficiency to decrease. Clean burners and burner orifices thoroughly. Also, ensure that fuel filters and moisture traps are in place, clean, and operating properly, to prevent plugging of gas orifices. Confirm proper location and orientation of burner diffuser spuds, gas canes, etc. Look for any burned-off or missing burner parts, and replace as needed.

**b. CHECK FOR CLEAN BOILER, STEAM GENERATOR, OR PROCESS HEATER TUBES & HEAT TRANSFER SURFACES.**

External and internal build-up of sediment and scale on the heating surfaces creates an insulating effect that quickly reduces unit efficiency. Excessive fuel cost will result if the unit is not kept clean. Clean tube surfaces, remove scale and soot, assure proper process fluid flow and flue gas flow.

**c. CHECK WATER TREATMENT & BLOWDOWN PROGRAM.**

Soft water and the proper water or process fluid treatment must be uniformly used to minimize scale and corrosion. Timely flushing and periodic blowdown must be employed to eliminate sediment and scale build-up on a boiler, steam generator or process heater.

**d. CHECK FOR STEAM, HOT WATER OR PROCESS FLUID LEAKS.**

Repair all leaks immediately since even small high-pressure leaks quickly lead to considerable fuel, water and steam losses. Be sure there are no leaks through the blow-off, drains, safety valve, by-pass lines or at the feed pump, if used.

**3. SAFETY CHECKS**

a. Test primary and secondary low water level controls.

b. Check operating and limit pressure and temperature controls.

c. Check pilot safety shut off operation.

d. Check safety valve pressure and capacity to meet boiler, steam generator or process heater requirements.

e. Check limit safety control and spill switch.

**4. ADJUSTMENTS**

While taking combustion readings with a warmed up boiler, steam generator, or process heater at high fire perform checks and adjustments as follows:

- a. Adjust unit to fire at rate; record fuel manifold pressure.
- b. Adjust draft and/or fuel pressure to obtain acceptable, clean combustion at both high, medium and low fire. Carbon Monoxide (CO) value should always be below 400 parts per million (PPM) at 3% O<sub>2</sub>. If CO is high make necessary adjustments.

Check to ensure boiler, steam generator, or process heater light offs are smooth and safe. A reduced fuel pressure test at both high and low fire should be conducted in accordance with the manufacturers instructions and maintenance manuals.

- c. Check and adjust operation of modulation controller. Ensure proper, efficient and clean combustion through range of firing rates.

When above adjustments and corrections have been made, record all data.

**5. FINAL TEST**

Perform a final combustion analysis with a warmed up boiler, steam generator, or process heater at high, medium and low fire, whenever possible. In addition to data from combustion analysis, also check and record:

- a. Fuel pressure at burner (High, Medium, and Low).
- b. Draft above draft hood or barometric damper (High, Medium and Low).
- c. Steam pressure or water temperature entering and leaving boiler, steam generator, or process heater.
- d. Unit rate if meter is available.

When the above checks and adjustments have been made, record data and attach combustion analysis data to boiler, steam generator, or process heater records indicating name and signature of person, title, company name, company address and date the tuneup was performed.

## ATTACHMENT H

(Adopted October 5, 1990)(Amended July 10, 1992)(Amended May 13, 1994)  
(Amended September 5, 2008)(Amended November 1, 2013)  
(PAR December 7, 2018)

### **PROPOSED AMENDED RULE 1146.1. EMISSIONS OF OXIDES OF NITROGEN FROM SMALL INDUSTRIAL, INSTITUTIONAL, AND COMMERCIAL BOILERS, STEAM GENERATORS, AND PROCESS HEATERS**

(a) Applicability

This rule applies to boilers, steam generators, and process heaters that are greater than 2 million Btu per hour and less than 5 million Btu per hour rated heat input capacity used in any industrial, institutional, or commercial operation, ~~with the exception of RECLAIM facilities (NOx emissions only).~~

(b) Definitions

- (1) ADSORPTION CHILLER UNIT means any natural gas fired unit that captures and uses waste heat to provide cold water for air conditioning and other process requirements.
- (2) ANNUAL HEAT INPUT means the ~~actual amount of heat released by fuels burned in~~ total heat input to a unit during a calendar year, based on the fuel's higher heating value.
- (3) ATMOSPHERIC UNIT means any natural gas fired unit with a non-sealed combustion chamber in which natural draft is used to exhaust combustion gases.
- (4) BOILER OR STEAM GENERATOR means any combustion equipment fired with liquid and/or gaseous (including landfill and digester gas) and/or solid fossil fuel, and used to produce steam or to heat water, and that is not used exclusively to produce electricity for sale. Boiler or Steam Generator does not include any open heated tank, adsorption chiller unit, or waste heat recovery boiler that is used to recover sensible heat from the exhaust of a combustion turbine or any unfired waste heat recovery boiler that is used to recover sensible heat from the exhaust of any combustion equipment.
- (5) BTU means British thermal unit(s) ~~or units~~.
- (6) COMMERCIAL OPERATION means any office building, lodging place, or similar location designed for tenancy by one or more business entities or residential occupants.

- (7) FIRE-TUBE BOILER means any boiler that passes hot gases from a fire box through one or more tubes running through a sealed container of water. The heat of the gases is transferred through the walls of the tubes by thermal conduction, heating the water and ultimately creating steam.
- (8) FORMER RECLAIM FACILITY means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX, that has received a final determination notification, and is no longer in the RECLAIM program.
- (79) HEALTH FACILITY has the same meaning as defined in Section 1250 of the California Health and Safety Code.
- (10) HEAT INPUT means the chemical heat released due to assumed complete combustion of fuel in a unit, using the higher heating value of the fuel. This does not include the sensible heat of incoming combustion air.
- (811) INDUSTRIAL OPERATION means any entity engaged in the production and/or provision of chemicals, foods, textiles, fabricated metal products, real estate, personal services or other kindred or allied products or services.
- (912) INSTITUTIONAL OPERATION means any public or private establishment constituted to provide medical, educational, governmental, or other similar services to promote safety, order, and welfare.
- (13) MODIFICATION means any physical change that meets the criteria set forth in Rule 1302 – Definitions.
- (14) MUNICIPAL SANITATION SERVICES means basic sanitation services provided to the residents of a municipality by sewage treatment plants and municipal solid waste landfills.
- (15) NON-RECLAIM facility means a facility, or any of its successors, that was not in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.
- (4016) NOx EMISSIONS means the sum of nitric oxides and nitrogen dioxides ~~in the flue gas emitted, collectively expressed~~ calculated as nitrogen dioxide.
- (417) OPEN HEATED TANK means a non-pressurized self-heated tank that may include a cover or doors that can be opened or detached to put in or remove parts, components or other material for processing in the tank. Tanks heated solely by an electric heater, boiler, thermal fluid heater or heat recovered from another process using heat exchangers are excluded from this definition.

- (~~12~~18) PROCESS HEATER means any combustion equipment fired with liquid and/or gaseous (including landfill and digester gas) and/or solid fossil fuel and which transfers heat from combustion gases to water or process streams. Process Heater does not include any kiln or oven used for drying, curing, baking, cooking, calcining, or vitrifying; or any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment.
- (~~13~~19) RATED HEAT INPUT CAPACITY means the heat input capacity as specified by the permit issued by the Executive Officer, or if not specified on the permit, as specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified such that its maximum heat input is different than the heat input capacity specified on the nameplate, the new maximum heat input shall be considered as the rated heat input capacity.
- (20) RECLAIM FACILITY means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.
- (~~14~~) ~~SCHOOL means any public or private school, including juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including in kindergarten and grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property, but does not include unimproved school property.~~
- (~~15~~21) THERM means 100,000 Btu.
- (~~16~~22) THERMAL FLUID HEATER means a natural gas fired process heater~~PROCESS HEATER~~ in which a process stream is heated indirectly by a heated fluid other than water.
- (~~17~~23) UNIT means any boiler, steam generator, or process heater as defined in paragraph (b)(4) or (b)(~~12~~18).
- (c) Requirements
- Notwithstanding the exemptions contained in Rule 2001 – Applicability, Table 1 – Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NOx Emissions If Rule Was Adopted or Amended Prior to October 5, 2018, the owner or operator of any unit(s) subject to this rule shall not operate the unit in a manner

that exceeds the applicable emission limits specified in paragraphs (c)(1), (c)(2), and (c)(3).

~~(1) — On or after September 5, 2008, the owner or operator of any unit subject to subdivision (a) shall operate such unit so that it discharges into the atmosphere no more than 30 ppm of NOx emissions or for natural gas fired units 0.037 pound NOx per million Btu of heat input, as specified in the permit to operate.~~

(2) An owner or operator of any unit subject to subdivision (a) must select to comply with ~~one~~the applicable ~~of the following~~ NOx emission limits specified in Table 1146.1-1; and apply for a permit to construct to operate such unit in compliance with the selected emission limit and the corresponding permit application and full compliance dates.

Table 1146.1-1 – NOx Emission Limits and Compliance Schedule

<u>Rule Reference</u>	<u>Category</u>	<u>Limit<sup>1</sup></u>	<u>Submit Application for Permit to Construct on or before</u>	<u>Unit Shall be in Full Compliance on or before</u> <u>Compliance Schedule for Non-RECLAIM Facilities</u>	<u>Compliance Schedule for RECLAIM and Former RECLAIM Facilities</u>
(c)(1)(A)	All Other Units	30 ppm or for natural gas fired units 0.036 lbs/10 <sup>6</sup> Btu		September 5, 2008	
(c)(1)(B)	Any Units Fired on Landfill Gas	25 ppm	January 1, 2014	January 1, 2015	
(c)(1)(C)	Any Units Fired on Digester Gas	15 ppm	January 1, 2014	January 1, 2015	
(c)(1)(D)	Atmospheric Units	12 ppm or 0.015 lbs/10 <sup>6</sup> Btu	January 1, 2013	January 1, 2014	
(c)(1)(E)	Any Units Fired on Natural Gas, <del>excluding</del> <u>Units Located at Schools and Universities</u> <del>Fire-tube Boilers subject to (c)(1)(F), Atmospheric Units, and Thermal Fluid Heaters</del>	9 ppm or 0.011 lbs/10 <sup>6</sup> Btu	January 1, 2011	January 1, 2012 <del>2014</del> or <u>See (c)(5)(A)(6) for units with a previous NOx limit less than or equal to 12 ppm and greater than 9 ppm prior to September 5, 2008</u>	<u>See Rule 1100 – Implementation Schedule for NOx Facilities</u>
	Any Units Fired on Natural Gas Located at Schools and Universities, <del>Excluding Atmospheric Units, and Thermal Fluid Heaters</del>	9 ppm or 0.011 lbs/10 <sup>6</sup> Btu	January 1, 2013	January 1, 2014	
(c)(1)(F)	Any Fire-tube Boilers Fired on Natural Gas, <u>excluding units with less</u>	7 ppm or 0.0085 lbs/10 <sup>6</sup> Btu		<u>Date of amendment</u> or	

	<u>than or equal to 12 ppm and greater than 9 ppm prior to [date of amendment]</u>			<u>See (c)(5)(A) for units complying with a previous NOx emission limit that is less than or equal to 9 ppm prior to [date of amendment]</u>
(c)(1)(G)	Thermal Fluid Heaters	<u>12 ppm or 0.015 lbs/10<sup>6</sup> Btu</u>		<u>Date of amendment or See (c)(5)(B) for units with a previous NOx limit ≤less than or equal to 20 ppm prior to [date of amendment] or See (e)(2) for units with a previous NOx limit ≥greater than 20 ppm prior to [date of amendment]</u>

<sup>1</sup> All parts per million (ppm) emission limits are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.

- (32) For dual fuel co-fired combustion units a weighted average emission limit calculated by Equation 1146.1-1 may be used in lieu of the emission limits of Table 1146.1-1 provided a totalizing fuel flow meter is installed pursuant to paragraph (c)(~~677~~), for units burning a combination of both fuels.

$$\text{Weighted Limit} = \frac{(CL_A \times Q_A) + (CL_B \times Q_B)}{Q_A + Q_B} \quad \text{Equation 1146.1-1}$$

**Where:**

- CL<sub>A</sub> = compliance limit for fuel A
- CL<sub>B</sub> = compliance limit for fuel B
- Q<sub>A</sub> = heat input from fuel A
- Q<sub>B</sub> = heat input from fuel B

- (43) The owner or operator of any unit(s) with a rated heat input capacity greater than 2 million Btu per hour shall not discharge into the atmosphere carbon monoxide (CO) emissions in excess of 400 ppm (referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) or for natural gas fired units 0.30 lbs/10<sup>6</sup> Btu.
- (54) In lieu of complying with the applicable emission limits specified in paragraph (c)(1), (c)(2), (c)(3), (e)(1), and (e)(2)(~~e~~)(4) any unit(s) subject to subdivision (a) in operation prior to September 5, 2008 at non-RECLAIM

facilities, or in operation prior to [12 months after date of amendment] at RECLAIM or former RECLAIM facilities, and with an ~~annual~~ annual heat input of less than or equal to 18,000 therms per calendar year, shall:

- (A) be operated in a manner that maintains stack-gas oxygen concentrations at less than or equal to 3 percent on a dry basis for any 15-consecutive-minute averaging period; or
- (B) be tuned at least twice per year, (at intervals from four to eight months apart) in accordance with the procedure described in Attachment 1 or the unit manufacturer's specified tune-up procedure. If a different tune-up procedure from that described in attachment 1 is used then a copy of this procedure shall be kept on site. The owner or operator of any unit(s) selecting the tune-up option shall maintain records for a rolling of twenty four month period verifying that the required tune-ups have been performed. If the unit does not operate throughout a continuous six-month period within 12month period, only one tune-up is required for the twelve month period that includes the entire period of non-operation. For this case, the tune-up shall be conducted within 30 days of start-up. No tune-up is required during a rolling twelve month period for any unit that is not operated during that rolling 12\_month period; this unit may be test fired to verify availability of the unit for its intended use but once test firing is completed it shall be shutdown. Records of test firings shall be maintained for a rolling twenty four month period, and shall be made accessible upon request from an authorized District representative upon request.

- (65) Notwithstanding paragraph (c)(1), ~~A~~an owner or operator that has installed, ~~or~~ modified, or has been issued a SCAQMD Permit to Construct or Permit to Operate for the following units prior to [date of amendment], at a non-RECLAIM ~~facility~~FACILITY, shall meet the NOx emission limit specified in Table 1146.1-1 by [15 years after the date of amendment] or when 50 percent or more of the unit's burners are replaced, whichever is earlier; ~~a natural gas fired unit prior to September 5, 2008 complying with the applicable BACT emission limit of 12 ppm or less of NOx may defer compliance with paragraph (c)(2) until the unit's burner(s) replacement.~~

- (A) Fire-tube boilers fired on ~~n~~Natural gas-fired units subject to subparagraph ~~(c)(1)(E)~~ or (c)(1)(F) complying with a previous NOx emission limit that is less than or equal to ~~912~~ ppm; or
- (B) Thermal fluid heaters subject to subparagraph (c)(1)(G) complying with a previous NOx emission limit that is less than or equal to 20 ppm.
- (6) Notwithstanding the NOx emission limit specified in Table 1146.1-1 of paragraph (c)(1), by [15 years after the date of amendment] or when 50 percent or more of the unit's burners are replaced, whichever is earlier, the owner or operator that has installed, modified, or has been issued a SCAQMD Permit to Operate prior to September 5, 2008 for a natural gas fired unit complying with a previous NOx emission limit of 12 ppm or less and greater than 9 ppm shall not operate in a manner that discharges NOx emissions (reference at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) in excess of 9 ppm.
- (767) Any owner or operator who chooses the pound per million Btu of heat input compliance option in paragraph (c)(1) or (c)(3), ~~(e)(2), or (e)(4)~~ for natural gas fired units or chooses the weighted average emission limit using Equation 1146.1-1 under paragraph (c)(32) shall install a non-resettable, totalizing fuel meter for each fuel used on an individual unit basis, as approved by the Executive Officer.
- (878) ~~On or after January 1, 2015, a~~An owner or operator of any landfill or digester gas (biogas) unit co-fired with natural gas shall not operate the unit in a manner that exceeds the applicable landfill or digester gas emission concentration limits specified in paragraph (c)(21), provided that the facility monthly average biogas usage by the biogas units is 90% or more, based on the higher heating value of the fuels used.
- (A) The Executive Officer may approve the burning of more than 10% up to:
- (i) 25% natural gas in a biogas fired unit at the 15 ppm (digester gas) or 25 ppm (landfill gas) NOx level, when it is necessary, if the only alternative to limiting natural gas to 10% would be shutting down the unit and flaring more biogas.
  - (ii) 50% natural gas in a digester gas-fired unit at the 15 ppm NOx level, when it is necessary as specified in clause (c) (878)(A)(i) and for units installed on or after September 5,

2008 provided the unit has demonstrated compliance with the NO<sub>x</sub> limits in paragraph (c)(~~2~~1) applicable to units fired exclusively on natural gas.

For units subject to this subparagraph, the percent natural gas usage shall be based on the facility monthly average biogas usage by the biogas units and the higher heating value of the fuels used.

- (B) Any biogas-fired unit burning more than the approved percent natural gas as determined under subparagraph (c)(~~878~~)(A) shall comply with the weighted average NO<sub>x</sub> limit specified in paragraph (c)(~~32~~).

(89) Notwithstanding the NO<sub>x</sub> emission limits specified in Table 1146.1-1 of paragraph (c)(1) and paragraph (e)(3), and until a Regulation XI rule referenced in paragraph (f)(2) is adopted or amended and that rule compliance date occurs, an owner or operator shall not operate units at a municipal sanitation service facility in a manner that discharges NO<sub>x</sub> emissions (referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) in excess of:

- (A) 9 ppm for natural gas fired units; or  
(B) 9 ppm, upon burner replacement, for natural gas fired units that were installed or modified prior to September 5, 2008 complying with a previous NO<sub>x</sub> emission limit of 12 ppm or less; or  
(C) 30 ppm for thermal fluid heaters; or  
(D) 30 ppm, upon burner replacement, for any low-fuel use unit complying with paragraph (c)(4).

(d) Compliance Determination

The owner or operator of any unit(s) subject to this rule shall meet the following requirements for determining compliance:

- (1) Owners or operators of any units shall have the option of complying with either the pound per million Btu of heat input or parts per million emission limits specified in paragraph (c)(1), (c)(2), or (c)(3), ~~or (e)(4).~~
- (2) All emission determinations shall be made in the as-found operating condition, except no compliance determination shall be established during unit start-up, shutdown, or under breakdown conditions. ~~Start-up or shutdown intervals shall not last longer than is necessary to reach stable temperatures.~~ In no case shall the start-up or shutdown interval last longer

than six hours or the time specified in the permit to operate, whichever is less. Start-ups and shutdowns intervals shall not last longer than is necessary to reach stable conditions. A compliance determination as specified in paragraph (d)(~~65~~) shall be conducted at least 250 operating hours, or at least thirty days subsequent to the tuning or servicing of any unit, unless it is an unscheduled repair.

~~(3) All parts per million emission limits specified in subdivision (c) are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.~~

(43) Compliance with the NO<sub>x</sub> and CO emission requirements of paragraphs (c)(1) through (c)(43) and the stack-gas oxygen concentration requirement of subparagraph (c)(~~54~~)(A) shall be determined using a District approved contractor under the Laboratory Approval Program according to the following procedures:

(A) District Source Test Method 100.1 - Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling (March 1989); or

(B) District Source Test Method 7.1 - Determination of Nitrogen Oxide Emissions from Stationary Sources (March 1989) and Method 10.1 - Carbon Monoxide and Carbon Dioxide by Gas Chromatograph/Non-Dispersive Infrared Detector (GC/NDIR) - Oxygen by Gas Chromatograph-Thermal Conductivity (GC/TCD) (March 1989); or

(C) United States Environmental Protection Agency Conditional Test Method CTM-030, Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers; or

(D) ASTM D6522-00(2005) Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers

(E) any other test method determined to be alternative and approved before the test in writing by the Executive Officers of the District and the California Air Resources Board and the Regional Administrator of the United States Environmental Protection Agency, Region IX.

Records of all source tests shall be maintained for a period of two years (five years for Title V facilities) and shall be made available to District personnel upon request. Emissions determined to exceed any limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of this rule.

- (54) For any owner or operator who chooses the pounds-of per million Btu of heat input compliance option of paragraph (c)(1), (c)(2), or (c)(43) for natural gas fired units, NO<sub>x</sub> emissions in pounds per million Btu of heat input shall be calculated using the procedures in 40 CFR Part 60, Appendix A, Method 19, Sections 2 and 3 and CO emissions in pounds per million Btu of heat input shall be calculated according to the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Units Subject to South Coast Air Quality Management District Rules 1146 and 1146.1.
- (65) Compliance determination with the NO<sub>x</sub> emission requirements specified in paragraph (d)(43) shall be conducted once every five years.
- (76) Any owner or operator of units subject to this rule shall perform diagnostic emission checks of NO<sub>x</sub> emissions with a portable NO<sub>x</sub>, CO<sub>2</sub>, and oxygen analyzer according to the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Units Subject to South Coast Air Quality Management District Rules 1146 and 1146.1 according to the following schedule:
- (A) ~~On or after July 1, 2009,~~ The owner or operator of units subject to paragraphs (c)(1), (c)(2), or through (c)(43) shall check NO<sub>x</sub> emissions at least quarterly or every 2,000 unit operating hours, whichever occurs later. If a unit is in compliance for four consecutive required diagnostic emission checks, without any adjustments to the oxygen sensor set points, then the unit may be checked semi-annually or every 4,000 unit operating hours, whichever occurs later, until the diagnostic emission check exceeds the applicable limit specified in paragraphs (c)(1); or (c)(2); ~~or (e)(3).~~
- (B) ~~On or after January 1, 2015 or during burner replacement, whichever occurs later,~~ The owner or operator of units subject to subject to complying with the requirements specified in paragraph (c)(54)

shall check NO<sub>x</sub> emissions according to the tune-up schedule specified in subparagraph (c)(~~54~~)(B).

(C) Records of all monitoring data required under subparagraphs (d)(~~76~~)(A) and (d)(~~76~~)(B) shall be maintained for a rolling twelve month period of two years (five years for Title V facilities) and shall be made available to District personnel upon request.

(D) The portable analyzer diagnostic emission checks required under subparagraphs (d)(~~76~~)(A) and (d)(~~76~~)(B) shall only be conducted by a person who has completed an appropriate District-approved training program in the operation of portable analyzers and has received a certification issued by the District.

(~~87~~) An owner or operator shall comply with the requirements as applied to CO emissions specified in paragraphs (d)(~~65~~) and (d)(~~76~~).

(~~98~~) A diagnostic emission check conducted under the requirements specified in paragraph (d)(~~76~~) that finds emissions in excess of those allowed by this rule or a permit condition shall not constitute a violation of this rule if the owner or operator corrects the problem and demonstrate compliance with another emission check within 72 hours from the time the owner or operator knew of excess emissions, or reasonably should have known, or shut down the unit by the end of an operating cycle, whichever is sooner.

(~~109~~) Notwithstanding the requirements specified in paragraph (d)(~~98~~) any diagnostic emission check conducted by District staff that finds emissions in excess of those allowed by this rule or a permit condition is a violation.

(~~110~~) An owner or operator may opt to lower the unit's rated heat input capacity. The lowered rated heat input capacity shall not be less than or equal to 2 million Btu per hour and shall be based on manufacturer's identification or rating plate or permit condition.

(e) Compliance Schedule

~~(1) Owners or operators of units shall comply with the applicable schedule specified in paragraphs (e)(1) and (e)(2).~~

(1) The owner or operator of any unit(s) at a RECLAIM or former RECLAIM facility subject to paragraph (c)(1) shall meet the applicable NO<sub>x</sub> emission limit in Table 1146.1-1 in accordance with the schedule specified in Rule 1100 – Implementation Schedule for NO<sub>x</sub> Facilities.

- (2) An owner or operator of a non-RECLAIM facility with any thermal fluid heaters with a NOx emission limit greater than 20 ppm shall:
- (A) On or before [12 months after date of amendment], submit a complete permit application for each thermal fluid heater that does not currently meet the limit specified in subparagraph (c)(1)(G); and
- (B) On or before January 1, 2022, meet the applicable NOx emission limit in Table 1146.1-1 for thermal fluid heaters subject to subparagraph (c)(1)(G).
- (23) By ~~On or after January 1, 2015~~ [15 years after the date of amendment] or during burner replacement when 50 percent or more of the unit's burners are replaced, whichever is later~~earlier~~, no person shall operate in the District any unit ~~subject to~~ ~~subject to~~ ~~complying with~~ paragraph (c)(54) ~~which that~~ discharges into the atmosphere NOx emission in excess of 12 ppm (referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes)~~does not meet the emissions limits specified in paragraph (c)(1).~~
- (34) If ~~any~~ Any unit ~~subject to~~ ~~subject to~~ ~~complying with~~ the requirements specified in paragraph (c)(54) ~~that~~ exceeds 18,000 therms of ~~annual~~ annual heat input from all fuels used ~~in any twelve month period~~ shall constitute a violation of this rule. In addition, the owners or operators shall:
- (A) within 4 months after exceeding 18,000 therms of annual heat input ~~in any twelve month period~~, submit required applications for permits to construct and operate; and
- (B) within 18 months after exceeding 18,000 therms of annual heat input ~~in any twelve month period~~, demonstrate and maintain compliance with all applicable requirements specified in paragraphs (c)(1) through (c)(43) for the life of the unit.
- (45) The Executive Officer shall grant in writing a time extension to the full compliance date with the applicable NOx compliance limits for any natural gas fired units specified in paragraph (c)(21) for any health facility as defined ~~in writing~~ in Section 1250 of the California Health and Safety Code that can demonstrate that the Office of Statewide Health Planning and Development has approved an extension of time to comply with seismic safety requirements pursuant to Health and Safety Code Sections 130060 and 130061.5. The extension of time granted by the Executive Officer shall be consistent with the time extension granted pursuant to Health and Safety

Code Section 130060 but not to exceed January 1, 2015 and shall be consistent with the time extension granted pursuant to Health and Safety Code Section 130061.5 but not to exceed January 1, 2020. Those health facilities granted a time extension shall submit a compliance plan to the Executive Officer on or before January 1, 2010.

(f) Exemptions

The provisions of this rule shall not apply to:

- (1) any unit at a RECLAIM or former RECLAIM facility that is subject to a NO<sub>x</sub> emission limit in a different rule for an industry-specific category defined in Rule 1100 – Implementation Schedule for NO<sub>x</sub> Facilities; or
- (2) any unit at a municipal sanitation service facility that is subject to a NO<sub>x</sub> emission limit in a ~~different~~ Regulation XI rule adopted or amended after *[date of amendment]*.

**ATTACHMENT 1**

**A. Equipment Tuning Procedure<sup>1</sup> for Forced-Draft Boilers, Steam Generators, and Process Heaters**

Nothing in this Equipment Tuning Procedure shall be construed to require any act or omission that would result in unsafe conditions or would be in violation of any regulation or requirement established by Factory Mutual, Industrial Risk Insurers, National Fire Prevention Association, the California Department of Industrial Relations (Occupational Safety and Health Division), the Federal Occupational Safety and Health Administration, or other relevant regulations and requirements.

1. Operate the unit at the firing rate most typical of normal operation. If the unit experiences significant load variations during normal operation, operate it at its average firing rate.
2. At this firing rate, record stack gas temperature, oxygen concentration, and CO concentration (for gaseous fuels) or smoke-spot number<sup>2</sup> (for liquid fuels), and observe flame conditions after unit operation stabilizes at the firing rate selected. If the excess oxygen in the stack gas is at the lower end of the range of typical minimum values<sup>3</sup>, and if CO emissions are low and there is not smoke, the unit is probably operating at near optimum efficiency - at this particular firing rate.
3. Increase combustion air flow to the furnace until stack gas oxygen levels increase by one to two percent over the level measured in Step 2. As in Step 2, record the stack gas temperature, CO concentration (for gaseous fuels) or smoke-spot number (for liquid fuels), and observe flame conditions for these higher oxygen levels after boiler operation stabilizes.

However, complete the remaining portion of this procedure to determine whether still lower oxygen levels are practical.

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<sup>1</sup>This tuning procedure is based on a tune-up procedure developed by KVB, Inc. for the United States EPA.

<sup>2</sup>The smoke-spot number can be determined with ASTM Test Method D-2156 or with the Bacharach method.

ASTM Test Method D-2156 is included in a tuneup kit that can be purchased from the Bacharach Company.

<sup>3</sup>Typical minimum oxygen levels for boilers at high firing rates are:

1. For natural gas: 0.5% - 3%
2. For liquid fuels: 2% - 4%

4. Decrease combustion air flow until the stack gas oxygen concentration is at the level measured in Step 2. From this level gradually reduce the combustion air flow, in small increments. After each increment, record the stack gas temperature, oxygen concentration, CO concentration (for gaseous fuels) and smoke-spot number (for liquid fuels). Also observe the flame and record any changes in its condition.
5. Continue to reduce combustion air flow stepwise, until one of these limits is reached:
  - a. Unacceptable flame conditions - such as flame impingement on furnace walls or burner parts, excessive flame carryover, or flame instability.
  - b. Stack gas CO concentrations greater than 400 ppm.
  - c. Smoking at the stack.
  - d. Equipment-related limitations - such as low windbox/furnace pressure differential, built in air-flow limits, etc.
6. Develop an O<sub>2</sub>/CO curve (for gaseous fuels) or O<sub>2</sub>/smoke curve (for liquid fuels) similar to those shown in Figures 1 and 2 using the excess oxygen and CO or smoke-spot number data obtained at each combustion air flow setting.

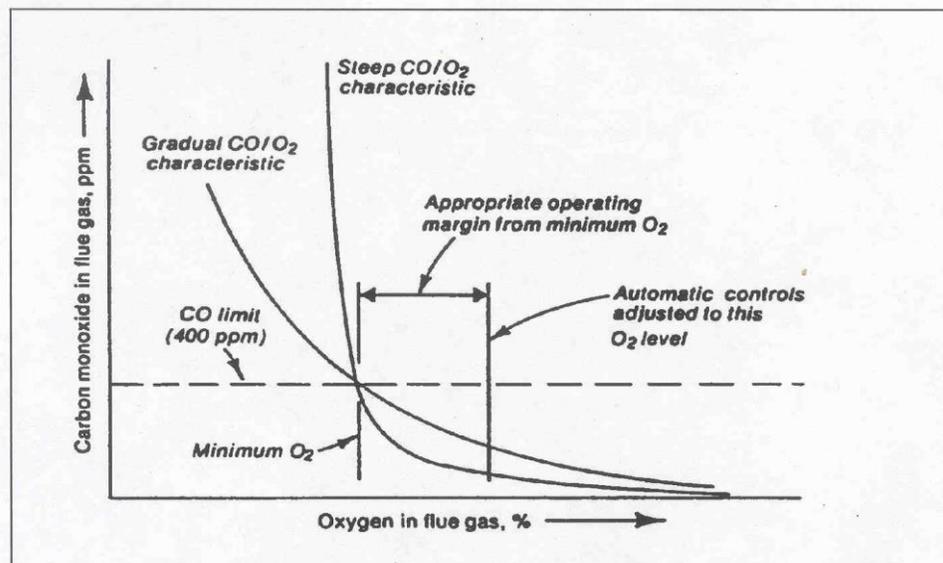


Figure 1 Oxygen/CO Characteristic Curve

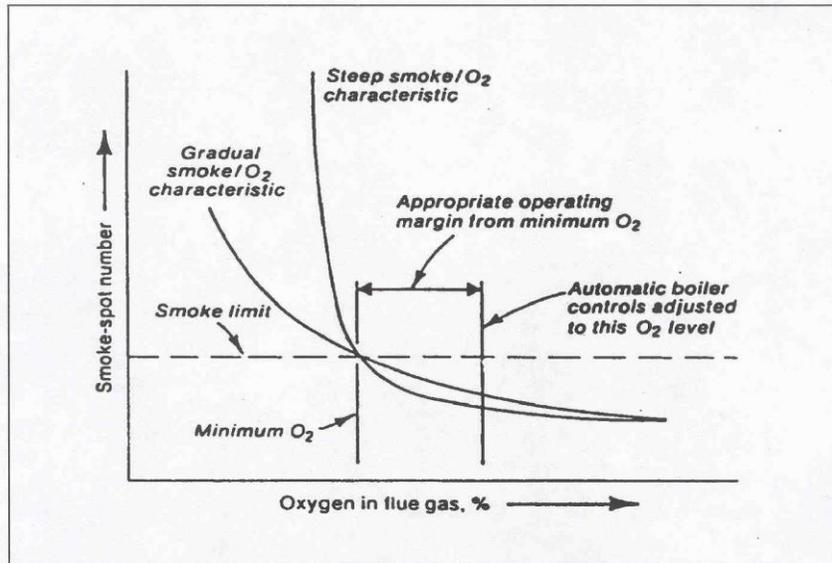


Figure 2 Oxygen/Smoke Characteristic Curve

7. From the curves prepared in Step 6, find the stack gas oxygen levels where the CO emissions or smoke-spot number equal the following values:

<u>Fuel</u>	<u>Measurement</u>	<u>Value</u>
Gaseous	CO Emissions	400 ppm
#1 and #2 oils	smoke-spot number	number 1
#4 oil	smoke-spot number	number 2
#5 oil	smoke-spot number	number 3
Other oils	smoke-spot number	number 4

The above conditions are referred to as the CO or smoke thresholds, or as the minimum excess oxygen level.

Compare this minimum value of excess oxygen to the expected value provided by the combustion unit manufacturer. If the minimum level found is substantially higher than the value provided by the combustion unit manufacturer, burner adjustments can probably be made to improve fuel and air mixing, thereby allowing operation with less air.

8. Add 0.5 to 2.0 percent O<sub>2</sub> to the minimum excess oxygen level found in Step 7 and reset burner controls to operate automatically at this higher stack gas oxygen level. This margin above the minimum oxygen level accounts for fuel variations, variations

- in atmospheric conditions, load changes, and nonrepeatability or play in automatic controls.
9. If the load of the combustion unit varies significantly during normal operation, repeat Steps 1-8 for firing rates that represent the upper and lower limits of the range of the load. Because control adjustments at one firing rate may affect conditions at other firing rates, it may not be possible to establish the optimum excess oxygen level at all firing rates. If this is the case, choose the burner control settings that give best performance over the range of firing rates. If one firing rate predominates, settings should optimize conditions at that rate.
  10. Verify that the new settings can accommodate the sudden load changes that may occur in daily operation without adverse effects. Do this by increasing and decreasing load rapidly while observing the flame and stack. If any of the conditions in Step 5 result, reset the combustion controls to provide a slightly higher level of excess oxygen at the affected firing rates. Next, verify these new settings in a similar fashion. Then make sure that the final control settings are recorded at steady-state operating conditions for future reference.
  11. When the above checks and adjustments have been made, record data and attach combustion analysis data to boiler, steam generator, or heater records indicating name and signature of person, title, and date the tuneup was performed.

**B. Equipment Tuning Procedure for Natural Draft-Fired Boilers, Steam Generators, and Process Heaters.**

Nothing in this Equipment Tuning Procedure shall be construed to require any act or omission that would result in unsafe conditions or would be in violation of any regulation or requirement established by Factory Mutual, Industrial Risk Insurers, National Fire Prevention Association, the California Department of Industrial Relations (Occupational Safety and Health Division), the Federal Occupational Safety and Health Administration, or other relevant codes, regulations, and equipment manufacturers specifications and operating manuals.

Should a different tuning procedure be used, a copy of this procedure should be kept with the unit records for two years and made available to the District personnel on request.

**1. PRELIMINARY ANALYSIS**

**a. CHECK THE OPERATING PRESSURE OR TEMPERATURE.**

Operate the boiler, steam generator, or heater at the lowest acceptable pressure or temperature that will satisfy the load demand. This will minimize heat and radiation losses. Determine the pressure or temperature that will be used as a basis for comparative combustion analysis before and after tuneup.

**b. CHECK OPERATING HOURS.**

Plan the workload so that the boiler, steam generator, or process heater operates only the minimum hours and days necessary to perform the work required. Fewer operating hours will reduce fuel use and emissions. For units requiring a tuneup to comply with the rule, a totalizing non-resettable fuel meter will be required for each fuel used and for each boiler, steam generator, and heater to prove fuel consumption is less than the heat input limit in therms per year specified in the rule.

**c. CHECK AIR SUPPLY.**

Sufficient fresh air supply is essential to ensure optimum combustion and the area of air supply openings must be in compliance with applicable codes and regulations. Air openings must be kept wide open when the burner is firing and clear from restriction to flow.

**d. CHECK VENT.**

Proper venting is essential to assure efficient combustion. Insufficient draft or overdraft promotes hazards and inefficient burning. Check to be sure that vent is in good condition, sized properly and with no obstructions.

**e. COMBUSTION ANALYSIS.**

Perform an "as is" combustion analysis (CO, O<sub>2</sub>, etc.) with a warmed up unit at high and low fire, if possible. In addition to data obtained from combustion analysis, also record the following:

i. Inlet fuel pressure at burner (at high & low fire)

ii. Draft at inlet to draft hood or barometric damper

1) Draft hood: high, medium, and low

2) Barometric Damper: high, medium, and low

iii. Steam pressure, water temperature, or process fluid pressure or temperature entering and leaving the boiler, steam generator, or process heater.

- iv. Unit rate if meter is available.

With above conditions recorded, make the following checks and corrective actions as necessary:

**2. CHECKS & CORRECTIONS**

a. **CHECK BURNER CONDITION.**

Dirty burners or burner orifices will cause boiler, steam generator, or process heater output rate and thermal efficiency to decrease. Clean burners and burner orifices thoroughly. Also, ensure that fuel filters and moisture traps are in place, clean, and operating properly, to prevent plugging of gas orifices. Confirm proper location and orientation of burner diffuser spuds, gas canes, etc. Look for any burned-off or missing burner parts, and replace as needed.

b. **CHECK FOR CLEAN BOILER, STEAM GENERATOR, OR PROCESS HEATER TUBES & HEAT TRANSFER SURFACES.**

External and internal build-up of sediment and scale on the heating surfaces creates an insulating effect that quickly reduces unit efficiency. Excessive fuel cost will result if the unit is not kept clean. Clean tube surfaces, remove scale and soot, assure proper process fluid flow and flue gas flow.

c. **CHECK WATER TREATMENT & BLOWDOWN PROGRAM.**

Soft water and the proper water or process fluid treatment must be uniformly used to minimize scale and corrosion. Timely flushing and periodic blowdown must be employed to eliminate sediment and scale build-up on a boiler, steam generator or process heater.

d. **CHECK FOR STEAM, HOT WATER OR PROCESS FLUID LEAKS**

Repair all leaks immediately since even small high-pressure leaks quickly lead to considerable fuel, water and steam losses. Be sure there are no leaks through the blow-off, drains, safety valve, by-pass lines or at the feed pump, if used.

**3. SAFETY CHECKS**

a. Test primary and secondary low water level controls.

b. Check operating and limit pressure and temperature controls.

c. Check pilot safety shut off operation.

d. Check safety valve pressure and capacity to meet boiler, steam generator or process heater requirements.

- e. Check limit safety control and spill switch.

**4. ADJUSTMENTS**

While taking combustion readings with a warmed up boiler, steam generator, or process heater at high fire perform checks and adjustments as follows:

- a. Adjust unit to fire at rate; record fuel manifold pressure.
- b. Adjust draft and/or fuel pressure to obtain acceptable, clean combustion at both high, medium and low fire. Carbon Monoxide (CO) value should always be below 400 parts per million (PPM) at 3% O<sub>2</sub>. If CO is high make necessary adjustments.

Check to ensure boiler, steam generator, or process heater light offs are smooth and safe. A reduced fuel pressure test at both high and low fire should be conducted in accordance with the manufacturers instructions and maintenance manuals.

- c. Check and adjust operation of modulation controller. Ensure proper, efficient and clean combustion through range of firing rates.

When above adjustments and corrections have been made, record all data.

**5. FINAL TEST**

Perform a final combustion analysis with a warmed up boiler, steam generator, or process heater at high, medium and low fire, whenever possible. In addition to data from combustion analysis, also check and record:

- a. Fuel pressure at burner (High, Medium, and Low).
- b. Draft above draft hood or barometric damper (High, Medium and Low).
- c. Steam pressure or water temperature entering and leaving boiler, steam generator, or process heater.
- d. Unit rate if meter is available.

When the above checks and adjustments have been made, record data and attach combustion analysis data to boiler, steam generator, or process heater records indicating name and signature of person, title, company name, company address and date the tuneup was performed.

## ATTACHMENT I

(Adopted January 9, 1998)-(Amended January 7, 2005)-(Amended May 5, 2006)  
(PAR December 7, 2018)

### **PROPOSED AMENDED RULE 1146.2. EMISSIONS OF OXIDES OF NITROGEN FROM LARGE WATER HEATERS AND SMALL BOILERS AND PROCESS HEATERS**

(a) Purpose and Applicability

The purpose of this rule is to reduce NOx emissions from natural gas-fired water heaters, boilers, and process heaters as defined in this rule. This rule applies to units that have a rated heat input capacity less than or equal to 2,000,000 BTU per hour. Type 1 Units as defined in this rule are typically, but not exclusively, large water heaters or smaller-sized process heaters in the above range. Type 2 Units as defined in this rule are typically, but not exclusively, small boilers or larger-sized process heaters in this range. Beginning, January 1, 2000, the provisions of this rule are applicable to manufacturers, distributors, retailers, refurbishers, installers and operators of new units. Beginning, July 1, 2002, the provisions of this rule are also applicable to operators of existing Type 2 Units.

(b) Definitions

- (1) BEST AVAILABLE RETROFIT CONTROL TECHNOLOGY (BARCT) as defined in the California Health and Safety Code Section 40406.
- (~~4~~2) BOILER OR STEAM GENERATOR means any equipment that is fired with or is designed to be fired with natural gas, used to produce steam or to heat water, and that is not used exclusively to produce electricity for sale. Boiler or Steam Generator does not include any waste heat recovery boiler that is used to recover sensible heat from the exhaust of a combustion turbine or any unfired waste heat recovery boiler that is used to recover sensible heat from the exhaust of any combustion equipment.
- (~~2~~3) BTU means British thermal unit(~~s~~) ~~or units~~.
- (~~3~~4) CERTIFIED RETROFIT KIT means any burner and ancillary controls or blowers that have been demonstrated to comply with the provisions of this rule, on a retrofit basis, on a particular model of unit.
- (~~4~~5) FIRE-TUBE BOILER means a BOILER ~~that passes in which~~ hot gases from a fire box through one or more tubes running through a sealed container of water. The heat of the gases is transferred through the walls of the tubes by thermal conduction, heating the water and ultimately creating

~~steam~~the combustion chamber pass through one or more tubes within the boiler.

- (6) FORMER RECLAIM FACILITY means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX, that has received a final determination notification, and is no longer in the RECLAIM program.
- (57) HEAT INPUT means the chemical heat released due to assumed complete combustion of fuel in a unit, using the higher heating value of the fuel. This does not include the sensible heat of incoming combustion air. ~~to the unit measured as BTU per hour.~~
- (68) HEAT OUTPUT means the enthalpy of the working fluid output of the unit.
- (79) INDEPENDENT TESTING LABORATORY means a testing laboratory that meets the requirements of District Rule 304, subdivision (k) and is approved by the District to conduct certification testing under the Protocol.
- (810) INSTANTANEOUS WATER HEATER means a WATER HEATER with a RATED HEAT INPUT CAPACITY less than or equal to 2,000,000 BTU per hour that heats water only when it flows through a heat exchanger.
- (911) NO<sub>x</sub> EMISSIONS means the sum of nitric~~ogen~~ oxides and nitrogen dioxides emitted in the flue gas, collectively expressed ~~emitted in the flue gas, collectively expressed~~ calculated as nitrogen dioxide.
- (4012) POOL HEATER means a WATER HEATER designed to heat a pool, hot tub or spa.
- (4413) PROCESS HEATER means any equipment that is fired with or is designed to be fired with natural gas and which transfers heat from combustion gases to water or process streams. Process Heater does not include any kiln or oven used for annealing, drying, curing, baking, cooking, calcining, or vitrifying; or any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment.
- (4214) PROTOCOL means South Coast Air Quality Management District Protocol: Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers.
- (15) RECLAIM FACILITY means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.

- (~~13~~16) RATED HEAT INPUT CAPACITY means the gross HEAT INPUT of the combustion device, as supported by required documentation and which shall be specified on a permanent rating plate.
- (~~14~~17) RECREATIONAL VEHICLE means any vehicle used for recreational purposes designed to include a water heater and licensed to be driven or moved on the highways of California.
- (~~15~~18) REFURBISHER means anyone who reconditions a Type 1 Unit or TYPE 2 UNIT and offers the unit for resale, for use in the District.
- (~~16~~19) RESELLER means anyone who sells either retail, wholesale or on an individual basis TYPE 1 UNITS or TYPE 2 UNITS.
- (~~17~~20) RESIDENTIAL means any structure which is designed for and used exclusively as a dwelling for not more than four families, and where such equipment is used by the owner or occupant of such a dwelling.
- (~~18~~21) TANK TYPE WATER HEATER means a WATER HEATER with a RATED HEAT INPUT CAPACITY from 75,000 BTU per hour to 2,000,000 BTU per hour and with an integral closed vessel in which water is heated and stored for use external to the vessel.
- (~~19~~22) THERM means 100,000 BTU.
- (~~20~~23) THERMAL FLUID HEATER means a natural gas fired PROCESS HEATER in which a process stream is heated indirectly by a heated fluid other than water.
- (~~21~~24) TYPE 1 UNIT means any WATER HEATER, BOILER or PROCESS HEATER with a RATED HEAT INPUT CAPACITY less than or equal to 400,000 BTU per hour excluding TANK TYPE WATER HEATERS subject to the limits of District Rule 1121.
- (~~22~~25) TYPE 2 UNIT means any WATER HEATER, BOILER or PROCESS HEATER with a RATED HEAT INPUT CAPACITY greater than 400,000 BTU per hour up to and including 2,000,000 BTU per hour.
- (~~23~~26) UNIT means any BOILER, STEAM GENERATOR, WATER HEATER or PROCESS HEATER as defined in paragraph (b)(~~1~~2), (b)(~~3~~4), (b)(~~4~~5), (b)(~~8~~10), (b)(~~40~~12), (b)(~~44~~13), (b)(~~18~~21), (b)(~~20~~23), (b)(~~21~~24), (b)(~~22~~25) or (b)(~~24~~27).
- (~~24~~27) WATER HEATER means any equipment that is fired with or designed to be fired with natural gas and that is used solely to heat water for use external to the equipment.

## (c) Requirements

- (1) On or after January 1, 2000, no person shall manufacture for use, or offer for sale for use, in the District any new Type 2 Unit, unless the NO<sub>x</sub> emissions level is less than or equal to 30 ppm of NO<sub>x</sub> emissions (at 3% O<sub>2</sub>, dry) or 0.037 pound NO<sub>x</sub> per million BTU of heat input and no more than 400 ppm of carbon monoxide (at 3% O<sub>2</sub>, dry), as certified by the District according to subdivision (d).
- (2) On or after January 1, 2001, no person shall manufacture for use, or offer for sale for use, in the District any new Type 1 Unit, unless the NO<sub>x</sub> emissions level is less than or equal to 40 nanograms of NO<sub>x</sub> (calculated as NO<sub>2</sub>) per joule (93 lb per billion BTU) of heat output or 55 ppm NO<sub>x</sub> emissions (at 3% O<sub>2</sub>, dry), as certified by the District according to subdivision (d).
- (3) Except for units at a RECLAIM or former RECLAIM facility, ~~On~~ on or after July 1, 2002, no person shall operate in the District any unit with a rated heat input capacity greater than 1,000,000 BTU per hour but less than or equal to 2,000,000 BTU per hour manufactured prior to January 1, 1992, which does not meet the emissions limits required by paragraph (c)(1). Alternatively, a unit may be modified or demonstrated to meet the emission limits of paragraph (c)(1) pursuant to the provisions of subdivision (e).
- (4) Except for units at a RECLAIM or former RECLAIM facility, ~~On~~ on or after January 1, 2006, no person shall operate in the District any unit more than 15 years old, based on the original date of manufacture as specified in paragraph (c)(6), with a rated heat input capacity greater than 1,000,000 BTU per hour but less than or equal to 2,000,000 BTU per hour and manufactured on or after January 1, 1992, which does not meet the emissions limits required by paragraph (c)(1). Alternatively, a unit may be modified or demonstrated to meet the emission limits of paragraph (c)(1) pursuant to the provisions of subdivision (e).
- (5) Except for units at a RECLAIM or former RECLAIM facility, ~~On~~ on or after January 1, 2006, no person shall operate in the District any unit more than 15 years old, based on the original date of manufacture as specified in paragraph (c)(6), with a rated heat input capacity greater than 400,000 BTU per hour but less than or equal to 1,000,000 BTU per hour manufactured prior to January 1, 2000, which does not meet the emissions limits required by paragraph (c)(1). Alternatively, a unit may be modified or demonstrated

to meet the emission limits of paragraph (c)(1) pursuant to the provisions of subdivision (e).

- (6) The original date of manufacture shall be determined by:
  - (A) Original manufacturer's identification or rating plate permanently fixed to the equipment. If not available, then;
  - (B) Invoice from manufacturer for purchase of equipment. If not available, then:
  - (C) Unit is deemed to be more than 15 years old.
- (7) On or after January 1, 2010, no person shall manufacture for use or offer for sale for use within the District any Type 2 unit unless the unit is certified pursuant to subdivision (d) to a NO<sub>x</sub> emission level of less than 14 nanograms of NO<sub>x</sub> (calculated as NO<sub>2</sub>) per joule of heat output or less than or equal to 20 ppm of NO<sub>x</sub> emissions (at 3% O<sub>2</sub>, dry).
- (8) On or after January 1, 2012, no person shall manufacture for use or offer for sale for use within the District any Type 1 unit (excluding pool heaters), unless the unit is certified pursuant to subdivision (d) to a NO<sub>x</sub> emission level of less than 14 nanograms of NO<sub>x</sub> (calculated as NO<sub>2</sub>) per joule of heat output or less than or equal to 20 ppm of NO<sub>x</sub> emissions (at 3% O<sub>2</sub>, dry).
- (9) Notwithstanding the exemptions contained in Rule 2001 – Applicability and its accompanying Table 1 – Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NO<sub>x</sub> Emissions If Rule Was Adopted or Amended Prior to October 5, 2018, ~~On~~ or after May 5, 2006, the owner or operator of any Type 2 unit shall perform maintenance in accordance with the manufacturer's schedule and specifications as identified in a manual and other written materials supplied by the manufacturer or distributor. The owner or operator shall maintain on site a copy of the manufacturer's and/or distributor's written instructions and retain a record of the maintenance activity for a period of not less than three years.
- (10) Notwithstanding the exemptions contained in Rule 2001 – Applicability and its accompanying Table 1 – Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NO<sub>x</sub> Emissions If Rule Was Adopted or Amended Prior to October 5, 2018, ~~The~~ owner or operator shall maintain on site a copy of all documents identifying the unit's rated heat input capacity. The rated heat input capacity shall be identified by a manufacturer's or distributor's manual or invoice. If a unit is modified, the

rated heat input capacity shall be calculated pursuant to paragraph (f)(3). The documentation of rated heat input capacity for modified units shall include a description of all modifications, the dates the unit was modified and calculation of rated heat input capacity. All documentation shall be signed by the licensed person modifying the unit.

- (11) Notwithstanding the requirements in paragraph (c)(7), until December 31, 2010, any person may sell, offer for sale, or install any Type 2 units that are manufactured and purchased prior to January 1, 2010 and in compliance with paragraph (c)(1).
- (12) Notwithstanding the requirements in paragraph (c)(8), until December 31, 2012, any person may sell, offer for sale, or install any Type 1 units that are manufactured and purchased prior to January 1, 2012 and in compliance with paragraph (c)(2).
- (13) By January 1, 2022, the Executive Officer shall conduct a technology assessment and report to the Governing Board if the NOx emission limits in subdivision (c) represent BARCT.
  - (A) If the Executive Officer determines that the NOx emission limits specified in paragraph (c)(1) represents BARCT, notwithstanding the exemptions contained in Rule 2001 – Applicability and its accompanying Table 1 – Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NOx Emissions If Rule Was Adopted or Amended Prior to October 5, 2018, the owner or operator of a RECLAIM or former RECLAIM facility with any Type 2 Units shall meet the NOx emission limit specified in paragraph (c)(1) by December 31, 2023. A Type 2 unit may be modified or demonstrated to meet the emission limit of paragraph (c)(1), pursuant to the provisions of subdivision (e). Alternatively, a Type 2 unit may be replaced with a certified unit in compliance with the provisions of paragraph (c)(7).
  - (B) If the technology assessment specified in this paragraph demonstrates that more stringent BARCT requirements are applicable, the Executive Officer shall initiate rule development for the implementation schedule of the more stringent BARCT requirements within six months after the technology assessment.

- (d) Certification
  - (1) The manufacturer shall obtain confirmation from an independent testing laboratory prior to applying for certification that, each unit model or retrofit kit complies with the applicable requirements of subdivision (c). This confirmation shall be based upon emission tests of a randomly selected unit of each model, and the Protocol shall be adhered to during the confirmation testing of all units subject to this rule.
  - (2) When applying for unit(s) certification, the manufacturer shall submit to the Executive Officer the following:
    - (A) A statement that the model is in compliance with subdivision (c). The statement shall be signed and dated, and shall attest to the accuracy of all statements;
    - (B) General Information
      - (i) Name and address of manufacturer,
      - (ii) Brand name, and
      - (iii) Model number, as it appears on the unit rating plate;
    - (C) A description of each model being certified; and
    - (D) A source test report verifying compliance with the emission limits in subdivision (c) for each model to be certified. The source test report shall be prepared by the confirming independent testing laboratory and shall contain all of the elements identified in Section 10 of the Protocol for each unit tested. The source test shall have been conducted no more than ninety (90) days prior to the date of submittal to the Executive Officer.
  - (3) When applying for unit certification, the manufacturer shall submit the items identified in paragraph (d)(2) no more than ninety (90) days after the date of the source test identified in subparagraph (d)(2)(D) and at least 120 days prior to the date of the proposed sale of the units.
  - (4) The Executive Officer shall certify a unit model which complies with the provisions of subdivision (c) and of paragraphs (d)(1), (d)(2), and (d)(3).
  - (5) Certification status shall be valid for three years from the date of approval by the Executive Officer. After the third year, recertification may be required according to the requirements of paragraphs (d)(1) and (d)(2).
- (e) Modification (Retrofit) Provisions and Demonstration of Compliance With Emission Limits.

Any unit, may be modified or demonstrated to meet the requirements of paragraph (c)(1), (c)(2), (c)(3), (c)(4), or (c)(5) provided:

- (1) The unit is certified pursuant to subdivision (d); or
- (2) A certified retrofit kit has been installed; or
- (3) A copy of a source test report conducted by an independent third party, demonstrating the specific unit complies with the emission limits at low and high fire, shall be maintained on-site; and
- (4) The source test report clearly specifies the emissions limit of the unit in parts per million or pounds of NO<sub>x</sub> per million BTU of heat input. The source test report must identify that the source test was conducted pursuant to a District approved protocol; and
- (5) The source test report shall be maintained on-site at the facility where the unit is being operated and made available to the Executive Officer, at all times, upon request, as long as the unit is being operated. The model and serial numbers of the specified unit shall clearly be indicated on the source test report.

(f) Identification of Compliant Units

(1) Newly Manufactured Units

The manufacturer shall display the model number of the unit complying with subdivision (c) on the shipping carton and permanent rating plate. The manufacturer shall also display the certification status on the shipping carton and on the unit.

(2) Certified Retrofit Kits

The manufacturer shall display the model number of the retrofit kit and manufacturer and model of applicable units on the shipping carton and in a plainly visible portion of the retrofit kit.

(3) Modified Units

A unit with a new or modified burner shall display the new rated heat input capacity and certification status on a new permanent rating plate. The gross heat input shall be based on the maximum fuel input corrected for fuel heat content, temperature and pressure.

## (g) Enforcement

The Executive Officer may periodically inspect distributors, retailers, and installers of units located in the District, and conduct such tests as are deemed necessary to ensure compliance with subdivision (c).

## (h) Exemptions

(1) The provisions of this rule shall not apply to:

(A) Units used in recreational vehicles.

(B) Units subject to the limits in District Rule 1121 – Control of Nitrogen Oxides From Residential Type, Natural Gas-fired Water Heaters.

(C) Units at a RECLAIM or former RECLAIM facility subject to a NOx emission limit in a different rule for an industry-specific category defined in Rule 1100 – Implementation Schedule for NOx Facilities.

(D) Units at a municipal sanitation service facility subject to a NOx emission limit in a Regulation XI rule adopted or amended after [date of amendment].

(2) The provisions of paragraphs (c)(3), (c)(4), and (c)(5) shall not apply to:

(A) Any residential unit.

(B) Units with a rated heat input capacity greater than 400,000 BTU per hour, but less than or equal to 2,000,000 BTU per hour that are demonstrated to use less than 9,000 therms during every calendar year. Compliance with the exemption limit shall be demonstrated by a calculation based on the annual fuel consumption recorded by an in line fuel meter or the annual operating hours recorded by a timer and using one of the following methods.

(i) Annual therm usage recorded by fuel meter and corrected to standard pressure; or

(ii) Amount of fuel (i.e., in thousand cubic feet of gas corrected to standard pressure) converted to therms using the higher heating value of the fuel; or

(iii) Annual therm usage calculated by multiplying the number of hours fuel is burned by the rated heat input capacity of the unit converted to therms.

~~(3) — The NOx emission limits of paragraphs (c)(1), (c)(2), (c)(3), (c)(4) and (c)(5) of this rule shall not apply to units located at RECLAIM facilities.~~

~~any RECLAIM or former RECLAIM facility that is subject to a NO<sub>x</sub> emission limit in a different rule for an industry specific category defined in Rule 1100 – Implementation Schedule for NO<sub>x</sub> Facilities.~~

(i) Progress Reports

Any person that manufactures Type 1 units or Type 2 fire tube boilers, steam boilers producing steam pressure greater than 100 pounds per square inch or thermal fluid heaters subject to this rule shall submit to the District a report on progress towards compliance with the emission limits of paragraphs (c)(7) and (c)(8). Progress reports shall include detailed information on all burner and control technologies evaluated and emission tests. The progress reports shall be submitted to the District for the following categories of equipment by the specified date:

- (1) Type 2 fire tube boilers, steam boilers producing steam pressure greater than 100 pounds per square inch and thermal fluid heaters shall be submitted to the District by January 31, 2008.
- (2) Type 1 units shall be submitted to the District by January 31, 2010.

(PR December 7, 2018)

**PROPOSED RULE 1100.                      IMPLEMENTATION SCHEDULE FOR  
NO<sub>x</sub> FACILITIES**

- (a) Purpose  
The purpose of this rule is to establish the implementation schedule for Regulation XX NO<sub>x</sub> RECLAIM facilities that are transitioning to a command-and-control regulatory structure.
- (b) Applicability  
This rule applies to any owner or operator of a RECLAIM or former RECLAIM facility that owns or operates equipment that meets the applicability provisions specified in:
- (1) Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; or
  - (2) Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters.
- (c) Definitions
- (1) ANNUAL HEAT INPUT means the total heat input to a unit during a calendar year.
  - (~~2~~) FORMER RECLAIM FACILITY means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX, that has received a final determination notification, and is no longer in the RECLAIM program.
  - (~~3~~) HEAT INPUT means the chemical heat released due to assumed complete combustion of fuel in a unit, using the higher heating value of the fuel. This does not include the sensible heat of incoming combustion air.
  - (~~4~~) INDUSTRY-SPECIFIC CATEGORY means RECLAIM or former RECLAIM facilities subject to NO<sub>x</sub> emission limits in a rule adopted on or after November 2, 2018 for refineries or electricity generating facilities.
  - (~~5~~) NO<sub>x</sub> EMISSIONS means the sum of nitric oxides and nitrogen dioxides emitted, calculated as nitrogen dioxide.
  - (~~6~~) RATED HEAT INPUT CAPACITY means the heat input capacity as specified by the permit issued by the Executive Officer, or if not specified on the permit, as specified on the nameplate of the combustion unit. If the combustion unit

has been altered or modified such that its maximum heat input is different than the heat input capacity specified on the nameplate, the new maximum heat input shall be considered as the rated heat input capacity.

- (67) RECLAIM FACILITY means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.
- (78) RULE 1146 UNIT means any boiler, steam generator, water heater, or process heater subject to Rule 1146 with a rated heat input capacity that is equal to or greater than 5 million Btu per hour, excluding units specified in Rule 1146 exemptions.
- (89) RULE 1146.1 UNIT means any boiler, steam generator, or process heater subject to Rule 1146.1 with a rated heat input capacity that is greater than 2 million Btu per hour and less than 5 million Btu per hour, excluding units specified in Rule 1146.1 exemptions.
- (910) TITLE V FACILITY means any facility that meets the criteria set forth in Rule 3001 - Applicability.
- (d) Rule 1146 and Rule 1146.1 Implementation Schedule
- (1) An owner or operator of a RECLAIM or former RECLAIM facility with any Rule 1146 or Rule 1146.1 unit shall:
    - (A) On or before [*12 months after date of adoption*], submit complete SCAQMD permit applications for any Rule 1146 and Rule 1146.1 units that currently do not meet the applicable NOx concentration limit specified in paragraph (d)(3);
    - (B) On or before January 1, 2021 meet the applicable NOx concentration limit for a minimum of 75% of the cumulative total rated heat input capacity of all Rule 1146 and Rule 1146.1 units at the facility; and
    - (C) On or before January 1, 2022 meet the applicable NOx concentration limit of 100% of Rule 1146 and Rule 1146.1 units at the facility.
  - (2) An owner or operator that elects to replace an existing Rule 1146 or Rule 1146.1 unit at a RECLAIM or former RECLAIM facility with a new unit may use the rated heat input capacity of the unit being replaced to meet the required percentage of the cumulative total rated heat input capacity for all Rule 1146 and Rule 1146.1 units at the facility specified under subparagraphs (d)(1)(B) and (d)(1)(C) provided the owner or operator:

- (A) On or before [*12 months after date of adoption*], submits complete SCAQMD permit applications for any applicable new Rule 1146 and Rule 1146.1 units, as well as accepts a permit condition that identifies which unit(s) will be replaced and no longer operated when the new units are installed or after January 1, 2023, whichever is earlier; and
  - (B) Replaces the existing unit on or before January 1, 2023.
- (3) The applicable NOx concentration limits specified in subparagraphs (d)(1)(B) and (d)(1)(C) are as follows:
- (A) Rule 1146 units shall meet the NOx concentration limit for the category of equipment specified in Rule 1146, Table 1146-1 – NOx Emission Limits and Compliance Schedule; and
  - (B) Rule 1146 units that meet the applicability provisions specified in Rule 1146 paragraph (c)(2) shall meet the ammonia emission limit specified in Rule 1146 paragraph (c)(2); and
  - (C) Rule 1146.1 units shall meet the NOx concentration limit for the category of equipment specified in Rule 1146.1, Table 1146.1-1 – NOx Emission Limits and Compliance Schedule
- (4) In lieu of complying with the applicable emission limits specified in paragraph (d)(3), the owner or operator of the following unit(s) in operation prior to [*12 months after date of adoption*] with an annual heat input less than or equal to as specified below, shall retain and comply with the unit's NOx emission limit and source testing requirements specified in the SCAQMD Permit to Operate as of [*date of adoption*].
- (A) 90,000 therms per year and complying with the requirements specified in Rule 1146 paragraph (c)(5); or
  - (B) 18,000 therms per year and complying with the requirements specified in Rule 1146.1 paragraph (c)(4).
- (5) Notwithstanding paragraph (d)(1), an owner or operator of a RECLAIM or former RECLAIM facility that has installed, modified, or has been issued a SCAQMD Permit to Construct or Permit to Operate for the following Rule 1146 or Rule 1146.1 units prior to [*date of adoption*] shall meet the NOx emission limit specified in paragraph (d)(3) by [*15 years after the date of adoption*] or when 50 percent or more of the unit's burners are replaced, whichever is earlier:
- ~~(A) Units subject to Rule 1146 subparagraph (c)(1)(F) complying with a previous NOx emission limit that is less than or equal to 7 ppm; or~~

- (A) Fire-tube boilers, as defined in Rule 1146 paragraph (b)(7), subject to Rule 1146 subparagraph (c)(1)(G) or (c)(1)(J) complying with a previous NOx emission limit that is less than or equal to 9 ppm and greater than 5 ppm; or
- (B) Units subject to Rule 1146 subparagraph ~~(c)(1)(G), (c)(1)(H), (c)(1)(J),~~ or (c)(1)(K) complying with a previous NOx emission limit that is less than or equal to 12 ppm and greater than 5 ppm; or
- (C) Units subject to Rule 1146.1 subparagraph (c)(1)(E) ~~or (c)(1)(F)~~ complying with a previous NOx emission limit that is less than or equal to 12 ppm and greater than 9 ppm; or
- (D) Fire-tube boilers, as defined in Rule 1146.1 paragraph (b)(7), fired on natural gas subject to Rule 1146.1 subparagraph (c)(1)(F) complying with a previous NOx emission limit that is less than or equal to 9 ppm; or
- ~~(E)~~ Thermal fluid heaters, as defined in Rule 1146 paragraph (b)(26), subject to Rule 1146 subparagraph (c)(1)(L) complying with a previous NOx emission limit that is less than or equal to 20 ppm; or
- ~~(F)~~ Thermal fluid heaters, as defined in Rule 1146.1 paragraph (b)(22), subject to Rule 1146.1 subparagraph (c)(1)(G) complying with a previous NOx emission limit that is less than or equal to 20 ppm.
- (6) Notwithstanding paragraph (d)(1), by [15 years after the date of adoption] or when 50 percent or more of the unit's burners are replaced, whichever is earlier, the owner or operator that has installed, modified, or has been issued a SCAQMD Permit to Construct or Permit to Operate prior to [date of adoption] for the following units shall not operate in a manner that discharges NOx emissions (reference at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) in excess of:
  - (A) 7 ppm for Rule 1146 Group I units operating without air pollution control equipment for the after treatment of the emissions in the exhaust complying with a previous NOx emission limit of 7 ppm or less and greater than 5 ppm; or
  - (B) 9 ppm for Rule 1146 Group III or Rule 1146.1 natural gas fired units complying with a previous NOx emission limit of 12 ppm or less and greater than 9 ppm.

- (7) The owner or operator of any Rule 1146 Group I unit complying with the requirements specified in subparagraph (d)(6)(A) that exceeds 300,000 therms of annual heat input from all fuels used shall:

  - (A) within 4 months after exceeding 300,000 therms of annual heat input, submit complete SCAQMD permit applications for the unit that does not meet the applicable NO<sub>x</sub> concentration limit specified in paragraph (d)(3); and
  - (B) within 18 months after exceeding 300,000 therms of annual heat input, demonstrate and maintain compliance with the applicable NO<sub>x</sub> concentration limit specified in paragraph (d)(3) for the life of the unit.
- (68) Any unit at a RECLAIM or former RECLAIM facility that is subject to a NO<sub>x</sub> emission limit in a different rule for an industry-specific category is not subject to the requirements contained in this subdivision.
- (e) The applicable monitoring, reporting, and recordkeeping requirements are as follows:

  - (1) For Title V facilities, an owner or operator of a RECLAIM facility shall comply with the monitoring, reporting, and recordkeeping requirements specified in Rule 2012.
  - (2) Except for Title V facilities, the owner or operator of a RECLAIM facility that becomes a former RECLAIM facility shall comply with the monitoring, reporting, and recordkeeping requirements in the applicable rule(s) as specified in subdivision (b) upon the date the facility becomes a former RECLAIM facility.

ATTACHMENT K

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**Final Staff Report**

**Proposed Amended Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters;**

**Proposed Amended Rule 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters;**

**Proposed Amended Rule 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and**

**Proposed Rule 1100 - Implementation Schedule for NO<sub>x</sub> Facilities**

**DECEMBER 2018**

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## EXECUTIVE SUMMARY

Control Measure CMB-05 of the Final 2016 Air Quality Management Plan (AQMP) included a five tons per day NO<sub>x</sub> emission reduction as soon as feasible but no later than 2025, and to transition the Regional Clean Air Incentives Market (RECLAIM) program to a command-and-control regulatory structure requiring Best Available Retrofit Control Technology (BARCT) as soon as practicable. California State Assembly Bill 617, approved by the Governor on July 26, 2017, requires Air Districts to develop, by January 1, 2019, an expedited schedule for the implementation of BARCT no later than December 31, 2023 for facilities that are in the state greenhouse gas cap and trade program.

The RECLAIM program, which is under Regulation XX, was adopted in October 1993 and is a market-based emissions trading program designed to reduce NO<sub>x</sub> and SO<sub>x</sub> emissions. Proposed Amended Rules 1146, 1146.1 and 1146.2 update NO<sub>x</sub> emission limits for boilers, heaters, and steam generators. The revised NO<sub>x</sub> emission limits represent BARCT and apply to RECLAIM and non-RECLAIM facilities. Proposed Rule 1100 – Implementation Schedule for NO<sub>x</sub> Facilities (PR 1100) establishes the compliance schedule for facilities exiting the RECLAIM program. The compliance deadlines for Proposed Amended Rules 1146 and 1146.1 were established taking into consideration equipment size range, fuel type, the number of units at a facility, and facilities with multiple units subject to multiple source-specific command-and-control rules. PR 1100 allows facilities with Rule 1146/1146.1 units until January 1, 2022 to retrofit all existing units and until January 1, 2023 to replace any existing units. Proposed Amended Rule 1146.2 applies to units between 400,000 to 2 million British thermal units per hour (MMBtu/hr) and requires units to comply with the 30 ppm limit by December 31, 2023, if a technology assessment (to be completed by January 1, 2022) determines that the NO<sub>x</sub> emission limits specified in Rule 1146.2 still represent BARCT.

Of the 103 RECLAIM facilities that will be affected by the proposed amendments, 65 facilities would be required to retrofit the non-compliant units by the compliance dates specified in PR 1100, while ~~2120~~ facilities that have units that meet the applicable RECLAIM BARCT<sup>1</sup> limit of 12 ppm would not need to meet the lower NO<sub>x</sub> emission limit under Proposed Amended Rules 1146 and 1146.1 until the unit's burner replacement or 15 years after rule adoption, whichever occurs earlier<sup>2</sup>. The permitted Rule 1146/1146.1/1146.2 units in the remaining ~~1748~~ facilities meet the proposed NO<sub>x</sub> emission limits, but could be impacted by the changes in Monitoring, Reporting and Recordkeeping requirements as they transition from the RECLAIM program into a command-and-control regulatory structure. For non-RECLAIM, 824 facilities could potentially be impacted by the proposed amendments.

The cost-effectiveness for Proposed Amended Rules 1146 and 1146.1 ranged from ~~less than \$11,000-\$17,000~~ to \$36,000 per ton of NO<sub>x</sub> reduced varying depending on the equipment size, type of retrofits, and the unit's operation and load. The cost-effectiveness for Proposed Amended Rule 1146.2 is less than \$10,000 per ton of NO<sub>x</sub> reduced for Rule 1146.2 units at RECLAIM or former RECLAIM facilities to meet the current rule limit. ~~The proposed rule amendments are estimated to reduce 0.27 tons per day of NO<sub>x</sub> from RECLAIM equipment by January 1, 2023. For non-RECLAIM facilities, the cost-effectiveness is below \$11,000 per ton of NO<sub>x</sub> reduced f~~For units that would be required to demonstrate compliance upon burner replacement or 15 years after

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<sup>1</sup> RECLAIM BARCT as stated in Rule 2002 Table 3

<sup>2</sup> The count of RECLAIM facilities with units meeting the applicable RECLAIM BARCT limit of 12 ppm, also includes facilities with thermal fluid heaters currently meeting a NO<sub>x</sub> emission limit of 20 ppm or less.

rule adoption, whichever occurs earlier, the cost-effectiveness ranges from \$17,000 to \$31,000 per ton of NO<sub>x</sub> reduced. For thermal fluid heaters, the cost-effectiveness is approximately \$36,000 per ton of NO<sub>x</sub> reduced. For non-RECLAIM facilities, the cost-effectiveness was assumed to be the same as the one for RECLAIM facilities, which varies from \$17,000 to \$36,000 per ton of NO<sub>x</sub> reduced. The proposed rule amendments are estimated to reduce 0.27 tons per day of NO<sub>x</sub> by January 1, 2023 and an estimated additional reduction of 0.04 tons per day of NO<sub>x</sub> by 15 years after rule amendment.

## **CHAPTER 1: BACKGROUND**

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**INTRODUCTION**

**REGULATORY HISTORY**

**AFFECTED INDUSTRIES**

**PUBLIC PROCESS**

## INTRODUCTION

The Regulation XX - Regional Clean Air Incentives Market (RECLAIM) was adopted in October 1993. The purpose of RECLAIM is to reduce NO<sub>x</sub> and SO<sub>x</sub> emissions through a market-based approach. The program replaced a series of existing and future command-and-control rules and was designed to provide facilities with the flexibility to seek the most cost-effective solution to reduce their emissions. It also was designed to provide equivalent emission reductions, in the aggregate, for the facilities in the program compared to what would occur under a command-and-control approach. Regulation XX includes a series of rules that specify the applicability and procedures for determining NO<sub>x</sub> and SO<sub>x</sub> facility emissions allocations, program requirements, as well as monitoring, reporting, and recordkeeping requirements.

Regulation XX – RECLAIM has been amended several times to reflect BARCT on a programmatic basis and was most recently amended on December 4, 2015 to achieve BARCT equivalent programmatic NO<sub>x</sub> emission reductions through an overall reduction in RECLAIM trading credits (RTCs) of 12 tons per day from compliance years 2016 through 2022. RECLAIM was amended on October 7, 2016 to address RTCs from facility shutdowns. In January 2018, Rules 2001 and 2002 were amended to commence the initial steps to transition RECLAIM facilities to a command-and-control regulatory approach. The most recent amendments to RECLAIM was on October 5, 2018, when Rules 2001 and 2002 were amended to provide existing facilities a pathway to voluntarily exit the RECLAIM program and add provisions to allow facilities that are notified to exit RECLAIM, the option to stay in RECLAIM until New Source Review issues are resolved.

Control Measure CMB-05 of the Final 2016 Air Quality Management Plan (AQMP) included a five tons per day NO<sub>x</sub> emission reductions as soon as feasible but no later than 2025, and to transition the RECLAIM program to a command-and-control regulatory structure requiring Best Available Retrofit Control Technology (BARCT) as soon as practicable. Consistent with the adoption resolution for the 2016 AQMP, staff is providing quarterly updates to the Stationary Source Committee on the status of the transition of RECLAIM facilities to command-and-control with quarterly reports provided on October 20, 2017, February 16, 2018, and June 15, 2018.

On July 26, 2017 California State Assembly Bill (AB) 617 was approved by the Governor, which addresses non-vehicular and vehicular air pollution (criteria pollutants and toxic air contaminants). It is a companion legislation to AB 398, which was also approved, and extends California's cap-and-trade program for reducing greenhouse gas emissions from stationary sources. RECLAIM facilities that are in the cap-and-trade program are subject to the requirements of AB 617. Among the requirements of this bill is an expedited schedule for implementing BARCT for cap-and-trade facilities. Air Districts are to develop by January 1, 2019 an expedited schedule for the implementation of BARCT no later than December 31, 2023 with emphasis on the largest emission sources first.

In 2015, staff conducted a programmatic analysis of equipment at each RECLAIM facility to determine if there are appropriate and up to date BARCT NO<sub>x</sub> limits within existing command-and-control rules. It was determined that existing command-and-control rules would need to be adopted and/or amended to provide implementation timeframes for achieving BARCT compliance limits for certain RECLAIM equipment and to update emission limits to reflect current BARCT in some existing rules.

Proposed Amended Rules (PARs) 1146, 1146.1 and 1146.2 update NO<sub>x</sub> emission limits for boilers, heaters, and steam generators applicable to these rules. The revised NO<sub>x</sub> emission limits represent

BARCT and apply to RECLAIM and non-RECLAIM facilities. Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters applies to existing boilers, steam generators, and process heaters with maximum rated heat input capacities greater than or equal to 5 million British thermal units per hour (MMBtu/hr). Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters applies to boilers, steam generators, and process heaters with maximum rated heat input capacities greater than 2 MMBtu/hr and less than 5 MMBtu/hr. Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters establishes NO<sub>x</sub> emission limits for large water heaters, boilers and process heaters less than or equal to 2 MMBtu/hr. Table 1 summarizes the applicability and existing NO<sub>x</sub> emission limits in Rules 1146, 1146.1 and 1146.2.

Proposed Rule 1100 - Implementation Schedule for NO<sub>x</sub> Facilities (PR 1100) establishes the compliance schedule for facilities exiting the RECLAIM program. The compliance timeframe for PARs 1146 and 1146.1 was established taking into consideration equipment size range and the number of units at each facility. Also taken into consideration within the compliance schedule are facilities with multiple units subject to multiple source-specific landing rules. PR 1100 allows facilities with Rule 1146 and/or Rule 1146.1 units until January 1, 2022 to retrofit all existing units and until January 1, 2023 to replace any existing units, if they elect to replace their equipment instead.

**Table 1**  
**Applicability and Existing NO<sub>x</sub> Emission Limits of Rules 1146, 1146.1, and 1146.2**

Rule	Applicability	Size	Summary of NO <sub>x</sub> Emission Limits
<b>Rule 1146</b>	Boilers, steam generators, and process heaters	≥ 5 MMBtu/hr	<ul style="list-style-type: none"> <li>• 5 ppm for units burning natural gas ≥ 75 MMBtu/hr;</li> <li>• 9 ppm for units burning gaseous fuels 5 to 75 MMBtu/hr</li> <li>• 30 ppm for thermal fluid heaters burning gaseous fuels</li> <li>• 40 ppm for nongaseous fuels</li> <li>• 12 ppm for atmospheric units</li> <li>• 15 ppm for units burning digester gas</li> <li>• 25 ppm for units burning landfill gas</li> </ul>
<b>Rule 1146.1</b>	Boilers, steam generators, and process heaters	>2 and <5 MMBtu/hr	<ul style="list-style-type: none"> <li>• 9 ppm for units burning natural gas</li> <li>• 30 ppm for thermal fluid heaters burning gaseous fuels</li> <li>• 12 ppm for atmospheric units</li> <li>• 15 ppm for units burning digester gas</li> <li>• 25 ppm for units burning landfill gas</li> </ul>
<b>Rule 1146.2</b>	Natural gas-fired water heaters, boilers, and process heaters	≤ 2 MMBtu/hr	<ul style="list-style-type: none"> <li>• Manufacturer limit of 20 ppm;</li> <li>• End-user limit of 30 ppm</li> </ul>

## REGULATORY HISTORY

The following section provides an overview of the regulatory history for Rules 1146, 1146.1, and 1146.2. All three rules currently exempt RECLAIM facilities.

### Rules 1146 and 1146.1

Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters was adopted September 1988 and establishes NOx limits for boilers, steam generators, and process heaters greater than or equal to 5 MMBtu/hour.

Rule 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters was adopted October 1990 and establishes NOx limits for boilers, steam generators and process heaters greater than 2 MMBtu/hour and less than 5 MMBtu/hour. In September 2008, Rules 1146 and 1146.1 were amended to reduce the allowable NOx emission limits from boilers based on rated heat input capacity. Rule 1146 establishes three groups of units based on the size or type of fuel used. The three Rule 1146 groups are as follows:

- Group I units include any unit burning natural gas, excluding digester and landfill gases, with a rated heat input greater than or equal to 75 MMBtu/hr, excluding thermal fluid heaters.
- Group II units include any unit burning gaseous fuels, excluding digester and landfill gases, with a rated heat input less than 75 MMBtu/hr down to and including 20 MMBtu/hr, excluding thermal fluid heaters.
- Group III units include any unit burning gaseous fuels, excluding digester and landfill gases, and thermal fluid heaters<sup>3</sup> with a rated heat input less than 20 MMBtu/hr down to and including 5 MMBtu/hr, and all units operated at schools and universities greater than or equal to 5 MMBtu/hr.

Under the 2008 amendment Rule 1146 Group I units were required to meet a lower emission limit of 5 ppm. Rule 1146 Group II and III units and Rule 1146.1 units, which represented approximately 2,100 units, were required to comply with the 9 ppm (0.011 lbs/10<sup>6</sup> Btu) NOx limit by January 1, 2012 through January 1, 2015. Amendments of Rule 1146 and 1146.1 also required equipment fired by landfill or digester gas to meet emissions limits of 25 ppm and 15 ppm, respectively, by January 1, 2015. The applicable compliance date depended on the unit's rated heat capacity, the number of units at the facility, and the type of service (e.g., supplying steam at a university). Both Rules 1146 and 1146.1 were amended in November 2013 to address an issue related to rule enforceability raised by EPA.

### Rule 1146.2

Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers was adopted on January 9, 1998. Rule 1146.2 establishes NOx emission limits for large water heaters and small boilers with a rating of less than 2 MMBtu/hr. SCAQMD has developed a certification program (Rule 1146.2 Certification Program) through which manufacturers submit documentation for new units, including source test reports, to SCAQMD to demonstrate compliance with Rule 1146.2 emission limits. Rule 1146.2 does not regulate residential gas-fired tank type water heaters less than 75,000 Btu/hr heat input which are regulated under SCAQMD Rule 1121. Units used in

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<sup>3</sup> A Thermal fluid heater means a process heater in which a process is heated indirectly by a heated fluid other than water.

recreational vehicles, and mobile homes are also exempt from the requirements of Rule 1146.2. The 1998 adoption of Rule 1146.2 established NO<sub>x</sub> emission limits for large water heaters and small boilers ranging from 75,000 Btu/hr up to and including 2 MMBtu/hr. New water heaters or boilers greater than 0.4 MMBtu/hr and less than or equal to 2 MMBtu/hr (Type 2) were required to meet an emission limit of 30 ppm of NO<sub>x</sub> and 400 ppm of CO. New units from 75,000 Btu/hr to 0.4 MMBtu/hr (Type 1) were required to meet a NO<sub>x</sub> emission limit of 55 ppm or 40 ng/Joule of heat output. Compliance dates for emission limitations were based on the date of equipment manufacture.

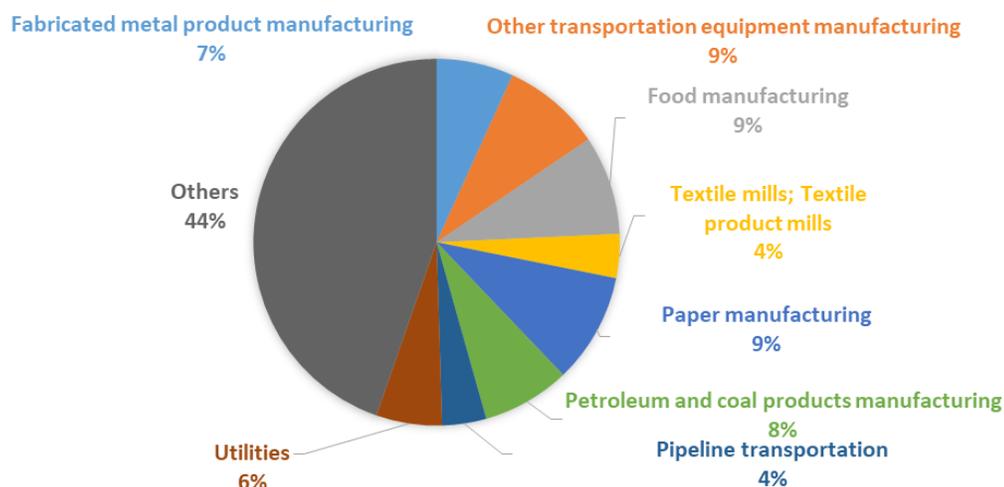
Rule 1146.2 was amended by the SCAQMD Governing Board at the January 7, 2005 hearing. Under the amended rule, compliance for existing in-use equipment was implemented as the unit reached 15 years of life. Lower emissions limits for new equipment were not considered for the January 7, 2005 rule amendment because additional time was needed to evaluate low NO<sub>x</sub> technologies and their cost-effectiveness.

Rule 1146.2 was amended again in May 2006 to address NO<sub>x</sub> emission limits for new equipment. With the exception for small pool heaters rated less than or equal to 400,000 Btu/hr, new manufactured units greater than 400,000 Btu/hr must meet a NO<sub>x</sub> emission limit of 20 ppm starting January 1, 2010. Most new manufactured units less than or equal to 400,000 Btu/hr must meet a 20 ppm (less than 14 ng/Joule heat output) NO<sub>x</sub> limit by January 1, 2012. Pool heaters rated less than or equal to 400,000 Btu/hr, will continue to meet the existing limit of 55 ppm (or 40 ng/Joule heat output). The cost-effectiveness for meeting a 20 ppm NO<sub>x</sub> limit averaged \$2,400 per ton for Type 2 units and up to \$16,000 per ton for Type 1 units less than or equal to 400,000 Btu/hr.

## **AFFECTED INDUSTRIES**

PARs 1146, 1146.1, and 1146.2 affect facilities in the NO<sub>x</sub> RECLAIM program as well as facilities outside of the RECLAIM program with boilers, heaters, and process heaters that are greater than 75,000 Btu/hr. PARs 1146 and 1146.1 will require facilities to comply with lower emissions limits for applicable units located in the South Coast Air Basin and Coachella Valley. Rule 1146.2 does not have new requirements for non-RECLAIM facilities so these facilities are not impacted by the proposed amendments. In addition, PARs 1146, 1146.1, and 1146.2 exempt units that are subject to an industry-specific rule that includes a NO<sub>x</sub> emission limit for the applicable units in Rules 1146, 1146.1, and 1146.2. For example, boilers that are subject to an emission limit in Rule 1109.1 (Refinery Equipment) and Rule 1135 (Emissions of Oxides of Nitrogen from Electricity Generating Facilities) are regulated under the respective rules, and are exempt from PAR 1146 series. On the other hand, non-electricity generating boilers are not regulated in Rule 1135, and they will be subject to PAR 1146 series. As a result, power generating boilers at electricity generating facilities and boilers at refineries that are in RECLAIM are not included in the analyses presented in this staff report.

Out of the 259 facilities currently in the NO<sub>x</sub> RECLAIM program as of August 2018, approximately 103 facilities would be affected by PARs 1146, 1146.1, and 1146.2 and PR 1100. For non-RECLAIM, 824 facilities could potentially be impacted by the proposed amendments.



**Figure 1**  
**Industries Affected by PARs 1146 Series**

When grouped according to the North American Industry Classification System (NAICS) (Figure 1), transportation equipment manufacturing, paper manufacturing, and food manufacturing are the largest contributors each accounting for 9% of the total, followed by petroleum and coal products manufacturing, fabricated metal product manufacturing, utilities, textile product mills, and pipeline transportation. Each single remaining group comprises less than 4% of the total. Remaining NAICS groups include, but are not limited to, chemical manufacturing, primary metal manufacturing, computer and electronic product manufacturing, and oil and gas extraction.

From the 2008 Rule 1146 staff report, the largest affected industry sector in non-RECLAIM was the health services industry which made up 19% for all Rule 1146 units when grouped according to Standard Industrial Classification (SIC). Next, education services and food industry sectors each accounted for 11% of the total units followed by chemicals and allied products, nonclassifiable establishments, and personal services with 4% of the total units each. Hotels and other lodging places and then executive, legislative, and general government each contributed about 3% of the total units. Remaining SIC groups contributed to less than 3% each and include, but are not limited to, textile mill products; justice, public order, and safety; fabricated metal product; and real estate. Similar distributions were outlined in the 2008 Rule 1146.1 staff report for respective units. The total size of non-RECLAIM natural gas fired equipment subject to Rule 1146 and 1146.1 is estimated to be about 2,3701,807 units as of November 2018.

In the non-RECLAIM universe, there are approximately 20 digester gas fired units and three landfill gas fired units currently operating in the district. Majority of these units are operated by sewage treatment facilities and landfills that offer essential public services to various municipalities. In acknowledgement of the unique challenges faced by the industry, these units will be addressed in a separate sector specific command-and-control rule to be developed, and will not be subject to the proposed emission limits in the PAR 1146 and 1146.1.

## **PUBLIC PROCESS**

Development of PARs 1146, 1146.1, and 1146.2 and PR 1100 was conducted through a public process. SCAQMD staff has held seven working group meetings at SCAQMD Headquarters in Diamond Bar on November 30, 2017, January 16, 2018, March 7, 2018, April 12, 2018, August

2, 2018, August 29, 2018, and October 16, 2018. The Working Group is composed of representatives from the manufacturers, trade organizations, permit stakeholders, businesses, environmental groups, public agencies, consultants, and other interested parties. The purpose of the working group meetings are to discuss proposed concepts and to work through the details of staff's proposal. A Public Workshop was held on February 14, 2018. A California Environmental Quality Act (CEQA) scoping meeting was held concurrently with the Public Workshop. Based on additional BARCT analysis, another Public Workshop was held on September 20, 2018.

In addition to the PARs 1146, 1146.1, and 1146.2 and PR 1100 Working Group Meetings, staff has also discussed concepts for the proposed rules at the RECLAIM Working Group meetings on July 13, 2017, September 14, 2017, October 12, 2017, January 11, 2018, February 8, 2018, March 8, 2018, April 12, 2018, May 9, 2018, June 14, 2018, July 12, 2018, and September 13, 2018. On April 20, 2018 and October 19, 2018, the proposed amendments to Rule 1146 series and PR 1100 and the associated impacts were presented to the Stationary Source Committee.

Staff has also had numerous individual meetings with stakeholders who will be impacted by this rulemaking.

## **CHAPTER 2: CONTROL TECHNOLOGIES**

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**BARCT ASSESSMENT FOR RULE 1146 AND 1146.1 EQUIPMENT  
CONTROL TECHNOLOGY ASSESSMENT FOR RULE 1146.2  
EQUIPMENT**

## **BARCT ASSESSMENT FOR RULE 1146 AND 1146.1 EQUIPMENT**

The California Clean Air Act (CCAA) requires districts to achieve and maintain state standards by the earliest practicable date, and for extreme non-attainment areas, to include all feasible measures. [Health and Safety (H&S) Code §§40913, 40914, and 40920.5]. The required use of *Best Available Retrofit Control Technology* (BARCT) for existing stationary sources is one of the specified feasible measures. Health & Safety Code §40406 defines BARCT as follows:

*Best Available Retrofit Control Technology means an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.*

The BARCT technology assessment for the source categories subject to the proposed amended rules included review of commercially available NO<sub>x</sub> emission reduction technologies for boilers, steam generators, and process heaters and an evaluation of applicable NO<sub>x</sub> concentration limits established under existing rules and regulations at other air districts. A summary of the analysis is provided below.

### **Assessment of SCAQMD Regulatory Requirements**

As part of the BARCT assessment, staff reviewed SCAQMD Rules 1146 and 1146.1 which regulates emissions of oxides of nitrogen from industrial, institutional, and commercial boilers, steam generators and process heaters. Rule 1146 regulates units rated to greater than or equal to 5 MMBtu/hr and Rule 1146.1 regulates units rated to greater than equal to 2 MMBtu/hr and less than 5 MMBtu/hr. Current rule emission limits were adopted on September 5, 2008. All parts per million emission limits specified in rules are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.

Under Rule 1146 boilers, steam generators and process heaters fueled by gaseous fuels, excluding digester and landfill gases, are segregated into three different size groups: Group I ( $\geq 75$  MMBtu/hr), Group II ( $\geq 20$  and  $< 75$  MMBtu/hr) and Group III ( $\geq 5$  and  $< 20$  MMBtu/hr). Group I units are limited to 5 ppm NO<sub>x</sub>, Group II and III are limited to 9 ppm NO<sub>x</sub>. Units that are fueled with non-gaseous fuels are subject to emission limit of 40 ppm.

Rule 1146.1 limit boilers and process heaters fueled by natural gas to 9 ppm NO<sub>x</sub>. Both Rules 1146 and 1146.1 includes a limit of 12 ppm NO<sub>x</sub> for atmospheric units<sup>4</sup> and a limit of 30 ppm for thermal fluid heaters. All units subject to Rule 1146 and 1146.1 fired by landfill gases are required to meet NO<sub>x</sub> emissions limits of 25 ppm by January 1, 2015, and units fueled by digester gas are required to meet 15 ppm by January 1, 2015.

### **Other Regulatory Requirements**

#### Analysis of NO<sub>x</sub> Concentration Limits for Rules 1146 and 1146.1 Equipment at Other Air Districts

Staff reviewed other air district's requirements for Rule 1146 and 1146.1 equipment to identify rules and regulations with lower emission limits or limits representing improvements in pollution control technologies. A comparison of the requirements in the PAR 1146 series with the analogous rules adopted by four other air districts in California was made. The four air districts were San

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<sup>4</sup> An atmospheric boiler is defined as a natural gas fired unit with a non-sealed combustion chamber in which natural draft is used to exhaust combustion gases.

Joaquin Valley, Sacramento Metropolitan, Ventura, and Bay Area. They are selected based on the severity of their nonattainment status for ozone and PM<sub>2.5</sub> federal air quality standards.

### **SJVAPCD Rule 4306, SJVAPCD Rule 4307, and SJVAPCD Rule 4320**

SJVAPCD Rules 4306 Boilers, Steam Generators, and Process Heaters – Phase 3 and 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr apply to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input greater than 5 MMBtu/hr. SJVAPCD Rule 4307 Boilers, Steam Generators, and Process Heaters – 2.0 MMBtu/hr to 5.0 MMBtu/hr apply to any gaseous fuel or liquid fuel fired boiler, steam generators, and process heaters with a total heat input greater than or equal to 2.0 MMBtu/hr and less than or equal to 5.0 MMBtu/hr. SJVAPCD Rule 4307 limits natural gas fired non-atmospheric units to 9 ppm, natural gas fired atmospheric units to 12 ppm, and gaseous fuel-fired units to 30 ppm. SJVAPCD Rule 4320 Advanced Emissions Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr limits NO<sub>x</sub> emissions from units with greater than a 20 MMBtu/hr input rating to 7 ppm (or 5 ppm for compliance at a later date). For units with greater than a 5 MMBtu/hr input rating up to and including 20 MMBtu/hr, emission limit was set at 9 ppm (or 6 ppm for compliance at a later date). Units located at a wastewater treatment facility fired by <50% California public utility commission (PUC) quality gas, such as biogas, emission limit was set at 12 ppm (or 9 ppm for compliance at a later date). Depending on the equipment size and selected NO<sub>x</sub> limit, the proposed compliance date extended from January 1, 2011 to January 1, 2014.

Overall, SJVAPCD has a more stringent limit than SCAQMD rules for the subcategory between 20 and 75 MMBtu/hr (7 ppm in SJVAPCD Rule 4320 vs 9 ppm in SCAQMD Rule 1146). SJVAPCD is also more stringent for units located at wastewater treatment facilities fired with biogas (between 9 to 12 ppm in SJVAPCD Rule 4320 vs 15 ppm for digester gas fired units and 25 ppm for landfill gas fired units in SCAQMD Rule 1146 and Rule 1146.1) for units greater than 5 MMBtu/hr. It is important to note that for SJVAPCD's Rules 4306 and 4320, the owner or operator has the option of paying into an annual emissions fee in lieu of complying with the limits. Also, for units  $\geq$  75 MMBtu/hr, emission limit in SCAQMD Rule 1146 (5 ppm) is more stringent than SJVAPCD's limit of 7 ppm for natural gas units.

### **Sacramento Metropolitan Air Quality Management District (SMAQMD) Rule 411**

SMAQMD Rule 411 NO<sub>x</sub> from Boilers, Process Heaters and Steam Generators establishes NO<sub>x</sub> emission limits boilers greater than or equal to 1 MMBtu/hr. The emission limits range from 15 to 30 ppm for units 1 to 20 MMBtu/hr, depending on equipment size and operation. For units greater than 20 MMBtu/hr, the limit is 9 ppm. Units that are fueled with landfill gas or combination of landfill gas and natural gas are limited to between 15 ppm as of October 27, 2009.

### **Ventura County Air Pollution Control District (VCAPCD) Rule 74.15 and Rule 74.15.1**

VCAPCD Rule 74.15 Boilers, Steam Generators and Process Heaters (5 MMBtu/hr and greater) establishes a NO<sub>x</sub> emission limit of 40 ppm for boilers greater than or equal to 5 MMBtu/hr regardless of fuel type. For natural gas fired units greater than 2 and less than 5 MMBtu/hr, emission limits range from 9 to 12 ppm in Rule 74.15.1 Boilers, Steam Generators and Process Heaters (1 to 5 MMBtu/hr). Rule 74.15.1 also requires units greater than 2 and less than 5 MMBtu/hr fueled by digester and landfill gases to meet emission limits of 15 ppm and 25 ppm respectively. The same rule requires units equal to or greater than 1 and less than or equal to 2 MMBtu/hr to limits their NO<sub>x</sub> emissions to 20 ppmv.

**Bay Area Air Quality Management District (BAAQMD) Regulation 9 Rule 7**

BAAQMD Regulation 9 Rule 7 (Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional and Commercial Boilers, Steam Generators and Process Heaters) establishes NO<sub>x</sub> emission limits for boilers greater than 2 MMBtu/hr. The emission limits range from 15 to 30 ppm for units 2 MMBtu/hr to and including 20 MMBtu/hr, depending on equipment size and operation. For units greater than 20 MMBtu/hr and less than 75 MMBtu/hr, the limit is 9 ppm. The emission limit is 5 ppm for units greater than or equal to 75 MMBtu/hr. Units greater than 1 MMBtu/hr fueled by landfill or digester gas are required to meet emission limit of 30 ppm.

**Assessment of NO<sub>x</sub> Emission Limits for Existing Units****Permit Limits**

As part of BARCT analysis, permit limits for existing boilers, steam generators, and process heaters fueled by natural gas, landfill gas and digester gas from within SCAQMD as well as permitting databases from other agencies were reviewed. The objective of this task is to ascertain if any existing units are currently permitted below current limits of Rule 1146 and 1146.1. The analysis also looked into identifying other control technologies implemented by permitted equipment in order to achieve designated permit limits. Additional considerations were made in regards to equipment configurations such as water-tube and fire-tube. Data from outside of SCAQMD was obtained from analyzing clearinghouse databases from the United States Environmental Protection Agency (US EPA), California Air Resources Board (CARB), and various local level agencies such as San Joaquin Valley APCD and Bay Area AQMD as well as installation lists provided by equipment vendors and local air agencies.

From the US EPA and California ARB clearinghouse database, several large units (>75 MMBtu/hr) fired with natural gas were found to be permitted at 5 ppm NO<sub>x</sub> with SCR post combustion controls, and the requirements are in line with SCAQMD Rule 1146 Group I requirements. No examples of units fired with natural gas with a permit limit of 7 ppm or below utilizing ULNB replacements were identified in the EPA or CARB clearinghouses. Similar results were found from clearinghouse databases of BAAQMD, SJVAPCD, SMAQMD and VCAPCD. From vendor provided installation lists and source test data, one new natural gas fired unit was identified in SJVAPCD with a permitted limit of 5 ppm with only ULNB. One new natural gas fired unit was identified within SCAQMD with permit limit of 7 ppm utilizing only ULNB as control technology.

Analysis of previously mentioned clearinghouse databases were also conducted for landfill gas fired and digester gas fired units. Landfill gas and digester gas are both forms of biogas created by decomposition of organic materials. Landfill gas is generated by chemical reactions between waste components and microbial action during waste decomposition occurring in landfill operations. Due to the nature of landfills, the supply of combustible gases are dependant on the amount of waste added and is expected to fall off after landfill closure as biological materials complete their decomposition process. Digester gas is generated by anaerobic biological reactions that occur inside of anaerobic digesters, or bioreactors. Rules 1146 and 1146.1 currently limits digester gas fired units to 15 ppm and landfill gas fired units to 25 ppm.

In addition to the database available online, SJVAPCD and SMAQMD provided permitting data and source test results for the landfill gas fired and digester gas fired units in the respective jurisdiction. The lowest permitted digester gas fired unit, demonstrated by source test, is located in SJVAPCD with a permit limit of 5 ppm. The unit is rated at 99 MMBtu/hr equipped with SCR post combustion control technology and was permitted as new; however, it is important to note that the source of this unit's digester gas is not from a wastewater treatment facility and would not

necessarily have the same challenges as those experienced in wastewater treatment facilities. One unit operating at a wastewater reclamation facility located in SJVAPCD was able to demonstrate compliance to a permit limit of 9 ppm with only burner replacement with ULNB technology. Digester units located in SCAQMD are permitted to a limit of 15 ppm. Based on this analysis, the lowest permitted digester gas unit across the three air districts achieved a NO<sub>x</sub> limit of 9 ppm using a burner replacement.

The lowest permitted landfill gas fired unit, demonstrated by source test, is located in SMAQMD with a permit limit of 15 ppm. The unit located in SMAQMD is rated at 32.4 MMBtu/hr and utilized ULNB replacement technology. Another unit fired with landfill gas was identified in SJVAPCD with a permit limit of 9 ppm and rated to 38 MMBtu/hr; however, this unit is pending source test to demonstrate compliance with permitted limit. The lowest limit for permitted landfill units located in SCAQMD is rated to 115 MMBtu/hr, permitted new, limited to 21 ppm.

Permit limits from thermal fluid heaters located within SCAQMD were also analyzed. Thermal fluid heaters are a form of process heaters that indirectly heat processes through the usage of thermal fluids that are not water. Thermal NO<sub>x</sub> emissions from thermal fluid heater differ from other water process heaters due to higher operating temperatures. The current emission limit for thermal fluid heaters under Rule 1146 and 1146.1 is 30 ppm. Permit limits for units in SCAQMD range between 9 ppm to 30 ppm. Most of the newly permitted units located in SCAQMD are given permit limits of 20 ppm based on manufacturer guarantees. One unit was found to be permitted new at 9 ppm with only ULNB technology and some units were permitted at 12 ppm utilizing burner replacements. From analysis of existing permitted limits, the unit with the lowest permitted emission limit was identified to be located in SJVAPCD with a permitted limit of 5 ppm utilizing only ULNB technology. The unit was permitted as new equipment subject to BACT. The analysis was able to show that the lowest achieved controlled emission from thermal fluid heaters utilizing burner replacements was 12 ppm.

The main limitation involved with utilizing clearinghouse databases is the frequency in which they are updated. Clearinghouse data are usually not up-to-date and do not reflect most recent best available control technology. Information that are not available in clearinghouse data are provided by vendors in the form of installation lists.

### Source Test

One of the main tools used for compliance demonstration is source tests conducted under District approved protocols. Rules 1146 and 1146.1 require periodic source testing for facilities to demonstrate compliance with applicable rule and permit limits. For RECLAIM facilities permitted with concentration limits, periodic RECLAIM source tests must be conducted to demonstrate equipment operates under the permitted concentration limit.

Facility submitted source test results were analyzed to determine the technical feasibility of establishing a lower BARCT limit. Within SCAQMD, there is a total of ~~4,072,722~~ non-RECLAIM<sup>5</sup> units subject to Rule 1146.1, ~~1,0681,075~~ non-RECLAIM<sup>6</sup> units subject to Rule 1146, and 259 units subject to RECLAIM rules. A total of 196 units was surveyed for real world emissions via facility submitted source test reports. Total units surveyed make up for 8.2% of total units located in SCAQMD with 105 units from the non-RECLAIM universe and 91 units from the

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<sup>5</sup>-~~Command and control equipment distribution figures obtained from 2008 rule revision staff report for Rule 1146 and 1146.1~~

<sup>6</sup>-~~Command and control equipment distribution figures obtained from 2008 rule revision staff report for Rule 1146 and 1146.1~~

RECLAIM universe. Source tests were obtained from SCAQMD database which consists of reports submitted by facilities to demonstrate compliance to various monitoring and testing requirements. SCAQMD requires equipment source tests to be conducted in an “as found” condition and emissions results are an average of the testing period. Some source test are conducted at different “loads” at a set time span. To account for source tests conducted at multiple load settings, the highest emission result was used for the analysis.

From the data set mentioned above, 34 units were subject to Rule 1146.1 NOx limits for natural gas fired equipment ranging from 9 to 12 ppm. Ten out of the 34 natural gas fired units were atmospheric units subject to the rule limit of 12 ppm. Six out of 10 atmospheric units were source tested about 10% below the rule limit (i.e., below 10.8 ppm), three out of 10 atmospheric units were source tested >30% below the rule limit (i.e., <8.4 ppm), and one out of 10 atmospheric units were source tested <10% below rule limit (i.e., between 10.8 to 12 ppm). It should be noted that the three atmospheric units tested >30% below the rule limit were all new installations. Twenty four of the 34 units were non-atmospheric units. Thirteen out of the 24 non-atmospheric units demonstrated <10% below the rule limit. The remaining eleven out of 24 non-atmospheric units demonstrated levels substantially lower (> 30%) than 9 ppm (i.e., below 6.3 ppm). Among the 11 units, nine were new or modified units permitted at BACT, and 2 utilized burner replacements. The source test results demonstrate that it is technically feasible for a Rule 1146.1 unit to achieve an emission level of 7 ppm with a burner replacement, providing at least 10% buffer for rule compliance. From this analysis, the source test records do not support the feasibility of Rule 1146.1 atmospheric units to achieve an emission level of 9 ppm with only a burner replacement, after providing a 10% buffer for possible rule compliance.

A total of 134 units surveyed were subject to Rule 1146, with 2 atmospheric units (5 to 10 MMBtu/hr), 73 units in Group III (5 to 20 MMBtu/hr), 44 units in Group II (20 to 75 MMBtu/hr) and 15 units in Group I and II equipped with SCR. Units equipped with SCR are required to meet 5 ppm regardless of unit size, so analysis summary combined Group I and SCR equipped units together.

Results displayed in Table 2 show that it is technically feasible for Rule 1146 Group III and Group II units to achieve an emission limit of 7 ppm with burner replacements; and Rule 1146 units equipped with SCR to achieve an emission limit of 4 ppm, both providing a 10% buffer for possible compliance demonstration. Table 2 also ~~shows~~ suggests that it is not technically feasible for Rule 1146 atmospheric units to achieve an emission level of 9 ppm with burner replacements since none of the atmospheric units surveyed demonstrated source test results >30% below the existing rule limit.

**Table 2**  
**Source Test Evaluation for Rule 1146 Equipment**

Category	Equipment Range	Current Rule Limit	Total Units Surveyed	Number of Units Tested to be > 30% below Existing Rule Limit	
				New	Retrofit
Rule 1146 Atmospheric (Group III)	5-10 MMBTU/HR	12 ppm	2	2	0
Rule 1146 Group III	5-20 MMBTU/HR	9 ppm	73	9	2
Rule 1146 Group II	20-75 MMBTU/HR	9 ppm	44	10	2
SCR Equipped Boilers (Groups I, II, & III)	21-127 MMBTU/HR	5 ppm	15	1	5

Source tests records from a total of 14 thermal fluid heaters ranging from 2 MMBtu/hr to 10 MMBtu/hr with emissions limit of 30 ppm were evaluated. Five out of 14 units source tested substantially (>64%) below the permit limit. Out of the five units, 3 units were new or modified equipment permitted at BACT and 2 units utilized burner replacements. This shows that it is technically feasible for thermal fluid heaters applicable to Rule 1146.1 and 1146 ~~thermal fluid heaters~~ to achieve an emission level of 12 ppm with burner replacements after providing at least 10% buffer for rule compliance.

In addition to natural gas fired units, source test results of 10 digester gas fired units and three landfill gas fired units subject to Rule 1146 and 1146.1 were also evaluated. Digester gas fired units ranged between 3 to 63 MMBtu/hr while landfill gas fired units ranged from 115 to 335 MMBtu/hr. Out of 10 digester gas fired units, five units source tested substantially (>40%) below permit limit of 15 ppm. Out of those five units, two units were boilers with burner replacements and the other three units were permitted new. These results show that it is technically feasible for digester gas fired units to meet emission limits lower than 15 ppm with only burner replacements. Out of the three source tests for landfill gas fired units, two units were source tested to show emissions below permitted limits (>20%) of 21 and 25 ppm. Surveyed units in the landfill facilities are operating with the burners that were originally equipped for the boilers. Original permit applications for the three landfill gas fired units were submitted between 1984 and 1990. Even though analyzed source test results were limited to equipment operating with burners designed back in original permit application, test results suggest that it is feasible for currently equipped burners to be able to meet a lower emission limit; however, the two landfills located in SCAQMD had been closed. Additional analysis will be required in order to determine the effects of lowering quality of gas from inactive landfills.

#### Continuous Emissions Monitoring System

Continuous emissions monitoring systems (CEMS) are continuous monitors affixed to the equipment's exhaust stack that offers constant real time averages (both 15 minute and hourly) for NOx or CO depending on the type of analyzer used. CEMS are used in both non-RECLAIM and RECLAIM applications. RECLAIM major sources are required to have continuous NOx emissions monitoring in the form of CEMS or district approved equivalent. CEMS systems in NOx RECLAIM are used to track NOx emissions at the equipment stack and calculate mass NOx emission averages in real time. RECLAIM CEMS are also used to transmit daily aggregate emission reports to District central station for RECLAIM reporting purposes. Facilities equipped with CEMS are required to conduct annual relative accuracy test audit (RATA) to demonstrate the accuracy of each system.

CEMS data from two RECLAIM major sources and three non-RECLAIM landfill gas fired sources were analyzed to study the behavior of equipment emissions throughout the span of an operational year. Analyzed CEMS data consists of 15 minute average and hourly average. The hourly average data is calculated from four 15 minute "quadrants" for every hour. Fifteen minute "quadrants" consists of averages of minute data that is collected from the CEMS analyzer located at the equipment exhaust stack. CEMS analyzers also have certified ranges of detection and data points are only valid between 10 to 95% of total analyzer range. To ensure accuracy of the analyzer data, data points that reside outside of CEMS analyzers certified valid ranges are excluded from this analysis.

CEMS data from two RECLAIM major sources were analyzed, and both units were equipped with SCR post combustion controls with permit limits of 5 ppm. The analyzed data show while facility's RATA results demonstrated emissions that were considerably (>30%) lower than the

permit limit, CEMS readings demonstrated that the real world emissions (in ppm @ 3% O<sub>2</sub>) from major sources with permit limit of 5 ppm often fluctuate from 3 ppm to 4.5 ppm even though facility passed annual RATA or periodic source tests with emissions results of <3.5 ppm. Results from this analysis were considered for ~~preliminary~~ staff BARCT recommendations.

In addition to analyzing RECLAIM CEMS results, CEMS data from all three landfill gas fired boilers located in SCAQMD were analyzed to study the behavior of emissions from landfill gas fired equipment. Facility reported emissions for both 15 minute averages and one hour averages. It is important to note that CEMS from RECLAIM and non-RECLAIM units serves different purposes. RECLAIM CEMS are utilized for emissions reporting while non-RECLAIM CEMS are used as a tool of enforcement. Rule 1146 contains periodic monitoring requirements that utilize both 15 minute and 60 minute averages. In order to take a conservative approach, focus was given to the 15 minute data in order to understand emissions behavior from landfill gas fired sources. CEMS analyzers are certified for accuracy only within 10 to 95% of their rated ranges; therefore, all measurements outside of their respective analyzer certified ranges were deemed invalid. Monthly averages of valid CEMS 15 minute data was calculated to obtain a macro perspective of equipment emissions. From the calculated monthly averages of 15 minute data, one out of three units demonstrated emission levels between 16 to 18 ppm NO<sub>x</sub> while the other two units demonstrated emissions of around 21 ppm NO<sub>x</sub>.

Monthly emission ranges from valid CEMS data also analyzed to provide understanding of emissions behavior for landfill gas fired equipment. One concern raised from stakeholders is the inconsistencies in equipment emissions due to gas “pockets” which would cause emission levels to unexpectedly spike without warning, resulting in violation of rule and permit requirements. To better understand this behavior, monthly maximum and minimum was determined from valid set of emissions data and standard deviation was calculated using the same valid monthly dataset used to calculate monthly emissions averages. It is observed that standard deviations across all data sets were relatively small which indicate a relatively small data spread; however, there were 1 to 2% of data points from each month that exceeded equipment permit limits. Start up and shutdown periods were accounted for due to the periods of inactivity before or after. Monthly maximums for some months were observed to be over twice the monthly average. In conclusion all three landfill gas fired units show fluctuations with their real world emissions. Results from this analysis were considered for ~~preliminary~~ BARCT recommendations and possible future rulemaking.

## **Monitoring, Reporting and Recordkeeping (MRR)**

### **RECLAIM**

Under RECLAIM mass emissions reported by each facility are used to track and demonstrate compliance. To ensure the integrity of reported emissions, RECLAIM includes substantial monitoring and reporting requirements, as specified in Rule 2012 - Requirements for Monitoring, Reporting and Recordkeeping for Oxides of Nitrogen Emissions. RECLAIM MRR requirements are developed to accurately determine mass emissions of NO<sub>x</sub> for each facility, which is necessary for emission reconciliation and compliance demonstration in the cap-and-trade regulatory structure. RECLAIM MRR requirements are segregated by device classifications. The 4 major device classifications are major sources, large sources, process units, and Rule 219 exempt equipment. A summary of the MRR requirements is discussed here and additional analysis can be found in Appendix A.

Major sources are units with a total heat input rating of greater than or equal to 40 MMBtu/hr with total annual fuel usage of greater than 90 Billion Btu. Units that are classified as major sources are

required to install a continuous emissions monitoring system (CEMS) or District approved equivalent. To ensure the integrity of reported emissions, RECLAIM includes substantial monitoring and reporting requirements for major sources such as annual (or semi-annual) relative accuracy testing audit (RATA), daily emissions electronic reporting, quarterly aggregate electronic reporting, quarterly certifications of emissions reports (QCER), and annual permit emissions program (APEP) report-~~(APEP)~~.

Large sources are units with a total heat input rating of greater than or equal to 10 MMBtu/hr and less than 40 MMBtu/hr with annual emissions of between 4 and 10 tons. Under the RECLAIM program, units classified as large sources are required to electronically report monthly emissions and quarterly aggregate emissions as well as QCER and APEP requirements. Large sources are also required to conduct source testing every three years and conduct semi-annual tuning.

Process units are units with a total heat input rating of between 2 MMBtu/hr and 10 MMBtu/hr. Process units share similar reporting requirements as Rule 219 exempt equipment which are rated to less than or equal to 2 MMBtu/hr. Both process units and Rule 219 exempt equipment are required to submit quarterly electronic emissions reports as well as QCER and APEP requirements. Process units assigned concentration limits are required to conduct source testing every five years and all process units are required to conduct semi-annual tuning. Rule 219 exempt equipment are not subject to periodic testing or tuning requirements unless required by permit.

#### Non-RECLAIM

In a command-and-control regulatory structure, a device-level emission standard (expressed in concentration such as ppm in Rules 1146, 1146.1 and 1146.2) is used for regulatory and compliance demonstration. Rules 1146 and 1146.1 also requires periodic emissions monitoring for facilities to demonstrate compliance to emission concentration limits.

Non-RECLAIM units with total heat input rating of greater than or equal to 5 MMBtu/hr are subject to Rule 1146. Rule 1146 units with the exception of CEMS equipped units are subject to periodic monitoring and source testing to demonstrate compliance to command-and-control concentration limits. Facilities are required to conduct initial periodic monitoring either monthly or every 750 hours and then quarterly or every 2,000 hours after three consecutive passes. Source testing is required every three years for units with total heat input of greater than or equal to 10 MMBtu/hr and every five years for units with total heat input of greater than or equal to 5 MMBtu/hr and less than 10 MMBtu/hr. CEMS is required for units with total heat input of greater than or equal to 40 MMBtu/hr and with total annual heat input of greater than 200 Billion Btu. Units equipped with CEMS are also subject to monitoring and reporting requirements of Rule 218 which includes annual ~~relative accuracy testing~~ (RATA), and semi-annual reporting. Periodic tuning is required for units complying with low-use requirements.

Non-RECLAIM units with total heat input of greater than 2 MMBtu/hr and less than 5 MMBtu/hr are subject to Rule 1146.1. Rule 1146.1 units are subject to periodic monitoring and source testing to demonstrate compliance to command-and-control concentration limits. Facilities are required to conduct initial periodic monitoring either quarterly or every 2,000 hours and then semi-annually or every 4000 hours after four consecutive passes. Source testing is required every five years. Periodic tuning is required for units complying with low-use requirements.

Rule 1146.2 applies to units rated to less than or equal to 2 MMBtu/hr and does not require periodic monitoring, recordkeeping or reporting.

### Comparison of MRR Requirements in RECLAIM and Non-RECLAIM

Staff has analyzed the MRR requirements in RECLAIM and Rule 1146 Series. Comparisons between the MRR requirements in RECLAIM and Rule 1146 Series of (a) source testing, (b) tune up / emission checks, (c) reporting, (d) recordkeeping, and (e) missing data procedures are presented in Appendix A Tables A1-5, respectively. In general, RECLAIM MRR and Rule 1146 command and control MRR are comparable. The reporting element of the RECLAIM program is more comprehensive than Rule 1146 command and control requirements; however, the focus of RECLAIM reporting is to certify the accuracy of RTC reconciliation while the focus of Rule 1146 reporting is for compliance determination. RECLAIM periodic compliance monitoring and Rule 1146 command-and-control periodic compliance monitoring are generally comparable with the exception of facilities operating a unit that is in between the CEMS applicability threshold or facilities subject to Title V.

Since the applicability threshold in annual heat input is lower in RECLAIM, it is possible that a piece of equipment required to maintain a CEMS under RECLAIM Rule 2012 might not be required to maintain the CEMS when it is subject to Rule 1146. Mass emissions reported by RECLAIM facilities are used to track and demonstrate compliance in the RECLAIM program and not necessarily required to demonstrate compliance to Rule 1146. Facilities transitioning from RECLAIM to an equipment-based command-and-control regulatory structure should be subject to the same regulatory requirements as other non-RECLAIM facilities. In particular, Rule 1146 was approved in the California State Implementation Plan (SIP) in 2014 (79 FR 57442). It was determined by EPA that Rule 1146 is consistent with the relevant policy and guidance as required under the Clean Air Act.

Title V requires additional periodic monitoring for the SIP-approved, federally enforceable rules that do not contain sufficient monitoring requirements to assure compliance with the emission limitations or other requirements. SCAQMD has developed guidelines, outlined in SCAQMD Periodic Monitoring Guidelines<sup>7</sup>, for periodic monitoring, testing and recordkeeping requirements that may be incorporated in Title V permits. Currently, the monitoring requirements in the RECLAIM program are comprehensive and address the Title V periodic monitoring requirements. Staff is currently working on adopting Proposed Rule 113 – Monitoring, Reporting, and Recordkeeping (MRR) Requirements for NO<sub>x</sub> and SO<sub>x</sub> Sources in order to address the additional MRR as required by the Title V program.

### **Assessment of Pollution Control Technologies**

#### Ultra-Low NO<sub>x</sub> Burners Systems

For gaseous fuels, thermal NO<sub>x</sub> is generally the largest contributor of NO<sub>x</sub> emissions. High flame temperatures trigger the disassociation of nitrogen molecules from combustion air and a chain reaction with oxygen follows to form oxides of nitrogen. Factors that minimize the formation of thermal NO<sub>x</sub> include reduced flame temperature, shortened residence time, and an increased fuel to air ratio. To reduce NO<sub>x</sub> emissions, combustion parameters can be optimized, control techniques can be applied downstream of the combustion zone, or a combination of the two approaches can be utilized. Common types of combustion modification include: lowered flame temperature; reduced residence time at high combustion temperature; and reduced oxygen concentration in the high temperature zone.

There are a variety of configurations and types of burners for ultra-low NO<sub>x</sub> burner (ULNB) systems. Often, fuel and air are pre-mixed prior to combustion. This results in a lower and more

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<sup>7</sup> Periodic Monitoring Guideline. <http://www.aqmd.gov/home/permits/title-v/title-v-requirements#pm>.

uniform flame temperature. Some premix burners also use staged combustion with a fuel rich zone to start combustion and stabilize the flame and a fuel lean zone to complete combustion and reduce the peak flame temperature. These burners can also be designed to spread flames over a larger area to reduce hot spots and lower NO<sub>x</sub> emissions. Radiant premix burners with ceramic, sintered metal or metal fiber heads spread the flame and produce more radiant heat. When a burner produces more radiant heat, it results in less heat escaping the boiler through the exhaust gases.

Most premix burners require the aid of a blower to mix the fuel with air before combustion takes place (primary air). A commonly used application in combination with these burners is flue gas recirculation (FGR). FGR recycles a portion of the exhaust stream back into the burner. Increasing the amount of primary air and/or use of FGR can reduce flame temperature but it also reduces the temperature of combustion gases through dilution and can reduce efficiency. To maintain efficiency a manufacturer may have to add surface area to the heat exchanger. Increasing the primary air may also destabilize the flame. Ultra-low NO<sub>x</sub> burners require sophisticated controls to maintain emissions levels and efficiency, to stabilize the flame, and to maintain a turndown ratio that is sufficient for the demands of the particular operation.

It was noted in the 2008 staff report to Rule 1146 and 1146.1 that there was clear evidence that these types of burners had been successfully retrofitted on boilers and heaters according to SJVAPCD in their Rule 4306. Source tests that were conducted in conjunction with Rule 4306 showed a 98% compliance rate with a 9 ppm NO<sub>x</sub> limits using ultra-low NO<sub>x</sub> burners. In 2010, SCAQMD staff published a technology assessment report discussing the implementation assessment of ultra-low NO<sub>x</sub> burners subject to Rules 1146 and 1146.1. The report concluded that the 9 ppm NO<sub>x</sub> limit can be achieved by ultra-low NO<sub>x</sub> burner systems for boilers and process heaters greater than 2 MMBtu/hour. There were ultra-low NO<sub>x</sub> burners from 16 different manufacturers that could achieve the 9 ppm NO<sub>x</sub> compliance limit.

#### Selective Catalytic Reduction (SCR) Systems

SCR is a post-combustion control technology that is a commercially available commonly employed to control NO<sub>x</sub> emissions from boilers and other NO<sub>x</sub> sources. It is considered to be BARCT, if cost-effective, for controlling NO<sub>x</sub> emissions from existing combustion sources such as boilers and process heaters. A typical SCR system design consists of an ammonia storage tank, ammonia vaporization and injection equipment, a booster fan for the flue gas exhaust, an SCR reactor with catalyst, an exhaust stack plus ancillary electronic instrumentation and operations control equipment. The technology uses a precious metal catalyst that selectively reduces NO<sub>x</sub> in the presence of ammonia. Ammonia is injected in the flue gas stream where it reacts with NO<sub>x</sub> and oxygen in the presence of the catalyst to produce nitrogen and water vapor.

For conventional SCRs, the minimum temperature for NO<sub>x</sub> reduction is 500 degrees F and the maximum operating temperature for the catalyst is 800 degrees F. Depending on the application, the type of fuel combusted, and the presence of sulfur compounds in the exhaust gas, the optimum flue gas temperature of an SCR system is case-by-case and will range between 550 degrees F and 750 degrees F to limit the occurrence of several undesirable side reactions at certain conditions. Depending on the type of combustion equipment utilizing SCR technology, the typical amount of ammonia slip can vary between less than five ppmv when the catalyst is fresh and 20 ppmv at the end of the catalyst life. However, newly permitted SCR systems have an ammonia slip limit of 5 ppmv. In addition to the conventional SCR catalysts, there are high temperature SCR catalysts that can withstand temperatures up to 1200 degrees F and low temperature SCR catalysts that can operate below 500 degrees F.

Based on the 2008 staff reports for Rule 1146 and 1146.1, SCR as applied to Rule 1146 boilers can achieve NO<sub>x</sub> concentrations from 5 to 6 ppm for units greater than or equal to 75 MMBtu/hr.

### Other Potential Technologies

The following section summarizes an alternative technology that may have the potential to reduce NO<sub>x</sub> emissions for this source category.

#### **ClearSign Technology**

ClearSign Combustion Corporation in Seattle has developed two technologies applicable for boilers and heaters: DUPLEX™ technology and Electrodynamic Combustion Control (ECC™). DUPLEX™ technology can be installed in new boilers or heaters, or retrofit in existing boilers and heaters. The DUPLEX technology comprises a proprietary DUPLEX tile installed downstream of conventional burners. The hot combustion flame from the conventional burners impinges onto the DUPLEX tile, and the tile helps radiate heat evenly with high emissivity to the combustion products. DUPLEX operation also creates more mixing and shorter flames. Since the flame length is one parameter that limits the total heat release in a furnace, decreased flame length can allow for significantly higher process throughputs. DUPLEX tile is expected to have a 3- to 5-year life. The Electrodynamic Combustion Control (ECC™) uses an electric field to effectively shape the flame, accelerate flame speed, and improve flame stability. The total electrical field power required to generate such effects is less than 0.1% of the firing rate. Bench test performance estimates for DUPLEX and ECC indicated that NO<sub>x</sub> and CO were less than 5 ppmv, when furnace temperatures were steady maintained between 1200 and 1800 degrees F.

In San Joaquin Valley, this technology has been installed in two small refinery heaters, three oilfield steam generators, and six enclosed flares. While it is a promising technology, more testing/demonstration would be needed before sustainability / durability is proven.<sup>8</sup>

#### **Vendors Discussion**

The following nine vendors and manufacturers (in alphabetical order) were contacted requesting information regarding ULNB and SCR systems. Five out of the nine provided technical input and cost estimates that has been included in the discussion below and the cost-effectiveness analysis in this staff report.

- Alzeta
- California Boiler
- Heat Transfer Solutions
- McGill AirClean
- McKenna Boiler
- Nationwide Boiler Incorporated
- Parker Boiler Company
- RF MacDonald
- Superior Boiler

### Ultra-Low NO<sub>x</sub> Burners Systems

Except for atmospheric units and thermal fluid heaters, the current NO<sub>x</sub> limit for units burning gaseous fuels, excluding digester and landfill gases, with a rated heat input capacity between 2 and 75 MMBtu/hr is 9 ppm. Based on the information obtained through vendor discussions, lower

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<sup>8</sup> “Clearsign Ultra Low NO<sub>x</sub> Technology”, San Joaquin Valley APCD, November 7-8 2017.

NOx emissions with ultra-low NOx burners are feasible for burner replacements and new installations. For certain applications and for new installations, achieving 5 ppm NOx limit with an ultra-low NOx burner without SCR is feasible. Based on discussions with three vendors, burner replacements on existing units could potentially meet 7 ppm or less. With the exception of one vendor, 7 ppm or less with ultra-low NOx burners are limited to fire-tube boilers and not currently available for water-tube boilers. The difference between water-tube and fire-tube boilers is that a water-tube boiler circulates water through a series of tubes, the tubes are heated externally by the combustion gas, and the surrounding hot gases heat the water in the steam-generating tubes; whereas a fire-tube boiler passes combustion gases inside a series of tubes that are surrounded by a closed vessel of water that is heated to produce steam.

Two of the three vendors stated they would be able to provide 7 ppm ultra-low NOx burner replacements for existing units with a rated heat input capacity greater than 2 MMBtu/hr and up to 30 MMBtu/hr for one vendor and 60 MMBtu/hr for the other. The third vendor that could provide 7 ppm ultra-low NOx burner replacements specified a rated heat input capacity of at least 8.4 MMBtu/hr, since a minimum furnace size would be required, and up to 50 MMBtu/hr. In addition to these size requirements, based on discussions with the third vendor, the proper back and steam pressure, as well as the age of the unit would be factors in whether an existing unit could achieve a NOx emission limit of 7 ppm or less with a burner replacement. Additionally, for existing units to achieve 7 ppm or less with ultra-low NOx burner replacements additional controls, such as variable frequency drive (VFD) and oxygen trim might ~~are~~ also be needed. Historically, the scope of staff's analysis does not go beyond determining feasibility of the proposed control options to account for detailed engineering of viable alternatives as other means to meet the proposed limits. The limitations provided by some vendors are precautions for case-by-case scenarios, were certain burner designs or unit specifications could have limitations in achieving 7 ppm or less with only an ultra-low NOx burner replacement. However, these restrictions were not presented by all vendors. Vendors have been providing 7 ppm ultra-low NOx burner replacements as retrofits for a wide and diverse variety of boilers, which has been standard practice for units in SJVAPCD. In addition to the information gathered from vendor discussions, the source test results discussed and summarized above show that it is technically feasible for existing Rule 1146 Group II and Group III and Rule 1146.1 units to achieve an emission limit of 7 ppm or less with burner replacements.

### SCR Systems

The NOx emission limit specified in Rule 1146 for Group I units is 5 ppm, which is met with the use of SCR. SCR systems are scalable and generally utilized for units greater than 10 MMBtu/hr. Based on the information obtained through vendor discussions, it is potentially feasible for retrofit units to meet 4 ppm or less. While vendors have not been able to guarantee 3 ppm or less for SCR retrofits for units subject to the proposed amendments, there are some applications that can achieve 4 ppm or less. However, there are several limitations for SCR retrofits to meet 4 ppm or less, such as the age, flow, and size of the catalyst bed of the existing SCR system. Another factor that might limit SCR retrofit applications from meeting 4 ppm or less is the required 5 ppm ammonia slip; for example, NOx emissions of 2.5 ppm is feasible but at the cost of higher ammonia slip (i.e. 10 ppm). The existing catalyst bed might not be large enough to comply with both the lower NOx limit and the 5 ppm ammonia slip limit. Additionally, a NOx feedback analyzer will most likely be needed in order to maintain the lower NOx levels. The most significant constraint is the inadequate safety margin between the permitted limit and the actual emissions to account for fluctuations in external factors such as ambient temperature or fuel heat input (i.e. gas Btu).

### Atmospheric Units

Atmospheric units are currently required to meet 12 ppm NO<sub>x</sub> in Rules 1146 and 1146.1. A vendor has stated that they can provide new atmospheric units with ultra-low NO<sub>x</sub> burners to meet 9 ppm. However, this lower limit would not be feasible for all retrofit applications via burner replacement. Since fluctuations in ambient conditions affect atmospheric units more than sealed combustion units, a 9 ppm NO<sub>x</sub> emission limit is currently not feasible for retrofitted atmospheric units.

### Thermal Fluid Heaters

The NO<sub>x</sub> emission limit for thermal fluid heaters in Rules 1146 and 1146.1 is currently 30 ppm. Thermal fluid heaters typically operate at much higher temperatures than process heaters that use water as the heating fluid, which could result in higher NO<sub>x</sub> emissions. Based on discussions with vendors, thermal fluid heaters with ultra-low NO<sub>x</sub> burners guaranteed to meet 20 ppm or less are available. While 9 ppm is available for new units of certain applications, burner replacements for existing units could meet 15 to 12 ppm. However, there could be some loss in efficiency for the units since premix combustion burners requires higher percentage of oxygen.

### Landfill and Digester Gas Fired Units

The NO<sub>x</sub> emission limit for digester gas fired units in Rules 1146 and 1146.1 is currently 15 ppm. Based on discussions with vendors, digester gas fired units can be guaranteed to meet 12 ppm, while 9 ppm is dependant on fuel composition and heating value which can vary depending on facility. NO<sub>x</sub> concentrations limits below 7 ppm is not feasible due to the presence of H<sub>2</sub>S. Lowering digester gas emissions might also cause an increase in CO emissions.

The NO<sub>x</sub> emission limit for landfill gas fired units in Rules 1146 and 1146.1 is currently 25 ppm. Based on discussions with vendors, it is feasible for landfill gas fired units to meet between 15 to 20 ppm NO<sub>x</sub> when the methane concentration of supplied landfill gas is between 50 to 60%. If fuel is supplemented by up to 10% natural gas by volume, methane concentration requirement of supplied landfill gas can be lowered to 50%.

### Low-Fuel Use Units

Rule 1146 and 1146.1 each include a provision for units that operate with low fuel usage. The low fuel use provisions limit annual usage to <90,000 therms/year and <18,000 therms/year, in Rule 1146 (c)(5) and Rule 1146.1 (c)(4) respectively. As a matter of illustration, the operating capacity for a 10 MMBtu/hr unit with an annual usage of 90,000 therms/year is approximately 11 percent. The annual fuel usage limit is listed as a condition in the permit, and is used for compliance determination. If a low fuel use unit exceeds the fuel usage limit in the permit, the operator or owner of the unit shall demonstrate compliance with the BARCT emission limit within 18 months after the exceedance. Although low fuel use units are exempt from the BARCT emission limits, they are still subject to a NO<sub>x</sub> emission limit of 30 ppm (or 0.036 lbs/10<sup>6</sup> Btu) upon the unit's burner replacement. The 30 ppm limit was established based on the "off-the-shelf" technology that was available back in the technology assessment of the 2008 amendments. As part of the current BARCT assessment, the emission limit for low fuel use units is reassessed. Whereas the BARCT emission limits, representing the *best* available retrofit control technology, for Group I, Group II, and Group III units vary from 5 to 9 ppm, the current "off-the-shelf" technology for a *basic* retrofit for a natural gas fired unit is 12 ppm. The emission limit of 12 ppm was based on discussion with vendors, taking into the consideration that many of the low fuel use units have a higher equipment life and they have been in operation for more than 30 years. Nonetheless, given the low fuel usage, it is not cost-effective to require immediate retrofits for these units (see the cost-effectiveness section for more details). As a result, staff does not recommend reducing the

emissions limit for these units at this time as this would not be BARCT because it is not cost-effective. Therefore, it is recommended for low fuel use units to meet a NOx emission limit of 12 ppm upon replacement of burner.

### Summary of BARCT Technology Assessment for Rules 1146 and 1146.1

#### Natural Gas Fired Equipment

Based on the review of the types of pollution control technologies available to reduce NOx emissions applicable to the boilers, steam generators and process heaters subject to Rule 1146 and 1146.1, SCR and ultra-low NOx burners are still the main technologies that can achieve the NOx concentration limits specified in these rules<sup>9</sup>.

Natural gas fired units make up for the majority of equipment subject to Rules 1146 and 1146.1. Currently, San Joaquin Valley APCD Rule 4320 limits units with greater than a 20 MMBtu/hr input rating to 7 ppm (or 5 ppm for compliance at a later date) with an option to comply with a mitigation fee. Source test and permitting data from SJVAPCD demonstrated that compliance to their limits was being achieved without the need for facilities to comply with this mitigation fee option. Based on source test records, it is technically feasible to retrofit non-atmospheric units and thermal fluid heaters to meet lower emission limits as shown in Table 3. Information obtained from vendor discussions confirms findings from the source test analysis. Considerations were made on the operational differences between water-tube and fire-tube boilers which could impact the ability for equipment to come into compliance with staff's recommendations. With additional considerations to the operational differences between water-tube and fire-tube boilers, staff proposes different limits for these types of boiler groups. Staff's recommendation based on feasibility is shown in Table 3.

**Table 3**  
**Staff Recommendations for Rules 1146 and 1146.1**

Group	Size (MMBtu/hr)	Recommended Emission Limit	Supporting Evidence
Rule 1146 Group I	≥75	5 ppm via SCR (same as existing limit)	N/A
Rule 1146 Group II	≥20 to <75	For units > 12 ppm: 5 ppm via SCR For units ≤ 12 ppm: Fire-tube boilers: 7 ppm via ULNB Other boilers: 9 ppm via ULNB	<ul style="list-style-type: none"> <li>Existing permitted equipment currently equipped with SCR</li> <li>Source test results from permitted equipment</li> <li>Scalability of SCR technology from vendor discussions</li> </ul>
Rule 1146 Group III	≥5 to <20	Fire-tube boilers: 7 ppm via ULNB Other boilers: 9 ppm via ULNB	<ul style="list-style-type: none"> <li>Existing equipment permitted at 7 ppm</li> <li>Source test result from permitted equipment</li> <li>Vendor discussions backs up feasibility of 7 ppm retrofits for fire-tube equipment</li> </ul>
Rule 1146.1	>2 to <5	Fire-tube boilers: 7 ppm via ULNB Other boilers: 9 ppm via ULNB	<ul style="list-style-type: none"> <li>Source test result from permitted equipment</li> <li>Vendor discussions backs up feasibility of 7 ppm retrofits for fire-tube equipment</li> </ul>
Atmospheric Units	≤10	12 ppm via ULNB (same as existing limit)	N/A
Thermal Fluid Heaters	N/A	12 ppm via ULNB	<ul style="list-style-type: none"> <li>Existing equipment permitted at 12 ppm</li> <li>Source test result from permitted equipment</li> <li>Vendor discussions backs up feasibility of 12 ppm retrofits</li> </ul>

<sup>9</sup> In the event that an owner or operator installs a new burner to meet the proposed emission limit, a permit modification would be required. If the owner or operator chooses to increase the boiler's rating in the process, the equipment would be subject to the emission limit set by Best Available Control Technology (BACT).

### Landfill and Digester Gas Fired Equipment

Analysis of source test results from digester gas fired equipment demonstrated that it is feasible for digester gas fired units to be retrofitted to meet a lower BARCT limit. Rules 1146 and 1146.1 currently require digester gas fired units to meet NO<sub>x</sub> emission limits of 15 ppm. However SJVAPCD Rule 4320 contains a more stringent limit of 9 to 12 ppm for all units fired with <50% PUC quality natural gas. Since SJVAPCD allows facilities to mix in up to 50% PUC quality natural gas in order to meet their rule limits, it allows facilities greater flexibility to demonstrate compliance to their rule limits. Units located in SCAQMD demonstrate compliance to biogas limits in rules 1146 and 1146.1 with between 90% to 100% biogas content while units that are co-fired with natural gas (>10% of total usage) require emissions limit to be calculated by the weighted average of each fuel. When allotted for 50% mix of PUC quality natural gas and digester gas, the weighted average is around 12 ppm which is near SJVAPCD's rule limit of 9 to 12 ppm. During the 2008 rule amendment for Rules 1146 and 1146.1, the compliance date for units fired with digester gas was set to January 1, 2015. As a result, most of the facilities recently retrofitted their units to meet the 15 ppm requirement. Given an average lifetime of 15 years for burners, the retrofitted units could have a remaining lifetime of >10 years. By requiring facilities to meet a lower limit three years after the previous amended compliance date could possibly result in stranded assets. Due to the nominal differences between SCAQMD and SJVAPCD limits as well as the relatively recent compliance date for digester gas fired boilers, staff recommends retaining current NO<sub>x</sub> emission limits for digester gas fired boilers at this time.

In addition to single fueled and co-fired boilers, there are dual fuel boilers. Some dual fuel units located at sewage treatment facilities are capable of utilizing both natural gas and digester gas separately, but cannot be co-fired from a fuel mix. Due to the separation of fuels, dual fuel boilers are permitted to meet both the limit for digester gas and natural gas depending on the fuel used unlike the weighted average emissions limit of co-fired units. Source tests obtained from a retrofitted dual fuel unit in SJVAPCD was able to demonstrate that dual fuel units are capable of achieving 7 ppm when firing on natural gas only. Digester gas and natural gas fired dual fueled units located in SCAQMD are primarily used in wastewater treatment facilities which provide essential public services. Currently SJVAPCD Rule 4320 limit for dual fueled boilers located at wastewater treatment plants is 9 ppm instead of the 7 ppm limit for natural gas fired equipment. Dual fueled units located at sewage treatment facilities within SCAQMD are currently permitted to meet 15 ppm for digester gas and 9 ppm for natural gas. Wastewater treatment facilities need the ability to quickly switch between the two fuels depending on demand which leaves little to no time to retune the boiler for each fuel. There are no examples of digester gas and natural gas dual fueled units located in SJVAPCD or SCAQMD that are currently permitted to 7 ppm when fired by natural gas. Due to the nature of dual fueled units from the varying BTU ratings from natural gas and digester gas, additional analysis is required to determine BARCT for this type of equipment located at wastewater treatment facilities.

Three active landfill gas fired boilers located at two closed landfills in SCAQMD were identified, one is rated to 115 MMBtu/hr and the remaining two are identical units rated to 335 MMBtu/hr, all three units are permitted below current rule limit of 25 ppm. One landfill was closed in 1996 and the other one was closed in 2013. All three landfill gas fired units located in SCAQMD are operating with original burners permitted in 1984 and 1990. Source test results from SMAQMD demonstrated the feasibility for a lower rated unit (32.4 MMBtu/hr) to meet a NO<sub>x</sub> limit of 15 ppm and one ULNB retrofitted landfill gas fired unit located in SJVAPCD has a permit limit of 9 ppm; however, all the landfill gas fired units located in SCAQMD are larger in size. Based on discussions with vendors, landfill gas fired units should be able to meet concentration limits

between 15 to 20 ppm if the methane concentration of supplied landfill gas is between 50 to 60%, which may differ between facilities. Based on landfill gas analysis conducted during the equipment source tests in 2017, the current methane concentration from both closed landfills ranged between 27 to 33%.

Two facilities located in SCAQMD operating three identified landfill gas fired boilers are closed as of 1996 and 2013. Throughout the rulemaking process, stakeholders that operate equipment fired with landfill gas voiced concerns regarding to the decline in fuel quality and fuel production due to landfill closure. Based on input from facility operators, another challenge faced by these facilities is that replacement and retrofitting will be costly due to the age and unique layout of their equipment. Facility operators also noted that there is no guarantee the newer equipment will be able to operate on the current low methane content of the landfill gas. As for the equipment found in other air districts such as SJVAPCD and SMAQMD, the units identified are significantly smaller in size, so their analysis to establish respective BARCT limits do not necessarily account for the same challenges as the equipment located in SCAQMD. Stakeholders have also raised concerns in regards to the reliability of dual fuel units that can also meet 7 ppm when firing with natural gas only; citing that it is crucial for units to quickly and reliably switch between the two fuels, and facilities do not have time to retune everytime fuel switch occurs.

In consideration to the unique challenges faced by sewage treatment facilities and landfills providing essential public services, staff has decided not to change the NO<sub>x</sub> concentration limits at this time and to initiate a separate rulemaking efforts to establish an industry specific rule for equipment operated at POTWs and sanitation districts to better address the uniqueness of these facilities such as the type, quantity, and quality of gas and that these units are at essential public services.

### **Cost-Effectiveness Analysis**

In order to assess the cost-effectiveness for the proposed BARCT limits, cost information about the control equipment was obtained from discussions with manufacturers and vendors, as well as from the U.S. EPA SCR Cost Manual<sup>10</sup>. The cost for the control equipment consists of two main components, the capital cost and annual cost. The capital cost is a one-time expense of the equipment, installation, and permitting fees, whereas the annual operating cost includes any recurring expense, such as the cost for electricity, operation and maintenance (O&M), monitoring, and consumables like ammonia and catalyst.

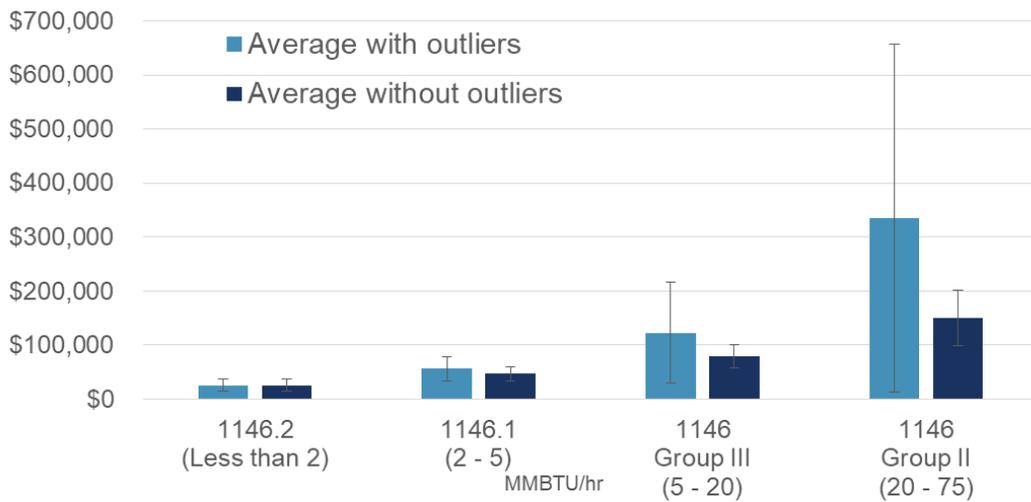
Cost estimates for the equipment and installation were obtained from 5 vendors. The cost depended on the equipment size, NO<sub>x</sub> emission limit, and the type of retrofit control technology (ultra-low NO<sub>x</sub> burner or SCR). The budget prices obtained assumed the cost was for retrofits only, that there would be no major changes to existing units such as major structural or foundation changes. Additionally, the useful life for the control equipment was assumed to be 15 years for ultra-low NO<sub>x</sub> burners and 25 years for SCR. As shown in the graphs below in Figures 2 and 3, when the average costs were compared, there were substantial deviations because of outlier prices obtained from one vendor. To be conservative, the cost-effectiveness analysis is based on the average cost including the outlier. In addition to the average cost for the equipment and installation, the permitting fees are included as part of the capital cost in the cost-effectiveness analysis. The most current fee rates in Rule ~~301340~~ – Permitting and Associated Fees were used to estimate the permitting cost for each category grouped by unit size. Additionally, a recurring

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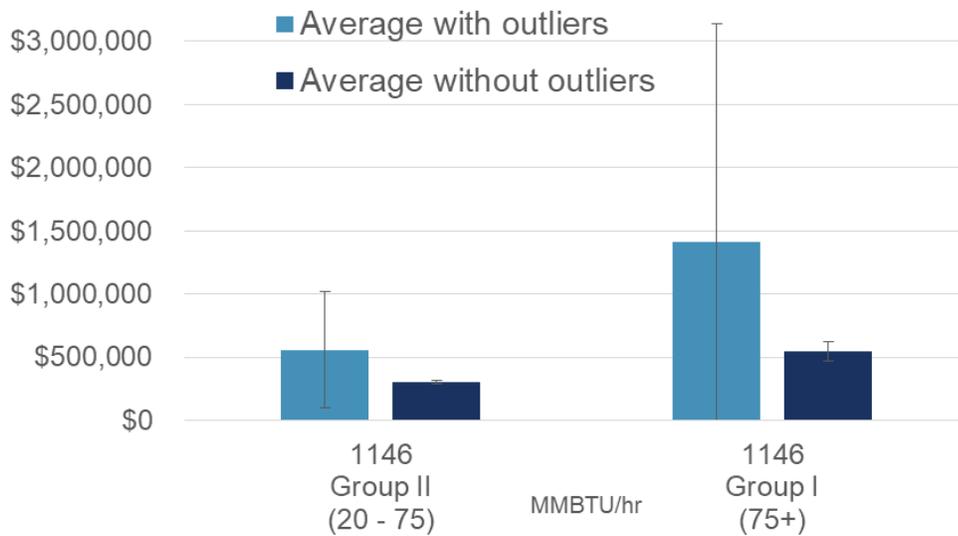
<sup>10</sup> U.S. EPA SCR Cost Manual available at:

[https://www3.epa.gov/ttn/ecas/docs/SCRCostManualchapter7thEdition\\_2016.pdf](https://www3.epa.gov/ttn/ecas/docs/SCRCostManualchapter7thEdition_2016.pdf)

cost for SCR retrofits was included in the cost-effectiveness analysis to account for the annual operating permit renewal fee for SCR systems.



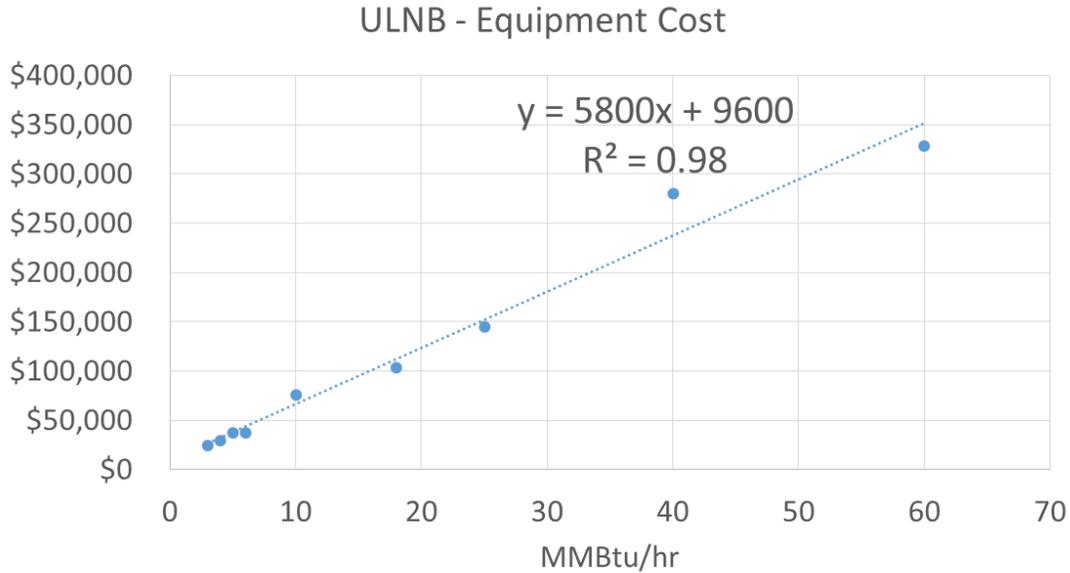
**Figure 2**  
**Average Cost with Outliers (Ultra-Low NOx Burner Replacements)**



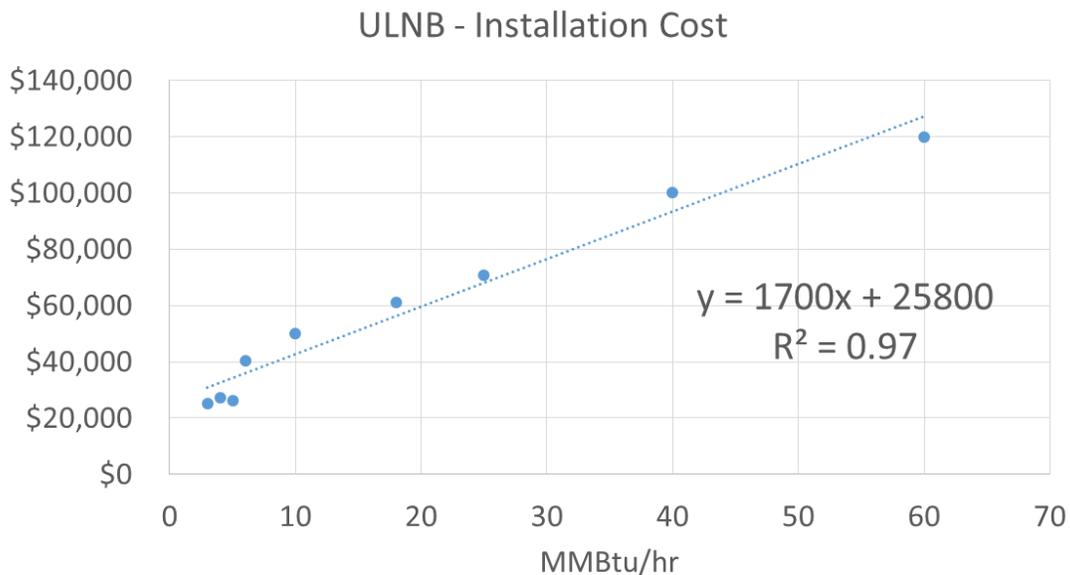
**Figure 3**  
**Average Cost with Outliers (SCR Retrofits)**

The average equipment and installation cost for Rule 1146 Group I, Group II, Group III, and Rule 1146.1 units was based on the vendor cost estimates for natural gas units of a given size within the size range of each group category. Figures 4 through 9 show the linear correlations between equipment and installation cost for natural gas fired units based on size (MMBTu/hr). The linear

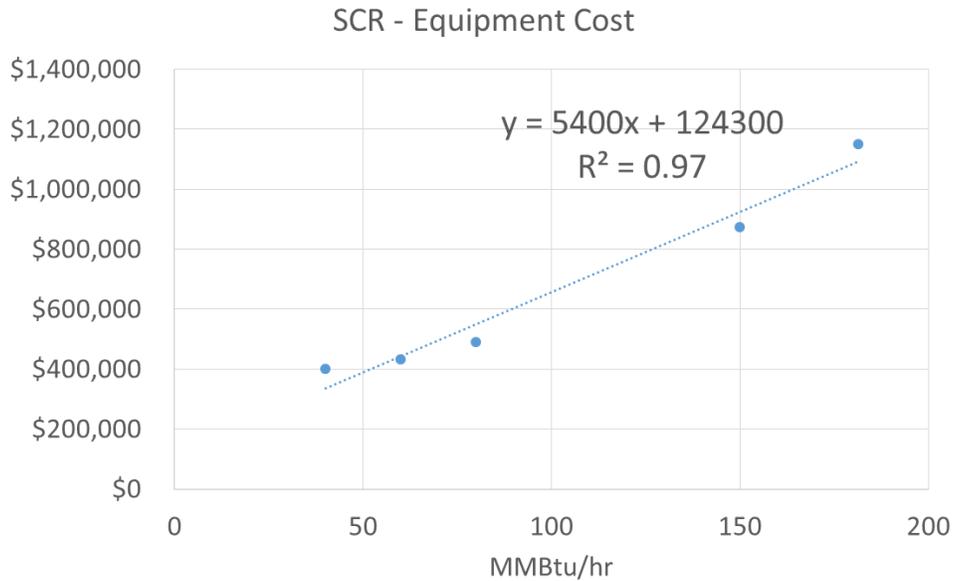
correlation equation (rounded up to two significant figures) displayed in the figures below are for 9 ppm ultra-low NOx burner replacements and 5 ppm SCR retrofits. In the figures below, each data point is the average vendor cost with outliers for a natural gas unit of a given size. The equipment and installation cost for 9 ppm ultra-low NOx burner replacements for existing units with a rated heat input capacity between 2 and 60 MMBtu/hr are shown in Figures 4 and 5. Figure 6 and 7 shows the equipment and installation cost for 5 ppm SCR retrofits for existing units with a rated heat input capacity between 40 and 181.3 MMBtu/hr.



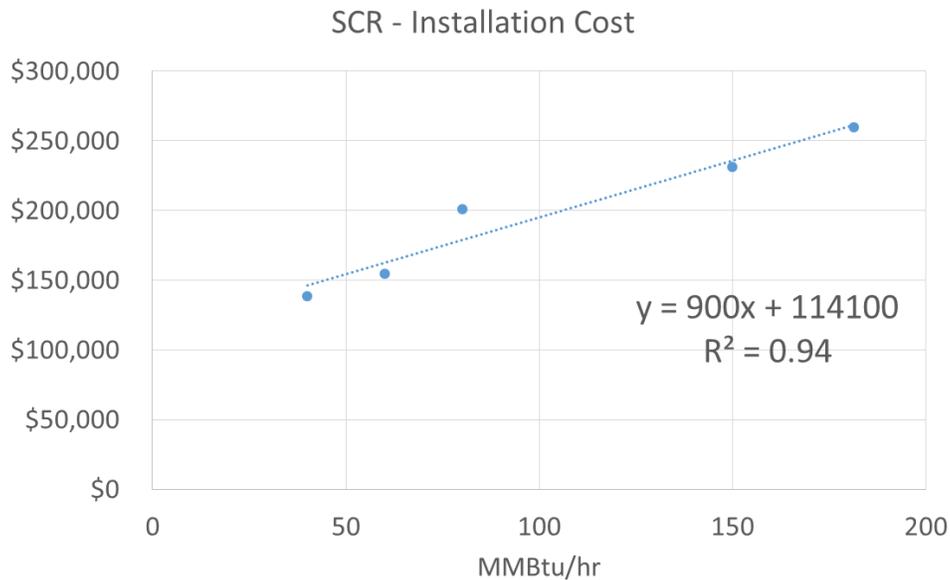
**Figure 4**  
**Equipment Cost (9 ppm Ultra-Low NOx Burner Replacements)**



**Figure 5**  
**Installation Cost (9 ppm Ultra-Low NOx Burner Replacements)**



**Figure 6**  
**Equipment Cost (5 ppm SCR Retrofits)**



**Figure 7**  
**Installation Cost (5 ppm SCR Retrofits)**

The cost-effectiveness analysis assumed an additional cost for the equipment that might be needed ~~of for~~ a 7 ppm ultra-low NOx burner replacement for fire-tube boilers. This additional ~~equipment~~ cost was assumed to be for the additional controls needed, such as variable frequency drive and oxygen trim sensors, in comparison to ~~a~~ the equipment cost for a standard 9 ppm ultra-low NOx burner. It was assumed that the additional equipment cost for a 7 ppm ultra-low NOx burner varied by equipment size. Therefore, the additional equipment cost that ~~were~~ was added to the cost of the 9 ppm ultra-low NOx burner for a 7 ppm ultra-low NOx burner was approximately \$3,000 for

Rule 1146.1 units, \$10,000 for Rule 1146 Group III units, and \$21,000 for Rule 1146 Group II units.

Figures 8 and 9 below summarize the average capital cost that was included in the cost-effectiveness analysis for ultra-low NOx burners and SCR retrofits, respectively. The capital cost in the cost-effectiveness analysis for ultra-low NOx burner replacements, which included the equipment, installation, and permitting costs, was based on 7 ppm and 9 ppm for Rule 1146 Group III and Rule 1146.1 units, where 5755% of the units were fire-tube boilers required to meet 7 ppm and 4345% were non fire-tube boilers required to meet 9 ppm<sup>11</sup>. For Rule 1146 Group III, the average capital cost was based on the equipment, installation, and permitting cost of a 6, 10, and 18 MMBtu/hr unit, which was \$89,000, \$137,000, and \$176,000, respectively. For Rule 1146.1, the average capital cost was based on the equipment, installation, and permitting cost of a 3, 4, and 5 MMBtu/hr unit, which was \$55,000, \$62,000, and \$69,000, respectively. The capital cost for atmospheric units and thermal fluid heaters was based on the equipment, installation, and permitting cost of a 2, 5, and 10 MMBtu/hr unit and a 12 ppm NOx emission limit. The average capital cost for thermal fluid heaters was \$40,000 (2 MMBtu/hr), \$54,000 (5 MMBtu/hr), and \$91,000 (10 MMBtu/hr). The average capital cost for atmospheric units was \$36,000 (2 MMBtu/hr), \$47,000 (5 MMBtu/hr), and \$66,000 (10 MMBtu/hr). The average capital cost for Rule 1146.2 units was based on the equipment and installation cost of a 0.4 MMBtu/hr (\$30,000), 1 MMBtu/hr (\$32,000), and 2 MMBtu/hr (\$36,000) unit and a 30 ppm NOx emission limit.

The average capital cost in the cost-effectiveness analysis for SCR retrofits, which included the equipment, installation, and permitting costs, was based on Rule 1146 Group I and Group II units required to meet a 5 ppm NOx emission limit. The average rated heat input capacity that was used to determine the average capital cost for Rule 1146 Group I was 181.3 MMBtu/hr based on the sizes of the three Group I units in RECLAIM that need to be retrofitted. The three units were two 147 MMBtu/hr and one 250 MMBtu/hr. The average capital costs for these respective sizes are \$1,151,000 and \$1,784,000. The average capital cost for Rule 1146 Group II was based on the equipment, installation, and permitting cost of a 25, 40, and 60 MMBtu/hr unit. The average capital costs was \$549,000 (40 MMBtu/hr) and \$598,000 (60 MMBtu/hr). For a 25 MMBtu/hr unit, the SCR equipment and installation costs were conservatively assumed to be the same as that of a 40 MMBtu/hr unit.

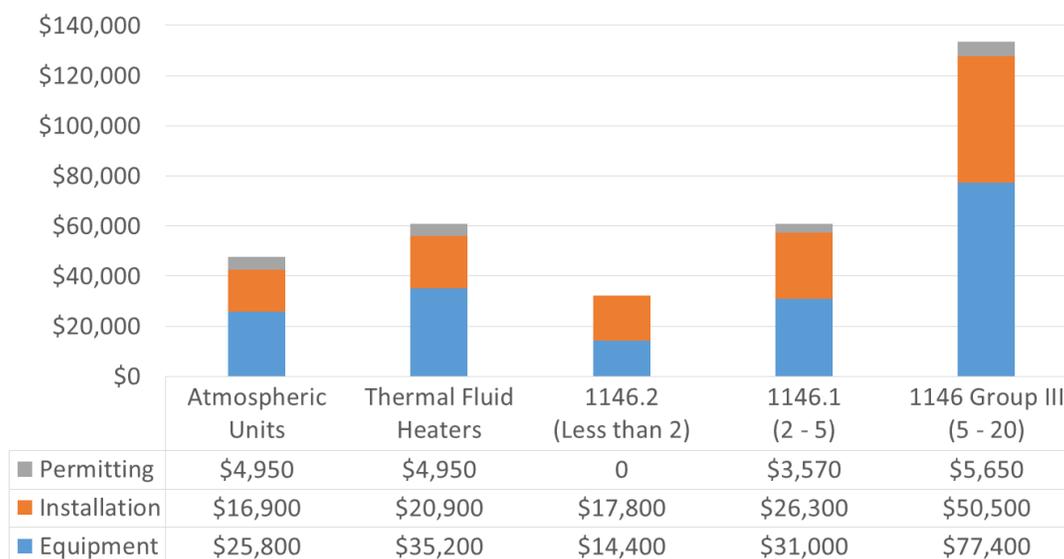
The capital costs summarized in Figures 8 and 9 are estimates based on average costs for conventional equipment and standard installations<sup>12</sup>. Some facilities might experience higher than average costs if they decide to stay with a specific vendor or have unique equipment that might required specialized engineering or complex installations. The capital costs varied from vendor to vendor. For example, the cost by vendors ranged from \$495,000 to \$4 million for Rule 1146 Group I, which had an average capital cost of \$1.41 million, from \$290,000 to \$1.32 million for Group II, which had an average capital cost of \$557,000, from \$76,000 to \$255,000 for Group III, which had an average capital cost of \$123,000, and from \$28,000 to \$89,000 for Rule 1146.1 units, which had an average capital cost of \$57,000. The average cost was used to estimate the cost-effectiveness for each group, since it is a better representation to include the costs provided by all

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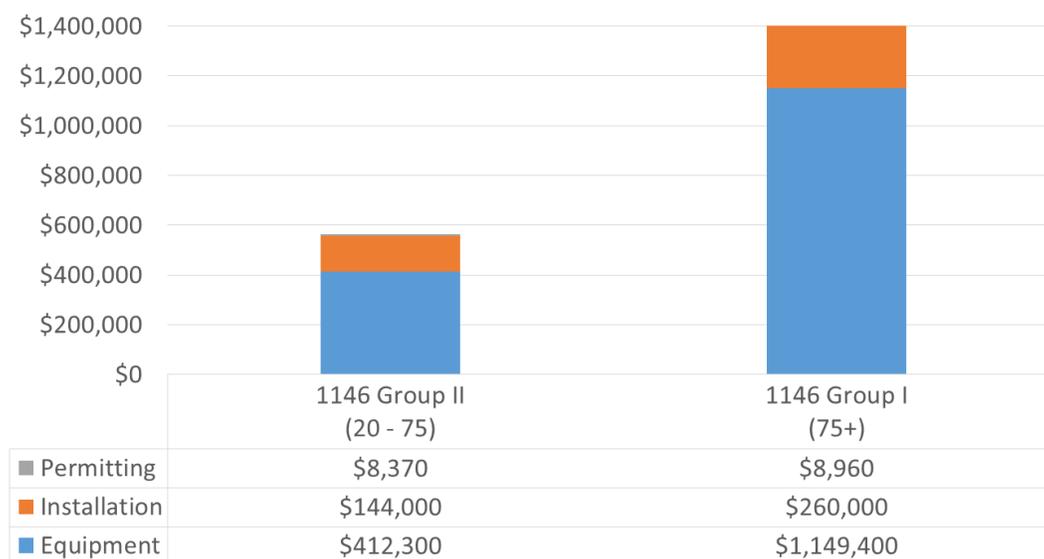
<sup>11</sup> When estimating equipment cost, the percentage of fire-tube boilers was conservatively assumed to be the highest percentage between Rule 1146 Group III and Rule 1146.1 units. This was a conservative approach since the average percentage of fire-tube boilers across Rule 1146 Group II, Group III, and Rule 1146.1 is approximately 40% (rounded up to nearest ten).

<sup>12</sup> Total and average differences due to rounding

five vendors as an indication of the actual impacts on stakeholders, given that not all stakeholders will select the vendor with the highest costs.



**Figure 8  
Capital Cost (Ultra-Low NOx Burner Replacements)**



**Figure 9  
Capital Cost (SCR Retrofits)**

The recurring expenses included in the annual cost were additional electrical, O&M, and monitoring expenses, as well as ammonia and catalyst consumption that are not already required for the existing operation. Additional details of the annual costs that were included in the cost-effectiveness analysis are provided in the following sections.

### Additional Electrical Cost

For retrofits with ultra-low NO<sub>x</sub> burner replacements, the potential cost increase for electricity is from the use of flue gas recirculation (FGR), which requires additional energy due to the higher dilution. However, there are potential savings gained with a new burner since the new burner would have greater efficiency and higher turndowns compared to the older burner. Additionally, the installation of variable frequency drive (VFD) and oxygen sensors can reduce the electrical cost. Therefore, the cost-effectiveness analysis for retrofits with ultra-low NO<sub>x</sub> burner replacements does not account for additional electrical cost. For SCR retrofits, there will be a cost increase due to the additional energy consumption required for the higher pressure drop, ammonia vaporization, and induction fan associated with the SCR system. The additional energy consumption was calculated using the U.S. EPA SCR Cost Manual, where the estimated power consumption (kW) for the SCR system depended on the unit's rated heat input capacity (MMBtu/hr). The cost was determined assuming a 50% operating capacity and an industrial electricity rate of 12.68 cent per kW-hr<sup>13</sup>. The additional electrical cost included in the cost-effectiveness analysis was approximately \$11,900 for Rule 1146 Group II units and \$51,800 for Rule 1146 Group I units.

Although, there are additional electrical cost with an SCR system, there are potential savings for units currently using FGR. After installing SCR, units that currently use FGR could reduce or eliminate the use of FGR, since the NO<sub>x</sub> emissions could primarily be control by the SCR system rather than with FGR. Therefore, savings based on the number of existing non-compliant units with FGR was accounted for when calculating the potential increase in electrical cost. Approximately 47 units between 20 and 75 MMBtu/hr and 3 units greater than 75 MMBtu/hr currently use FGR. The savings were estimated by calculating the annual electrical cost for the energy consumption of FGR based on the average heat input of the burners in Group I and Group II of Rule 1146. The total savings applied in the cost-effectiveness analysis was assumed to be the difference in electrical cost from the reduction in FGR utilization<sup>14</sup> of 30% down to 15%. This potential savings in electrical cost (based on a 20% operating capacity and an industrial electricity rate of 12.68 cent per kW-hr) for each non-compliant unit utilizing FGR was distributed among the total number of non-compliant units in each group category. The number of non-compliant Rule 1146 units for Group II and Group I was 52 and 3, respectively. The FGR savings included in the cost-effectiveness analysis was approximately \$3,000 for Rule 1146 Group II units and \$14,700 for Rule 1146 Group I units.

### Ammonia and Catalyst Cost

SCR uses catalyst and ammonia to selectively reduce NO<sub>x</sub>. Ammonia is injected into the flue gas stream where it reacts with NO<sub>x</sub> and oxygen within the catalyst to produce nitrogen and water vapor. The U.S. EPA SCR Cost Manual was used to estimate, based on the unit's rated heat input and a 50% operating capacity, the consumption rate of ammonia and the catalyst volume required to reduce NO<sub>x</sub> emission from 30 ppm down to 5 ppm with an ammonia slip limit of 5 ppm. The average price of 19% aqueous ammonia obtained from two suppliers was used to determine the recurring cost for the SCR ammonia consumption. The additional recurring annual cost for ammonia that was included in the cost-effectiveness analysis was approximately \$5,400 for Rule 1146 Group II units and \$23,100 for Rule 1146 Group I units.

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<sup>13</sup> U.S. Energy Information Administration Electric Power Monthly Reports (data for the monthly price of electricity for industrial sector in California was used to calculate the annual average for the months of June 2017 – June 2018)

<sup>14</sup> Electrical use for FGR utilization was estimated using data from the chart available at: <https://www.preferred-mfg.com/assets/documents/Combustion%20Control%20Strategies.pdf>

As for the catalyst, according to discussions with vendors, the catalyst replacement frequency is between 7 to 12 years. Therefore an average replacement frequency of 9 years and a catalyst replacement cost of \$258.80 per cubic foot<sup>15</sup> was assumed to estimate the recurring catalyst cost. The additional recurring annual cost for the catalyst consumption that was included in the cost-effectiveness analysis was approximately \$3,200 for Rule 1146 Group II units and \$13,900 for Rule 1146 Group I units.

#### Additional O&M Cost

For the O&M cost included in the cost-effectiveness analysis was only the recurring annual cost for labor and materials that are not already part of the existing operations. Existing burners already have service contracts in place, plus there would most likely be less maintenance and fewer repairs for the retrofit burner. Also, additional controls, such as oxygen sensors for oxygen trim would reduce the combustion tuning frequency of a burner without these controls. The oxygen sensors have typical lifespans of 10 – 15 years similar to the ultra-low NOx burners. Therefore no additional O&M cost were accounted for in the cost-effectiveness analysis for retrofits with ultra-low NOx burner replacements. For a retrofit with an SCR system, there will be additional O&M costs compared to a unit with no SCR. The additional O&M cost associated with SCR retrofits accounted for the recurring expense of annual SCR maintenance checks. According to the U.S. EPA SCR Cost Manual, the annual maintenance labor and material cost for an SCR system was assumed to be 0.5% of equipment and installation cost. The additional O&M cost that was included in the cost-effectiveness analysis was approximately \$2,800 for Rule 1146 Group II units and \$7,100 for Rule 1146 Group I units.

#### Additional Monitoring Cost

Emissions monitoring was considered separately from the O&M cost. The monitoring cost included in the cost-effectiveness analysis was the additional cost for monitoring, reporting, and recordkeeping (MRR) that is not already required for the existing operations. RECLAIM or former RECLAIM Title V facilities will continue with their current MRR requirements specified in Rule 2012, whereas non-Title V facilities would transition to the command-and-control landing rule requirements. Except for reporting requirements, the MRR requirements for Rule 2012 are comparable to command-and-control MRR requirements for Rules 1146 and 1146.1. Since the MRR requirements will either remain the same or be similar to the existing requirements, no additional monitoring cost was considered in the cost-effectiveness analysis for ultra-low NOx burner retrofits. On the other hand, since SCR systems will have an ammonia emission limit, there will be additional monitoring cost due to ammonia slip tests. The additional monitoring costs will require quarterly ammonia testing in the first year of operation and then annually thereafter when four consecutive quarterly source tests demonstrate compliance. The ammonia slip source test was estimated to be \$3,333-3,400 per year based on information obtained from discussions with vendors.

For RECLAIM facilities, substantial reporting requirements are currently required pursuant to Rule 2012, and the transition into a command-and-control rule would not impose additional monitoring costs. Instead, since RECLAIM has extensive reporting requirements, as discussed in Appendix A, it is anticipated that there might be potential cost savings in MRR for some facilities by transitioning into the command-and-control rule. For instance, RECLAIM facilities are required to electronically report their emissions daily for major source units, monthly for large source units and quarterly for other units, in addition to the quarterly certification of emissions and

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<sup>15</sup> December 2015 Staff Report for NOx RECLAIM Amendments to Regulation XX – Regional Clean Air Incentives Market (RECLAIM)

annual permit emissions reports. In contrast, Rule 1146 only requires units with CEMS to report their emissions once every 6 months pursuant to Rule 218 – Continuous Emission Monitoring. The potential savings due to the change in reporting requirements as they transition from RECLAIM to Rule 1146 was estimated based on the approximated annual staffing cost that would be needed to fulfill RECLAIM reporting requirements. The potential savings were approximated to be \$40,000 and \$2,000 per piece of major and non-major sources, respectively. However, at this time these potential savings were not included in the cost-effectiveness analysis since no change is being proposed to the reporting requirements for Title V facilities and aggregate savings for Non-Title V facilities are minimal. Additionally, since the annual heat input threshold for CEMS applicability is lower in RECLAIM, it is possible that a piece of equipment required to maintain a CEMS under RECLAIM Rule 2012 might not be required to maintain the CEMS when it is subject to Rule 1146. However, due to the uncertainty in quantifying the potential cost savings for facilities impacted by the change in the CEMS applicability threshold as they transition from RECLAIM into Rule 1146, this potential savings was not included in the cost-effectiveness analysis.

The California Health & Safety Code (H&SC) Section 40920.6 requires a cost-effectiveness analysis when establishing BARCT requirements. The cost-effectiveness of a control technology is measured in terms of the control cost in dollars per ton of air pollutant reduced. The costs for the control technology includes purchasing, installing, operating, and maintaining the control technology. The 2016 AQMP established a cost-effectiveness threshold of \$50,000 per ton of NO<sub>x</sub> reduced. The cost-effectiveness is estimated based on the present worth value of the control cost, which is calculated according to the capital cost (initial one-time equipment, installation, and permitting expense) plus the annual operating cost (recurring expenses over the useful life of the control equipment times a present worth factor). The present worth factor was based on the Discount Cash Flow (DCF) method assuming a 4% real interest rate. The assumed useful life was 25 years for SCR systems and 15 years for ultra-low NO<sub>x</sub> burners. Table 4 below summarizes the cost-effectiveness for the categories in the PAR 1146 series. The present worth value for Rule 1146 Group I units ranged based on unit size from \$2,278,000 (147 MMBtu/hr) to \$3,617,000 (250 MMBtu/hr). The present worth value for Rule 1146 Group II units ranged according to unit size between \$841,000 (25 MMBtu/hr) to \$1,117,000 (60 MMBtu/hr). Rule 1146 Group III units had a present worth value based on unit size between \$89,000 (6 MMBtu/hr) to \$176,000 (18 MMBtu/hr). The present worth value for Rule 1146.1 ranged from \$55,000 (3 MMBtu/hr) to \$68,000 (5 MMBtu/hr). Rule 1146.2 units had a present worth value between \$30,000 (0.4 MMBtu/hr) to \$36,000 (2 MMBtu/hr).

As discussed previously, the capital cost for atmospheric units and thermal fluid heaters was based on the equipment, installation, and permitting cost for units with a rated heat input of 2, 5, and 10 MMBtu/hr. The emission reductions for these units was based according to a 20% operating capacity and a reduction to 12 ppm NO<sub>x</sub> from a NO<sub>x</sub> emissions baseline of 30 ppm. The present worth values were \$36,000 (2 MMBtu/hr), \$47,000 (5 MMBtu/hr), and \$66,000 (10 MMBtu/hr) for atmospheric units and \$40,000 (2 MMBtu/hr), \$54,000 (5 MMBtu/hr), and \$91,000 (10 MMBtu/hr) for thermal fluid heaters.

For non-RECLAIM facilities, the cost-effectiveness was assumed to be the same as the cost-effectiveness for units that would be required to demonstrate compliance upon burner replacements or 15 years after rule amendment, whichever occurs earlier, which ranged from \$17,000 to \$31,000 per NO<sub>x</sub> reduced, and approximately \$36,000 per NO<sub>x</sub> reduced for thermal fluid heaters, as was estimated for RECLAIM facilities.

The cost-effectiveness values presented in this analysis and summarized below in Table 4, differ slightly from that of the Draft Socioeconomic Impact Assessment (SIA) for PAR 1146 series and PR 1100. The analysis used in the Draft SIA assumes a staggered implementation costs from 2020 to 2023 where 75% of capital costs are assumed in the first year, 20% in the second year, and 5% in the final year of implementation. Additionally, cost-effectiveness calculations will differ based on whether the Discounted Cash Flow (DCF) or Levelized Cash Flow (LCF) method was used.

**Table 4  
Cost-Effectiveness Analysis**

Category	Size (MMBtu/hr)	Recommended Emission Limit	Present Worth Value per unit	Reductions* (tpy)	Control Technology useful life	Cost-effectiveness (\$/ton)
1146 Group I	≥ 75	5 ppm (existing limit)	\$2,765,000	16	SCR – 25 yrs	\$21,000
1146 Group II	≥20 to <75	5 ppm	For units > 12 ppm*			
			\$960,000	56	SCR – 25 yrs	\$36,000
			For units ≤ 12 ppm*			
1146 Group III	≥5 to <20	7 ppm for fire-tube boilers (9 ppm for others)	\$21,000	1.72	ULNB – 15 yrs	\$11,000
			For units > 12 ppm*			
1146.1	≥2 to <5	Same as above	\$134,000	22.6	ULNB – 15 yrs	\$28,000
			For units ≤ 12 ppm*			
			\$10,000	1.88	ULNB – 15 yrs	<\$10,000
1146.2	<2	30 ppm (existing limit)	For units > 12 ppm*			
			\$61,000	2.18	ULNB – 15 yrs	\$36,000
Atmospheric Units	≤10	12 ppm (existing limit)	\$3,000	0.19	ULNB – 15 yrs	<\$10,000
Thermal Fluid Heaters	NA	12 ppm	\$33,000	0.95	ULNB – 15 yrs	<\$10,000

Category	Size (MMBtu/hr)	Recommended Emission Limit	Present Worth Value per unit	Number of Units	Reductions* (tpy)	Control Technology useful life	Cost-effectiveness (\$/ton)
1146 Group I	≥75	5 ppm (existing limit)	\$2,775,000	3	16	SCR – 25 yrs	\$21,000
1146 Group II	≥20 to <75	5 ppm	For units > 12 ppm*				
			\$970,000	52	56	SCR – 25 yrs	\$36,000
			For units ≤ 12 ppm*				
1146 Group III	≥5 to <20	7 ppm for fire-tube boilers (excl. units w/ previous limit >9 or ≤5 ppm)	\$30,000	14	1.7	ULNB – 15 yrs	\$17,000
			For units > 12 ppm*				
			\$134,000	67	22	ULNB – 15 yrs	\$28,000
1146.1	≥2 to <5	Same as above	For units ≤ 12 ppm*				
			\$16,000	41	1.7	ULNB – 15 yrs	\$26,000
1146.2	<2	30 ppm (existing limit)	For units > 12 ppm*				
			\$61,000	19	2.2	ULNB – 15 yrs	\$36,000
Atmospheric Units	≤10	12 ppm (existing limit)	\$7,000	12	0.2	ULNB – 15 yrs	\$31,000
Thermal Fluid Heaters	NA	12 ppm	\$33,000	3	0.9	ULNB – 15 yrs	<\$10,000

\* Estimated using emissions from RECLAIM units

^ Estimated assuming 20% operating capacity and a baseline of 30 ppm

# The present worth value for atmospheric units and thermal fluid heaters is the average of the present worth values of a 2, 5, and 10 MMBtu/hr unit. However, the cost-effectiveness for these two categories was estimated using the sum of the emission reductions and present worth values of the units. Estimated assuming retrofit to meet 20 ppm

Cost estimates from one impacted RECLAIM facility were received after the release of the Draft Staff Report on November 6, 2018. The cost estimates were specific to one Rule 1146 Group III boiler fired on natural gas and process gas, which is a specialized boiler designed with 3 NOx burners to process a mixture of fuel at that facility. Based on information provided from the facility, the total estimate of replacing the 3 burners was approximately \$1.3 million, including about \$200,000 for tuning the existing system and about \$250,000 for contingency. The equipment and installation cost was estimated at \$500,000, which is about 70% higher than the high end of the capital cost estimates provided in the staff report (equipment and installation cost varies from approximately \$80,000 to \$300,000 for that specific boiler size). Given the short timeframe of the information received, the estimations could not be verified and incorporated into the comprehensive cost analysis. Yet, a sensitivity analysis was conducted to estimate the impacts to the cost-effectiveness of Group III units if the estimations (at face value without verification or solicitations of costs from other vendors) are used to meet the NOx limit at that specific RECLAIM facility. The updated cost-effectiveness for Group III, including the one estimate at \$1.3 million at the RECLAIM facility, increased from \$28,000 per ton of NOx reduced to \$30,000 per ton of NOx reduced. Therefore, it is concluded that after accounting for the cost of retrofitting a specialized boiler, it is cost-effective for Group III units to comply with PAR 1146.

Rules 1146 and 1146.1 include a provision for units that operate with low fuel usage. The low fuel use provisions limit annual fuel usage to <90,000 therms/year and <18,000 therms/year for Rule 1146 (c)(5) and Rule 1146.1 (c)(4), respectively. Although it is technically feasible for low fuel use units to retrofit to meet the BARCT emission limits, the resulting emission reductions would be low resulting in the retrofit being not as cost-effective (> \$50,000 per ton of NOx reduced). For example, the cost-effectiveness for a 10 MMBtu/hr water-tube boiler operating at 90,000 therms/year to meet the BARCT emission limit of 9 ppm is about \$56,000/ton. For the same boiler with a fuel usage of 45,000 therms/year, the cost-effectiveness is approximately \$112,000/ton. Due to their lower operations and potential emission reductions, it is not cost-effective to require immediate retrofits for low use units to meet the BARCT emission limits.

### **Incremental Cost-effectiveness**

H&SC Section 40727.2 requires an incremental cost-effectiveness analysis for BARCT rules or emission reduction strategies when there is more than one control option which would achieve the emission reduction objective of the proposed amendment, relative to ozone, CO, SOx, NOx, and their precursors. Incremental cost-effectiveness is defined as the difference in control cost divided by the difference in emission reductions between two potential control options that can achieve the same emission goal or a regulation.

The incremental cost-effectiveness for PAR 1146 ~~and 1146.1~~ was calculated assuming that units between 5 and 75 MMBtu/hr currently complying with a NOx emission limit of 12 ppm or less would be required to meet a more stringent 5 ppm NOx limit with SCR retrofits instead of ~~instead~~ ~~of~~ the proposed limits (7 ppm for fire-tube boilers or 9 ppm for all others) by 15 years after the date of the proposed amendment or when 50 percent or more of the unit's burners are replaced, whichever is earlier. As shown in the Table 5 below, the incremental cost-effectiveness ranged from \$290,976 per tons of NOx reduced for units between  $\geq 20$  and <75 MMBtu/hr to \$1,472,777 per tons of NOx reduced for units between  $\geq 5$  to <20 MMBtu/hr.

**Table 5**  
**Incremental Cost-effectiveness**

Group	Size (MMBtu/hr)	Current Proposal	Alternative	Incremental Cost-Effectiveness
Rule 1146 Group II	≥20 to <75	For units > 12 ppm	None	Not Applicable
		5 ppm via SCR		
		For units ≤ 12 ppm	5 ppm via SCR	\$290,976
7 ppm via ULNB for fire-tube boilers 9 ppm via ULNB for non fire-tube boilers				
Rule 1146 Group III	≥5 to <20	7 ppm via ULNB for fire-tube boilers 9 ppm via ULNB for non fire-tube boilers	5 ppm via SCR	\$1,472,777

There were no other potential control options identified for PAR 1146.1 as alternatives that would achieve the proposed BARCT NOx emission limits given that SCR systems are not scalable down to these units.

Since the emissions limits for the PAR 1146.2 remain the same as the existing rule requirements, an estimate of the incremental cost-effectiveness for the proposed amendments to Rule 1142 relied upon the analysis conducted during the 2006 amendment to Rule 1146.2. In the 2006 amendment to Rule 1146.2, the incremental cost-effectiveness for the larger Type 2 units meeting a lower NOx emission limit of 12 ppm / 20 ppm from 30 ppm was analyzed. The incremental cost-effectiveness was about \$2,400 per ton of NOx reduced for meeting the 20 ppm limit and \$24,100 per ton of NOx reduced for meeting the 12 ppm limit. The incremental cost-effectiveness between NOx emission limits of 20 ppm and 12 ppm was about \$43,600 per additional ton reduced. After adjusting for inflation between 2006 and 2017, the updated incremental cost-effectiveness ranged from roughly \$2,700 to \$27,000 per tons of NOx reduced for meeting the 20 ppm and 12 ppm respectively. Since staff is not proposing changes to the NOx concentration limit for Rule 1146.2 at this time, staff has committed to conduct a technology assessment and possibly a more extensive rulemaking in the future.

### Summary of NOx BARCT Emission Limit

Staff's ~~preliminary~~ recommendation for the BARCT emission limits are established using information gathered from existing SCAQMD regulations, existing permitted units located in SCAQMD, regulatory requirements for other air districts, existing permitted units located in other air districts, the technology assessment, and considerations for application specific limitations. Both retrofits and new installations are considered. After considering the cost-effectiveness, staff recommendations for NOx BARCT can be found in the table below:

**Table 6**  
**Staff's Preliminary Recommendations for NOx BARCT**

Unit Description	Recommended NOx Emission Limits and Compliance Dates			
Rule 1146	Units >5 ppm	Units ≤5 ppm	Compliance Date >5 ppm	Compliance Date ≤5 ppm
≥75 MMBtu/hour (Rule 1146 Group I)	5 ppm via SCR (same as existing limit)	In compliance with rule limit	75% of 1146 & 1146.1 units by Jan 2021 100% of 1146 & 1146.1 units by Jan 2022 Replacement by Jan 2023	No Action Needed
Rule 1146 and 1146.1	Units >12 ppm	Units ≤12 ppm	Compliance Date >12 ppm	Compliance Date ≤12 ppm
≥20 to <75 MMBtu/Hour (Rule 1146 Group II)	5 ppm via SCR	Fire-tube: 7 ppm via ULNB Others: 9 ppm via ULNB	Same as above	Burner replacement or 15 yrs after amendment (for both RECLAIM and non-RECLAIM)
≥5 to <20 MMBtu/Hour (Rule 1146 Group III)	Fire-tube: 7 ppm via ULNB Others: 9 ppm via ULNB	Fire-tube (Excl. units w/ previous limits >9 and ≤12 ppm): 7 ppm via ULNB Others: 9 ppm via ULNB		
>2 to <5 MMBtu/Hour (Rule 1146.1)				
Atmospheric Units ≤10 MMBtu/Hour	12 ppm via ULNB (same as existing limit)	In compliance with rule limit		No Action Needed
Thermal Fluid Heaters	Units >20 ppm	Units ≤20 ppm	Compliance Date >20 ppm	Compliance Date ≤20 ppm
All Sizes	12 ppm via ULNB	12 ppm via ULNB	Same as above for RECLAIM facilities Jan 2022 for non-RECLAIM facilities	Burner replacement or 15 yrs after amendment (for both RECLAIM and non-RECLAIM)

Unit Description	Recommended NOx Emission Limits and Compliance Dates			
Rule 1146	Units >5 ppm	Units ≤5 ppm	Compliance Date >5 ppm	Compliance Date ≤5 ppm
≥75 MMBtu/hour (Rule 1146 Group I)	5 ppm via SCR (same as existing limit)	In compliance with rule limit	75% of 1146 & 1146.1 units by Jan 2021 100% of 1146 & 1146.1 units by Jan 2022 Replacement by Jan 2023	No Action Needed
Rule 1146 and 1146.1	Units >12 ppm	Units ≤12 ppm	Compliance Date >12 ppm	Compliance Date ≤12 ppm
≥20 to <75 MMBtu/Hour (Rule 1146 Group II)	5 ppm via SCR	Fire-tube: 7 ppm via ULNB Others: 9 ppm via ULNB	Same as above	Burner replacement or 15 yrs after amendment (for both RECLAIM and non-RECLAIM)
≥5 to <20 MMBtu/Hour (Rule 1146 Group III)	Fire-tube: 7 ppm via ULNB Others: 9 ppm via ULNB	Fire-tube: 7 ppm via ULNB Others: 9 ppm via ULNB		
>2 to <5 MMBtu/Hour (Rule 1146.1)				
Atmospheric Units ≤10 MMBtu/Hour	12 ppm via ULNB (same as existing limit)	In compliance with rule limit		No Action Needed
Thermal Fluid Heaters	Units >20 ppm	Units ≤20 ppm	Compliance Date >20 ppm	Compliance Date ≤20 ppm
All Sizes	12 ppm via ULNB	12 ppm via ULNB	Same as above for RECLAIM facilities Jan 2022 for non-RECLAIM facilities	Burner replacement or 15 yrs after amendment (for both RECLAIM and non-RECLAIM)

## **CONTROL TECHNOLOGY ASSESSMENT FOR RULE 1146.2 EQUIPMENT**

As part of the technology assessment under the 2006 amendment for Rule 1146.2, source test reports conducted for the Rule 1146.2 Certification Program were analyzed to assess the advancement in pollution control technologies. It was found that low-NO<sub>x</sub> burners for boilers and heaters in this size range can achieve less than 10 ppm NO<sub>x</sub> (at 3% oxygen). In particular, about 15% of the Type 2 units (more than 400,000 Btu/hr) had a certification level of less than 10 ppm of NO<sub>x</sub>, indicating that Type 2 units are capable of meeting a lower emission level at 12 ppm. Although a lower NO<sub>x</sub> emission limit was technically feasible at the time of the 2006 amendment, the average cost-effectiveness for the 12 ppm emission limit was \$24,100, which was considerably higher than the then-proposed emission limit of 20 ppm (average cost-effectiveness = \$2,400). Due to the relatively high cost of implementing the 12 ppm emission limit for Type 2 units in 2006, the 20 ppm emission limit was proposed and adopted in the 2006 amendment.

### **Analysis of NO<sub>x</sub> Concentration Limits for Rule 1146.2 Equipment at Other Air Districts**

To evaluate for potential BARCT advancement from the 2006 amendment, staff has evaluated the following analogous rules in other California Air Districts:

- SJVAPCD Rule 4308 Boilers, Steam Generators, and Process Heaters – 0.075 MMBtu/hr to Less Than 2.0 MMBtu/hr
- SMAQMD Rule 411 NO<sub>x</sub> from Boilers, Process Heaters and Steam Generators
- SMAQMD Rule 414 Water Heaters, Boilers and Process Heaters Rated Less Than 1,000,000 Btu Per Hour
- VCAPCD Rule 74.15.1 Boilers, Steam Generators and Process Heaters 1 to 5 MMBTUs
- VCAPCD Rule 74.11.1 Large Water Heaters and Small Boilers
- BAAQMD Regulation 9 Rule 6 Nitrogen Oxides Emissions from Natural Gas-Fired Boilers and Water Heaters

SCAQMD staff evaluated the requirements contained within the analogous rules and found no requirements that were more stringent than those already in Rule 1146.2.

### **Summary of BARCT Technology Assessment for Rule 1146.2**

Based on the above information, there is a potential opportunity to lower the NO<sub>x</sub> concentration emission limit for Rule 1146.2. However, amending the NO<sub>x</sub> concentration limit will affect both RECLAIM and non-RECLAIM sources, and requires a much more extensive rulemaking process. Since a major objective is to initiate the transition of RECLAIM facilities into a command-and-control regulatory structure with highest priority given to older, higher polluting units that will need to install retrofit controls, staff is not proposing changes to the NO<sub>x</sub> concentration limit for Rule 1146.2 equipment at this time. Staff is committed to return to Rule 1146.2 to further assess the advancement and the cost-effectiveness of advanced control technologies for this source category.

## **CHAPTER 3: SUMMARY OF PROPOSALS**

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**INTRODUCTION**

**PROPOSED AMENDED RULE 1146**

**PROPOSED AMENDED RULE 1146.1**

**PROPOSED AMENDED RULE 1146.2**

**PROPOSED RULE 1100**

**TRANSITION LOGISTICS**

## INTRODUCTION

The primary objectives of PARs 1146, 1146.1, and 1146.2 are to establish NO<sub>x</sub> limits that represent BARCT requirements for equipment regulated under these rules and to remove the exclusion of RECLAIM facilities. Additional definitions and provisions were needed to clarify the revised requirements for the applicable facilities. The key revisions to the rules are discussed below.

## PROPOSED AMENDED RULE 1146

### Rule 1146 Applicability (Subdivision (a))

Rule 1146 applies to boilers, steam generators, and process heaters of equal to or greater than 5 MMBtu/hr of rated heat input capacity used in all industrial, institutional, and commercial operations and currently exempts power generating boilers at electricity generating facilities (EGFs), boilers and process heaters with a rated heat input capacity greater than 40 MMBtu/hr that are used in petroleum refineries, sulfur reaction plant boilers, and units operated at RECLAIM facilities pertaining to NO<sub>x</sub> emissions only.

The proposed amendments would revise and move these exemptions from subdivision (a) – Applicability to a new subdivision (f) – Exemptions.

### Rule 1146 Definitions (Subdivision (b))

The following definitions were added to Rule 1146 to distinguish different boiler types, facility types, and consistently define the meaning of modification.

FIRE-TUBE BOILER in paragraph (b)(7), which means:

*“any boiler that passes hot gases from a fire box through one or more tubes running through a sealed container of water. The heat of the gases is transferred through the walls of the tubes by thermal conduction, heating the water and ultimately creating steam.”*

FORMER RECLAIM FACILITY in paragraph (b)(8), which means:

*“a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX, that has received a final determination notification, and is no longer in the RECLAIM program.”*

MODIFICATION in paragraph (b)(16), which means:

*“any physical change that meets the criteria set forth in Rule 1302 – Definitions.”*

MUNICIPAL SANITATION SERVICES in paragraph (b)(17), which means:

*“basic sanitation services provided to the residents of a municipality by sewage treatment plants and municipal solid waste landfills”*

NON-RECLAIM FACILITY in paragraph (b)(18), which means:

*“a facility, or any of its successors, that was not in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.”*

RECLAIM FACILITY in paragraph (b)(23), which means:

*“a facility, or any of its successors, that ~~was~~ is currently in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.”*

The following definitions were deleted from Rule 1146 since they were no longer referred to in this rule.

#### ANNUAL CAPACITY FACTOR

#### STANDBY BOILER

#### **Rule 1146 Requirements (Subdivision (c))**

Prior to this amendment, RECLAIM facilities were not required to comply with the command-and-control NO<sub>x</sub> emission limits in Rule 1146 because of the exemption specified in subdivision (j) of Rule 2001 and paragraph (a)(4) of the current Rule 1146. In order to remove this exemption, subdivision (c) will have the following notwithstanding clause:

*“Notwithstanding the exemptions contained in Rule 2001 – Applicability, Table 1 – Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NO<sub>x</sub> Emissions If Rule was Adopted or Amended Prior to October 5, 2018, the owner or operator of any unit(s) subject to this rule shall not operate the unit in a manner that exceeds the applicable emission limits specified in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4).”*

RECLAIM and former RECLAIM facilities with equipment subject to Rule 1146 will be required to comply with the proposed NO<sub>x</sub> emission limit that is specified in paragraph (c)(1) based on the applicable category in Table 1146-1, which represents current BARCT. The implementation schedule will be detailed in PR 1100, as specified in subparagraph (e)(1).

The NO<sub>x</sub> emission limits are presented in Table 7 which is also in PAR 1146 Table 1146-1 – NO<sub>x</sub> Emission Limits and Compliance Schedule. This table changed for certain units in Group II, Group III, and thermal fluid heaters from Table 1146-1 in the current Rule 1146. The table was also updated to remove the columns specifying dates for submittal of compliance plans and permit applications. Also removed was the criteria for the previously required compliance plans that was specified in paragraph (c)(9) of the current Rule 1146.

The enhanced compliance limits for Group II units specified in Table 1146-2 and paragraph (c)(2) in the current Rule 1146 were removed. These enhanced limits and compliance dates are no longer applicable to the proposed amendment, given that the compliance dates have passed and that the standard limit for Group II has been revised in Table 1146-1 to 5 ppm or 0.0062 lbs/10<sup>6</sup> Btu. However, an existing Group II unit meeting 5 ppm based on the prior Enhanced Compliance Limits and Schedule in Table 1146-2 of the current Rule 1146 would still be required to meet 5 ppm. Group II units complying with 5 ppm would be subject to subparagraph (c)(1)(I) of the proposed amended rule, since such a unit would be excluded from subparagraph (c)(1)(G) or (c)(1)(H) given that the previous NO<sub>x</sub> limit prior to the date of amendment must be greater than 5 ppm for these subparagraphs to be applicable.

Paragraph (c)(2) was replaced to specify an ammonia slip limit as follows:

*“The owner or operator of any unit(s) operating with air pollution control equipment that results in ammonia emissions in the exhaust shall not discharge into the atmosphere ammonia emissions in excess of 5 ppm (referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 60 consecutive minutes), except for units complying with paragraph (c)(89).”*

The ammonia emission limit of 5 ppm is consistent with the current BACT limit and would apply to units that are installed or modified on or after the date of the proposed amendment. As specified in paragraph (c)(89), existing non-RECLAIM units installed or modified prior to the proposed amendment that are currently permitted with an ammonia emission limit greater than 5 ppm do not

have to meet the ammonia emission limit in paragraph (c)(2) or conduct follow the compliance schedule specified in paragraph (d)(3) until the air pollution control equipment is replaced or modified. However, any existing air pollution control equipment shall retain and continue to comply with the NOx emission limit and source testing requirements as specified in the unit's SCAQMD Permit to Operate.

“(89) An owner or operator that has installed, modified, or has been issued a SCAQMD Permit to Construct or Permit to Operate prior to [date of amendment]for any unit(s) operating with air pollution control equipment that results in ammonia emissions in the exhaust complying with an ammonia emission limit greater than 5 ppm, when the air pollution control equipment is replaced or modified, the owner or operator shall:

(A) Meet the ammonia emission limit in specified in (c)(2); and

(B) During the first 12 months of operation, demonstrate compliance according to the schedule specified in paragraph (d)(3).”

**Table 7  
Rule 1146-1 – NOx Emission Limits and Compliance Schedule**

Rule Reference	Category	Limit <sup>1</sup>	Compliance Schedule for Non-RECLAIM Facilities	Compliance Schedule for RECLAIM and Former RECLAIM Facilities
(c)(1)(A)	All Units Fired on Gaseous Fuels	30 ppm or for natural gas fired units 0.036 lbs/10 <sup>6</sup> Btu	September 5, 2008	See Rule 1100 – Implementation Schedule for NOx Facilities
(c)(1)(B)	Any Units Fired on Non-gaseous Fuels	40 ppm	September 5, 2008	
(c)(1)(C)	Any Units Fired on Landfill Gas	25 ppm	January 1, 2015	
(c)(1)(D)	Any Units Fired on Digester Gas	15 ppm	January 1, 2015	
(c)(1)(E)	Atmospheric Units	12 ppm or 0.015 lbs/10 <sup>6</sup> Btu	January 1, 2014	
(c)(1)(F)	Group I Units	5 ppm or 0.0062 lbs/10 <sup>6</sup> Btu	January 1, 2013	
(c)(1)(G)	Group II Units (Fire-tube boilers with a previous NOx limit <u>≤less than or equal to 9±2 ppm</u> and <u>≥greater than 5 ppm</u> prior to [date of amendment])	7 ppm or 0.0085 lbs/10 <sup>6</sup> Btu;	See (c)(7)(A)	
(c)(1)(H)	Group II Units (All others with a previous NOx limit <u>≤less than or equal to 12 ppm</u> and <u>≥greater than 5 ppm</u> prior to [date of amendment])	9 ppm or 0.011 lbs/10 <sup>6</sup> Btu	January 1, 2014 or See (c)(7)(A)	
(c)(1)(I)	Group II Units (All others)	5 ppm or 0.0062 lbs/10 <sup>6</sup> Btu	Date of amendment	
(c)(1)(J)	Group III Units (Fire-tube boilers <del>only</del> <u>excluding units with a previous NOx limit less than or equal to 12 ppm and greater than 9 ppm</u> prior to [date of amendment])	7 ppm or 0.0085 lbs/10 <sup>6</sup> Btu	Date of amendment or See (c)(7)(B) <u>for units with a previous NOx limit less than or equal to 9 ppm</u> prior to [date of amendment]	
(c)(1)(K)	Group III Units (All others)	9 ppm or 0.011 lbs/10 <sup>6</sup> Btu	January 1, 2015 or See (c)(8)(7)(B) <u>for units with a previous NOx limit less than or equal to 12 ppm</u> prior to September 5, 2008	
(c)(1)(L)	Thermal Fluid Heaters	12 ppm or 0.015 lbs/10 <sup>6</sup> Btu	Date of amendment or See (c)(7)(C) for units with a previous NOx limit <u>≤less than or equal to 20 ppm</u> prior to [date of amendment] or See (e)(2) for units with a previous NOx limit <u>≥greater than 20 ppm</u> prior to [date of amendment]	

<sup>1</sup>All parts per million (ppm) emission limits are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.

### Requirements for Low-Fuel Use Units

Paragraph (c)(5), which contains provisions for non-RECLAIM low-fuel usage units that have been in operation prior to September 5, 2008, was extended to also apply to low-fuel usage units at a RECLAIM or former RECLAIM facility that are in operation prior to the 12 months after the date of the proposed amendment with an annual heat input less than or equal to  $9.0 \times 10^9$  Btu (90,000 therms) per year. Pursuant to paragraph (e)(3), any owner or operator that complies with the alternative compliance option specified in paragraph (c)(5) will be subject to a NOx emission limit of 12 ppm 15 years after the date of amendment or when 50 percent or more of the unit's burners are replaced, whichever is earlier.

On or after January 1, 2015 or until burner replacement, whichever occurs later, is the compliance schedule for non-RECLAIM low-fuel use units that is currently specified in paragraph (e)(3) in the current Rule 1146. Since this date has passed, compliance until burner replacement will be retained for existing units that have not had a burner replacement, but a definite timeframe of 15 years after amendment of the rule is now included for non-RECLAIM, RECLAIM or former RECLAIM facilities as follows:-

*“(3) By [15 years after the date of amendment] or when 50 percent or more of the unit’s burners are replaced, whichever is earlier, no person shall operate in the District any unit subject to paragraph (c)(5) that discharges into the atmosphere NOx emissions in excess of 12 ppm (referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes).”*

Additionally, paragraph (e)(4) was revised to clarify that the fuel use limitation for compliance determination is not based on the heat input during any twelve month period, but rather the “annual heat input”, which is defined in subdivision (b) as the total heat input to the unit during a calendar year. If a low fuel use unit exceeds the fuel usage limit, the exceedance will constitute a violation of this rule and the operator or owner of the unit will be required to demonstrate compliance with the applicable NOx emission limit and all applicable requirements within 18 months after the exceedance.

### Requirements for Units Complying with a NOx Emission Limit of 12 ppm or less (or Thermal Fluid Heaters Complying with a NOx Emission Limit of 20 ppm or less)

In the 2008 amendments of Rules 1146 and 1146.1, a provision was included for natural gas units ranging from 2 to 20 MMBtu/hr to comply with the BARCT emission limits until the unit's burner(s) replacement, if the units complied with the then-applicable BACT limit of 12 ppm and were installed prior to the 2008 amendments. The provision was specified in Rule 1146 (c)(7) and Rule 1146.1 (c)(6), respectively (November 1, 2013 amendment).

Currently, there are a total of ~~6797~~ RECLAIM units between 2 and 75 MMBtu/hr ~~with~~ complying with NOx emission limit between 9 and 12 ppm. The reported emissions for these ~~6797~~ units in 2016 totaled to ~~0.0430-0.58~~ tpd of NOx. If these units were required to meet the proposed NOx concentration limits of (7 ppm for fire-tube boilers currently meeting 9 ppm and 9 ppm for all others), the estimated emission reductions would be ~~0.0100-0.063~~ tpd. Units currently complying with a 12 ppm NOx emission limit were either retrofitted or required to meet a specific emission limit to meet BACT if the unit was new. Assuming a useful equipment life of 15 years for ultra-low NOx burners, the majority of these units might not have met their full useful life by the compliance date under PR 1100. Additionally, there are 7 thermal fluid heaters currently complying with a NOx emission limit less than or equal to 20 ppm with reported emission of 0.0031 tpd. The estimated emission reductions would be 0.0012 tpd if these units were required to meet the proposed NOx emission limits of 12 ppm. Since it is not cost-effective to require

immediate retrofits for ~~these units~~ currently complying with a NOx emission limit of 12 ppm or less (or 20 ppm or less for thermal fluid heaters), a future compliance timeframe will be specified, as shown below, in Rule 1146 paragraphs (c)(7) and (c)(8) for units between 5 and 75 MMBtu/hr currently complying with a NOx emission limit between 5 and 12 ppm and thermal fluid heaters complying with a NOx emission limit of 20 ppm or less. These units will have to meet the applicable NOx emission limit by a date that is 15 years after the date of the proposed amendment or when 50 percent or more of the unit's burners are replaced. For units with multiple burners, each successive burner replacement after the date of rule amendment shall be added to the cumulative percentage of burners replaced. The same compliance timeframe will be specified in PR 1100 for units between 2 and 75 MMBtu/hr currently complying with a NOx emission limit of 12 ppm or less and thermal fluid heaters complying with a NOx limit of 20 ppm or less at a RECLAIM or former RECLAIM facility.

- “(7) Notwithstanding paragraph (c)(1), *an owner or operator that has installed, modified, or has been issued a SCAQMD Permit to Construct or Permit to Operate for the following units prior to [date of amendment], at a non-RECLAIM facility, shall meet the NOx emission limit specified in Table 1146-1 by [15 years after the date of amendment] or when 50 percent or more of the unit's burners are replaced, whichever is earlier:*
- (A) *Group II fire-tube boilers~~units~~ subject to subparagraph (c)(1)(G) ~~or (e)(1)(H)~~ complying with a previous NOx emission limit that is less than or equal 9 ppm and greater than 5 ppm; or*
  - (B) *Group III fire-tube boilers~~units~~ subject to subparagraph (c)(1)(J) ~~or (e)(1)(K)~~ complying with a previous NOx emission limit that is less than or equal to ~~9~~12 ppm; or*
  - (C) *Thermal fluid heaters subject to subparagraph (c)(1)(L) complying with a previous NOx emission limit that is less than or equal to 20 ppm.”*

- “(8) Notwithstanding the NOx emission limit specified in Table 1146-1 of paragraph (c)(1), by [15 years after the date of amendment] or when 50 percent or more of the unit's burners are replaced, whichever is earlier, the owner or operator that has installed, modified, or has been issued a SCAQMD Permit to Operate prior to September 5, 2008 for a Group III natural gas fired unit complying with a previous NOx emission limit of 12 ppm or less and greater than 9 ppm shall not operate in a manner that discharges NOx emissions (reference at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) in excess of 9 ppm.”

As a conservative approach, fire-tube boilers subject to PARs 1146 and 1146.1 that were subject to the prior BACT limit of 12 ppm NOx before 2008 will be subject to 9 ppm upon burner replacements or 15 years after rule amendment, whichever is earlier, eventhough at least two vendors confirmed that 7 ppm retrofits are feasible for Rule 1146 Group II, Group III, and 1146.1 units and a third said they could provide them (except for certain cases). These units are older than the current 9 ppm fire-tube boilers, which operate with NOx emissions between 6 and 8 ppm, thus a 7 ppm retrofit for these units could possibly just involve tuning of the unit with or without additional controls. Whereas, the older 12 ppm burners that typically operate with NOx emissions between 11 and 12 ppm, might require a burner replacement with a new burner that could possibly be of a different technology, which could cost up to 4 or 5 times more than just the additional controls (VFD/oxygen trim) that might be used for the 9 ppm burners to meet 7 ppm NOx.

### Requirements for Biogas Units

Paragraph (c)(~~11~~), which applies to biogas units that are co-fired with natural gas, would require compliance with the emission limits in Table 1146-1 by each applicable compliance date for the selected unit under PR 1100 for units located at a RECLAIM or former RECLAIM facility.

### Requirements for Units at a Municipal Sanitation Service Facility

As discussed above, because of the inherent challenges for units at a municipal sanitation service facility, such as sewage treatment plants and solid waste landfills, the existing NOx emission limits in the current Rule 1146 will be retained for these units. The proposed 7 ppm NOx limit for Group II and Group III units or 12 ppm NOx limit for thermal fluid heaters specified in Table 1146-1, or the proposed 12 ppm for any low-fuel use unit complying with paragraph (c)(5), will not apply to units at a municipal sanitation service facility. These units will instead continue to meet the existing NOx limits as specified in paragraph (c)(~~11~~12):

*“(12~~1~~) Notwithstanding the NOx emission limits specified in Table 1146-1 of paragraph (c)(1) or paragraph (e)(3), and until a Regulation XI rule referenced in paragraph (f)(5) is adopted or amended and that rule compliance date occurs, an owner or operator shall not operate units at a municipal sanitation service facility in a manner that discharges NOx emissions (referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) in excess of:*

- (A) *9 ppm for Group II and Group III units; or*
- (B) *9 ppm, upon burner replacement, for Group III units that were installed or modified prior to September 5, 2008 complying with a previous NOx emission limit of 12 ppm or less~~shall~~; or*
- (C) *30 ppm for thermal fluid heaters; or.*
- (D) *30 ppm, upon burner replacement, for any low-fuel use unit complying with paragraph (c)(5).”*

### Rule 1146 Compliance Determination (Subdivision (d))

Subdivision (d) contains the compliance determination requirements for the equipment subject to this rule. Paragraph (d)(8) provides a clarification that is also contained in the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Units Subject to SCAQMD Rules 1146 and 1146.1 (Combustion Gas Periodic Monitoring Protocol). The purpose of the clarification is to exclude units that are subject to continuous emission monitoring system (CEMS) requirements from the periodic monitoring requirements (or diagnostic emission checks) contained in Rule 1146. Paragraph (c)(6) contains the continuous emission monitoring requirements and the proposed language in paragraph (d)(8) excludes the units that are subject to CEMS from performing diagnostic emission checks. Subparagraph (d)(8)(A) specifies the periodic monitoring for NOx emissions that each owner or operator of units subject to paragraphs (c)(1), (c)(2), or (c)(4) must conduct. Subparagraph (d)(8)(B) specifies the schedule for performing the diagnostic NOx emissions checks for low-fuel use units complying with the requirements specified in paragraph (c)(5). In the current Rule 1146, the schedule for performing the diagnostic emission checks for low-fuel units at a non-RECLAIM facility is on or after January 1, 2015 or during burner replacement, whichever occurs later. Since this date has passed and low-fuel units at a non-RECLAIM facility are currently complying with diagnostic NOx emissions checks according to the tune-up schedule specified in subparagraph (c)(5)(B), subparagraph (d)(8)(B) will state:

*“The owner or operator of units ~~subject to complying with~~ the requirements specified in paragraph (c)(5) shall check NOx emissions according to the tune-up schedule specified in subparagraph (c)(5)(B).”*

For units at a RECLAIM or former RECLAIM facility the NOx emissions checks pursuant to subparagraph (d)(8)(B) will be required according to the schedule for the selected unit under PR 1100 .

### **Compliance Demonstration for Ammonia Emissions**

Paragraph (d)(3) was replaced with the compliance demonstration requirements for the ammonia emission limit specified in paragraph (c)(2). The compliance demonstration for ammonia emissions will be quarterly source testing for the first 12 months of operation and annually thereafter when four consecutive quarterly source tests demonstrate compliance, or in lieu of source testing, an ammonia Continuous Emission Monitoring System (CEMS) under an approved SCAQMD protocol.

*“(3) An owner or operator of a unit subject to the ammonia emission limit specified in paragraph (c)(2) shall:*

- (A) Conduct quarterly a source test to demonstrate compliance with the ammonia emission limit, according to the procedures in District Source Test Method 207.1 for Determination of Ammonia Emissions from Stationary Sources, during the first 12 months of unit operation and thereafter, except that source tests may be conducted annually within 12 months thereafter when four consecutive quarterly source tests demonstrate compliance with the ammonia emission limit. If an annual test is failed, four consecutive quarterly source tests must demonstrate compliance with the ammonia emissions limits prior to resuming annual source tests; or*
- (B) Utilize an ammonia Continuous Emissions Monitoring System (CEMS) certified under an approved SCAQMD protocol to demonstrate compliance with the ammonia emission limit.”*

### **Monitoring, Reporting and Recordkeeping Requirements**

Staff compared monitoring reporting and recordkeeping requirements for Rule 1146, 1146.1, and 1146.2 to the monitoring and reporting requirements under RECLAIM. The detailed comparison is provided in Appendix A of this staff report. In general, most monitoring and recordkeeping requirements under RECLAIM were similar to the corresponding command-and-control rule. The most substantive difference was the threshold for continuous emissions monitoring systems. Staff is currently working on adopting Proposed Rule 113 – Monitoring, Reporting, and Recordkeeping (MRR) Requirements for NOx and SOx Sources. Once PR 113 is adopted, all Rule 1146/1146.1 equipment will transition to PR 113 for MRR. In the interim, the intention of PAR 1146 series and PR 1100 is for Title V ~~RECALIM~~ RECLAIM facilities to retain RECLAIM MRR requirements pursuant to Rule 2012. A discussion of the requirements of monitoring, recordkeeping, and reporting requirements for RECLAIM and non-RECLAIM facilities is presented below.

#### *Non-Major Sources in Non-Title V Facilities*

The requirements in monitoring and recordkeeping are comparable between RECLAIM and those specified in Rule 1146, Rule 1146.1, and Rule 1146.2. Since mass emissions are used for RTC reconciliation and compliance determination, the reporting requirements in RECLAIM include

both monthly/quarterly electronic reporting, and quarterly and annual paper reporting. The corresponding requirement in Rule 1146 is a semi-annual report only for equipment equipped with CEMS and subject to Rule 218 - *Continuous Emission Monitoring*. For facilities without CEMS, Rule 1146 applicable equipment must comply with periodic monitoring with the use of portable emission analyzers either monthly or every 750 operating hours, or quarterly or every 2000 operating hours. Given that the reporting requirements in RECLAIM were designed to ensure the integrity of the reported mass emissions, mass emission reporting requirements might not be needed if the facilities are subject to Rule 1146 series, which determine compliance through a concentration limit. As such, non-major sources in non-Title V facilities would be subject to the MRR requirements in Rule 1146 series.

#### *Major Sources in Non-Title V Facilities*

Major sources in the RECLAIM program are required to be equipped with a Continuous Emission Monitoring System (CEMS). A Major source is defined in Rule 2012 (c)(1) as follows:

*“(A) any boiler, furnace, oven, dryer, heater, incinerator, test cell and any solid, liquid or gaseous fueled equipment with a maximum rated capacity:*

- (i) greater than or equal to 40 but less than 500 million Btu per hour and an annual heat input greater than 90 billion Btu per year; or*
- (ii) 500 million Btu per hour or more irrespective of annual heat input;”*

In Rule 1146, any units with a rated heat input capacity greater than or equal to 40 MMBtu/hr and an annual heat input greater than 200 billion Btu per year are required to have installed a continuous in-stack NO<sub>x</sub> monitor (CEMS-equivalent) (Rule 1146 (c)(6)). A comparison between the applicability thresholds in Rule 1146 and the RECLAIM program is shown in Table 8.

**Table 8**  
**Applicability Thresholds of CEMS in Rule 1146 and RECLAIM**

	<b>Rule 1146</b>	<b>RECLAIM</b>
<b>Size</b>	40 MMBtu/hr	40 MMBtu/hr
<b>Annual Fuel Usage</b>	200 Billion Btu/year	90 Billion Btu/year

Since the applicability threshold in annual heat input is lower in RECLAIM, it is possible that a piece of equipment required to maintain a CEMS under RECLAIM Rule 2012 might not be required to maintain the CEMS when it is subject to Rule 1146. As discussed previously, mass emissions reported by RECLAIM facilities are used to track and demonstrate compliance in the RECLAIM program. To ensure the integrity of reported emissions, RECLAIM includes substantial monitoring and reporting requirements for major sources such as annual (or semi-annual) relative accuracy testing (RATA), daily emissions electronic reporting, quarterly aggregate electronic reporting, quarterly emissions reports (QCER), and annual emissions report (APEP). As RECLAIM facilities transition into an equipment-based command-and-control regulatory structure, to the extent possible, they should be subject to the same regulatory requirements as other non-RECLAIM facilities that are currently regulated by the respective command-and-control rules. In particular, Rule 1146 was approved in the California State Implementation Plan (SIP) in 2014 (79 FR 57442). It was determined by EPA that Rule 1146 is consistent with the relevant policy and guidance as required under the Clean Air Act. Therefore, as RECLAIM facilities exit the RECLAIM program, PAR 1146 requires that Rule 1146 equipment at a former RECLAIM facility to be subject to the CEMS requirements in Rule 1146. In other

words, a former non-Title V RECLAIM facility would be allowed to remove the CEMS that is equipped on a Rule 1146 unit, if the equipment size and annual heat input usage of the unit is lower than the CEMS applicability threshold as specified in Rule 1146.

To evaluate the potential impacts of the change in CEMS threshold as RECLAIM facilities transition into PAR 1146, the fuel usage records of RECLAIM units was retrieved for calendar year 2015 and 2016. Among the 18 units that exceed the equipment size threshold of  $\geq 40$  MMBtu/hr, one was defined as non-major sources under the RECLAIM program, as their annual heat inputs were less than the major source definition of 90 billion Btu per year as specified in Rule 2012 (c)(1). For this one, CEMS would not be required under both Rule 1146 or RECLAIM requirements. Fifteen of the 17 major source units reported fuel usage data in 2015 / 2016. Five of these units had an annual fuel usage that exceeded 200 billion Btu per year. These units would be required to be equipped with CEMS under both Rule 1146 and the RECLAIM program. A total of ten major source units reported fuel usage below 200 billion Btu per year with 7 units that reported fuel usage below 90 billion Btu per year, and 3 units reported fuel usage between 90 and 200 billion Btu per year. Although the annual heat input of these 7 major source units fall below the CEMS applicability threshold in Rule 1146, they are equipped with CEMS, as required by all major source units in RECLAIM. Therefore, these units might have higher fuel usage records before year 2015, which was not captured in this analysis. To be conservative, a total of 10 Rule 1146 major source units is estimated to be potentially impacted by the change in the CEMS applicability threshold as they transition from RECLAIM into Rule 1146, and they may potentially remove the CEMS currently equipped with the unit, dependent upon future fuel usage of each unit.

#### *Title V Facilities*

Title V is a federal program designed to standardize air quality permits and the permitting process for “major sources” of emissions across the country. EPA defines a “major source” as a facility that emits, or has the potential to emit (PTE) any criteria pollutant or hazardous air pollutant (HAP) at levels equal to or greater than the Major Source Thresholds (MST), which may vary depending on the attainment status (e.g. marginal, serious, extreme) of the geographic area and the criteria pollutant or HAP in which the facility is located. Title V requires additional periodic monitoring for the SIP-approved, federally enforceable rules that do not contain sufficient monitoring requirements to assure compliance with the emission limitations or other requirements. SCAQMD has developed guidelines, outlined in SCAQMD Periodic Monitoring Guidelines<sup>16</sup>, for periodic monitoring, testing and recordkeeping requirements that may be incorporated in Title V permits. Currently, the monitoring requirements in the RECLAIM program are comprehensive and address the Title V periodic monitoring requirements. Therefore, RECLAIM Title V facilities will continue to comply with the monitoring, reporting, and recordkeeping requirements specified in Rule 2012 until PR 113 is adopted.

#### **Rule 1146 Compliance Schedule (Subdivision (e))**

Subdivision (e) contains the compliance schedule provisions for units at a RECLAIM or former RECLAIM facility and for thermal fluid heaters at a non-RECLAIM facility. Paragraph (e)(1) references the compliance schedule specified in PR 1100 for RECLAIM or former RECLAIM facilities, since PR 1100 will contain the implementation schedules for the units that will be transitioning out of the RECLAIM program.

*“(1) The owner or operator of any unit(s) at a RECLAIM or former RECLAIM facility subject to paragraph (c)(1) shall meet the applicable NOx emission limit in Table*

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<sup>16</sup> Periodic Monitoring Guideline. <http://www.aqmd.gov/home/permits/title-v/title-v-requirements#pm>.

*1146-1 in accordance with the schedule specified in Rule 1100 – Implementation Schedule for NOx Facilities.”*

As stated below, Paragraph (e)(2) will specify the compliance schedule for non-RECLAIM thermal fluid heaters. Permit applications will be due 12 months after rule amendment for units with a NOx emission limit greater than 20 ppm. These thermal fluid heaters will have to meet the proposed 12 ppm NOx limit by January 1, 2022.

- “(2) *An owner or operator of a non-RECLAIM facility with any thermal fluid heaters with a NOx emission limit greater than 20 ppm shall:*
- (A) *On or before [12 months after date of amendment], submit a complete SCAQMD permit application for each thermal fluid heater that does not currently meet the limit specified in subparagraph (c)(1)(L); and*
  - (B) *On or before January 1, 2022, meet the applicable NOx emission limit in Table 1146-1 for thermal fluid heaters subject to subparagraph (c)(1)(L).”*

### **Rule 1146 Exemptions (Subdivision (f))**

A new subdivision was added to include rule exemptions, which in the current rule were stated in subdivision (a). For the proposed amended rule, the exemptions will be under subdivision (f) as follows:

- “(f) *Exemptions*  
*The provisions of this rule shall not apply to:*
- (1) *boilers used by electric utilities to generate electricity; or*
  - (2) *boilers and process heaters with a rated heat input capacity greater than 40 million Btu per hour that are used in petroleum refineries; or*
  - (3) *sulfur plant reaction boilers; or*
  - (4) *any unit at a RECLAIM or former RECLAIM facility that is subject to a NOx emission limit in a different rule for an industry-specific category defined in Rule 1100 – Implementation Schedule for NOx Facilities; or*
  - (5) *any unit at a municipal sanitation service facility that is subject to a NOx emission limit in a ~~different~~ Regulation XI rule adopted or amended after [date of amendment].”*

Units that are, ~~or will be,~~ covered by a rule for an industry-specific category and subject to an applicable NOx emission limit are exempted from this rule. Paragraph (f)(4) includes any unit at a RECLAIM or former RECLAIM facility covered in an industry-specific category as defined in PR 1100. Currently, this includes energy generating boilers at electricity generating facilities (EGFs) and refinery boilers with applicable NOx limits specified in the corresponding rule. Paragraph (f)(5) will include units at municipal sanitation service facility, which will have a sector specific rule specifying the applicable NOx emission limits for these units.

## PROPOSED AMENDED RULE 1146.1

### Rule 1146.1 Applicability (Subdivision (a))

Rule 1146.1 applies to boilers, steam generators, and process heaters that are greater than 2 million Btu per hour and less than 5 million Btu per hour of rated heat input capacity used in any industrial, institutional, or commercial operation with the exception of boilers operated at RECLAIM facilities pertaining to NO<sub>x</sub> emissions only.

The proposed amendment to Rule 1146.1 will revise and move the exemption contained in subdivision (a) – Applicability to a new subdivision (f) – Exemptions.

### Rule 1146.1 Definitions (Subdivision (b))

The following definitions were added to Rule 1146.1 to distinguish different boiler types, facility types, and consistently define the meaning of modification.

FIRE-TUBE BOILER in paragraph (b)(7), which means:

*“any boiler that passes hot gases from a fire box through one or more tubes running through a sealed container of water. The heat of the gases is transferred through the walls of the tubes by thermal conduction, heating the water and ultimately creating steam.”*

FORMER RECLAIM FACILITY in paragraph (b)(8), which means:

*“a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX, that has received a final determination notification, and is no longer in the RECLAIM program.”*

HEAT INPUT in paragraph (b)(10), which means:

*“the chemical heat released due to assumed complete combustion of fuel in a unit, using the higher heating value of the fuel. This does not include the sensible heat of incoming combustion air.”*

MODIFICATION in paragraph (b)(13), which means:

*“any physical change that meets the criteria set forth in Rule 1302 – Definitions.”*

MUNICIPAL SANITATION SERVICES in paragraph (b)(14), which means:

*“basic sanitation services provided to the residents of a municipality by sewage treatment plants and municipal solid waste landfills.”*

NON-RECLAIM FACILITY in paragraph (b)(15), which means:

*“a facility, or any of its successors, that was not in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.”*

RECLAIM FACILITY in paragraph (b)(20), which means:

*“a facility, or any of its successors, that ~~was~~ ~~is~~ ~~currently~~ in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.”*

The following definitions were deleted from Rule 1146.1 since they were no longer referred to in this rule.

SCHOOL

**Rule 1146.1 Requirements (Subdivision (c))**

Prior to this amendment, RECLAIM facilities were not required to comply with the command-and-control NOx emission limits in Rule 1146.1 because of the exemption specified in subdivision (j) of Rule 2001. In order to remove this exemption, subdivision (c) will have the following notwithstanding clause:

*“Notwithstanding the exemptions contained in Rule 2001 – Applicability, Table 1 – Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NOx Emissions If Rule was Adopted or Amended Prior to October 5, 2018, the owner or operator of any unit(s) subject to this rule shall not operate the unit in a manner that exceeds the applicable emission limits specified in paragraphs (c)(1), (c)(2), and (c)(3).”*

RECLAIM and former RECLAIM facilities with equipment subject to Rule 1146.1 will be required to comply with the proposed NOx emission limit specified in paragraph (c)(1) based on the applicable category in Table 1146.1-1, which represents current BARCT. The implementation schedule will be detailed in PR 1100, as specified in subparagraph (e)(1).

The NOx emission limits are presented in Table 9 which is also in PAR 1146.1 Table 1146.1-1 – NOx Emission Limits and Compliance Schedule. This table changed for fire-tube boilers and thermal fluid heaters. A new column for the rule reference of the different categories was added, while the column specifying dates for submittal of permit applications was removed. Additionally, PAR 1146.1 will move and specify in row (c)(1)(A) the existing NOx limit of 30 ppm (or for natural gas fired units 0.036 lbs/106 Btu) that was specified in paragraph (c)(1) of the current Rule 1146.1.

**Table 9**  
**Table 1146.1-1 – NOx Emission Limits and Compliance Schedule**

Rule Reference	Category	Limit <sup>1</sup>	Compliance Schedule for Non-RECLAIM Facilities	Compliance Schedule for RECLAIM and Former RECLAIM Facilities
(c)(1)(A)	All Other Units	30 ppm or for natural gas fired units 0.036 lbs/10 <sup>6</sup> Btu	September 5, 2008	See Rule 1100 – Implementation Schedule for NOx Facilities
(c)(1)(B)	Any Units Fired on Landfill Gas	25 ppm	January 1, 2015	
(c)(1)(C)	Any Units Fired on Digester Gas	15 ppm	January 1, 2015	
(c)(1)(D)	Atmospheric Units	12 ppm or 0.015 lbs/10 <sup>6</sup> Btu	January 1, 2014	
(c)(1)(E)	Any Units Fired on Natural Gas, <u>e</u> Excluding Fire-tube Boilers subject to (c)(1)(F), Atmospheric Units, and Thermal Fluid Heaters	9 ppm or 0.011 lbs/10 <sup>6</sup> Btu	January 1, 2014 or <u>See (c)(6)(5)(A) for units with a previous NOx limit less than or equal to 12 ppm and greater than 9 ppm prior to September 5, 2008</u>	
(c)(1)(F)	Any Fire-tube Boilers Fired on Natural Gas, <u>excluding units with</u>	7 ppm or 0.0085 lbs/10 <sup>6</sup> Btu	<i>Date of amendment or</i>	

	<u>less than or equal to 12 ppm and greater than 9 ppm prior to [date of amendment]</u>		<u>See (c)(5)(A) for units complying with a previous NOx emission limit that is less than or equal to 9 ppm prior to [date of amendment]</u>	
(c)(1)(G)	Thermal Fluid Heaters	12 ppm or 0.015 lbs/10 <sup>6</sup> Btu	<i>Date of amendment</i> or See (c)(5)(B) for units with a previous NOx limit <u>≤less than or equal to 20 ppm</u> prior to [date of amendment] or See (e)(2) for units with a previous NOx limit <u>&gt;greater than 20 ppm</u> prior to [ date of amendment]	
<sup>1</sup> All parts per million (ppm) emission limits are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.				

**Requirements for Low-Fuel Use Units**

Paragraph (c)(4), which contains provisions for non-RECLAIM low fuel usage units that have been in operation prior to September 5, 2008, would also apply to units at a RECLAIM or former RECLAIM facility that have been in operation prior to the 12 months after the proposed amendment with an annual heat input less than or equal 18,000 therms per year. Pursuant to paragraph (e)(3), any owner or operator that complies with the alternative compliance option specified in paragraph (c)(4) will be subject to a NOx emission limit of 12 ppm 15 years after the date of amendment or when 50 percent or more of the unit’s burners are replaced, whichever is earlier.

On or after January 1, 2015 or until burner replacement, whichever occurs later, is the compliance schedule currently specified in paragraph (e)(3) in the current Rule 1146.1 for non-RECLAIM low-fuel use units. Since this date has passed, compliance until burner replacement will be retained for existing units that have not had a burner replacement, but a definite timeframe of 15 years after amendment of the rule is now included for non-RECLAIM, RECLAIM or former RECLAIM facilities as follows:-

*“(3) By [15 years after the date of amendment] or when 50 percent or more of the unit’s burners are replaced, whichever is earlier, no person shall operate in the District any unit subject to paragraph (c)(4) that discharges into the atmosphere NOx emissions in excess of 12 ppm (referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes).”*

Additionally, paragraph (e)(4) was revised to clarify that fuel use limitation for compliance determination is not based on the heat input during any twelve month period, but rather the “annual heat input”, which is defined in subdivision (b) as the total heat input to the unit during a calendar year. If a low fuel use unit exceeds the fuel usage limit, the exceedance will constitute a violation of this rule and the operator or owner of the unit will be required to demonstrate compliance with the applicable NOx emission limit and all applicable requirements within 18 months after the exceedance.

### **Requirements for Units Complying with a NO<sub>x</sub> Emission Limit of 12 ppm or less (or Thermal Fluid Heaters Complying with a NO<sub>x</sub> Emission Limit of 20 ppm or less)**

As discussed previously, PARs 1146 and 1146.1 would allow the same compliance provisions for non-RECLAIM units between 2 and 75 MMBtu/hr meeting the then-applicable BACT limit of 12 ppm as was previously done during the 2008 amendments.

Paragraphs (c)(5) and (c)(6) will specify the compliance timeframe for units currently complying with a NO<sub>x</sub> limit of 12 ppm or less and thermal fluid heaters complying with a NO<sub>x</sub> limit of 20 ppm or less. These units will have to meet the applicable NO<sub>x</sub> emission limit by 15 years after the proposed amendment or when 50 percent or more of the unit's burners are replaced. The same compliance timeframe will be specified in PR 1100 for units currently complying with a NO<sub>x</sub> limit of 12 ppm or less and thermal fluid heaters complying with a NO<sub>x</sub> limit of 20 ppm or less at a RECLAIM or former RECLAIM facility.

- (5) *Notwithstanding paragraph (c)(1), an owner or operator that has installed, modified, or has been issued a SCAQMD Permit To Construct or Permit to Operate for the following units prior to [date of amendment], at a non-RECLAIM facility, shall meet the NO<sub>x</sub> emission limit specified in Table 1146.1-1 by [15 years after the date of amendment] or when 50 percent or more of the unit's burners are replaced, whichever is earlier:*
- (A) *Fire-tube boilers fired on ~~n~~Natural gas fired ~~units~~ subject to subparagraph ~~(e)(1)(E) or (c)(1)(F)~~ complying with a previous NO<sub>x</sub> emission limit that is less than or equal to ~~212~~ ppm; or*
  - (B) *Thermal fluid heaters subject to subparagraph (c)(1)(G) complying with a previous NO<sub>x</sub> emission limit that is less than or equal to 20 ppm*
- (6) *Notwithstanding the NO<sub>x</sub> emission limit specified in Table 1146.1-1 of paragraph (c)(1), by [15 years after the date of amendment] or when 50 percent or more of the unit's burners are replaced, whichever is earlier, the owner or operator that has installed, modified, or has been issued a SCAQMD Permit to Operate prior to September 5, 2008 for a natural gas fired unit complying with a previous NO<sub>x</sub> emission limit of 12 ppm or less and greater than 9 ppm shall not operate in a manner that discharges NO<sub>x</sub> emissions (reference at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) in excess of 9 ppm."*

### **Requirements for Biogas Units**

Paragraph (c)(7~~8~~), which applies to biogas units that are co-fired with natural gas, would require compliance with the emission limits in Table 1146.1-1 by each applicable compliance date for the selected unit under PR 1100 for units located at a RECLAIM or former RECLAIM facility.

### **Requirements for Units at Municipal Sanitation Service Facilities**

As discussed above, because of the inherent challenges for units at a municipal sanitation service facility, the existing NO<sub>x</sub> emission limits in the current Rule 1146.1 will be retained for these units. The proposed 7 ppm NO<sub>x</sub> limit for natural gas fired fire-tube boilers or 12 ppm NO<sub>x</sub> limit for thermal fluid heaters specified in Table 1146.1-1 will not apply to units at a municipal sanitation service facility. These units will instead continue to meet the existing NO<sub>x</sub> limits as specified in paragraph (c)(8~~9~~):

- (9~~8~~) *Notwithstanding the NO<sub>x</sub> emission limits specified in Table 1146.1-1 of paragraph (c)(1) or paragraph (e)(3), and until a Regulation XI rule referenced in paragraph*

*(f)(2) is adopted or amended and that rule compliance date occurs, an owner or operator shall not operate units at a municipal sanitation service facility in a manner that discharges NOx emissions (referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) in excess of:*

- (A) 9 ppm for natural gas fired units; or*
- (B) 9 ppm, upon burner replacement, for natural gas fired units that were installed or modified prior to September 5, 2008 complying with a previous NOx emission limit of 12 ppm or less; or*
- (C) 30 ppm for thermal fluid heaters; or*
- (D) 30 ppm, upon burner replacement, for any low-fuel use unit complying with paragraph (c)(4).”*

#### **Rule 1146.1 Compliance Determination (Subdivision (d))**

Subdivision (d) contains the compliance determination requirements for the equipment subject to this rule. Subparagraph (d)(6)(A) specifies the periodic monitoring for NOx emissions that each owner or operator of units subject to paragraphs (c)(1), (c)(2), or (c)(3) must conduct. For units at a RECLAIM or former RECLAIM facility, the NOx emissions checks will be required according to the monitoring schedule for the selected unit under PR 1100. Subparagraph (d)(6)(B) specifies the schedule for performing the diagnostic NOx emissions checks for low-fuel use units complying with the requirements specified in paragraph (c)(4). In the current Rule 1146.1, the schedule for performing the diagnostic emission checks for low-fuel units at a non-RECLAIM facility is on or after January 1, 2015 or during burner replacement, whichever occurs later. Since this date has passed and low-fuel units at a non-RECLAIM facility are currently complying with diagnostic NOx emissions checks according to the tune-up schedule specified in subparagraph (c)(4)(B), subparagraph (d)(6)(B) will state:

*“The owner or operator of units ~~subject to~~ ~~complying with~~ the requirements specified in paragraph (c)(4) shall check NOx emissions according to the tune-up schedule specified in subparagraph (c)(4)(B).”*

For units at a RECLAIM or former RECLAIM facility the NOx emissions checks pursuant to subparagraph (d)(6)(B) will be required according to the schedule for the selected unit under PR 1100.

#### **Rule 1146.1 Compliance Schedule (Subdivision (e))**

Subdivision (e) contains the compliance schedule provisions for units at a RECLAIM or former RECLAIM facility and for thermal fluid heaters at a non-RECLAIM facility. Paragraph (e)(1) references the compliance schedule specified in PR 1100 for RECLAIM or former RECLAIM facilities, since PR 1100 will contain the implementation schedules for the units that will be transitioning out of the RECLAIM program. Paragraph (e)(2) will specify the compliance schedule for non-RECLAIM thermal fluid heaters. Permit applications will be due 12 months after rule amendment for units that are currently complying with a NOx emission limit greater than 20 ppm. These thermal fluid heaters will have to meet the proposed 12 ppm NOx limit by January 1, 2022. Paragraph (e)(3).

#### **Rule 1146.1 Exemptions (Subdivision (f))**

A new subdivision was added to include rule exemptions, which in the current rule were stated in subdivision (a). For the proposed amended rule, the exemptions will be under subdivision (f) as follows:

*“(f) Exemptions*

*The provisions of this rule shall not apply to:*

- (1) any unit at a RECLAIM or former RECLAIM facility that is subject to a NOx emission limit in a different rule for an industry-specific category defined in Rule 1100 – Implementation Schedule for NOx Facilities; or*
- (2) any unit at a municipal sanitation service facility that is subject to a NOx emission limit in a ~~different~~ Regulation XI rule adopted or amended after [date of amendment].”*

Units that are, or will be, covered by a rule for an industry-specific category and subject to an applicable NOx emission limit are exempted from this rule. Paragraph (f)(1) includes any unit at a RECLAIM or former RECLAIM facility covered in an industry-specific category as defined in PR 1100. Currently, this includes energy generating boilers at electricity generating facilities (EGFs) and refinery boilers with applicable NOx limits specified in the corresponding rule. Paragraph (f)(2) will include units at a municipal sanitation service facility, which will have a sector specific rule specifying the applicable NOx emission limits for these units.

## PROPOSED AMENDED RULE 1146.2

Rule 1146.2 applies to large water heaters and small boilers and process heaters with a rated heat input capacity up to and including 2 MMBtu/hr. There are both manufacturer and end-user requirements contained in the rule. There were no changes to subdivision (a) Purpose and Applicability, subdivision (d) Certification, subdivision (e) Modification (Retrofit) Provisions and Demonstration of Compliance With Emission Limits subdivision (f) Identification of Compliant Units, subdivision (g) Enforcement, subdivision (i) progress reports. All other revisions to PAR 1146.2 are discussed below.

### Rule 1146.2 Definitions (Subdivision (b))

The following definitions were added to Rule 1146.2.

BEST AVAILABLE RETROFIT CONTROL TECHNOLOGY in paragraph (b)(1), which means:

*“as defined in the California Health and Safety Code Section 40406.”*

FORMER RECLAIM FACILITY in paragraph (b)(6), which means:

*“a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as January 5, 2018, as established in Regulation XX, that has received a final determination notification, and is no longer in the RECLAIM program.”*

RECLAIM FACILITY in paragraph (b)(15), which means:

*“a facility, or any of its successors that ~~was is currently~~ in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.”*

### Rule 1146.2 Requirements (Subdivision (c))

Paragraphs (c)(3), (c)(4), and (c)(5) contain end-user requirements for the operation of units subject to the rule. As discussed in Chapter 2, staff anticipates to further assess the advancement of control technology and the cost-effectiveness of the equipment regulated under Rule 1146.2. To avoid the need to install an intermediate technology that would be obsolete upon future amendment to Rule 1146.2, it is recommended that RECLAIM facilities with Rule 1146.2 equipment can exit RECLAIM, but the compliance date under paragraph (c)(13) is proposed in a later timeframe (December 31, 2023) to allow staff time to conduct a technology assessment. Dependent on the results of the technology assessment, if it is determined that the NOx emission limits specified in Rule 1146.2 still represent BARCT, NOx RECLAIM facilities with Rule 1146.2 units will be required to meet the applicable NOx limits by December 31, 2023. In contrast, if a more stringent BARCT level is applicable, then a new compliance schedule will be developed through a future rule development.

### Rule 1146.2 Exemptions (Subdivision (h))

Subdivision (h) contains the exemptions to the provisions of this rule. ~~Paragraph (h)(3)~~ Subparagraph (h)(1)(C) contains the exemptions for units at any RECLAIM or former RECLAIM facilities that are subject to a NOx emission limit in a different rule for an industry-specific category as defined in PR 1100 – Implementation Schedule for NOx Facilities. Subparagraph (h)(1)(D) states the exemption for units at a municipal sanitation service facility, which will have a sector specific rule specifying the applicable NOx emission limits for these units.

## **PROPOSED RULE 1100**

Proposed Rule 1100 - Implementation Schedule for NO<sub>x</sub> Facilities specifies the implementation schedule for NO<sub>x</sub> RECLAIM and former NO<sub>x</sub> RECLAIM facilities that have equipment regulated under PARs 1146 and 1146.1. The compliance timeframe for PARs 1146 and 1146.1 was established taking into consideration equipment size range and the number of units at a facility. Also taken into consideration within the compliance schedule are facilities with multiple units subject to multiple source-specific landing rules. Appendix B of this staff report contains the facility and equipment analysis that were conducted to understand the number, size and emissions of the units that would be required to meet the NO<sub>x</sub> emission limits. The implementation schedule for equipment regulated under PAR 1146.2 is included in that rule.

### **Rule 1100 Purpose (Subdivision (a))**

The purpose of this rule is to establish the implementation schedule for Regulation XX NO<sub>x</sub> RECLAIM facilities that are transitioning to a command-and-control regulatory structure.

### **Rule 1100 Applicability (Subdivision (b))**

Proposed Rule 1100 applies to RECLAIM and former RECLAIM facilities that own or operate equipment that meets the applicability provisions specified in PARs 1146 and 1146.1. The applicability provisions excludes equipment at energy generating facilities (EGFs) and refineries which will be subject to a NO<sub>x</sub> emission limit under other industry-specific rules.

### **Rule 1100 Definitions (Subdivision (c))**

Definitions for a Rule 1146 unit and a Rule 1146.1 unit are included in PR 1100 that make reference to the definition of boiler and process heater contained in both Rule 1146 and Rule 1146.1. In addition, a definition for Industry-Specific Category has been specified that would list the types of RECLAIM facilities that would not be subject to the requirements of PR 1100. At this time, refineries and EGFs (except for non-power generating boilers) would not be subject to the command-and-control rules referenced in PR 1100 (Rule 1146 and Rule 1146.1) or the implementation schedule listed in subdivision (d). These types of equipment and all other combustion sources belonging to these two industry-specific categories will be addressed in individual command-and-control rules that will contain both the required emission limits and implementation schedule. Proposed Rule 1100 includes other definitions under subdivision (c) to improve the clarity of the proposed rule.

### **Rule 1100 Implementation Schedule (Subdivision (d))**

#### **Implementation Schedule for Retrofits**

Proposed Rule 1100 subdivision (d) establishes the implementation schedule requirements for boilers and process heaters that will be subject to the emission requirements of Rule 1146 and Rule 1146.1. Proposed Rule 1100 requires owner or operators to submit a complete permit application no later than 12 months after rule adoption, which leaves about 18 – 24 months for permit approval, unit installation and source testing. RECLAIM facilities that do not meet the emission limits of Rule 1146 and Rule 1146.1 would have until 12 months after rule adoption to submit a complete permit application for retrofits or replacements. RECLAIM facilities retrofitting boilers and process heaters would have until January 1, 2021 to meet the applicable Rule 1146 and Rule 1146.1 emission requirements for at least 75% of the cumulative total rated heat input capacity for the boilers and process heaters at the facility. The rated heat input capacity is the equipment rating of the unit, expressed in million BTUs per hour. The final compliance deadline for the remaining units would be January 1, 2022. Subparagraph (d)(3) will include the rule references of the

applicable NOx concentration limits specified in subparagraphs (d)(1)(B) and (d)(1)(C). This implementation schedule will be specified in paragraph (d)(1) as follows:

- “(1) An owner or operator of a RECLAIM or former RECLAIM facility with any Rule 1146 or Rule 1146.1 unit shall:*
- (A) On or before [12 months after date of adoption], submit complete SCAQMD permit applications for any Rule 1146 and Rule 1146.1 units that currently do not meet the applicable NOx concentration limit specified in subparagraph (d)(3);*
  - (B) On or before January 1, 2021 meet the applicable NOx concentration limit for a minimum of 75% of the cumulative total rated heat input capacity for all Rule 1146 and Rule 1146.1 units at the facility; and*
  - (C) On or before January 1, 2022 meet the applicable NOx concentration limit of 100% of Rule 1146 and Rule 1146.1 units at the facility.”*

When establishing the compliance schedule for PARs 1146 and 1146.1 for equipment at RECLAIM facilities, the compliance schedule of the 2008 amendment of Rules 1146 and 1146.1 was considered. In the 2008 amendments, there were about 2,100 active permitted units affected by the rule amendments. The impacted facilities were given about 3 - 5 years to comply with the then-proposed emission limits. Given the considerably lower number of units that would need to be retrofitted or replaced under the proposed amendments (126 permitted units for Rule 1146 and 19 permitted units for Rule 1146.1), therefore a similar, if not a shorter timeframe would be reasonable. The compliance timeframe for PARs 1146 and 1146.1 also took into consideration equipment size range, the number of units at a facility, and facilities with multiple units subject to multiple source-specific landing rules. The details of the analysis are provided in Appendix B of this staff report. Proposed Rule 1100 would require a compliance timeframe of 2 to 3 years. To focus on larger emission sources having an earlier final implementation date, staff proposed to stagger the implementation schedule by rated heat input, an approach that is consistent with the 2008 amendment of Rule 1146 and Rule 1146.1. About 17% of the affected facilities have multiple units with rated heat input in different size bins. Instead of setting a different compliance schedule for each size category, all Rule 1146 and 1146.1 equipment are grouped together providing more flexibility to operators to achieve the greatest emission reductions first.

### **Implementation Schedule for Replacement Equipment**

An owner or operator that elects to fully replace the affected equipment, in lieu of installing ultra-low NOx burners or SCRs is given until January 1, 2023 to comply with the existing NOx emission limits in Rules 1146 and 1146.1, provided the owner or operator submits complete permit applications for any new Rule 1146 and Rule 1146.1 unit within 12 months after the date of rule adoption, as well as accepts a permit condition that identifies which unit(s) will be replaced and no longer operated once the new units are installed or after January 1, 2023, whichever is earlier. Additionally, the existing unit must be replaced on or before January 1, 2023.

### **Requirements for Units Complying with a NOx limit of 12 ppm or less (or Thermal Fluid Heaters Complying with a NOx limit of 20 ppm or less)**

PARs 1146 and 1146.1 will include a provision for a compliance timeframe similar to the provision included during the 2008 amendments of Rule 1146 and 1146.1, for units that complied with the then-applicable BACT limit of 12 ppm and were installed prior to the 2008 amendments. Paragraphs (d)(5) and (d)(6) of PR 1100 will specify the compliance timeframe for units greater than 75 MMBtu/hr that are currently complying with a NOx limit of 7 ppm or less, units between 2 and 75 MMBtu/hr that are currently complying with a NOx limit of less than or equal to 12 ppm

(9 ppm for fire-tube boilers) and greater than 5 ppm or less, and thermal fluid heaters complying with a NOx limit of 20 ppm or less. These units will have to meet the applicable NOx emission limit 15 years after the date of the proposed rule amendment or when 50 percent or more of the unit's burners are replaced, whichever is earlier. Subparagraph (d)(6)(A) specifies that Rule 1146 Group I units that are currently complying with a NOx emission limit of 7 ppm or less without an SCR system do not have to meet the current 5 ppm NOx limit in Rule 1146 until the annual heat input specified in paragraph (d)(7) is exceeded. The annual heat input threshold of 300,000 therms specified in paragraph (d)(7) is the annual heat input at which it would be cost-effective for a Rule 1146 Group I unit with a rated heat input of 75 MMBtu/hr currently meeting 7 ppm without an SCR system to meet 5 ppm with an SCR retrofit.

### **Requirements for Low-Fuel Use Units**

Paragraph (d)(4) contains the provision that requires the owner or operator of any low-fuel use unit at a RECLAIM or former RECLAIM facility, that in lieu of complying with the applicable emission limits specified in paragraph (d)(3) will comply with the low-fuel use provisions pursuant to paragraph (c)(5) in Rule 1146 or paragraph (c)(64) in Rule 1146.1, to retain and continue complying with the NOx emission limits and source testing requirements specified in the SCAQMD Permit to Operate as of the date of rule adoption. RECLAIM or former RECLAIM facilities that submit permit applications and accept a fuel use limitation prior to 12 months after the date of rule adoption, do not have to demonstrate that the unit did not previously exceed the fuel usage threshold, since provisions in Rule 1146 and Rule 1146.1 specify that exceedance of the accepted fuel usage limit will constitute a violation of the rule and require the operator or owner of the unit to demonstrate compliance with the applicable NOx emission limit and all applicable requirements within 18 months after the exceedance.

- “(4) *In lieu of complying with the applicable emission limits specified in paragraph (d)(3), the owner or operator of the following unit(s) in operation prior to [12 months after date of adoption] with an annual heat input less than or equal to as specified below, shall retain and comply with the unit's NOx emission limit and source testing requirements specified in the SCAQMD Permit to Operate as of [date of adoption].*
- (A) *90,000 therms per year and complying with the requirements specified in Rule 1146 paragraph (c)(5); or*
  - (B) *18,000 therms per year and complying with the requirements specified in Rule 1146.1 paragraph (c)(4).”*

### **Exclusion for Facilities in an Industry-Specific Category**

Paragraph (d)(86) states that any unit at a RECLAIM facility that is subject to an industry-specific rule as defined in subdivision (c) would not be subject to the command-and-control rules referenced in subdivision (b) or the implementation schedule listed in subdivision (d).

## **Rule 1100 Applicable Monitoring, Reporting, and Recordkeeping (Subdivision (e))**

### **Monitoring, Reporting, and Recordkeeping for Title V Facilities**

Under the Title V program, “relaxation of any monitoring, recordkeeping, or reporting requirement, term, or condition in the Title V permit” is considered a significant revision (Rule 3000(b)(31)), and would trigger a public process (Rule 3005(f) and Rule 3006(a)). To avoid the need for an extensive public process triggered by the change in the MRR requirements, PR 1100 would require Title V facilities to maintain the RECLAIM MRR requirements as part of the proposed rule amendments. In other words, Title V facilities would still be subject to the MRR

requirements in RECLAIM after the transition in lieu of being subject to the command-and-control MRR. Staff is currently working on adopting Rule 113 – Monitoring, Reporting, and Recordkeeping (MRR) Requirements for NO<sub>x</sub> and SO<sub>x</sub> Sources. Once Rule 113 is adopted, all applicable PR 1100 equipment will transition to Rule 113 for MRR. In the interim, the intention of PR 1100 is for Title V ~~RECLAIM~~ RECLAIM facilities to retain RECLAIM MRR. Paragraph (e)(1) states that RECLAIM or former RECLAIM facilities that are also in Title V would be required to comply with the monitoring, reporting, and recordkeeping requirements specified in Rule 2012. Additional information on MRR analysis can be found in Appendix A.

#### **Monitoring, Reporting, and Recordkeeping for Non-Title V Facilities**

Proposed Rule 1100 proposes that both major RECLAIM and non-major RECLAIM sources in non-Title V facilities to be subject to the MRR requirements in Rule 1146 series. Paragraph (e)(2) states that the monitoring, reporting, and recordkeeping requirements in the applicable rule(s) as specified in subdivision (b) shall automatically apply for a non-Title V RECLAIM facility once it becomes a former RECLAIM facility. Additional information on MRR analysis can be found in Appendix A.

## TRANSITION LOGISTICS

The proposed amendments would initiate the transition of RECLAIM facilities into a command-and-control regulatory structure. A facility is ready to transition into command-and-control if all the NO<sub>x</sub> emitting equipment located at the RECLAIM facility is subject to a non-RECLAIM rule that regulates NO<sub>x</sub> emissions and does not specify an exemption for RECLAIM facility emissions. Command-and-control rules that exempt RECLAIM facilities will undergo amendments throughout the transition process to include RECLAIM facilities. Once the applicable rules at a RECLAIM facility have been adopted and/or amended a facility would be eligible exit.

The procedure for the transition can be found in Rules 2001 and 2002. Rule 2001 specifies the eligibility criteria for a facility to exit RECLAIM. Rule 2002 contains the notification procedures for facilities that will be transitioned out of RECLAIM and addresses the RTC holdings for these facilities that will be transitioned out of RECLAIM or that elect to exit RECLAIM. Rule 2002 Paragraphs (f)(6) through (f)(9), detail how a facility will be notified regarding the transition.

Rule 2001 Paragraph (g)(2) ~~would specify~~ specifies actions for submitting the request to opt-out of the NO<sub>x</sub> RECLAIM program:

*“The owner or operator of a RECLAIM facility that is eligible to exit the NO<sub>x</sub> RECLAIM program, pursuant to the requirements of paragraph (g)(1), may notify the Executive Officer with a request to opt-out that includes the identification of:*

*(A) All permitted and unpermitted NO<sub>x</sub> RECLAIM emission equipment, including applicable control equipment; and*

*(B) Permitted NO<sub>x</sub> emission levels, and if not available, manufacturer guaranteed NO<sub>x</sub> emission levels.”*

Upon review of the submitted information, the Executive Officer would notify the facility that the facility meets the criteria to transition out of RECLAIM and would issue an initial determination notification to initiate the facility’s transition to command-and control. A facility would then be subject to the provisions in ~~PARR~~Rule 2002 (f)(6) through (f)(10), but not be required to resubmit any equipment information required by subparagraphs (f)(6)(A) and (f)(6)(B) because the Executive Officer would have already obtained the facility’s equipment information through the opt-out process prior to issuing the initial determination notification. If the Executive Officer denies the request to transition out of NO<sub>x</sub> RECLAIM, however, the facility would remain in the RECLAIM program. The reasons for a denial would be that the facility does not meet all the requirements in ~~proposed~~paragraph (g)(1) of Rule 2001. If an applicable non-RECLAIM rule has not yet been amended, the facility would not be allowed to exit. Also, if it is determined that a piece of equipment that emits non-combustion NO<sub>x</sub> and has no applicable rule for its NO<sub>x</sub> emissions, the facility would not be allowed to exit. The facility would be notified if the request to opt-out is denied. These approval and denial provisions are contained in Rule 2001 subparagraph (g)(3), which states:

*“If the owner or operator of a RECLAIM facility meets the criteria for exiting the NO<sub>x</sub> RECLAIM program, specified in paragraph (g)(1) and has satisfied the requirements of paragraph (g)(2), the Executive Officer will issue an initial determination notification and the facility shall be subject to the provisions of Rule 2002, paragraphs (f)(6) through (f)(10), excluding the requirements in subparagraphs (f)(6)(A) and (f)(6)(B). If the request to opt-out is denied, the facility shall remain in RECLAIM, and the owner or operator will be notified.”*

Rule 2002 Paragraph (f)(10) outlines requirements pertaining to RTCs for facilities that are notified for exiting RECLAIM. It states that:

*“The owner or operator of any RECLAIM facility that receives a final determination notification from the Executive Officer pursuant to paragraph (f)(8):*

*(A) Shall not sell or transfer any future compliance year RTCs as of the date specified in the final determination notification and may only sell or transfer that current compliance year’s RTCs until the facility is transitioned out of the RECLAIM program; and*

*(B) Shall provide Emission Reduction Credits to offset any emissions increases, calculated pursuant to Rule 1306 – Emission Calculations, notwithstanding the exemptions contained in Rule 1304 – Exemptions, until New Source Review provisions governing emission calculations and offsets for former RECLAIM sources are amended after (date of amendment).”*

If, after review, a RECLAIM facility receives a final determination notification, then the facility would not be able to sell any future compliance year RTCs after a date certain as specified in the notification, but could only sell that current compliance year RTCs until the facility exits RECLAIM. Additionally, any RECLAIM facility that exits the NOx RECLAIM program will not have access to the SCAQMD internal offset bank until new provision governing emission calculations and offset requirements for former RECLAIM facilities are adopted in Regulation XIII. This temporary provision would require all former RECLAIM facilities to provide emission reduction credits (ERCs) to offset any emission increases for new or modified sources even if the facility has a PTE of less than 4 tons per year and would have been eligible for emission offsets from the SCAQMD internal bank if the source was not RECLAIM.

Currently, facilities regulated under the command-and-control regulatory structure are subject to Regulation XIII for New Source Review (NSR) requirements. There are a number of NSR policy issues that need to be resolved as facilities transition to a command-and-control regulatory structure. Staff has been working on these issues with the RECLAIM Working Group. In addition, staff will continue discussions with EPA on NSR issues. One of the most important NSR issues is the future availability of NOx ERCs in the open market and the concern that there is not a sufficient supply of ERCs in the open market for facilities that want to install new or modified equipment that triggers NSR. RECLAIM facilities that are comprised of the region’s largest emitters would join an existing open market with a limited amount of ERCs. Until the NSR concerns are resolved, facilities will be allowed to remain in RECLAIM for a limited time upon receiving an initial determination notification. Facilities would not receive a final determination notification to exit RECLAIM until key elements such as NSR and permitting are resolved. However, these facilities may request to opt-out of RECLAIM before these key elements are resolved, upon meeting the specific conditions specified in subdivision (g) of Rule 2001. However, facilities would still be subject to non-RECLAIM rules and their associated BARCT implementation schedules that been adopted or amended to include RECLAIM facilities. Rule 2002 paragraph (f)(11) allows facilities to request to remain in RECLAIM:

*“An owner of operator of a RECLAIM facility that receives an initial determination notification may elect for the facility to remain in RECLAIM if a request to the Executive Officer to remain in RECLAIM is submitted, including any equipment information required pursuant to paragraph (f)(6).*

*(A) Upon written approval by the Executive Officer that the facility shall remain in RECLAIM:*

*(i) The facility may remain in RECLAIM until a subsequent notification is issued to the facility that it must exit by a date no later than December 31, 2023.*

*(ii) The facility is required to submit any updated information within 30 days of the date of the subsequent notification.*

*(iii) The facility shall comply with all requirements of any non-RECLAIM rule that does not exempt NOx emissions from RECLAIM facilities.”*

As a result of the proposed amendments to Rules 1146, 1146.1 and 1146.2, staff has identified 22 RECLAIM facilities that could potentially be transitioned out of the RECLAIM program. These facilities have permitted NOx emissions solely from a combination of (i) Rule 1146, (ii) Rule 1146.1, and (iii) Rule 1146.2. After PARs 1146, 1146.1, and 1146.2 are amended to remove the exemption for RECLAIM facilities, the identified facilities will be ready to transition from the cap-and-trade regulatory approach to a command-and-control regime.

## **CHAPTER 4: IMPACT ASSESSMENT**

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**INTRODUCTION**

**EMISSION REDUCTIONS**

**SOCIOECONOMIC ASSESSMENT**

**CALIFORNIA ENVIRONMENTAL QUALITY ACT**

**DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE  
SECTION 40727**

**COMPARATIVE ANALYSIS**

## INTRODUCTION

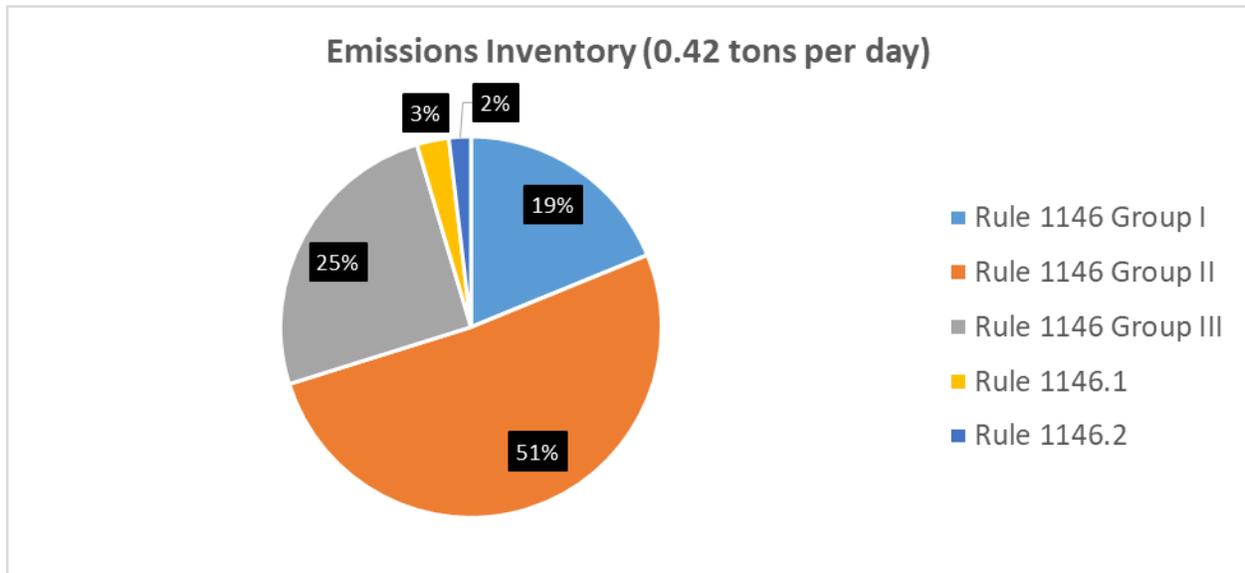
Among the 103 RECLAIM facilities that will be affected by the proposed amendments, 18 facilities already met BARCT requirements and will only be subject to change to monitoring recordkeeping and reporting. A total of 65 facilities would be required to retrofit the non-compliant units by the compliance dates specified in PR 1100, while 20 facilities operating units that comply with the applicable RECLAIM BARCT<sup>17</sup> limit of 12 ppm would not apply until the unit's burner replacement. The proposed rule amendments are estimated to reduce 0.27 tons per day (tpd) of NO<sub>x</sub> from RECLAIM facilities by January 1, 2023. The proposed amendments affect a wide variety of RECLAIM and non-RECLAIM facilities. Staff has estimated that there are about 291 active permitted units in the RECLAIM universe that are affected by this rule amendment (220, 39 and 32 permitted units affected by PAR 1146, 1146.1 and 1146.2 respectively). Among the 291 units impacted, ~~146~~<sup>148</sup> units would be required to comply with the existing BARCT limits in Rule 1146 series (~~124~~<sup>126</sup> permitted units for Rule 1146, 19 permitted units for Rule 1146.1, and 3 permitted units for Rule 1146.2) by the compliance dates as specified in PR 1100, ~~145~~<sup>142</sup> units would be allowed to meet the emission limits upon burner replacement, and units that are already at BARCT would be subject to the change in MRR requirements upon transition. For non-RECLAIM, 824 facilities could potentially be impacted by the proposed amendments. The total size of non-RECLAIM natural gas fired equipment subject to Rule 1146 and 1146.1 is estimated to be about 1,807 units as of November 2018.

## EMISSION REDUCTIONS

The total NO<sub>x</sub> inventory for the RECLAIM units affected by PARs 1146 series is estimated to be 0.42 tons per day. This estimate is taken from SCAQMD annual emission report (AER) inventory database for compliance year 2016 for permitted units, and excludes EGFs and refineries. The District's AER program was developed to track emissions of air contaminants from permitted facilities. Facilities with annual emissions exceeding 4 or more tons of nitrogen oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>), volatile organic compounds (VOCs), specific organics (SPOG), particulate matter (PM), or emissions of 100 tons per year or more of carbon monoxide (CO) are required by the District to submit an annual emissions report. Facilities could also be required to submit AER if the facility receives a notification from SCAQMD or subject to the AB2588 Program for reporting quadrennial updates to its toxics inventory. For each piece of RECLAIM equipment, the annual activity is estimated using the facilities fuel usage as reported in the AER reports for year 2016. Emission factor is represented by the permit limit specific for each unit. Emissions for RECLAIM units identified as major sources, as defined in SCAQMD Rule 2012, are constantly monitored with CEMS, so the units may not be assigned a permit limit for emissions reporting. Emission factors for RECLAIM major sources can be back-calculated using CEMS reporting data and reported fuel for the corresponding year. Annual emissions for major sources were calculated from facility submitted AER usage and emission factor derived from CEMS back-calculations or permit limit. For units with missing data or reports, their emissions were calculated assuming 50% operating capacity. The NO<sub>x</sub> emission distribution by the size range are as follows:

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<sup>17</sup> RECLAIM BARCT as stated in Rule 2002 Table 3

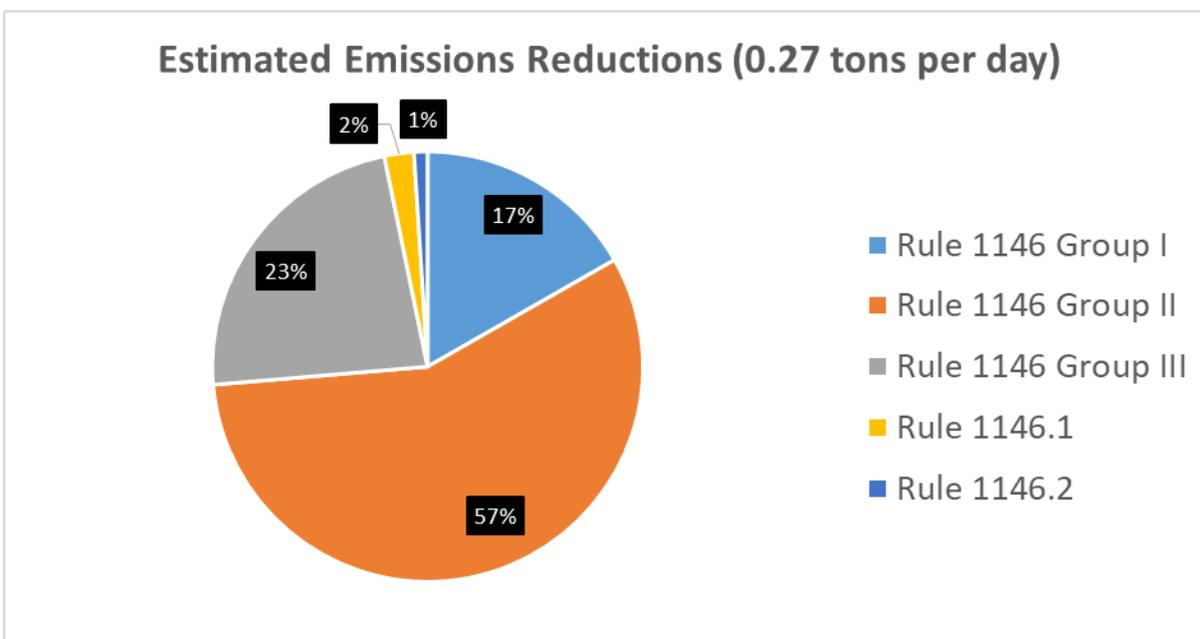


**Figure 10**  
**2016 RECLAIM Baseline Emissions by Size Range**

As presented in Figure 10, about half of the 2016 baseline emissions were emitted from Rule 1146 Group II units (20 to <75 MMBtu/hr). On average, each Group II unit accounted for 0.0027 tpd of NO<sub>x</sub> emissions. Although Group I units contributed to 19% of baseline emissions, on average, each Rule 1146 Group I unit accounted for more than quadruple the amount of emissions (0.011 tpd) than a Group II unit (0.0027 tpd). This suggests that to achieve the greatest amount of emission reduction early, equipment with a larger heat input should be addressed first.

Emission reductions were calculated using the difference between the emission factor for the existing permit emission limits and the NO<sub>x</sub> emission limits for the various categories of boilers and heaters presented in the staff proposal. Based on this methodology, the proposed rule amendments are estimated to reduce approximately 0.27 tons per day of NO<sub>x</sub> emissions from RECLAIM facilities regulated under PARs 1146 series. The estimated emission reductions by unit size range are presented in Figure 11.

Note that the emissions for Rule 1146.2 were calculated based on the 32 permitted units. As discussed in Appendix B, the majority of Rule 1146.2 units are exempt from permitting. Therefore, the actual emission inventory, and the associated emission reductions of PAR 1146.2 could be considerably higher than the ones presented in Figures 10 and 11. To avoid overestimating the emission reductions from PAR 1146.2, only emissions from the permitted units were included in the analysis.



**Figure 11**  
**RECLAIM Emission Reduction by Size Range**

Total emissions inventory for non-RECLAIM units affected by PAR 1146 series is estimated to be about 0.66-44 tpd. Estimates for baseline emissions and emission reductions of units within the non-RECLAIM universe are calculated using unit distribution figures from 2008 amendments of Rule 1146 and Rule 1146.1 and adjusted to equipment distribution as of November 2018, thermal fluid heaters are not included in the calculation estimates.

Baseline emissions for non-RECLAIM units in Rule 1146 Group I, Rule 1146 Group II, Rule 1146 Group III, and Rule 1146.1 were calculated with assumptions that unit composition of the universe is the same as that at the time of the 2008 evaluation and approximately of 80% of units evaluated in 2008 are still in operation from baseline emissions from the 2008 Rule 1146 Staff Report and adjusted to 2018 equipment distribution. Calculations for emission reductions also assumed that the fraction of fire-tube units in non-RECLAIM universe is the same as those in the RECLAIM universe, where 40% of Rule 1146 Group II, Rule 1146 Group III and Rule 1146.1 units were fire-tube units that will be subject to proposed limits of 7 ppm. Total emissions baseline calculated from units in Rule 1146 Group I, Rule 1146 Group II, Rule 1146 Group III, and Rule 1146.1 totaled around 0.440-48 tpd and total reductions were calculated to be about 0.054 tpd. Emission reductions for non-RECLAIM natural gas fired units are effective 15 years after date of rule amendment. For thermal fluid heaters in the non-RECLAIM universe, it is not feasible to quantify the total number of affected units due to the lack of distinction in their permits that set them apart from other process heaters; however, it is reasonable to assume the same fraction of thermal fluid heaters in RECLAIM is in the non-RECLAIM universe. The total fraction of RECLAIM thermal fluid heaters make up approximately 4.2% of the total universe. Since thermal fluid heaters are not limited in total heat input, the same fraction is applied to the total universe of 1,807 units to come up with the estimate of 76 total thermal fluid heaters in the non-RECLAIM universe. Thermal fluid heaters were not included in this calculation due to the lack of distinction in their permits that set them apart from other process heaters. Thermal fluid heaters make up for a very small portion of the RECLAIM universe (<4%) and the emission reductions are assumed to be nominal in the non-RECLAIM universe.

## SOCIOECONOMIC ASSESSMENT

~~A Draft Final Socioeconomic Impact Assessment for PARs 1146 Series and PR 1100 will be conducted is prepared and will be available included in the Final Hearing Package to the public at least 30 days prior to the SCAQMD Governing Board Meeting anticipated for December 7, 2018.~~

## CALIFORNIA ENVIRONMENTAL QUALITY ACT ANALYSIS

PARs 1146 series and PR 1100 are considered a “project” as defined by the California Environmental Quality Act (CEQA), and the SCAQMD is the designated lead agency. Pursuant to CEQA Guidelines Sections 15252, 15162(b), and 15251(l) (codified in SCAQMD Rule 110), the SCAQMD has prepared a Final Subsequent Environmental Assessment (SEA) for PARs 1146 series and PR 1100 which relies on the March 2017 Final Program Environmental Impact Report (EIR) for the 2016 AQMP, the September 2008 Final Environmental Assessment (EA) for Rule 1146, the September 2008 Final EA for Rule 1146.1, and the May 2006 Final EA for Rule 1146.2.

~~PARs 1146 series and PR 1100 are considered a “project” as defined by the California Environmental Quality Act (CEQA), and the SCAQMD is the designated lead agency. Pursuant to the CEQA and SCAQMD’s Certified Regulatory Program (Rule 110), the SCAQMD, as lead agency for the proposed project, prepared a Draft Subsequent Environmental Assessment (SEA) for PARs 1146 series and PR 1100 which was released for a 45-day public review and comment period from April 3, 2018 to May 18, 2018 and four comment letters were received. Subsequent to the release of the Draft SEA for public review, changes were made to the project description and the environmental analysis. For this reason, the SCAQMD revised and recirculated a Revised Draft SEA for an additional 45-day public review and comment period from September 27, 2018 to November 13, 2018. As with the Draft SEA, the analysis in the Revised Draft SEA also indicated that while reducing NOx emissions is an environmental benefit, secondary significant adverse environmental impacts are also expected for the topic area of hazards and hazardous materials. Since significant adverse impacts were identified, an alternatives analysis and mitigation measures are required and are included in the Revised Draft SEA. [CEQA Guidelines Section 15252].~~

~~The proposed project may have statewide, regional, or area-wide significance; therefore, a CEQA scoping meeting was required (pursuant to Public Resources Code section 21083.9(a)(2)) and held at the SCAQMD’s Headquarters in conjunction with a prior Public Workshop on February 14, 2018. The comment made at the CEQA scoping meeting and the response to the comment is included in Appendix F of the Revised Draft SEA. The comment letters received relative to the Draft SEA and the responses to the comments are included in Appendix G of the Revised Draft SEA. In addition, all comments received during the public comment period on the analysis presented in the Revised Draft SEA will be responded to and included in an appendix to the Final SEA.~~

Prior to making a decision on the adoption of the proposed project, the SCAQMD Governing Board must review and certify the Final SEA, including responses to comments, as providing adequate information on the potential adverse environmental impacts that may occur as a result of adopting the proposed project.

## **DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727**

### **Requirements to Make Findings**

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report.

#### **Necessity**

PARs 1146, 1146.1 and 1146.2, and PR 1100 are needed to establish BARCT requirements for facilities that will be transitioning from RECLAIM to a command-and-control regulatory structure.

#### **Authority**

The SCAQMD obtains its authority to adopt, amend, or repeal rules and regulations pursuant to California Health and Safety Code Sections 39002, ~~39616~~, 40000, 40001, 40440, 40702, 40725 through 40728, and 41508.

#### **Clarity**

PARs 1146, 1146.1 and 1146.2, and PR 1100 are written or displayed so that their meaning can be easily understood by the persons directly affected by them.

#### **Consistency**

PARs 1146, 1146.1 and 1146.2, and PR 1100 are in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

#### **Non-Duplication**

PARs 1146, 1146.1 and 1146.2, and PR 1100 will not impose the same requirements as any existing state or federal regulations. The proposed amended rules are necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD.

#### **Reference**

In amending these rules, the following statutes which the SCAQMD hereby implements, interprets or makes specific are referenced: Health and Safety Code sections 39002, 40001, 40702, 40440(a), and 40725 through 40728.5.

## **COMPARATIVE ANALYSIS**

Under H&SC Section 40727.2, the SCAQMD is required to perform a comparative written analysis when adopting, amending, or repealing a rule or regulation. The comparative analysis is relative to existing federal requirements, existing or proposed SCAQMD rules and air pollution control requirements and guidelines which are applicable to industrial, institutional, and commercial water heaters, boilers, steam generators, and process heaters. See Table 10 below.

**Table 10  
Comparative Analysis**

Rule Element	PAR 1146	PAR 1146.1	PAR 1146.2	PR 1100	RECLAIM	Equivalent Federal Regulation
<b>Applicability</b>	Boilers, steam generators, and process heaters with maximum rated heat input capacities greater than or equal to 5 MMBtu/hr	Boilers, steam generators, and process heaters with maximum rated heat input capacities greater than 2 MMBtu/hr and less than 5 MMBtu/hr	Large water heaters, boilers and process heaters less than or equal to 2 MMBtu/hr	RECLAIM or post-RECLAIM facilities	Facilities regulated under the NOx RECLAIM program (SCAQMD Reg. XX)	None
<b>Requirements*</b>	<p>NOx limits:</p> <ul style="list-style-type: none"> <li>• Digester gas: 15 ppmv</li> <li>• Landfill gas: 25 ppmv</li> <li>• Natural gas: 5 ppmv for <math>\geq 75</math> MMBtu/hr, 7 or 9 ppmv for 20–75 MMBtu/hr, 12 ppm for atmospheric, and 12 ppm for thermal fluid heaters</li> </ul> <p>For other types of fuels:</p> <ul style="list-style-type: none"> <li>• 30 ppmv for other gaseous fuels; 40 ppmv for nongaseous fuels</li> <li>• CO limit: 400 ppmv</li> </ul> <p>*All parts per million (ppm) emission limits are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.</p>	<ul style="list-style-type: none"> <li>• Digester gas: 15 ppmv</li> <li>• Landfill gas: 25 ppmv</li> <li>• Natural gas: 7 or 9 ppmv, 12 ppm for atmospheric, and 12 ppm for thermal fluid heaters</li> <li>• All others: 30 ppmv</li> <li>• CO limit: 400 ppmv.</li> </ul>	<p>NOx limit is 20 ppmv for new units less than 2 MMBtu/hr.</p> <p>NOx limit is 30 ppmv for retrofit units less than 2 MMBtu/hr.</p>	<ul style="list-style-type: none"> <li>• Schedule for meeting BARCT emission limits and MRR requirements</li> </ul>	<p>For refinery gas: 2 ppmv for units &gt; 40 MMBtu/hr</p> <p>For other units: 9 ppmv for units &gt; 20 MMBtu/hr; and 12 ppmv for units <math>\geq 2</math> MMBtu/hr</p>	None
<b>Reporting</b>	Every 6 months for units greater than or equal to 40 MMBtu/hr and an annual heat input greater than $200 \times 10^9$ Btu per year (Rule 218)	None	None	As specified in SCAQMD Rules 1146, 1146.1 and 1146.2	<ul style="list-style-type: none"> <li>• Daily electronic reporting for major sources</li> <li>• Monthly to quarterly reporting for large sources and process units</li> <li>• Quarterly Certification of Emissions Report and Annual Permit Emissions Program for all units</li> </ul>	None
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>• A continuous in-stack NOx monitor for units greater than or equal to 40 MMBtu/hr and an annual heat input greater than <math>200 \times 10^9</math> Btu per year</li> <li>• Source testing once every 3 – 5 years for other units</li> </ul>	<ul style="list-style-type: none"> <li>• Source testing once every 5 years</li> </ul>	None	As specified in SCAQMD Rules 1146, 1146.1 and 1146.2	<ul style="list-style-type: none"> <li>• A continuous in-stack NOx monitor for major sources</li> <li>• Source testing once every 3 years for large sources</li> <li>• Source testing once every 5 years for process units</li> </ul>	None
<b>Recordkeeping</b>	<ul style="list-style-type: none"> <li>• Source test records</li> <li>• Maintenance &amp; emission records = 2 years</li> <li>• Monitoring data = 2 years (5 years if Title V)</li> </ul>	<ul style="list-style-type: none"> <li>• Source test records = 2 years (5 years if Title V)</li> <li>• Monitoring data = 2 years (5 years if Title V)</li> </ul>	None	As specified in SCAQMD Rules 1146, 1146.1 and 1146.2	<ul style="list-style-type: none"> <li>• &lt; 15-min. data = min. 48 hours; • <math>\geq 15</math>-min. data = 3 years (5 years if Title V)</li> <li>• Maintenance &amp; emission records, source test reports, RATA reports, audit reports and fuel meter calibration records for Annual Permit Emissions Program = 3 years (5 years if Title V)</li> </ul>	None

## **APPENDIX A – ANALYSIS OF MRR REQUIREMENTS**

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## INTRODUCTION

Under RECLAIM mass emissions reported by each facility are used to track and demonstrate compliance. To ensure the integrity of reported emissions, RECLAIM includes substantial monitoring and reporting requirements, as specified in Rule 2012 - *Requirements for Monitoring, Reporting and Recordkeeping for Oxides of Nitrogen Emissions*. RECLAIM MRR requirements are developed to accurately determine mass emissions of NOx for each facility, which is necessary for emission reconciliation and compliance demonstration in the cap-and-trade regulatory structure. RECLAIM MRR requirements are segregated by device classifications. The 4 major device classifications are major sources, large sources, process units, and Rule 219 exempt equipment.

In a command-and-control regulatory structure, a device-level emission standard (expressed in concentration such as ppm in Rules 1146, 1146.1 and 1146.2) is used for regulatory and compliance demonstration. Rules 1146 and 1146.1 also requires periodic emissions monitoring for facilities to demonstrate compliance to emission concentration limits. Staff has analyzed the MRR requirements in RECLAIM and Rule 1146 Series. Comparisons between the MRR requirements in RECLAIM and Rule 1146 Series of (a) source testing, (b) tune up / emission checks, (c) reporting, (d), recordkeeping, and (e) missing data procedures are presented in Tables A1-5, respectively.

**Table A-1  
Source Testing Requirements**

Equipment Type		RECLAIM	Rule 1146 Series
RECLAIM	Rule 1146 Series		
Major Source* • ≥40 MMBtu/hr or • >10tpy	R1146 • ≥40 MMBtu/hr and • >200 Billion Btu/year	Continuous Emissions Monitoring System (CEMS) – Annual (or semi-annual <sup>#</sup> ) certification of Relative Accuracy Test Audits (RATA) including source testing	
Large Source* • ≥10 and <40 MMBtu/hr or • >4 and <10 tpy	R1146 • ≥5 and <40 MMBtu/hr	Source testing once every 3 years;	Source testing once every 3 years for ≥10 <sup>+</sup> ; Source testing once every 5 years for ≥5 and <10 MMBtu/hr
Process Unit* • >2 and <10 MMBtu/hr • ≤2 MMBtu/hr if permitted	R1146.1 • >2 and <5 MMBtu/hr	Source testing once every 5 years for devices with concentration limit	Source testing once every 5 years;
R219 Exempt • ≤2 MMBtu/hr	R1146.2 • ≤2 MMBtu/hr	Not applicable <sup>^</sup>	Not applicable

\* Refer to Rule 2012 for specific definitions

# Only applicable to RECLAIM facilities with standards exceeding the 7.5% requirements

<sup>^</sup> Unless equipment is reported to be using an alternate emission factor

<sup>+</sup> Except units equipped with CEMS

**Table A-2  
Tune Up / Emission Check Requirements**

Equipment Type		RECLAIM Tune Up Frequency	Rule 1146 Series Diagnostic Emission Check Frequency
RECLAIM	Rule 1146 Series		
Major Source* • ≥40 MMBtu/hr or • >10tpy	R1146 • ≥40 MMBtu/hr and • >200 Billion Btu/year	Daily calibration and semi-annual tune ups OR Annual RATA	Not required for units with CEMS
Large Source* • ≥10 and <40 MMBtu/hr or • >4 and <10 tpy	R1146 • ≥5 and <40 MMBtu/hr	Semi-annual tune ups	At least monthly or every 750 operating hours, or quarterly or every 2000 operating hours
Process Unit* • >2 and <10 MMBtu/hr • ≤2 MMBtu/hr if permitted	R1146.1 • >2 and <5 MMBtu/hr	Semi-annual tune ups	At least quarterly or every 2000 operating hours or semi-annually or every 4000 operating hours
R219 Exempt • ≤2 MMBtu/hr	R1146.2 • ≤2 MMBtu/hr	Not applicable	Not applicable

\* Refer to Rule 2012 for specific definitions

**Table A-3  
Reporting Requirements**

Equipment Type		RECLAIM		Rule 1146 Series
RECLAIM	Rule 1146 Series	Electronic	Paper	
Major Source* • ≥40 MMBtu/hr or • >10tpy	R1146 • ≥40 MMBtu/hr and • >200 Billion Btu/year	Daily automatic reporting	Quarterly Certification of Emissions Report and Annual Permit Emissions Program	Every 6 months (Rule 218)
Large Source* • ≥10 and <40 MMBtu/hr or • >4 and <10 tpy	R1146 • ≥5 and <40 MMBtu/hr	Monthly reporting	Report and Annual Permit Emissions Program	None
Process Unit* • >2 and <10 MMBtu/hr • ≤2 MMBtu/hr if permitted	R1146.1 • >2 and <5 MMBtu/hr	Quarterly reporting		None
R219 Exempt • ≤2 MMBtu/hr	R1146.2 • ≤2 MMBtu/hr	Quarterly reporting		None

\* Refer to Rule 2012 for specific definitions

**Table A-4  
Recordkeeping Requirements**

Equipment Type		RECLAIM	Rule 1146 Series
RECLAIM	Rule 1146 Series		
Major Source* <ul style="list-style-type: none"> <li>• ≥40 MMBtu/hr or</li> <li>• &gt;10tpy</li> </ul>	R1146 <ul style="list-style-type: none"> <li>• ≥40 MMBtu/hr and</li> <li>• &gt;200 Billion Btu/year</li> </ul>	<ul style="list-style-type: none"> <li>• &lt; 15-min. data = min. 48 hours</li> <li>• ≥ 15-min. data = 3 years (5 years if Title V)</li> <li>• Maintenance &amp; emission records, source test reports, RATA reports, audit reports and fuel meter calibration records for Annual Permit Emissions Program = 3 years (5 years if Title V)</li> </ul>	<ul style="list-style-type: none"> <li>• Source test records</li> <li>• Maintenance &amp; emission records = 2 years</li> <li>• Monitoring data = 2 years (5 years if Title V)</li> </ul>
Large Source* <ul style="list-style-type: none"> <li>• ≥10 and &lt;40 MMBtu/hr or</li> <li>• &gt;4 and &lt;10 tpy</li> </ul>	R1146 <ul style="list-style-type: none"> <li>• ≥5 and &lt;40 MMBtu/hr</li> </ul>		<ul style="list-style-type: none"> <li>• Source test records</li> <li>• Monitoring data = 2 years (5 years if Title V)</li> </ul>
Process Unit* <ul style="list-style-type: none"> <li>• &gt;2 and &lt;10 MMBtu/hr</li> <li>• ≤2 MMBtu/hr if permitted</li> </ul>	R1146.1 <ul style="list-style-type: none"> <li>• &gt;2 and &lt;5 MMBtu/hr</li> </ul>		<ul style="list-style-type: none"> <li>• Source test records = 2 years (5 years if Title V)</li> <li>• Monitoring data = 2 years (5 years if Title V)</li> </ul>
R219 Exempt <ul style="list-style-type: none"> <li>• ≤2 MMBtu/hr</li> </ul>	R1146.2 <ul style="list-style-type: none"> <li>• ≤2 MMBtu/hr</li> </ul>	<ul style="list-style-type: none"> <li>• Fuel usage records</li> </ul>	<ul style="list-style-type: none"> <li>• Fuel usage records</li> </ul>

\* Refer to Rule 2012 for specific definitions

**Table A-5  
Missing Data Procedures**

Equipment Type		RECLAIM	Rule 1146 Series
RECLAIM	Rule 1146 Series		
Major Source* <ul style="list-style-type: none"> <li>• ≥40 MMBtu/hr or</li> <li>• &gt;10tpy</li> </ul>	R1146 <ul style="list-style-type: none"> <li>• ≥40 MMBtu/hr and</li> <li>• &gt;200 Billion Btu/year</li> </ul>	For >95% availability (short gaps) <ul style="list-style-type: none"> <li>• use avg. valid hour before and after or use highest hourly NOx conc. for last 30 days</li> </ul> For <95% availability (longer gaps) <ul style="list-style-type: none"> <li>• use highest hourly NOx conc. or last 30 days, or 365 days</li> </ul> For <90% availability <ul style="list-style-type: none"> <li>• use lifetime highest hourly NOx conc.</li> </ul>	Not applicable
Large Source* <ul style="list-style-type: none"> <li>• ≥10 and &lt;40 MMBtu/hr or</li> <li>• &gt;4 and &lt;10 tpy</li> </ul>	R1146 <ul style="list-style-type: none"> <li>• ≥5 and &lt;40 MMBtu/hr</li> </ul>	If missing data is < 1 month <ul style="list-style-type: none"> <li>• use average monthly for the previous 12 months.</li> </ul> If missing data is > 1 month <ul style="list-style-type: none"> <li>• use highest monthly fuel usage for the previous 12 months.</li> </ul> If missing data is > 2 months or no records are available <ul style="list-style-type: none"> <li>• assume 24 hours operation at maximum rated capacity at an uncontrolled emission factor</li> </ul>	Not applicable
Process Unit* <ul style="list-style-type: none"> <li>• &gt;2 and &lt;10 MMBtu/hr</li> <li>• ≤2 MMBtu/hr if permitted</li> </ul>	R1146.1 <ul style="list-style-type: none"> <li>• &gt;2 and &lt;5 MMBtu/hr</li> </ul>	If missing data is < 1 quarter <ul style="list-style-type: none"> <li>• use average quarterly fuel usage for the previous 4 quarters.</li> </ul> If missing data is > 1 quarter <ul style="list-style-type: none"> <li>• use source's highest quarterly fuel usage for the previous 4 quarters.</li> </ul>	Not applicable
R219 Exempt <ul style="list-style-type: none"> <li>• ≤2 MMBtu/hr</li> </ul>	R1146.2 <ul style="list-style-type: none"> <li>• ≤2 MMBtu/hr</li> </ul>	If no records are available <ul style="list-style-type: none"> <li>• assume 24 hours operation at maximum rated capacity at an uncontrolled emission factor</li> </ul>	

## **APPENDIX B – FACILITY AND EQUIPMENT ANALYSIS**

## INTRODUCTION

Starting March 2017, a monthly RECLAIM Working Group Meeting has been held to present and solicit information and suggestions from the public regarding the RECLAIM transition mechanisms. With the consideration of comments received, staff identified the following pathways to transition facilities out of RECLAIM:

- Source-specific command-and-control rules
- Industry-specific command-and-control rules
- Opt-out provisions

As of April 2018, four industry-specific categories have been identified. These four sectors are:

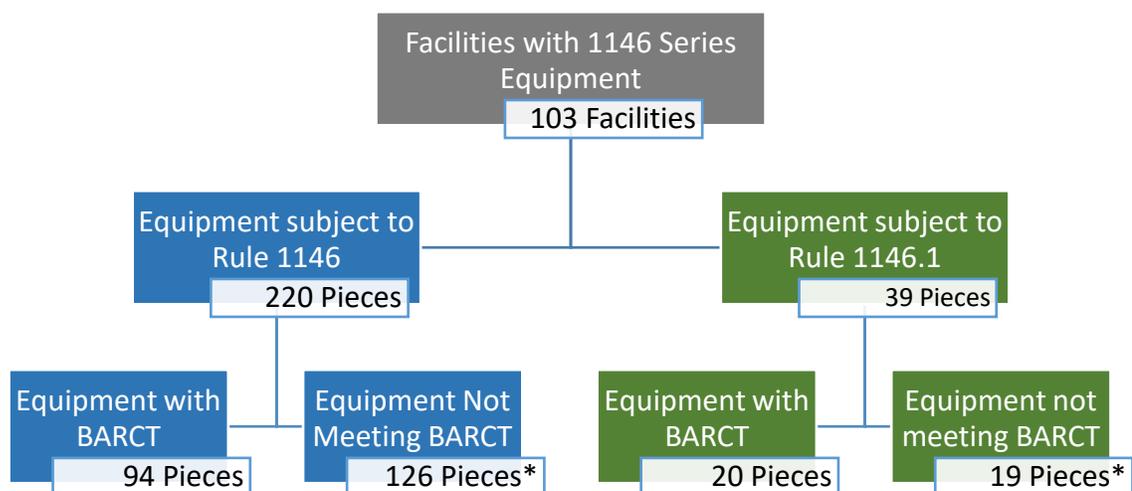
- Electricity Generating Facilities (EGFs)
- Refineries
- Metal Operations Facilities
- Aggregate Facilities

However the list of industry specific categories may change as the RECLAIM transition rulemaking process continues. The facilities in the four sectors would be subject to industry-specific command-and-control rules (Rule 1135 for EGFs; Rule 1109.1 for refineries; Rule 1147.1 for metal operations facilities; and Rule 1147.2 for aggregate facilities). Energy generating equipment located in EGFs and equipment located in refineries are subject to requirements to be established in the industry-specific rules. Since they would not follow the implementation schedule established for PARs 1146 series, they are not included in the permit analysis presented in this staff report. However, for metal operations and aggregate facilities as well as EGF equipment that do not generate electricity, their Rule 1146 series equipment will be subject to the requirements and implementation schedule as specified in the proposed rule amendments.

To understand the number and the size of units that need to meet the NO<sub>x</sub> concentration limits, permit data was retrieved in August 2017 for all Rule 1146, 1146.1, and 1146.2 units in RECLAIM to evaluate facilities with multiple pieces of Rule 1146 and 1146.1 equipment and those with both Rule 1146 series and other RECLAIM equipment.

### **Analysis of Rule 1146 and 1146.1 Units Currently Not Meeting NO<sub>x</sub> Limit**

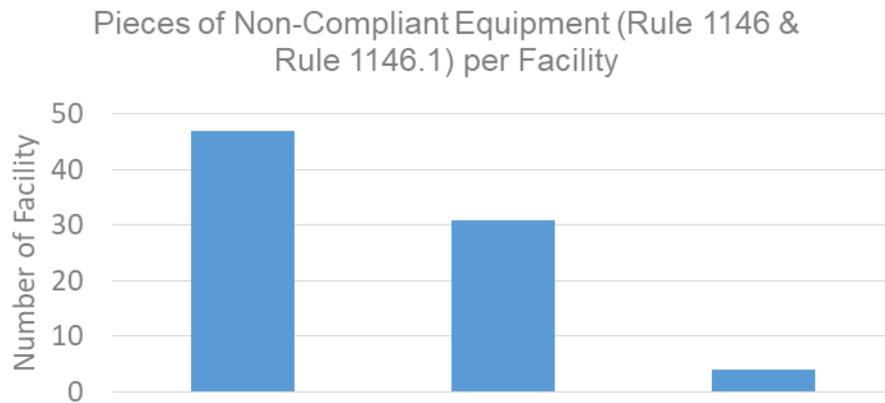
Out of the 259 RECLAIM facilities, 103 facilities were permitted with equipment that will be subject to PARs 1146, 1146.1 or 1146.2. As shown in Figure B-1, for the 103 facilities, there are 220 pieces of equipment that are subject to Rule 1146 and 39 pieces of equipment that are subject to Rule 1146.1. Of the 220 pieces of Rule 1146 equipment, 126 are currently not meeting the proposed BARCT limits. Of the 39 Rule 1146.1 equipment, 19 are currently not meeting the BARCT limit. Some facilities will have a combination of Rule 1146 and 1146.1 pieces of equipment at their facility.



*\*Includes units not subject to BARCT until burner replacement*

**Figure B-1  
RECLAIM Facilities with Rule 1146 Series Equipment**

Figure B-2 shows the number of units that are currently not meeting the applicable NOx concentration limits in Rules 1146 and 1146.1 at a facility level. Equipment currently in compliance with RECLAIM BARCT<sup>i</sup> of 12 ppm are considered in compliance until burner replacement. Most of the facilities had 1 to 3 pieces of equipment that are non-compliant with Rule 1146 & Rule 1146.1 limits. Nine facilities had between 4 and 7 non-compliant units, while 2 facilities had 8 or more pieces of non-compliant equipment. One of two facilities had 19 units between 5 and 20 MMBtu/hr not meeting the Rule 1146 BARCT limit of 7 ppm. However, 13 of the 19 units are currently meeting the RECLAIM BARCT limit of 12 ppm, and would not need to meet the lower NOx emission limit under Proposed Amended Rules 1146 and 1146.1 until the unit’s burner replacement or 15 years after rule adoption, whichever occurs earlier. The other facility had a total of 11 non-compliant units (3 Rule 1146 units and 7 Rule 1146.1 units), of which 3 would not need to meet the lower NOx emission limit under Proposed Amended Rules 1146 and 1146.1 until the unit’s burner replacement or 15 years after rule adoption, whichever occurs earlier. Excluding the units that could delay compliance until burner replacement, these two facilities are required to retrofit 6 and 8 units, respectively. These units range from 2 to 13 MMBtu/hr, and compliance can be achieved with ultra-low NOx burners.



**Figure B-2**  
**Non-Compliant Equipment in Facilities Subject to Rules 1146 & 1146.1 Only**

**Analysis of Facilities with Rules 1146 and 1146.1 Equipment and Other Landing Rules**

Staff has reviewed permits for all Rule 1146, 1146.1, and 1146.2 units in RECLAIM, and identified the number of non-Rule 1146 and 1146.1 units a facility has. As illustrated in Figure B-3, about half of the facilities had 3 or less non-Rule 1146 and 1146.1 units<sup>18</sup> (“other units”). Most of these equipment are subject to Rule 1110.2 (*Emissions from Gaseous - and Liquid-Fueled Engines*) or Rule 1147 (*NOx Reductions from Miscellaneous Sources*), which are scheduled to be amended in fall 2018 and in 2019 respectively. Twenty-five facilities had 4 to 10 other units. On this basis, facilities with 10 or less other units can meet the NOx concentration limits for Rule 1146 and/or Rule 1146.1 within three years.

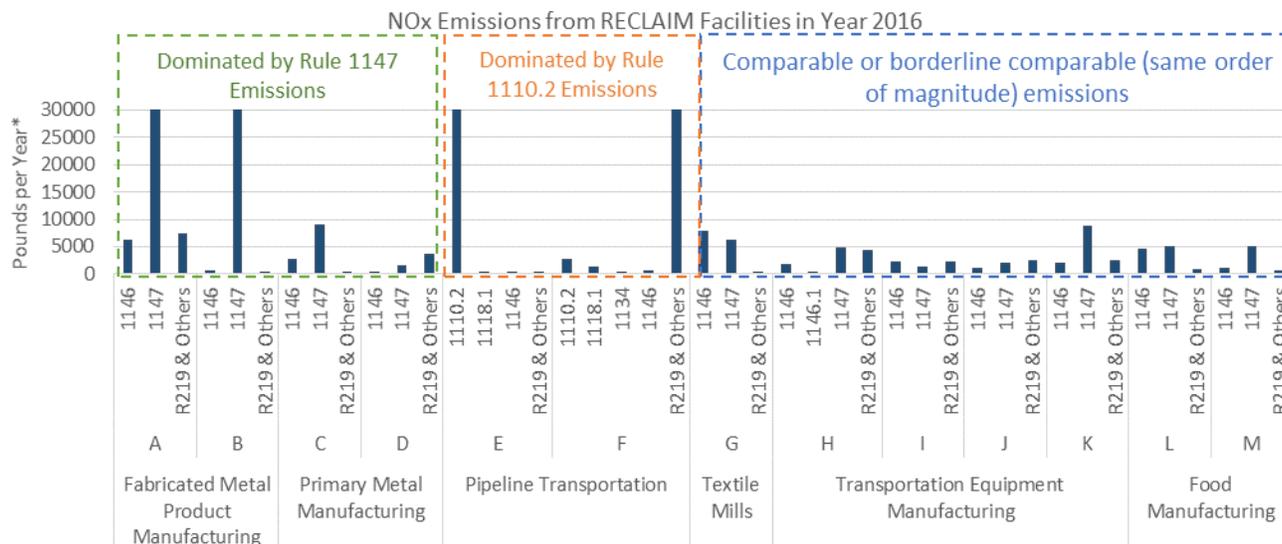


**Figure B-3**  
**Non-Rule 1146 and Rule 1146.1 Equipment**

To ensure that the greatest emissions reductions are achieved as early as practicable, staff evaluated the NOx emissions for each source category for facilities with more than 10 other units. Figure B(4) illustrates the NOx emissions of the 13 facilities with more than 10 units subject to other

<sup>18</sup> Excludes Rule 1470 equipment

landing rules. Four of the 13 facilities (Facilities A-D) had emissions dominated by Rule 1147 (*NOx Reductions from Miscellaneous Sources*) units. These facilities are associated with fabricated metal product manufacturing and primary metal manufacturing. Emissions from the two facilities (Facility E and Facility F) in the pipeline transportation industry were largely contributed by their internal combustion engines that are subject to Rule 1110.2 (*Emissions from Gaseous - and Liquid-Fueled Engines*). For the remaining facilities, emissions from their Rule 1146 series are mostly comparable with the emissions from other landing rules.



\* Emissions from some facilities exceeded 30,000 pounds per year.

**Figure B-4**  
**Emissions from Facilities with More than 10 Units**  
**Subject to Other Landing Rules**

For facilities with emissions dominated by other landing rules, staff evaluated each facility individually to better understand the emissions from different source types. The permitted units that are subject to the proposed rule amendments in Facility D and Facility E are already at BARCT, and they are not impacted by the compliance schedule in the proposed amendments. For Facilities A, B, C, and F, they have 5, 1, 2, and 3 permitted units that would be required to retrofit according to the compliance timeframe set forth in the proposed amendments.

These units ranged from 3 to 33 MMBtu/hr. For Rule 1146.1 and Rule 1146 Group III units not in compliance with RECLAIM BARCT of 12 ppm, will need to meet proposed limits of 7 ppm, compliance can be achieved with ultra-low NOx burners while units that meet RECLAIM BARCT would not need to meet the lower NOx emission limit under Proposed Amended Rules 1146 and 1146.1 until the unit’s burner replacement or 15 years after rule adoption, whichever occurs earlier. Rule 1146 Group II units that are not in compliance with the RECLAIM BARCT will need to meet proposed limit of 5 ppm while Group II units currently in compliance with RECLAIM BARCT will need to meet proposed limit of 7 ppm at burner replacement. Rule 1146 Group II units that do not meet RECLAIM BARCT would require the more expensive control technology of SCR. In particular, the units in Facilities A-C are subject to Rule 1147, which is scheduled to be amended in 2019 as presented in various monthly RECLAIM Working Group Meetings. Given the time required for facilities to perform the engineering evaluation as well as the time needed for permit

application and processing, it is very likely that the implementation timeframe for the proposed amendments to Rule 1147 series would be later than January 1, 2021, leaving time for compliance with the Rule 1146 series equipment before that timeframe. Staff also determined that there are many other facilities belonging to different industries that are in a similar situation as some of these metal and aggregate facilities (e.g., many Rule 1147 pieces of equipment, along with Rule 1146 series equipment), and they would be subject to PARs 1146 series under the proposed amendments.

### **Analysis of Rule 1146.2 Units**

Rule 1146.2 applies to boilers and process heaters with a rated heat input less than or equal to 2 MMBtu/hr. However, Rule 1146.2 units are exempt from SCAQMD permitting requirements per Rule 219 (Equipment Not Requiring a Written Permit Pursuant to Regulation II). Only a small portion of the Rule 1146.2 units are permitted due to unique circumstances, such as operators obtaining a lower emission factor for calculating the unit's potential to emit (PTE). As of September 2018, there is a total of 32 permitted Rule 1146.2 units in the RECLAIM universe, with 28 units meeting the existing Rule 1146.2 NO<sub>x</sub> concentration limit of 30 ppm. Among the 28 units, 21 of them were permitted at 12 ppm, above and beyond the 30 ppm requirement. Four of the 32 permitted Rule 1146.2 RECLAIM units were permitted at emission limits above the Rule 1146.2 limit, and would require retrofit / replacement to meet the existing Rule 1146.2 requirements. It is important to emphasize that majority of the Rule 1146.2 units in RECLAIM facilities are not permitted. Although non-RECLAIM facilities are required to register Rule 1146.2 equipment from 1 up to and including 2 MMBtu/hr under Rule 222 (*Filing Requirements For Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II*), RECLAIM facilities are exempt from the registration requirements. In addition, RECLAIM facilities report emissions from Rule 1146.2 units in the aggregate with other Rule 219 exempt equipment. Thus, the actual number of Rule 1146.2 units in the RECLAIM universe and its associated emissions could not be accurately quantified as part of this rule development, and the analysis below is the best estimate based on the best available information to date.

To better estimate the number of Rule 1146.2 units in RECLAIM, staff evaluated the equipment inventory provided by the facility responses from the initial determination notifications. This initial notification included an existing list of NO<sub>x</sub> emitting equipment and a request for the owner or operator of the RECLAIM facility to confirm the RECLAIM source equipment at the facility, as well as to identify any NO<sub>x</sub> emitting equipment that is not subject to permitting requirements (e.g., Rule 1146.2 units). As of April 2018, 37 RECLAIM facilities responded to the initial determination notifications, and a total of 118 Rule 1146.2 Type 2 units were reported. Based on the results of this initial survey, on average, each RECLAIM facility has 3.19 pieces of Rule 1146.2 Type 2 equipment. Assuming the same ratio for the rest of the RECLAIM facilities, it is estimated that about 850 Rule 1146.2 Type 2 units are present in the RECLAIM universe comprising of 259 facilities. While this provides an adequate estimation of the number of Rule 1146.2 units under the RECLAIM program, staff commits to collect and improve the RECLAIM inventory for this source category through annual inspections.

### **Equipment by Size**

One major goal of PR 1100 is to ensure that facilities affected by multiple landing rules will achieve the greatest emission reductions early, and that facilities will address higher emitting equipment first. Equipment subject to PAR 1146 series and near final emission limits (RECLAIM BARCT) will not need to comply with lower emission limits under burner replacement or 15 years

after rule amendment. The distribution of units affected by PARs 1146 and 1146.1 by size range is presented in Table B-1.

**Table B-1**  
**Number of Equipment by Size**

<b>Rule Applicability</b>	<b>Meet RECLAIM BARCT</b>	<b>Do Not Meet RECLAIM BARCT</b>
<b>Rule 1146</b>		
<b>Group I (<math>\geq 75</math> MMBtu/hr)</b>	4	3
<b>Group II ( 20 to <math>&lt;75</math> MMBtu/hr)</b>	26	52
<b>Group III (5 to <math>&lt; 20</math> MMBtu/hr)</b>	55	69
<b>Rule 1146 Thermal Fluid Heaters</b>	9	2
<b>Rule 1146.1 (2 to <math>&lt;5</math> MMBtu/hr)</b>	20	19
<b>Total</b>	<b>114</b>	<b>145</b>

**APPENDIX C – PUBLIC COMMENTS**

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Thu 2/22/2018 9:19 AM

 Jiang, Hao <Hao.Jiang@disney.com>  
RE: PAR 1146s and PR1100

To  Kalam Cheung;  Kevin Orellana;  Gary Quinn;  Tracy Goss

 This message is part of a tracked conversation. Click here to find all related messages or to open the original flagged message.

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**From:** Jiang, Hao [<mailto:Hao.Jiang@disney.com>]  
**Sent:** Friday, February 16, 2018 2:15 PM  
**To:** Kevin Orellana <[korellana@aqmd.gov](mailto:korellana@aqmd.gov)>; Kalam Cheung <[kcheung@aqmd.gov](mailto:kcheung@aqmd.gov)>; Gary Quinn <[GQuinn@aqmd.gov](mailto:GQuinn@aqmd.gov)>; Tracy Goss <[TGoss@aqmd.gov](mailto:TGoss@aqmd.gov)>  
**Subject:** PAR 1146s and PR1100

Kevin and all,

Disneyland would like to submit 2 comments to the PR1100.

- (1) PR1100 should include a provision stating that RECALIM units receive deferred compliance deadline to next burner replacement per Rule 1146(c)(7) or Rule 1146.1 (c)(6) shall not subject to the January 1, 2020 and January 1, 2023 compliance deadlines.  
This was brought to the February 14 public meeting and was confirmed by the District staff.
- (2) PR1100 should include a provision stating that RECALIM units receive deferred compliance deadline to next burner replacement per Rule 1146(c)(7) or Rule 1146.1 (c)(6) shall be counted as BARCT-compliant equipment in determining heat input percentage for implementation schedule. This is due to the same reason that businesses should not be penalized for install BACT earlier than required.

Thank you.

Hao Jiang, P.E.  
Environmental Affairs  
Disneyland Resort  
PO Box 3232  
TDA 224C  
Anaheim, Ca 92802  
714-781-4504, [hao.jiang@disney.com](mailto:hao.jiang@disney.com)

} 1-1

} 1-2

**Response to Comment 1-1**

Rule 1100 (d)(5) proposes to allow a RECLAIM or former RECLAIM facility that installed, or modified, or has been issued a SCAQMD Permit to Construct or Permit to Operate, a respective Rule 1146 or Rule 1146.1 natural gas fired unit prior to the date of rule adoption and near final emission limit to comply with proposed rule limits at the time of the unit's burner(s) replacement or 15 years after rule adoption.

**Response to Comment 1-2**

Units near final emission limit will be counted towards the 75% total heat input compliance requirement.

Thu 2/22/2018 9:19 AM

 Jiang, Hao <Hao.Jiang@disney.com>  
RE: PAR 1146s and PR1100

To Kalam Cheung; Kevin Orellana; Gary Quinn; Tracy Goss

 This message is part of a tracked conversation. [Click here to find all related messages or to open the original flagged message.](#)

Morning Kalam,

Thank you for checking status of our 13 boilers for me. I have 2 more comments/questions regarding PR1100.

- (1) PR1100 should make it clear that deferred compliance deadline to next burner replacement per Rule 1146(c)(7) or Rule 1146.1 (c)(6) shall be required only after facility exits RECALIM regulation.  
This is to eliminate the confusion that burner replacement while remain in the RECLAIM is not subject to 9 ppm standard.
- (2) I like to learn that how R1146 and R1146.1 facilities handle the permitting process for burner replacement. Boiler OEMs do not have a fixed schedule for burner replacement so facilities normally practice "run-to-fail". Because the District needs 6–9 months (for Title V facility) to complete a permit revision, facilities would have to either plan ahead to replace burner that is still working to avoid permitting delay, or to bring in rental units to cover the permitting period. Both create significant financial burdens and operation disturbances to a facility. Can District create a provision in PR1100 that allows facilities to replace to 9ppm burner before obtaining permit revision, provided that a permit application is submitted within 2 weeks of such replacement?  
This is because there are only 42 of such units and new burners reduce emissions (12ppm to 9ppm).

Thank you  
Hao

} 2-1  
} 2-2

**Response to Comment 2-1**

As part of this rule amendment, PARs 1146 series will expand the applicability to include units that were not previously required to comply with Rules 1146 and 1146.1 because they were in the NO<sub>x</sub> RECLAIM program. Rule 1100 (c)(5) proposes to allow a RECLAIM or former RECLAIM facility that installed, or modified, or has been issued a SCAQMD Permit to Construct or Permit to Operate, a respective Rule 1146 natural gas fired unit or Rule 1146.1 natural gas fired unit prior to the date of rule adoption and near final emission limit to comply with proposed rule limits at the time of the unit's burner(s) replacement or 15 years after rule adoption.

**Response to Comment 2-2**

Before a burner becomes inoperable, the burner or boiler performance will suffer and show signs of wear and tear, which would be shown in the various operating parameters. For example, a review of higher fuel usage or even a Visible Emission Evaluation (VEE) at the smoke stack could indicate a problem with the burner assembly. Once a determination that the boiler is suffering a performance problem, an overall evaluation of the boiler should take place. Overall, if there are signs of a potential problem, routine maintenance should be able to ascertain the problem well ahead of time for planning purposes.



Daniel McGivney  
 Environmental Affairs  
 Program Manager

Tel: 951-225-2958  
 dmcgivney@semprautilities.com

February 28, 2018

Mr. Philip Fine, Ph.D.  
 Deputy Executive Officer  
 South Coast Air Quality  
 Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765

via email

**Subject: Proposed Amended Rules 1146, 1146.1, 1146.2, and Proposed Rule 1100  
 Transition Rules for RECLAIM Facilities**

Dr. Fine:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide comments on Proposed Amended Rules 1146, 1146.1, 1146.2, and Proposed Rule 1100 Transition Rules for RECLAIM Facilities. We look forward to continued engagement in the working group process as this, and other RECLAIM landing rules are developed.

**Comments regarding Proposed Rule 1100**

Permit Application Submittal Date

The August 1, 2018 permit application submittal deadline contained in draft Proposed Rule 1100 (PR 1100) does not provide adequate time for a regulated facility to prepare and submit a required permit application. Facilities need time to assess their equipment and determine a retrofit or replacement strategy, evaluate and estimate project costs, including ancillary activities such as necessary electrical, plumbing and/or ducting modifications. Additionally, facilities must obtain funding and management approval for these projects, perform engineering design and develop project bid specifications, and select equipment. These activities must occur before preparation and submittal of a permit application (which typically also requires bringing on a contracted entity to prepare the permit application). Depending upon type, complexity and size of a business, the time to do all of this can range from weeks to many months. At SoCalGas facilities, the above activities can take as long as 12 to 18 months.

} 3-1

As proposed in PR 1100, there are approximately 44 months between the scheduled May 2018 hearing to adopt amendments to the 1146 series rules and the final Best Available Retrofit Control Technology (BARCT) implementation date of January 1, 2022. **SoCalGas respectfully requests that the proposed permit application submittal deadline be revised to require submittal at one year from the date of Governing Board adoption of Rule 1100.** If amended in May as scheduled, this would still allow 20 and 32 months for permit issuance and construction/installation of necessary equipment to achieve compliance with the January 1, 2021 and 2022 deadlines.

3-1  
cont.

**General Comments Regarding the RECLAIM Transition**

Permitting

SoCalGas is concerned about the transition process for Title V/major sources as we understand that there could be a lag in updating permits as facilities are transitioned out of RECLAIM and become regulated under command and control (C&C) regulations. This lag would appear to expose facilities to undue enforcement jeopardy as a facility may be responsible for complying with both C&C regulations due to the transition and requirements contained in the existing, and yet to be amended, Title V/RECLAIM permits.

3-2

We recommend that if permits cannot be updated at the time of transition, that the District consider including language in Rule 1100 that stays, or otherwise addresses, applicable requirements in the facilities' existing permits until permits can be amended.

**Comments Regarding the Amendments to Rule 1146, 1146.1, 1146.2**

Monitoring, Reporting & Recordkeeping

SoCalGas is concerned that the District is requiring facilities that transition out of the program to maintain existing RECLAIM program Monitoring, Reporting & Recordkeeping (MR&R) requirements even though they will be subject to command and control regulation. Transitioning facilities into a C&C regulatory regime requires those facilities to retrofit or replace existing equipment and install emissions controls to achieve BARCT standards contained in applicable C&C regulations. In many cases, this will result in emission reductions. SoCalGas believes that these reductions, and the MR&R contained in the landing rules, are sufficient to assure compliance. Therefore, retaining more costly RECLAIM MR&R, is not necessary or reasonable.

3-3

As MR&R has been a significant topic of discussion at all landing rule and RECLAIM phase-out working group meetings to date, SoCalGas recommends that the District continue to discuss this important issue so that there is consistent application of MR&R as facilities transition into a variety of landing rules. We suggest modifying the proposed 1146 series rules to include language transitioning RECLAIM facilities to current, or significantly similar, landing rule MR&R requirements and phase-out the bulk of existing RECLAIM MR&R requirements as these RECLAIM facilities fully transition to a full C&C regulatory program.

**Conclusion**

SoCalGas appreciates your consideration of these comments and recommendations. We look forward to continuing to work with staff regarding these amendments. Please contact me if there are any questions.

Sincerely,

A handwritten signature in black ink that reads "Daniel McGivney". The signature is written in a cursive style with a large initial "D".

Daniel McGivney  
Environmental Affairs Program Manager  
Southern California Gas Company

cc:  
Susan Nakamura, SCAQMD  
Tracy Goss, SCAQMD  
Gary Quinn, SCAQMD  
Kevin Orellana, SCAQMD  
Lauren Nevitt, SoCalGas

**Response to Comment 3-1**

After considering public input, the permit application submittal deadline has been extended from August 1, 2018 to twelve months after rule adoption (i.e. December 7, 2019). Staff believes the new deadline provides adequate time if a comprehensive engineering or energy assessment is needed to prepare for the required permit application.

**Response to Comment 3-2**

As a facility modifies its equipment, permits can be modified to reflect compliance with command-and-control rules. In the Monthly RECLAIM Working Group Meeting held on April 12, 2018, staff presented an initial plan for permitting for the RECLAIM transition. Staff will continue to work with stakeholders and will modify the schedule as needed to transition facilities to command-and-control if additional time is needed to address transitional permitting issues.

**Response to Comment 3-3**

Staff acknowledges that part of the existing RECLAIM MRR requirements, such as daily monitoring and reporting of emissions, and missing data provisions, are developed for a compliance program that relies on reported mass emissions to track and demonstrate compliance. Staff has evaluated the MRR requirements in both RECLAIM and Rule 1146 series, and recommends that non-Title V facilities to be subject to the MRR requirements in Rule 1146 series after exiting the RECLAIM program. For Title V facilities, an extensive public review process is triggered by modifications on monitoring and recordkeeping requirements. Staff is recommending that Title V facilities maintain existing RECLAIM MRR requirements while the transition process proceeds. The SCAQMD is committed to re-evaluate monitoring and recordkeeping requirements for Title V facilities, and will continue to discuss the matter with EPA.



February 28, 2018

Gary Quinn, P.E.  
 Program Supervisor  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765

**Subject: COMMENTS TO PAR 1146 and PR 1100**

Dear Mr. Quinn:

Thank you for this opportunity to comment on SCAQMD Proposed Amended Rule 1146 and Proposed Rule 1100.

Plains West Coast Terminals (PWCT) has five RECLAIM facilities – PWCT Alamitos and PWCT Dominguez Hills have two Rule 1146 heaters each, PWCT Long Beach has two out of service heaters and a Rule 1147 afterburner, PWCT Huntington Beach has an out of service heater, and PWCT El Segundo no longer has a heater on location. The last three should comply fairly easily with using the Rule 1146 (c)(5) low use provision. The first two facilities with active heaters may be able to use the low use provision however, it only allows for an 18 month compliance date if it no longer meets the exemption while Proposed Rule 1100 allows a 31 month compliance date if adopted in its current version in May 2018.

4-1

PWCT will have from one to four heaters to retrofit by January 2021. The first hurdle will be to prepare *COMPLETE* permit to construct (PTC) applications by August 1, 2018. Before an application can be prepared, there are many planning components involved. These include: engineering evaluation of the current heaters, viability of retrofitting the existing configuration, scoping out viable vendors and their guarantees for the retrofit, signing all subcontractors on an agreeable master services contract, scheduling the construction on-site with limited physical space, evaluating downtime options without interrupting our business, and more importantly budgeting this new unanticipated work in the middle of a fiscal year. We are requesting more time to provide the PTC applications, such as January 1, 2019 with a compliance date of 30 months for this major retrofit after the PTC is issued. We foresee SCAQMD staff being overly burdened with extra applications to process and feel it is unfair for us to have a shorter time to retrofit the heater due to unforeseen permitting evaluation time.

4-2

C:\My Documents\Environmental Projects\PAA\2018\PWCT 1146 - 1100 comment letter\PWCT PAR1146 Comments.docx

Plains West Coast Terminals, LLC  
 5900 Cherry Avenue • Long Beach, CA 90805-4408 • (562) 728-2800 • FAX (562) 728-2860

Mr. Gary Quinn  
SCAQMD  
February 26, 2018  
Page 2 of 2

Also while staff is evaluating the permit applications, there should be a distinction in the monitoring, recordkeeping, and reporting (MRR) requirements between NOx Title V facilities and other Title V facilities. Our facilities are in Title V because we have the potential to emit more than 10 tons per year of ROG. All the other criteria pollutants are less than 10 tons per year. Therefore, the MRR requirements should entail those listed in Rule 1146 and not in Regulation XX – RECLAIM for large sources.

} 4-3

If you have any questions, please contact me at (661) 204-8749 or Ms. Connie Cunningham at (562) 728-2024.

Sincerely,



Glen Mears  
Western Division ERC Director

Cc: Kevin Orellana, SCAQMD  
Kalam Cheung, SCAQMD  
Connie Cunningham, PWCT

**Response to Comment 4-1**

Rule 1100(d)(4) allows low use units with an annual heat input less than 90,000 therms located at RECLAIM facilities, in operation prior to 12 months after date of rule adoption, to retain and comply with unit's NO<sub>x</sub> emission limit and source testing requirements specified in the SCAQMD permit to operate as of the date of rule adoption. Units complying with Rule 1100(d)(4) must also comply with requirements of Rule 1146(c)(5) and (e)(4).

As specified in Rule 1146 (e)(4), any unit complying with low use requirements of Rule 1146(c)(5) exceeding the low use threshold of 90,000 therms of heat input in any twelve month period, shall submit required applications for permits to construct and operate within 4 months after exceedance and demonstrate and maintain compliance with applicable requirements of Rule 1146(c)(1), (c)(2), (c)(3), (c)(4), and (c)(5) for the life of the unit.

**Response to Comment 4-2**

After considering public input, the permit application submittal deadline has been extended from August 1, 2018 to twelve months after rule adoption (i.e. December, 2019). Staff believes the new deadline provides adequate time if a comprehensive engineering or energy assessment is needed to prepare for the required permit application. Staff highly encourages facilities to start the necessary planning, engineering design, and budgeting process early to allow for enough time after the Permit to Construct (PTC) is issued.

The compliance date specified in PR 1100 is consistent with the compliance timeframe allowed in previous Rules 1146 and 1146.1 amendments in 2008. Units that are subject to Rules 1146 and 1146.1 are grouped together in the compliance schedule to allow facilities to decide which units they can demonstrate compliance by the earlier compliance date (January 1, 2021), thereby providing them more flexibility. In addition, for any operator that commits to fully replacing the affected equipment, in lieu of installing ultra-low NO<sub>x</sub> burners or SCR retrofit, extra time (until January 1, 2023) is allowed to comply with the existing NO<sub>x</sub> emission limits in Rules 1146 and 1146.1.

**Response to Comment 4-3**

Staff acknowledges that some NO<sub>x</sub> RECLAIM facilities are in the Title V program due to other pollutants such as VOC or PM. As discussed in Response to Comment 3-3, an extensive public review process is triggered by modifications on monitoring and recordkeeping requirements for Title V facilities. Since the RECLAIM Title V permit is a facility permit, the public review process could be triggered by changes in MRR requirements. The SCAQMD is committed to re-evaluate monitoring and recordkeeping requirements for Title V facilities, and will continue to discuss this matter with EPA.



February 28, 2018

Philip Fine, Ph.D.  
Deputy Executive Officer  
South Coast Air Quality Management District  
21865 E. Copley Drive  
Diamond Bar, CA 91765

Re: PAR1146, 1146.1, 1146.2 and PR1100

Dear Dr. Fine:

As Executive Director of the Southern California Air Quality Alliance I am providing the following comments on the proposed rules identified above.

**Proposed Rule 1100**

Proposed Rule 1100 currently includes a requirement that applications for permits to construct any new equipment or retrofit equipment necessary to comply with the emission standards in the 1146 series of rules be submitted by August 1, 2018. This time period is way too short for many if not all of the affected facilities. They will need adequate time to determine whether retrofits or replacements (or a combination of the two) are most appropriate, determine project costs, retain consultants to develop the appropriate engineering solution(s), obtain funding for the project, and then prepare a complete package to submit to SCAQMD in the form of the necessary permit forms and support documents. My members have advised me that this cannot reasonably be done (and done well) in the amount of time currently provided in the rule. We strongly request that additional time be provided and suggest that an appropriate amount of time is 12-18 months from the date of adoption of the proposed rules and amendments.

5-1

**Proposed Amended Rule 1146, 1146.1 and 1146.2**

I was very involved during the initial development and adoption of the RECLAIM program. One of the early "trade-offs" demanded by SCAQMD and EPA was extensive monitoring, recordkeeping and reporting requirements in exchange for the flexibility provided to facility operators in determining how to comply with the emission caps imposed by the RECLAIM program. With SCAQMD now moving those facilities to a command-and-control regime, facility operators are losing that flexibility. There is no longer a need to demonstrate that emissions are below arbitrary quarterly poundage limits reflected by RTC allocations since RTCs will no longer have any pertinence in the command-and-control program. Accordingly, we believe that it is only fair that the monitoring, recordkeeping and reporting requirements now applicable to facilities exiting RECLAIM be those that have traditionally been applicable to non-RECLAIM facilities and equipment.

5-2

We believe that requirements such as daily monitoring and reporting of emissions to the SCAQMD and missing data reporting have no relevancy to a

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Suite 500  
Los Angeles, CA 90045  
Attn: Curtis L. Coleman  
(310) 348-8186 Ph  
(310) 861-1484 Fax  
colemanlaw@earthlink.net

Philip Fine, Ph.D.  
February 28, 2018  
Page 2

command-and-control regime and should be eliminated as soon as a facility exits RECLAIM. Only monitoring, recordkeeping and reporting that is necessary to show compliance with the emission standards in the applicable rule should be required. We believe that the Rule 1146 series rules have adequate and appropriate monitoring, recordkeeping and reporting requirements and no different or more stringent requirements are necessary or appropriate.

5-2  
cont.

**Compliance During Transition from RECLAIM to Command and Control**

All current RECLAIM facilities have facility permits with detailed permit requirements. Those permit requirements do not reflect the requirements of the command-and-control rules and may conflict with the command-and-control rules. There needs to be a recognition somewhere in the transition rules that the command-and-control requirements take precedence and that facility operators will not be considered in violation of facility permit requirements while the permit modification process is pending.

5-3

I look forward to continuing to work with you and SCAQMD staff on these and other issues that we will confront as we move ahead with "unwinding" the RECLAIM program.

Very truly yours



Curtis L. Coleman, Esq.  
Executive Director  
Southern California Air Quality Alliance

**Response to Comment 5-1**

After considering public input, the permit application submittal deadline has been extended from August 1, 2018 to twelve months after rule adoption (i.e. December 7, 2019). Staff believes the new deadline provides adequate time if a comprehensive engineering or energy assessment is needed to prepare the required permit application.

**Response to Comment 5-2**

See Response to Comment 3-3.

**Response to Comment 5-3**

See Response to Comment 3-2.



Northrop Grumman Systems Corporation  
 One Space Park  
 SDS362/R9  
 Redondo Beach, CA 90278

March 12, 2018

Gary Quinn,  
 Program Supervisor, Planning and Rules  
 21865 E. Copely Drive  
 Diamond Bar, CA 91765-4182

**RE: COMMENTS ON PROPOSED RECLAIM TRANSITION TO RULES 1100, 1146, and 1146.1**

Dear Mr. Quinn,

Per our meeting on February 7<sup>th</sup>, Northrop Grumman Systems Corporation is hereby submitting a proposed adjusted compliance timeline for replacing equipment subject to SCAQMD Rules 1100, 1146, and 1146.1. Northrop Grumman operates multiple manufacturing centers located in the South Coast Air Basin involved in advanced development engineering and production and assembly of aircraft, satellites, electronics, and extreme high frequency semiconductors for government and military customers. This letter pertains to the El Segundo, Manhattan Beach, and Redondo Beach sites collectively known as South Bay, comprised of over 3.4 million square feet, located in the vicinity of LAX, and managed under the same operating budgets and project management personnel. Although none of these three sites are subject to the cap and trade requirements of AB32, the facility in Redondo Beach (FID 800409) does submit an abbreviated report with emissions well below the 25,000 MT CO<sub>2</sub>e threshold for cap and trade.

We believe the transition to command and control rules is an excellent opportunity to reevaluate overall energy demand and usage. Instead of replacing like with like, a building by building robust engineering analysis would maximize this opportunity, yet it is a time-intensive endeavor. In addition, as a government contractor, Northrop Grumman is bound by specific procurement rules and requirements that significantly impede expedient vendor selection. Based on our best faith effort, we have put together what we believe to be a reasonable timeline to replace existing equipment covered under the proposed amended 1146 and 1146.1 rules.

6-1

Site	Bldg	Permit ID Number	Asset	Input rating (MMBTUH)	Year of Completion
Manhattan Beach	D1	D22	16044	2.5	Q4 2018
Manhattan Beach	D1	D314	21424	4.5	2019
Manhattan Beach	D1	D24	16043	4.5	2019
Manhattan Beach	R6	D19	19786	5	2020
Redondo Beach	S	D185	18310	2.07	2020
Redondo Beach	S	D183	18311	2.07	2021
Redondo Beach	S	D181	18312	2.07	2021
El Segundo	905	D37	B00WC011	5.23	2021
Redondo Beach	S	D179	18313	2.07	2022
Redondo Beach	F1	D90	3000	5	2022
Redondo Beach	S	D187	18309	3	2023
Redondo Beach	R7	D102	8449	2.7	2023

We recognize that facilities covered under AB617 need to meet the 1/1/2021 and 1/1/2022 compliance deadlines, but we strongly believe a minor extension will allow facilities like ours to further explore opportunities, maximizing our emission reductions. Under our proposed timeline our three facilities would achieve 100% compliance by January 1 of the following years:

- Manhattan Beach (FID 800408) – **2021**
- El Segundo (FID 18924) – **2022**
- Redondo Beach (FID 800409) – **2024**

6-1  
cont.

If you have any questions or need additional information please don't hesitate to contact the undersigned at [Matthew.Kent@ngc.com](mailto:Matthew.Kent@ngc.com) or at the number provided below.

Sincerely,  
NORTHROP GRUMMAN SYSTEMS CORPORATION



Matthew Kent  
Air Quality Engineer  
Aerospace Systems  
(310) 812-9698

**Response to Comment 6-1**

The compliance date specified in PR 1100 is consistent with the compliance timeframe allowed in previous Rules 1146 and 1146.1 amendments in 2008. Units that are subject to Rules 1146 and 1146.1 at a facility are grouped together in the compliance schedule to allow facilities to decide which units they can demonstrate compliance by the earlier compliance date (January 1, 2021), thus providing them more flexibility. In addition, for any operator that commits to fully replacing the affected equipment, in lieu of installing ultra-low NOx burners or SCR retrofits, extra time (January 1, 2023) is allowed to comply with the existing NOx emission limits in Rules 1146 and 1146.1.

 Fri 4/20/2018 1:31 PM  
Jiang, Hao <Hao.Jiang@disney.com>  
PAR Rule 1100 comment

To Kevin Orellana; Kalam Cheung  
Cc Tracy Goss; Gary Quinn

Kevin and Kalam,

Disneyland would appreciate the District to consider sunseting RECLAIM MRR requirements after Title V facilities fully integrated into command-and-control rules, as proposed below. This is to avoid unnecessary and duplicated MRR requirements as current in PAR Rule 1100 to Title V facilities.

R1100(d)(4): All Title V facilities subject to this rule shall comply with the monitoring, reporting, and recordkeeping requirements specified in Rule 2012 until six months after the applicable compliance date specified in Rule 1100 – Implementation Schedule for NOx Facilities.

} 7-1

Thank you!

Hao Jiang, P.E.  
Environmental Affairs  
Disneyland Resort  
PO Box 3232  
TDA 224C  
Anaheim, Ca 92802  
714-781-4504, [hao.jiang@disney.com](mailto:hao.jiang@disney.com)

**Response to Comment 7-1**

As discussed in Response to Comment 3-3, an extensive public review process is triggered by modifications on monitoring and recordkeeping requirements for Title V facilities. The SCAQMD is committed to re-evaluate monitoring and recordkeeping requirements for Title V facilities, and will continue to discuss this with EPA. Staff is recommending that Title V facilities to maintain existing RECLAIM MRR requirements while the transition process proceeds. Staff intends to return to PR 1100 (d)(4) as the MRR requirements for Title V facilities exiting the RECLAIM program are addressed.

**Subject:** Comments on PR 1100 and 1146.x

Dear Tracy,

I am writing to reiterate some issues that I and others raised in the Public Workshop today.

- 1. The costs incorporated into the cost effectiveness calculations should include additional permit to operate fees in the operating costs for additional permit units such as for Selective Catalytic Reduction (SCR). } 8-1
- 2. One problem we foresee is that in the case where a burner must be replaced due to a failure, the rules as currently drafted would trigger the lower emission limits. We are concerned that the SCAQMD would require a permit to construct for this installation, which would keep the affected unit shut down for several months or more while the permit application is prepared and then processed. Normal burner replacement if done with an identical burner would not require a permit. Perhaps the rule could have language addressing this issue. I confess I do not have a good recommendation at this point. } 8-2

Thanks for listening!

Best regards,

Joe

**Joseph Hower, PE, DEE**

Principal and Vice-President - Mechanical Engineering  
1692740 - Los Angeles

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**Response to Comment 8-1:**

Staff has updated cost-effectiveness calculations reflected in the staff report to include additional recurring permitting costs.

**Response to Comment 8-2:**

Objective of the rule provision is to allow burner (currently in compliance) to operate through its useful life and for facility to bear the cost of a new burner only upon burner replacement. Burners that fail ahead of the 15 years will need to be replaced to meet new emission limits. Before a burner becomes inoperable, the burner or boiler performance will suffer and show signs of wear and tear, which would be shown in the various operating parameters. For example, a review of higher fuel usage or even a Visible Emission Evaluation (VEE) at the smoke stack could indicate a problem with the burner assembly. Once a determination that the boiler is suffering a performance problem, an overall evaluation of the boiler should take place. Overall, if there are signs of a potential problem, routine maintenance should be able to ascertain the problem well ahead of time for planning purposes.

**Subject:** SCAP Comments on PARs Series 1146

Hi Kevin,

Southern California Alliance of Publicly Owned Treatment Works (SCAP) appreciates the opportunity to provide comments on Proposed Amended Rules 1146/1146.1/1146.2. We also appreciate the acknowledgement that BARCT for digester gas will remain at 15 ppm NOx. However, we have concerns about the ability for dual fuel boilers using digester gas and/or natural gas to achieve the proposed limit. Ultra-low NOx burners are very sensitive, which makes it extremely challenging to operate when the proportion of digester gas to natural gas is altered. The proposal to lower the natural gas NOx limit will by default lower the dual fuel weighting limit and would likely restrict dual fuel use at wastewater treatment plants. To address this concern, SCAP respectfully requests that dual fuel boilers at wastewater treatment plants be allowed to use the existing natural gas NOx limits for the weighted limit formula, if the natural gas limits are lowered.

} 9-1

Our members have also expressed concerns about the feasibility of reducing the NOx limit to 7ppm on existing natural gas only boilers. We are concerned that the proposed limit might not be achievable when retrofitting a boiler. Our members use both natural gas and digester gas boilers to heat anaerobic digesters. In order to treat wastewater, our digesters need a reliable source of heat. Accordingly, we respectfully request that the viability of 7ppm NOx burners be carefully validated. In our experience vendors have difficulty delivering reliable retrofit technology, so we believe a detailed review of actual installations that have achieved the proposed limit using retrofitted burners is critical, especially for essential public services.

} 9-2

Thank you again for the opportunity to provide comments and please let me know if you have any questions regarding our concerns.

Sincerely,

David

---

**DAVID L. ROTHBART, P.E., BCEE**  
SCAP Air Quality Committee Chair  
Supervising Engineer | Air Quality Engineering  
SANITATION DISTRICTS OF LOS ANGELES COUNTY | 1955 Workman Mill Road, Whittier, CA 90601  
Phone: 562.908.4288 x2412 | Cell: 714.878.9655 | FAX: 562.692.9690  
Converting Waste Into Resources | [www.LACSD.org](http://www.LACSD.org)

**Response to Comment 9-1:**

Staff acknowledges the unique challenges faced by sewage treatment facilities and landfills offering essential public services and has initiated rulemaking efforts to establish an industry specific rule for equipment located at aforementioned facilities in order to address stakeholder concerns. Natural gas fired equipment in compliance with current NOx emission limits will not have to comply with new NOx emission limits until the time of burner replacement or 15 years after rule amendment.

**Response to Comment 9-2:**

Staff has been in contact with five equipment vendors throughout the rulemaking process. Three out of the five vendors expressed that 7 ppm burner retrofits are feasible. SJVAPCD adopted Rule 4320 on October 16, 2008 which implemented NOx emission limits of between 7 to 9 ppm for all natural gas fired units rated to >5 MMBtu/hr. Approximately ~~980~~708 units (between 5 to 300 MMBtu/hr) located in SJVAPCD were identified and source tested to comply with 7 ppm limit without use of the mitigation fee option. Over ~~1,000~~2,400 source test reports from equipment located in SCAQMD and SJVAPCD ~~support~~were reviewed to evaluate the feasibility of the 7 ppm BARCT. ~~†~~The information received from vendors and evaluated source test results demonstrate that 7 ppm limit is feasible for new and retrofit equipment.



**BOILER DYNAMICS, INC**  
Making the world more efficient

2031 E. Via Burton, Suite A • Anaheim, CA 92806 • Voice 714.879.6029 • Fax 714.879.7547  
fireaway@boilerdynamics.com • C4 License No. 1013138 • boilerdynamics.com

September 25<sup>th</sup>, 2018

**SCAQMD**  
21865 Copley Drive  
Diamond Bar CA 91765

Attention: Mr. Tracy Goss, P.E  
Manager

Subject: Comments RE: PR-1100

Dear Mr. Goss;

Appended below are some points regarding the Proposed rRle 1100 and preliminary draft of the staff report dated September 2018. I would appreciate the District respond to the comments listed below:

- 1. Economics analysis and Cost effectiveness of the proposed rule is not included. We would appreciate the opportunity to comment on the costs of equipment, replacement, installation and operation. } 10-1
- 2. Atmospheric fired units ( Parker Boilers ) less than 10.0-MMBTU per hour input should also be subject to the Proposed 7-PPM NOx limit from current 12-PPM. In fact, they should have been subjected to meet current 9-PPM NOx emissions already. Currently 9-PPM technology does exist and can be adopted for these units. No Manufacturer should receive special treatment over their competition. } 10-2
- 3. Source test reports of Ultra Low NOx burner installation outside this air basin need validation by the AQMD Source Testing Division. Copy of their reports need to be made public. Transperency of these source tests reports is necessary for proper goverence. } 10-3

We are available to discuss the above comments and concerns at your convenience.

Please feel free to contact me at 714-984-5479 or email at [Imran@boilerdynamics.com](mailto:Imran@boilerdynamics.com).

Sincerely,  
  
Imran Husain-Tech Sales & Marketing  
Boiler Dynamics, Inc

Encl; as above  
Cc; Gary Quinn-PE-Program Supervisor

Low NOx Burners • Steam and Hot Water Boilers • SCR Systems • Heat Exchangers • Feedwater Systems • Water Treatment  
Waste Water and Heat Recovery Systems • Rental Equipment • 24-Hour Service and Repair • Air Quality Compliance Solutions

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**Response to Comment 10-1:**

Staff cost assumptions used to determine cost-effectiveness were presented in Working Group #5 on August 2<sup>nd</sup>, 2018 ,Working Group #7 on October 16<sup>th</sup>, 2018, and Chapter 2 of this staff report.

**Response to Comment 10-2:**

Staff has conducted a comprehensive BARCT analysis for boilers, process heaters and steam generators subject to Rule 1146 and 1146.1 operating within the district including atmospheric units rated between 2 to 10 MMBtu/hr. Source test results reviewed were not able to provide sufficient data to support establishment of 9 ppm BARCT. It is important to note that the current limit for atmospheric units in SJVAPCD Rule 4307 is also 12 ppm.

Staff has met with the commentor for additional information. Commentor's comments are addressing new units and not retrofits.

**Response to Comment 10-3:**

Equipment source test reports obtained from outside of SCAQMD were conducted using EPA approved test methods. For example, SJVAPCD source tests follow CARB Method 100 which is considered equivalent to SCAQMD Method 100.1. Information can be obtained through public records requests.

**From:** McGivney, Daniel [<mailto:DMcGivney@semprautilities.com>]  
**Sent:** Thursday, October 4, 2018 9:42 AM  
**To:** Kalam Cheung <[kcheung@aqmd.gov](mailto:kcheung@aqmd.gov)>; Gary Quinn <[GQuinn@aqmd.gov](mailto:GQuinn@aqmd.gov)>  
**Cc:** Nevitt, Lauren B <[LNevitt@semprautilities.com](mailto:LNevitt@semprautilities.com)>; Fickerson, Karin U <[kFickerson@semprautilities.com](mailto:kFickerson@semprautilities.com)>  
**Subject:** Comment regarding PAR 1146 Series Rules Package

Kalam, Gary, per yesterday's conversation with Kalam, SoCalGas is providing a recommendation for consideration, regarding the definition of "Thermal Fluid Heater" which occurs in both Rules 1146 and 1146.1. SoCalGas understands that the current definition, aside from the proposed amended version which now includes the phrase "natural gas fired," has been in the these rules for quite some time. However, we believe that the definition does not accurately describe or distinguish a thermal fluid heater from a process heater, and would better accomplish that if it was further amended as noted below. Recognizing this request is fairly late in the process, SoCalGas would appreciate the District review this request and consider including SoCalGas' proposed language in the current proposed amendments scheduled to go before the Governing Board at its December 2 Board meeting. Should staff wish to discuss this proposal further, or if there are any questions, please contact me. Thank you.

**SoCalGas Proposed Definition:** THERMAL FLUID HEATER means a natural gas fired PROCESS HEATER in a system in which a process stream is heated indirectly by a heated fluid other than water.

**Explanation:** The proposed change to the thermal fluid heaters definition clarifies that the process streams are not inside the thermal fluid heater. Thermal fluid heaters work harder than process heaters or water heaters because the thermal fluid typically needs to be heated to higher temperatures than process streams or water. The slightly higher NOx limit for these units is justified because they heat the fluids to higher temperatures, and we want to assure it is clear which units are in this category.

**Daniel McGivney**  
Environmental Affairs Program Manager  
Southern California Gas Company  
951-225-2958  
[dmcgivney@semprautilities.com](mailto:dmcgivney@semprautilities.com)

11-1

**Response to Comment 11-1**

SCAQMD staff appreciates your comments and participation throughout the rulemaking for PAR 1146 series and PR 1100.

Staff has taken consideration of your comments and updated the definition of thermal fluid heaters from “a PROCESS HEATER in which a process is heated indirectly by a heated fluid other than water” to “a natural gas fired process heater in which a process stream is heated indirectly by a heated fluid other than water.”

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018282-0000

November 1, 2018

VIA E-MAIL (see attached distribution)

Governing Board  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Re: Proposed Amended Rules 1146, 1146.1 and 1146.2

Dear SCAQMD Governing Board Member:

We are submitting these comments on behalf of our client the Regulatory Flexibility Group (“RFG”) regarding Proposed Amended Rules 1146, 1146.1 and 1146.2 (“PAR 1146 Series”). The RFG is an industry coalition comprised of companies in the refining, utility and aerospace sectors that operate facilities within the jurisdiction of the South Coast Air Quality Management District (“SCAQMD”). RFG member facilities are subject to the Regional Clean Air Incentives Market (“RECLAIM”) program, and will be seriously affected by the transition to a command-and-control regulatory structure that is currently underway. The RFG participated in the development of the RECLAIM program from its inception, and has been an active participant in all major amendments to the program, including those currently underway.

12-1

This rulemaking raises a number of issues that cut across some or all of the “landing rules” that are slated for amendment or adoption and that will directly affect RFG member companies. All of these issues have been raised with staff, and, in some cases, with Governing Board members, through written comments and verbal comments at working group meetings, public workshops, public hearings, committee meetings and individual company or coalition meetings. Following is a brief summary of each of the issues about which we have concerns, and attached to this letter are more detailed comment letters previously submitted to the SCAQMD on these issues.

***Mandating Equipment Replacement Exceeds The SCAQMD’s Authority***

SCAQMD staff has taken the position that a best available retrofit control technology (“BARCT”) standard may require total replacement of the emitting piece of equipment. Mandating replacement projects exceeds the authority of the SCAQMD to adopt BARCT standards for *existing* sources, as set forth in the California Health & Safety Code, and, therefore, runs afoul of the well-established legal principle that a regulatory agency must act within the

12-2

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SCAQMD Governing Board Members  
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**LATHAM & WATKINS LLP**

scope of the authority delegated to it by the legislature. This issue is addressed in more detail in the following attachments:

- Attachment 1: August 24, 2018 comments from Latham & Watkins LLP on behalf of RFG
- Attachment 2: November 1, 2018 comments from Latham & Watkins LLP on behalf of RFG and WSPA

12-2  
(Cont'd)

***New Source Review Issues Must Be Addressed Comprehensively And Expeditiously***

Although SCAQMD staff has indicated that it is communicating with U.S. Environmental Protection Agency (“USEPA”) staff regarding the nature of the new source review (“NSR”) program that will apply to RECLAIM facilities once they exit the program, we are not aware of the specifics of those communications, and we have no reason to believe that material progress is being made to resolve this issue. Addressing fundamental programmatic issues, such as NSR, early in the transition process will result in a more orderly and efficient transition. This issue is addressed in more detail in the following attachment:

12-3

- Attachment 3: September 7, 2018 comments from Latham & Watkins LLP on behalf of WSPA

***The California Environmental Quality Act Analysis For The Transition Project Is Piecemealed***

It is a fundamental principle of California Environmental Quality Act (“CEQA”) review that all environmental impacts for the whole of the project be analyzed together. In this case, the “project” is the RECLAIM transition as a whole as required by Control Measure CMB-05 as adopted in the 2016 AQMP. Yet, staff is conducting the CEQA review through a series of Supplemental Environmental Assessments (“SEA”) that analyze only the impacts associated with the particular landing rule under consideration. Staff argues that this approach is acceptable because each SEA “tiers off” the March 2017 Final Program Environmental Impact Report for the 2016 AQMP and several other earlier certified CEQA documents, which analyzed the transition as a whole. However, the March 2017 Final Program EIR for the 2016 AQMP, which was completed in January 2018, did not analyze the transition of the RECLAIM program because the transition was not part of Control Measure CMB-05 as proposed at that time. Therefore, tiering off of the earlier CEQA documents to support rule amendments that seek to implement the transition is not possible because there is no comprehensive analysis in the earlier documents. In the absence of a program level CEQA analysis that includes the whole of the RECLAIM transition, staff’s segmented analysis of each proposed rulemaking action constitutes classic “piecemealing” in violation of CEQA. This issue is addressed in more detail in the following attachment:

12-4

- Attachment 3: September 7, 2018 comments from Latham & Watkins LLP on behalf of WSPA

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LATHAM & WATKINS LLP

***Incremental Socioeconomic Assessment***

By analyzing the socioeconomic impacts associated with the transition in an incremental fashion in the context of each rulemaking, as opposed to a comprehensive analysis of the entire transition, staff is either underestimating the cumulative impacts or failing to identify them at all. An illustration of this problem can be found in the two sets of amendments to Rules 2001 and 2002 in 2018. In the January 2018 amendments to these rules, staff did not even address the impact that the removal of 38 facilities from the RECLAIM program that would then be eligible to take advantage of offset exemptions in Rule 1304 might have on the internal offset bank. In contrast, the Staff Report supporting the October 2018 amendments to these same rules expressed serious concerns about the potential impacts to the internal bank. Either staff erred in January by failing to analyze the potential impacts on the internal bank, or it overstated the potential impacts associated with the October amendments. In either case, this inconsistency illustrates the problem with undertaking analysis of the impacts associated with the RECLAIM transition in an incremental fashion. This issue is addressed in more detail in the following attachment:

- Attachment 3: September 7, 2018 comments from Latham & Watkins LLP on behalf of WSPA

12-5

***Inappropriate Cost-Effectiveness Methodology***

RFG objects to certain aspects of the cost-effectiveness methodology that SCAQMD staff is using to determine BARCT requirements for the landing rules currently under development. First, staff typically assumes a useful life for equipment of 25 years even though rulemaking requires replacement of technology much sooner. Use of a 25-year assumption makes the control equipment appear more cost-effective by diluting the significant capital costs of required projects over a much longer time period than is likely to occur. Second, staff utilizes the discounted cash flow ("DCF") method instead of the levelized cash flow ("LCF") method as used by several other air districts. The LCF method is a better representation of cost-effectiveness than the DCF method. Finally, staff utilizes a \$50,000 per ton cost-effectiveness threshold for determining BARCT, which is much higher than that applied by other air quality agencies, and, in some cases, staff has concluded that controls with a cost-effectiveness above \$50,000 per ton constitute BARCT. This issue is addressed in more detail in the following attachment:

- Attachment 4: July 3, 2018 comments from WSPA

12-6

SCAQMD Governing Board Members  
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LATHAM & WATKINS LLP

Thank you for your attention to these comments. We are available to discuss these issues with you and/or your Governing Board Assistant at any time.

Best regards,



Michael J. Carroll  
of LATHAM & WATKINS LLP

---

Attachments

cc: Clerk of the Boards, SCAQMD  
Wayne Nastri, SCAQMD  
Philip Fine, SCAQMD  
Barbara Baird, SCAQMD  
Robert Wyman, Latham & Watkins LLP  
John Heintz, Latham & Watkins LLP  
RFG Members

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016282-0000/033950-0005

November 1, 2018

### VIA EMAIL

Bayron T. Gilchrist, General Counsel  
 Barbara Baird, Chief Deputy Counsel  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765

Re: SCAQMD Staff Proposal to Require Equipment Replacement as BARCT

Dear Bayron and Barbara:

Thank you for your October 3, 2018 letter responding to our August 15, 2018 comments submitted on behalf of the Western States Petroleum Association ("WSPA"), and our August 24, 2018 comments submitted on behalf of the Regulatory Flexibility Group ("RFG"), regarding South Coast Air Quality Management District ("SCAQMD") staff's position that a best available retrofit control technology ("BARCT") standard may require total replacement of the emitting piece of equipment. Portions of your response reassert arguments that staff has made in the past in support of its position; namely, that neither the statutory definition of BARCT nor common dictionary definitions of "retrofit" specifically exclude replacements, and that the *American Coatings Ass'n v. South Coast Air Quality Mgt. Dist.*, 54 Cal 4<sup>th</sup> 446 (2012) case ("*American Coatings*") is supportive of staff's position. We responded to those arguments in our previous comment letters and will not revisit them here. This letter responds on behalf of WSPA and RFG to your assertions that the staff's position is supported by public policy considerations, and that we have failed to present any policy rationale for our position.

Staff asserts that requiring replacements under certain circumstances is supported by policy justifications, and, therefore, public policy supports an expansive interpretation of its authority that would include the authority to mandate replacements. This reasoning is contrary to two important public policies that are also well enshrined in administrative law. The first is that regulatory agencies must act within the scope of the authority delegated to them by the legislature, even if that means the agency may not undertake certain actions that it might otherwise view as sound public policy. The second is that public agencies may not substitute their own judgment for that of the legislature as reflected in the statutory grant of authority. These public policies and legal requirements support our position that staff cannot mandate replacements as BARCT.

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Bayron T. Gilchrist/Barbara Baird  
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Page 2

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*Public policy and well established law dictate that the SCAQMD act within the scope of authority granted to it by the legislature.*

An agency can adopt, administer or enforce a regulation only if it is within the scope of authority conferred on it by other provisions of law. Cal Gov. Code § 11342.1. No regulation is valid unless it is consistent and not in conflict with the statute conferring authority to the agency. Cal Gov. Code § 11342.2. As explained in our previous comment letters, the statutory provisions defining BARCT and the SCAQMD’s authority to adopt and implement BARCT standards are clear. “In the construction of a statute or instrument, the office of the Judge is simply to ascertain and declare what is in terms or in substance contained therein, *not to insert what has been omitted*, or to omit what has been inserted . . .” Cal. Civ. Proc. Code § 1858 (emphasis added). The role of an agency charged with implementing a statute is no different. In this case, staff seeks to insert what has been omitted by arguing that the term “retrofit” encompasses replacement, notwithstanding that there are numerous examples of the distinction between those terms throughout the statute.

12-2-1

Finding ambiguity where there is none, staff then invokes “public policy” to support an expansive interpretation of its authority. Relying on the example of replacing engines on Santa Catalina Island, staff argues that because the replacements would further the broader statutory purpose of reducing emissions, a mandate to do so is sound public policy, and, therefore, public policy supports an expansive interpretation of the agency’s authority to impose such a mandate.

12-2-2

According to staff’s reasoning, the scope of the agency’s authority should be interpreted to encompass any action which the agency deems sound public policy, regardless of the specific language contained in the statutory grant of authority. In fact, you argue in your letter, citing *American Coatings*, that the agency’s authority is essentially unbounded as long as the requirement is not arbitrary and capricious, or without reasonable or rational basis, or lacking in evidentiary support. However, as the cases relied upon in *American Coatings* make clear, a critical consideration in evaluating whether or not an agency action meets this standard is whether or not the action is within the scope of the agency’s delegated authority. As stated in *Yamaha Corp. of America v. State Bd. of Equalization* (1998) 19 Cal.4<sup>th</sup> 1, citing *Wallace Berri & Co. v. State Bd. of Equalization* (1985) 40 Cal.3d 60, 65: “[I]n reviewing the legality of a regulation adopted pursuant to a delegation of legislative power, the judicial function is limited to determining whether the regulation (1) is “within the scope of the authority conferred” [citation] and (2) is “reasonably necessary to effectuate the purpose of the statute” [citation].” [Citation.]”

12-2-3

The scope of authority delegated to an agency may not authorize it to take any and all actions that the agency deems sound public policy in light of its overall mission. In fact, acting as it does from a broader perspective, and balancing a broader range of policy considerations, the very reason the legislature imposes limitations on the authority of regulatory agencies is to prevent them from undertaking actions that they might otherwise be inclined to take because they deem them sound public policy. The fact that a proposed action may reflect sound public policy in the view of the agency does not mean that it is within the scope of the authority granted by the legislature.

12-2-4

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Bayron T. Gilchrist/Barbara Baird  
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*Staff's position is contrary to the legislature's policy considerations embedded in the relevant statutory provisions.*

By including economic impacts as one of the factors in the definition of BARCT, and by specifying the process for evaluating the cost-effectiveness of proposed BARCT standards, it is clear that one of the policies of the legislature was to balance the goal of achieving additional emission reductions from existing sources against the costs of achieving those reductions, and to impose limits on the costs that would be borne by existing sources to further control emissions.<sup>1</sup> The legislature determined that stationary sources should bear the cost of implementing cost-effective retrofits. If cost-effective retrofits are determined to be unavailable, then that is the end of the inquiry. There may be specific cases where the outcome results in foregone emission reductions, but it was the judgment of the legislature that this regulatory scheme struck the proper public policy balance between achieving air quality goals and imposing additional costs on regulated sources. It is not the place of the agency to substitute its own public policy considerations for those of the legislature when the language of the statute is clear, as it is here.

12-2-5

Furthermore, the fact that a replacement project may be cost-effective in a situation where available retrofits are not is irrelevant. Staff seems to suggest that if a replacement project would cost no more than a cost-effective retrofit project (if one existed), then the cost to the source is no greater than what the legislature intended, and, therefore, requiring replacement in such situations does not undercut any economic considerations that the legislature may have had in mind when adopting the statute. However, in situations where there are no available cost-effective retrofits, the legislature determined that the cost to the source for installing additional controls would be zero. Therefore, staff's determination that it can mandate replacement when there are no cost-effective retrofits, as long as the replacement is cost-effective, imposes costs on existing sources that go beyond what the legislature contemplated. The fact that the cost of a replacement may be less than, or more cost-effective than, available retrofits does not mean that the agency is entitled to mandate replacements.

12-2-6

**Conclusion**

SCAQMD staff is attempting to use policy rationale to read something into the statute that simply is not there. That approach is not only poor public policy, it is contrary to the law. Whether or not a particular course of action may be good public policy in the judgment of the agency does not mean it is within the authority of the agency to mandate it. Furthermore, in this case, that rationale elevates the judgment of the agency over that of the legislature with regards to the appropriate balance between furthering air quality objectives and maintaining a viable economy. There are limits on the rulemaking authority of the SCAQMD, and those limits may well preclude it from pursuing what it might otherwise view as good public policy in order to accomplish the broader policy objectives of the legislature.

12-2-7

<sup>1</sup> Health & Safety Code Sections 40406 and 40920.6.

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Bayron T. Gilchrist/Barbara Baird  
November 1, 2018  
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Thank you for considering these comments. We look forward to continuing to work with you on these rulemakings which are critically important to stakeholders as well as the regional economy. If you have any questions, please contact me at (714) 401-8105 or by email at [michael.carroll@lw.com](mailto:michael.carroll@lw.com).

Sincerely,



Michael J. Carroll  
of LATHAM & WATKINS LLP

cc: Robert Wyman, Latham & Watkins LLP  
John Heintz, Latham & Watkins LLP  
RFG Members  
Bridget McCann, WSPA

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**Response to Comment 12-1:**

This comment introduces the party represented by the letter; no response to this the comment is necessary. SCAQMD staff appreciates comments and participation throughout the rulemaking for the transition of the RECLAIM program to a command-and-control regulatory structure.

**Response to Comment 12-2:**

This comment letter includes as an attachment the August 24, 2018 comment letter on this issue by Michael Carroll on behalf of the Regulatory Flexibility Group (RFG). A similar comment letter on behalf of WSPA attaches an August 15 letter from Michael Carroll on this subject. Neither the RFG letter nor the WSPA letter includes the SCAQMD's response to these letters. Therefore, we have attached the SCAQMD's letter dated October 3, 2018, from Chief Deputy Counsel Barbara Baird which responds to both the August 15 and August 24 letter. In addition, this comment letter includes a new November 1, 2018 comment letter, addressed to Bayron Gilchrist and Barbara Baird, responding to the SCAQMD October 3 letter. Comments contained in the November 1 letter from Michael Carroll are bracketed and staff's responses are presented below. It should be noted that Proposed Rules 1146, 1146.1, or 1146.2 does not require any facility to replace existing equipment to achieve compliance. Equipment replacement may be an option for compliance, but in all cases SCAQMD staff has determined that compliance is feasible through methods which the commenter would consider proper "retrofit" methods. Therefore, this issue is irrelevant to these proposed rules.

**Response to Comment 12-2-1:**

While the particular statutes cited do not apply to SCAQMD rulemaking, but only to state agencies, staff agrees that an agency can only adopt a rule that is within its delegated authority. Staff does not agree that it is seeking to insert what has been omitted, because both the statutory definition of BARCT in Section 40406 and the dictionary definition of "retrofit" which includes replacing equipment or a system are broad enough to encompass equipment replacement.

**Response to Comment 12-2-2:**

Staff disagrees that the term "retrofit" as used in the statute unambiguously precludes equipment replacement. Staff does believe that public policy supports the broader statutory interpretation, because if the SCAQMD could not adopt a rule requiring equipment replacement, assuming it is feasible and cost-effective, then the agency would not be able to require the oldest and dirtiest equipment to reduce its emissions if it could not be done cost-effectively through add-on controls.

**Response to Comment 12-2-3:**

The comment misstates the SCAQMD staff's position. Staff does not state that the agency may take any action that is deemed sound public policy, regardless of any statutory restrictions. Instead, staff fundamentally disagrees with the proposition that the definition of BARCT is a limitation on the SCAQMD's authority. Therefore, SCAQMD could require equipment replacement even if BARCT itself is limited to add-on controls. Under the principles that govern rulemaking, any such rule could not be arbitrary and capricious or entirely lacking in evidentiary support. The requirement in Section 40440(a) that SCAQMD impose BARCT on existing stationary sources is a mandate upon the agency, not a limitation. It does not preclude the agency from requiring additional control measures. This is clear from the statutory language, which says SCAQMD rules "shall" require BARCT, but does not say that they can only require BARCT. And the legislative history shows that the "BARCT standard was therefore part of a legislative enactment designed to augment rather than restrain the District's regulatory power." [American Coatings Ass'n. v. South Coast Air Quality Mgt. Dist., 54 Cal. 4th 446,466 (2012)]. And when the legislature reiterated the BARCT requirement for SCAQMD and expanded it to other districts, it specifically said that the bill was intended to establish "minimum requirements" and was not intended to "limit or otherwise

discourage those districts from adopting rules and regulations which exceed those requirements.”  
[Stats. 1992 ch. 945, 18.]

**Response to Comment 12-2-4:**

Staff agrees that a proposed action may reflect sound public policy does not necessarily mean it is within the scope of legislative authority. However, staff believes that public policy is a relevant consideration in determining the intent of a statute.

**Response to Comment 12-2-5:**

Staff does not agree that BARCT was intended to limit what the agency could require, but rather to impose a minimum that the agency must require. See Response No. 12-2-3. Staff therefore disagrees with the commenter’s assertion that the legislature intended that *no* controls could be required—and the cost of control would be zero- if add-on controls are not cost-effective. Once again, this approach would ironically insulate the oldest and highest-emitting equipment from reducing its emissions, while newer equipment for which add-on controls are feasible would bear the burden of compliance.

**Response to Comment 12-2-6:**

See Responses 12-2-3 and 12-2-5.

**Response to Comment 12-2-7:**

Staff does not agree that its approach elevates the agency’s judgment over that of the legislature. Additionally staff does not agree that the legislature intended BARCT to be a limitation on an air district’s authority, when the legislature specifically stated it did not intend to discourage districts from adopting rules which exceed the legislatively mandated “minimum” requirements, including BARCT. See Response 12-2-3. Moreover, if equipment replacement is cost-effective and feasible, there is no reason the legislature would want to preclude it.

**Response to Comment 12-3:**

The November 1, 2018, comment letter on behalf of the Regulatory Flexibility Group states that new source review issues must be addressed comprehensively and expeditiously. It further attaches a comment letter dated September 7, 2018 regarding proposed amended rules 2001 and 2002 which addresses new source review and other issues. SCAQMD staff responded to the September 7<sup>th</sup> letter in the staff report for PARs 2001 and 2002, which were adopted by the Governing Board at the October 5, 2018 Governing Board Meeting. The September 7<sup>th</sup> letter and the staff responses thereto are attached to this document as part of the public comments.

**Response to Comment 12-4:**

The November 1<sup>st</sup> comment letter on behalf of the Regulatory Flexibility Group asserts that staff is improperly “piecemealing” the CEQA analysis for the RECLAIM transition, citing a September 7<sup>th</sup> letter that is attached. The November 1<sup>st</sup> comment letter on behalf of WSPA makes the same argument and attaches an additional letter dated July 3, 2018 from WSPA. Staff has already responded to the September 7<sup>th</sup> letter as described above. The September 7<sup>th</sup> letter and staff’s responses are included in this response to comments section of the staff report. The July 3<sup>rd</sup> letter does not include any additional discussion specific to Proposed Amended Rules 1146, 1146.1 or 1146.2.

**Response to Comment 12-5:**

See response 12-3.

**Response to Comment 12-6:**

The major parameters in cost-effectiveness include capital and installation costs, operating, and maintenance costs, interest rates, and project life. DCF is based on a conversion of future

expenditures (including annual costs) to a present value basis using a present value factor. LCF is different in that fixed capital expenditures are converted into an equivalent annual amount using a capital recovery factor. LCF generally yields numbers that are 20 to 30% higher than DCF. DCF is more versatile than LCF in that DCF can easily deal with non-constant annual operating and maintenance costs and those costs occurring longer than the standard one-year interval (e.g., catalyst replacement every five years). Second, DCF allows non-uniform emission reductions over the project life. Finally, DCF is neutral on how a project is financed by individual businesses, which is very much tied to the well-being of those businesses.

In addition the most important criteria in applying a cost-effectiveness methodology is to maintain consistency. That is, if past rulemaking projects are based on DCF, then it would be prudent to continue using DCF for future projects. The Governing Board approved the use of DCF in 1989. Likewise, it has been used for BACT determinations since 1995 and rule development since 1996. Using the LCF method for this analysis would result in the inability to compare cost-effectiveness for new BARCT with past rules.

Supplement to Response 12-2**South Coast  
Air Quality Management District**

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*Office of the General Counsel  
21865 Copley Drive  
Diamond Bar, California 91765  
909.396.2302, fax 909.396.2961*

October 3, 2018

*Via e-mail and U.S. Mail*

Michael Carroll, Esq.  
Latham & Watkins  
650 Town Center Drive, 20<sup>th</sup> Floor  
Costa Mesa, CA 92626-1925

Re: South Coast Air Quality Management District's Authority to  
Require Equipment Replacement

Dear Mr. Carroll:

This is in response to your letters of August 15, 2018, on behalf of the Western States Petroleum Association, and August 24, 2018, on behalf of the Regulatory Flexibility Group, regarding the District's ability to require equipment replacement as best available retrofit control technology (BARCT). Your letters take issue with many of the points made in the South Coast Air Quality Management District ("SCAQMD" or "the District") staff report for Proposed Amended Rule 1135. In this letter, we respond to your principal arguments.

In summary, we explain the particular instance in which SCAQMD has sought to specify a level equivalent to equipment replacement as BARCT for internal combustion engines on Santa Catalina Island. This letter demonstrates how public policy supports SCAQMD's interpretation. Moreover, as we explained in the Preliminary Draft Staff Report, the statutory definition of BARCT supports a broad interpretation. And applicable dictionary definitions do not preclude the view that BARCT can include equipment replacement. Additional arguments presented in your letters do not change this conclusion. Finally, even if a court were to conclude that BARCT cannot encompass equipment replacement, BARCT is not a limitation on SCAQMD authority. The SCAQMD retains broad statutory authority to adopt emission-control requirements for stationary sources, and that authority may require equipment replacement, as long as the requirement is not arbitrary and capricious.

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*C. M. ...*

Michael Carroll, Esq.  
October 3, 2018  
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### ***Public Policy Supports the SCAQMD's Interpretation***

Significantly, your letters fail to present any policy rationale for excluding replacement projects from BARCT. We note that you concede that a replacement project may be BARCT, as long as it does not include replacing the entire piece of equipment. (Aug. 15 Ltr., p. 2.) Presumably, something like a new ultra-low-NOx burner would be allowed as BARCT under your interpretation. However, the interpretation you urge would still unduly limit the application of BARCT and preclude SCAQMD from requiring cost-effective actions that would help achieve clean air. As noted in the staff report for PAR 1135, staff has proposed a BARCT for diesel fueled internal combustion engines that may be cost-effectively met by replacing the engine. If SCAQMD were precluded from requiring the replacement of these engines, the oldest and dirtiest power-producing equipment would continue to operate for possibly many years, even though it would be cost-effective and otherwise reasonable to replace those engines. As long as an emissions limit meets the requirements of the statutory definition set forth in section 40406, there is no policy reason why replacement equipment cannot be an element of BARCT. And there is no policy reason why the legislature would want BARCT to somehow limit the SCAQMD from requiring equipment replacement where that requirement is reasonable and feasible.<sup>1</sup>

The BARCT proposed for internal combustion engine power producers (replacement with Tier IV engines) is economically and practically reasonable and therefore does not “go beyond” BARCT, based on statutory definition. However, you seem to take the position that the District cannot require equipment replacement, whether as BARCT or otherwise. Such a position is contrary to the purpose behind the statutory scheme. As stated by the Supreme Court, the “statutes that provide the districts with regulatory authority serve a public purpose of the highest order-protection of the public health.” (*W. Oil & Gas Assn. v. Monterey Bay Unified Air Pollution Control Dist.*, 49 Cal. 3d 408, 419 (1989) (“WOGA”).) Therefore, courts should not find that any statute causes an “implied repeal” of the districts’ authority. *Id.*

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<sup>1</sup> You appear to contend that it is not necessary to supply a policy reason the legislature would exclude all replacements from BARCT, even if they meet the statutory definition (discussion at RECLAIM Working Group). However, “[i]f the statutory language permits more than one reasonable interpretation, courts may consider other aids, such as the statute’s purpose, legislative history, and public policy.” (*Jones v. Lodge at Torrey Pines Partnership*, 42 Cal. 3d 1158, 1163 (2008).) In this case, the statute permits two reasonable interpretations, since the statutory definition in section 40406 does not preclude requiring equipment replacement if it is reasonable considering economic and other factors. The legislative history and public policy both support the SCAQMD’s interpretation, and a narrow interpretation is inconsistent with the statutory purpose.

Michael Carroll, Esq.  
October 3, 2018  
Page 3

The proposal to require replacement of five out of the six internal combustion engines at Santa Catalina Island is supported by overwhelming policy justifications. There are six internal combustion engines at the facility, of which three are at least 50 years old. The other three were installed in 1974, 1985, and 1995. The 1995 engine was installed with SCR; the other five had SCR installed in 2003. Staff concludes that it would be more cost-effective to replace the five oldest of these engines with new Tier IV engines rather than to install additional add-on controls. (The sixth engine was found not to be cost-effective to replace). (Preliminary Draft Staff Report, p. 2-17.) These engines account for 0.06% of the electric utility power produced in the District. (Draft Staff Report, Table 4-1; 9 MWhr divided by 15,904 MWhr.) But they account for 5.7% of the emissions inventory from electricity generating facilities. (Draft Staff Report, Table 4-2; 0.2 tpd divided by 3.5 tpd.) If the SCAQMD could not require replacement of these engines, then paradoxically the oldest, highest-emitting equipment would escape control.

The SCAQMD has in the past required replacement of old equipment in appropriate cases. The SCAQMD has required replacement, for example, in its dry-cleaning rule, adopted in 2002, which required all perchloroethylene dry-cleaning machines to be phased out by 2020, with other specific requirements implemented starting shortly after rule adoption. (Rule 1421(d)(1)(F).) Thus, a perchloroethylene machine that was installed in 2001 would be required to be replaced with a non-perchloroethylene machine when it is 19 years old. While this is a rule relating to toxic air contaminants, we do not believe the SCAQMD's authority is any less for criteria pollutants.

As an additional policy and legal concern, we note that a restrictive definition of BARCT could potentially interfere with the SCAQMD's ability to require "reasonably available control technology" (RACT) for ozone as specified by Clean Air Act sections 182(b)(2) and 182(f). (42 U.S.C. §§7511a (b)(2) and 7511a(f).) EPA defines RACT as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. (44 Fed. Reg. 53762 (Sept. 17, 1979).) This definition does not even include the word retrofit and therefore could not be limited in the manner asserted in your letter. Yet if a particular RACT determination were to call for replacement of old, high-emitting equipment, under your interpretation, SCAQMD would not be able to implement RACT and would ultimately be subject to sanctions for inability to submit an approvable state implementation plan (SIP). An interpretation which would lead to such unreasonable consequences should be rejected, especially where it would frustrate the apparent intent of the legislature, which wanted SCAQMD to impose more stringent controls, in order to attain the federal clean air standards. (*Friedman v. City of Beverly Hills*, 47 Cal. App. 4th 436, 444 (1996).) As is obvious, the actual statutory definition, like the definition of RACT, does not include the term "retrofit," and the statute should be interpreted to ensure adequate authority to comply with RACT requirements.

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#### ***Dictionary Definitions Support SCAQMD's Interpretation***

We do not agree that the term “retrofit” excludes replacement, such as replacement of an engine. Your August 15 letter concedes that “retrofit” can include “replacement,” but asserts that it can include a replacement only if just a part of a whole object is being replaced, not the entire object. (Aug. 15 Ltr. pp. 2, 4.) We do not find that limitation in the dictionary definitions for the term “retrofit,” including those cited in the SCAQMD staff report for Rule 1135. Instead, at least one definition provides that “retrofit” can mean “to replace existing parts, equipment, etc., with updated parts or systems.” ([http://www.dictionary.com/browse/retrofit.](http://www.dictionary.com/browse/retrofit)) Nothing in this definition requires that only part of a piece of equipment can be replaced. Indeed according to this definition, a retrofit can include the replacement of an entire system. We therefore disagree with your conclusion that the use of the term “retrofit” necessarily means that the pre-existing object that is the subject of the action (e.g., the source) continues to exist after the action. Your August 15 letter takes the position that the most common use of the term retrofit is for a change to equipment that does not include replacement of the whole piece of equipment (e.g., “to install [new or modified parts or equipment] in something previously manufactured or constructed.”) (Aug. 15 Ltr. p. 2.) You note that the definition of “replace” means “to take the place of especially as a substitute or successor.” (Aug. 15 Ltr. p. 2.) We agree that “replace” is a more specific term than “retrofit.” Our disagreement is with the principle that “best available retrofit control technology” can never include replacement of existing equipment. In our view, at least one dictionary definition of the term “retrofit” encompasses “replacement of equipment or systems.” See definition cited above. This definition is broad enough to include replacing the entire piece of equipment or system. Therefore, the key issue to determine is what the legislature meant when it imposed the BARCT requirement on SCAQMD.

#### ***Statutory Definition of BARCT Supports SCAQMD's Interpretation***

The statutory definition of BARCT, as found in Health & Safety Code section 40406, does not contain any language precluding replacement technology. Section 40406 defines BARCT as “an emissions limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.” Thus, BARCT is an emissions limitation. Nothing in the statutory definition specifies the type of technology that may be used. Your entire argument therefore rests on the use of the word “retrofit” in the term being defined. But the California Supreme Court has made it clear that it is the definition of BARCT that controls, not implications from the language used in the term itself. Thus, the Supreme Court rejected the argument that “best available retrofit control technology” is limited to that which is readily available at the time when the regulation is enacted, and instead concluded that it encompasses technology that is “achievable,” i.e., expected to become available at a future date. (*American Coatings Ass’n v. South Coast Air Quality Mgt. Dist.*, 54 Cal. 4th 446, 462 (2012).) The Court focused on the actual statutory definition, which provides that BARCT is “an emissions limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.” (*American Coatings*, 54 Cal. 4th at 463.) The Court concluded that in

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common usage, “achievable” means “capable of being achieved,” which in turn includes “a potentiality to be fulfilled or a goal to be achieved at some future date.” *Id.*

Thus, an emissions reduction was “achievable” when the rule was adopted in 1999 if it was “capable of being achieved” by the rule deadline of 2006. (*American Coatings*, 54 Cal. 4th at 464.) This was so even if that reduction was not “readily available” in 1999, notwithstanding the use of the word “available” in the term being defined. Your August 24 letter argues that this case did not decide whether BARCT may include replacement technology. That is true, but the Supreme Court did hold that the statutory definition controls, and in this case the statutory definition does not preclude replacement technology.

When the legislature has defined a term, courts must follow that definition. (*People v. Ward*, 62 Cal. App. 4th 122, 126 (1998).) Following the California Supreme Court’s analysis in *American Coatings*, the test of whether an emission limit constitutes BARCT is whether it meets the definition found in the statute. (§40406.) If so, then it is within the statutory definition of BARCT, whether or not it is within the most common understanding of “retrofit.” This does not mean that the word “retrofit” is surplusage. The use of the word “retrofit” serves to distinguish an emission limit that is imposed on existing sources, and which under the statutory definition must consider economic and other factors, from the emissions limit imposed on new sources. The limit for new sources must be met if it has been achieved in practice, regardless of cost. See definition of “best available control technology” [BACT] in section 40405, which includes “the most stringent emission limitation that is achieved in practice by that class or category of source.” We do not argue that a replacement can be BARCT if it does not meet the definition of BARCT. Instead, if a limit meets that definition, it can be BARCT even if it can most cost-effectively be met by replacing the equipment with new equipment, as recognized in the dictionary definition discussed above.<sup>2</sup>

#### ***Other Statutory References to “Retrofit” Are Inapplicable***

In your August 24 letter, you argue that the legislature has used the term replacement as well as retrofit in certain sections of the Health and Safety Code, so that these terms must mean something different from each other. (§§ 43021(a) and 44281(a).) Furthermore, the legislature

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<sup>2</sup> Your August 24 letter also argues that *American Coatings* is irrelevant because it dealt with a rule for architectural coatings, requiring coating reformulation, which “does not typically involve the manufacture of modified production equipment or new add-on controls,” whereas control technologies that require physical modification of existing equipment or installation of add-on controls may require “significant disruption to the operation of the facility.” (Aug. 24 Ltr. p. 6.) We do not know whether the claim regarding architectural coatings is correct, but even if it is, we do not understand how this relates to the question at issue since *both* add-on controls (your definition of “retrofit”) and replacements would involve the disruption of facility operations for some time.

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defined retrofit in sections 44275(a)(19) and 44299.80(o) and the definition does not mention replacement but rather making modifications to the engine and fuel system. Finally, you note that these same code sections define “repower” as replacing an engine with a different engine. (§§ 44275(a)(18) and 44299.80(n); Aug. 24 Ltr., pp. 4-5.) However, all of these code sections were adopted long after 1987, when the legislature mandated SCAQMD to require BARCT for existing sources. They do not shed any light on what the legislature meant by “retrofit” in 1987 when section 40406 was adopted. All of the sections cited (except section 43021(a)) deal with incentive programs, and the definitions are specifically stated to be only “as used in this chapter”; i.e., for the specific incentive program. (§§44275(a); 44299.80(a).) These definitions facilitate the administering agency in implementing the programs, which generally provide different amounts of funding for different types of projects, including “repowering” or “retrofitting.” (See *e.g.*, [https://www.arb.ca.gov/msprog/moyer/source\\_categories/moyer\\_sc\\_on\\_road\\_hdv\\_2.htm](https://www.arb.ca.gov/msprog/moyer/source_categories/moyer_sc_on_road_hdv_2.htm).)

Therefore, the legislature had a specific purpose in distinguishing between replacements and retrofits in these particular chapters, whereas no one has identified a policy reason that the legislature would have wanted to exclude replacement projects from BARCT, as long as they met the statutory definition.<sup>3</sup>

***Statute Discussing Best Available Control Technology Determinations Does Not Circumscribe BARCT Definition***

Your August 24 letter argues that section 40920.6 supports your claim because it states that in establishing the best available control technology (BACT), the District shall consider only “control options or emission limits to be applied to the basic production or process equipment.” (Emphasis is in letter.) You argue that this means BACT, and therefore BARCT, is a measure to be applied to the existing emitting source, not replacement of the emitting source in its entirety. (Aug. 24 Ltr. p. 4.) This inference is incorrect, since BACT is frequently applied to replacement of an entire source (such as repowers of electric generating units) as well as to new and modified

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<sup>3</sup> Section 43021(a), enacted in 2017 as part of SB1, prohibits Air Resources Board rules that require the “retirement, replacement, retrofit, or repower” of a commercial motor vehicle for a period of time. While you argue that this language means that a replacement must be different than a retrofit, under that theory it must also mean that a replacement is different from a repower, whereas under the sections cited above, a repower IS a replacement. Presumably, the legislature wanted to make very sure it covered all possibilities. And to add to the confusion, the Carl Moyer statutes appear to distinguish “retrofit” (an eligible project under §44282(a)(2)) from “use of emission-reducing add-on equipment” (an eligible project under §44281(a)(3)). Normally installing add-on controls is considered a type of retrofit. (See Aug. 24 Ltr., p. 4.) Therefore, we cannot draw any conclusions from the use of different terms in different parts of the Health & Safety Code.

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sources. Obviously, in the case of a new source, there is no existing equipment to which to apply the technology. We interpret this statutory language to mean that in establishing BACT, the SCAQMD may not fundamentally change the nature of the underlying process. For example, if an applicant seeks approval of a simple cycle turbine, the SCAQMD cannot require it to instead construct a combined cycle turbine, since they have different operational characteristics and needs to fill. This would be consistent with EPA's Draft NSR Workshop Manual, p. B-13, that specifies that in determining BACT, states need not redefine the design of the source, although they retain discretion to do so where warranted (i.e., to require consideration of inherently cleaner technology). (<https://www.epa.gov/nsr/nsr-workshop-manual-draft-october-1990>.) SCAQMD does not propose to require a facility subject to BARCT to "redefine" the nature of its source but merely to replace old diesel internal combustion engines with new diesel internal combustion engines meeting EPA's Tier IV standards. Therefore, section 40920.6 does not speak to the question at hand: whether BARCT precludes replacing old equipment with new equipment of the same type.

***SCAQMD Has Authority to Require Equipment Replacement, Which is Not Limited by the Definition of BARCT***

Finally, even if BARCT by itself did not include replacement equipment, the SCAQMD could still require the equipment to be replaced. Your August 24 letter states that the District's "authority is both granted and limited by section 40440(b)(1)," which provides that the District's rules "shall do all of the following: (1) Require the use of best available control technology for new and modified sources and the use of best available retrofit control technology for existing sources." We disagree that section 40440(a)(1) grants the authority to require BARCT (i.e., that without that section, the District would have no authority to require BARCT). We also disagree with the proposition that section 40440(a)(1) limits the District's authority.

State law has explicitly granted air districts primary authority over the control of pollution from all sources except motor vehicles since at least 1975, when the air pollution regulation provisions were recodified. (*See* § 40000, enacted Stats. 1975, ch. 957, § 12; *see also* § 39002, containing similar language and adopted in that same section.) As held by the California Supreme Court, these two sections (and their predecessors dating back to 1947) confirm that the air districts had plenary authority to regulate non-vehicular sources "for many years." *WOGA*, 49 Cal. 3d. at 418-419. And the Supreme Court had previously recognized the air districts' authority to adopt local regulations for non-vehicular sources under the predecessor statutes. (*Orange County Air Pollution Control Dist. v. Public Util. Comm.*, 4 Cal. 3d 945, 948 (1971).) Under these broad statutes, the districts could have adopted BARCT requirements for non-vehicular sources. Section 40440(a)(1), therefore, was not a statute granting authority, since the districts already had authority, but a statute imposing a *mandate* to adopt BARCT.

We also disagree with the claim that section 40440(a)(1) requiring the SCAQMD to impose BARCT on existing sources was a "limitation" of district authority. State law expressly provides that districts "may establish additional, stricter standards than those set forth by law," unless the

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legislature has specifically provided otherwise. (§§ 39002; 41508.) Nothing in section 40440(a)(1) specifically limits the District's authority. In fact, the legislative history of the bill requiring SCAQMD to impose BARCT – among other requirements – states that “this bill is intended to encourage *more aggressive improvements in air quality* and to give the District new authority to implement such improvements.” (*American Coatings*, 54 Cal. 4th at 466 (emphasis added).) As stated by the Supreme Court, “[t]he BARCT standard was therefore part of a legislative enactment designed to augment rather than restrain the District's regulatory power.”<sup>4</sup> *Id.* As illustrated by the legislative history, BARCT is a “minimum” requirement, and the legislature did not intend it to preclude the District from adopting requirements that go beyond BARCT.

Moreover, when the legislature extended the BARCT requirement to other districts with significant air pollution (§40919(a)(3) (districts with serious pollution and worse)), the legislature expressly stated that the bill “is intended to establish minimum requirements for air pollution control districts and quality management districts” and that “[n]othing in this act is intended to limit or otherwise discourage those districts from adopting rules and regulations which exceed those requirements.” (Stats. 1992, ch. 945 § 18.) Thus it is clear that BARCT is not intended to be a limitation or restriction on existing authority.<sup>5</sup>

In an earlier case, the California Supreme Court made it clear that new legislation does not impliedly repeal an air district's existing authority unless it “gives *undebatable evidence* of an intent to supersede” the earlier law. *WOGA*, 49 Cal. 3d. at 420 (internal citation omitted; emphasis by Supreme Court). There the Court noted that the present statutes and their predecessors giving air districts authority over non-vehicular sources, including the authority to regulate air toxics, had been in effect before the allegedly preempting law was enacted (in 1983; Stats 1983 Ch. 1047), and had been generally understood and acted upon. *WOGA*, 49 Cal. 3d at 419. The Court concluded there was no “undebatable evidence of a legislative intent to repeal the districts' statutory authority to protect the health of their citizens by controlling air pollution.” *WOGA*, 49 Cal. 3d at 420. By the same token here, there is no undebatable evidence of an intent to limit air districts' existing authority by imposing a *mandate* to adopt BARCT requirements. Instead, BARCT was a minimum requirement that SCAQMD must impose, not a

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<sup>4</sup> There were some new authorities granted in 1987, including section 40447.5, authorizing fleet rules and limits on heavy duty truck traffic and section 40447.6, authorizing the SCAQMD to adopt sulfur limits for motor vehicle diesel fuel. We do not believe that section 40440(a)(1) granted “new” authority to require BARCT, as the districts already had authority over non-vehicular sources.

<sup>5</sup> Although the California Supreme Court found it unnecessary to decide whether the SCAQMD could adopt rules going beyond BARCT, because it held that BARCT could include technology-forcing measures, it did state that BARCT was not designed to restrain the District's regulatory power. (*American Coatings*, 54 Cal 4<sup>th</sup> at 466, 469.)

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limit on its ability to impose additional, including more stringent, requirements. Indeed, the argument that BARCT limits SCAQMD's authority is illogical. It would make no sense for the Legislature in 1987 to limit only the district with the worst air pollution (SCAQMD) while leaving untouched the authority of other districts with lesser levels of pollution.

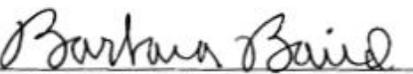
Nor does this conclusion leave the SCAQMD with unlimited regulatory power. In going beyond the statutory minimum of BARCT for existing sources, the District would still be limited by the requirement that its rules may not be arbitrary and capricious, or without reasonable or rational basis, or entirely lacking in evidentiary support. (*American Coatings*, 54 Cal. 4th at 460.) And of course, the SCAQMD's rulemaking authority is limited by applicable constitutional principles. Therefore, stakeholders need not rely on an argument that BARCT restricts the SCAQMD's authority in order to ensure the SCAQMD does not implement arbitrary action.

### ***Conclusion***

SCAQMD has the authority to require equipment replacement as a BARCT requirement as long as the requirement meets the statutory definition of BARCT. But even if BARCT were to exclude equipment replacement, the SCAQMD would still have the authority to require replacement, as long as the requirement is not arbitrary and capricious. The proposed BARCT for internal combustion engines on Santa Catalina Island is reasonable and feasible, and no one has argued to the contrary.

Respectfully submitted,

SOUTH COAST AIR QUALITY  
MANAGEMENT DISTRICT  
Bayron T. Gilchrist, General Counsel

By:   
Barbara Baird, Chief Deputy Counsel

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cc: Bill Quinn, CCEEB Vice President

**Supplement to Response 12-3**

*Appendix C – Comment Letters Received on the Draft SEA and Responses to Comments*

**Comment Letter #2**

**LATHAM & WATKINS LLP**

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 032950-0007

September 7, 2018

**VIA EMAIL**

Dr. Philip Fine  
 Deputy Executive Officer  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765

Re: Proposed Amended Rules 2001 and 2002

Dear Dr. Fine:

We are submitting these comments on behalf of our client Western States Petroleum Association (“WSPA”) on the most recent round of proposed amendments to South Coast Air Quality Management District (“SCAQMD”) Rules 2001 and 2002. The amendments are being proposed in connection with the transition of the Regional Clean Air Incentives Market (“RECLAIM”) program to a command-and-control regulatory structure. WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in five western states including California. WSPA has been an active participant in air quality planning issues for over 30 years. WSPA-member companies operate petroleum refineries and other facilities in the South Coast Air Basin that will be impacted by the transition out of the RECLAIM program.

2-1

**General Comments**

The proposed amendments to Rules 2001 and 2002 are primarily interim measures intended to establish new eligibility criteria for exiting RECLAIM, provide opt-out procedures, and address, on a temporary basis, unresolved issues surrounding compliance of new source review (“NSR”) for former RECLAIM facilities once they have transitioned out of the RECLAIM program. As WSPA and others have expressed in numerous meetings, workshops and hearings conducted in connection with the RECLAIM transition, we have serious concerns about the lack of clarity surrounding NSR in a post-RECLAIM regime.

2-2

We believe current SCAQMD staff’s (“staff”) proposed approach is premature, as staff has not addressed all of the underlying issues surrounding a RECLAIM sunset. RECLAIM is a comprehensive, complex program that was adopted as a whole. In the development of RECLAIM, staff not only determined current and future effective best available retrofit control

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technology (“BARCT”), but also examined and addressed NSR, reviewed socioeconomic impacts, mitigated implications of emissions trading, resolved enforcement and monitoring issues, and understood a host of other consequences of adopting such a program. This comprehensive approach ensured the overwhelming success of the RECLAIM program as it was designed. In contrast for this rulemaking, staff is dismantling the RECLAIM program without analyzing any of the consequences of the proposed approach. Most importantly, staff has not addressed NSR, nor the environmental and socioeconomic impacts of a RECLAIM sunset.

Our strong preference is that staff prioritizes resolution of the NSR issues and conduct an analysis of the entire RECLAIM transition project comparable with the same full analysis that was done during the implementation of RECLAIM before initiating rulemaking. There is no evidence that this has been done to date. We believe that addressing fundamental programmatic issues that will affect all former RECLAIM facilities, such as NSR, early in the transition process, and then moving on to the more narrowly applicable landing rules, would result in a more orderly and efficient transition in the following ways:

- It would provide facilities with an understanding of the NSR requirements and procedures that will apply to modifications required to comply with updated BARCT rules. It is not possible to develop a final and comprehensive plan for implementing new BARCT requirements without knowing the NSR requirements and procedures and how those will impact post-RECLAIM operating permits.
- It would result in a more efficient use of staff resources. For example, the proposed amendments to Rules 2001 and 2002 are essentially “stop-gap” measures that are necessary because the NSR and other programmatic issues remain unresolved. If the NSR and other programmatic issues were addressed, it would not be necessary to develop and implement such measures.
- It would avoid the current ad hoc, piecemeal approach to the RECLAIM Transition Project which results in additional confusion and uncertainty. This is illustrated by the fact that staff’s positions with respect to certain issues related to the proposed amendments to Rules 2001 and 2002 are quite different than positions taken when these two rules were amended in January of this year in what we view as a rush to get the RECLAIM transition process underway.
- It would avoid legal vulnerabilities that we believe are inherent in the current ad hoc, piecemeal approach because the environmental and socioeconomic assessments of incremental rulemaking are disjointed and incomplete.

Should the District continue with this piecemeal approach, we offer the comments set forth below on the proposed amendments:

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**Specific Comments on Proposed Amended Rule 2002(f)(11) – “Stay-In” Provision**

The proposed amendments to Rule 2002 would allow facilities to remain in the RECLAIM program, and thereby avail themselves of the RECLAIM NSR program set forth in SCAQMD Rule 2005 for some period of time. Our understanding, which was confirmed by staff during the RECLAIM Working Group meeting on August 9, 2018, is that the decision of whether or not to remain in the RECLAIM program is completely within the discretion of the facility (assuming the facility meets the specified criteria). Some of the language in the proposed amendments could be read to grant the Executive Officer discretion (beyond merely confirming that the facility meets the specified criteria) to decide whether or not the facility may remain in the program. The following proposed changes are intended to better reflect staff’s intent.

- (11) An owner ~~of or~~ operator of a RECLAIM facility that receives an initial determination notification may elect ~~that~~ for the facility to remain in RECLAIM ~~by submitting~~ if a request to the Executive Officer to remain in RECLAIM is submitted, ~~together with~~ including any equipment information required pursuant to paragraph (f)(6).
  - (A) Upon ~~receiving a request to remain in RECLAIM and any equipment information required pursuant to paragraph (f)(6),~~ written approval by the Executive Officer shall notify the ~~owner or operator in writing~~ that the facility shall remain in RECLAIM ~~subject to the following~~:
    - (i) The facility shall remain in RECLAIM until a subsequent notification is issued to the facility that it must exit by a date no later than December 31, 2023.
    - (ii) The facility is required to submit any updated information within 30 days of the date of the subsequent notification.
    - (iii) The facility shall comply with all requirements of any non-RECLAIM rule that does not exempt NOx emissions from RECLAIM facilities.

2-4

**Specific Comments on Proposed Amended Rule 2002(f)(10) – “Opt-Out” Provision**

Proposed Amended Rule 2002 includes an “opt-out” provision for those facilities that may be ready to voluntarily exit RECLAIM prior to the time that they might otherwise be transitioned out. The current staff proposal differs from previous proposals in that it places

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certain restrictions on facilities after they have exited the program that we believe are unfair and unwarranted. Specifically, proposed paragraph (f)(10)(B) would prohibit such facilities from taking advantage of otherwise available offset exemptions in SCAQMD Rule 1304. In the event that an NSR event requiring offsets were to occur after the facility exited the RECLAIM program, it would be required to obtain emission reduction credits on the open market, which the staff acknowledges are “scarce.” (July 20 Preliminary Draft Staff Report, p. 8).<sup>1</sup> We believe that it is unnecessary, unfair, and possibly contrary to state law, to deny former RECLAIM facilities advantages that they would otherwise be entitled to and that are available to all other non-RECLAIM facilities.

The Preliminary Draft Staff Report expresses concern that the potential impacts associated with emission increases from facilities that might exit the RECLAIM program, even if limited to the 37 facilities the staff initially identified as eligible to exit, could impose a demand on Rule 1304 offset exemptions that could approach or surpass the cumulative emissions increase thresholds of SCAQMD Rule 1315. (Preliminary Draft Staff Report, p. 8). In other words, staff is concerned that if former RECLAIM facilities were permitted to utilize Rule 1304 offset exemptions, the demand on the SCAQMD’s internal emission offset bank, which supports the offset exemptions, might exceed previously analyzed levels. This concern seems inconsistent with positions taken by staff in connection with the January 2018 amendments to these two rules, and with more recent statements by staff suggesting that it believes the internal emission offset bank is the most viable source of emission offsets for former RECLAIM facilities on a long-term basis.

2-5  
Cont

The January 2018 amendments established the criteria and procedures pursuant to which eligible facilities would be identified and exited from RECLAIM. According to the Final Staff Report, “. . . the proposed amendments would remove approximately 38 facilities from NOx RECLAIM.” (January 5 Final Staff Report, p. 2).<sup>2</sup> Staff determined that the impact of exiting the initial round of facilities, including impacts associated with reduced demand for RTCs, would be minimal:

Given the analysis above and the fact that the 38 facilities—which are potentially ready to exit out of the NOx RECLAIM program into command-and-control—account for about one percent of NOx emissions and NOx RTC holdings in the NOx RECLAIM universe, staff concludes that the potential impact of PAR 2002 on the demand and supply of NOx RTC market is expected to be

<sup>1</sup> References herein to “July 20 Preliminary Draft Staff Report” refer to the Preliminary Draft Staff Report, Proposed Amendments to Regulation XX- Regional Clean Air Incentives Market (RECLAIM), Proposed Amended Rules 2001 – Applicability and 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx), dated July 20, 2018.

<sup>2</sup> References herein to “January 5 Final Staff Report” refer to the Final Staff Report Proposed Amendments to Regulation XX – Regional Clean Air Incentives Market (RECLAIM) Proposed Amended Rules 2001 – Applicability and 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx), dated January 5, 2018.

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minimal and large price fluctuations in the NOx RTC market are unlikely to result directly from the potential exit of the 38 directly affected facilities out of the NOx RECLAIM program. Therefore, PAR 2002 would have minimal impacts on the existing facilities that are not yet ready to exit the NOx RECLAIM program. (January 5 Final Staff Report, p. 12.)

To support its conclusion that exiting the initial round of facilities from the program would have minimal impacts as a result of foregone market demand for RTCs, staff analyzed three scenarios in which NOx emissions from the subject facilities were: i) 5% below 2015 NOx emissions; ii) the same as 2015 NOx emissions; and iii) 5% above 2015 NOx emissions. (January 5 Final Staff Report, p. 11). Staff determined that foregone market demand for RTCs associated with exiting the initial group of facilities under each of the three scenarios would be 0.073 tons per day (TPD), 0.080 TPD, and 0.086 TPD, respectively. Based on this analysis, staff concluded that the anticipated future demand for NOx RTCs associated with the exiting facilities was minimal, and that eliminating that demand would not materially impact the remaining market. In other words, staff concluded that the exiting facilities would have a negligible demand for RTCs in the future, including RTCs required to satisfy NSR requirements. As stated in the Summary of the Proposal:

Considering the past market behavior by these facilities, staff concludes that the potential impact of PAR 2002 on the demand and supply of NOx RTC market is expected to be minimal and large price fluctuations in the NOx RTC market are unlikely to result directly from the potential exit of these facilities out of the NOx RECLAIM program. (Summary of Proposal, Agenda Item No. 18, January 5, 2018, p. 3.)

2-5  
Cont

Notably, staff did not even address the impact that the January 2018 amendments might have on the internal bank even though those amendments were intended to result in precisely the situation about which staff is now expressing concern – the removal of 38 facilities from the RECLAIM program that would then be eligible to take advantage of offset exemptions in Rule 1304 like any other RECLAIM facility.

In contrast with the January 2018 Final Staff Report, the July 2018 Preliminary Draft Staff Report expresses serious concerns about the potential for increased NOx emissions from facilities exiting the program, stating that “[e]ven among the first 37 facilities identified that may be eligible to exit, any impacts from potential emissions increases are unknown and if significant enough, can approach or surpass the cumulative emissions increase thresholds of Rule 1315.” (July 2018 Preliminary Draft Staff Report, p. 8).

Clearly, the conclusions reached by staff in the January 2018 Final Staff Report, upon which the Governing Board relied when it adopted the current versions of Rules 2001 and 2002, are inconsistent with the concerns being raised by staff in the current proposal. Either staff erred in January by underestimating the impacts on the RECLAIM market and failing to even analyze

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the potential impacts on the internal bank, or it is overstating the potential impacts associated with the current proposal. In either case, this inconsistency illustrates the problem with undertaking the RECLAIM transition in an ad hoc, piecemeal fashion.

**California Environmental Quality Act Considerations**

WSPA and others have expressed concerns regarding the “piecemeal” manner in which the California Environmental Quality Act (“CEQA”) analysis for the RECLAIM transition is being conducted. “. . . CEQA’s requirements ‘cannot be avoided by chopping up proposed projects into bite-size pieces which, individually considered, might be found to have no significant effect on the environment or to be only ministerial.’ [Fn. omitted.]” *Lincoln Place Tenants Assn. v. City of Los Angeles* (2005) 130 Cal.App.4th 1491,1507 quoting *Plan for Arcadia, Inc. v. City Council of Arcadia* (1974) 42 Cal.App.3d 712, 726. Staff explained its CEQA strategy for the RECLAIM transition in an April 25, 2018 letter to the Los Angeles County Business Federation in which it stated:

The potential environmental impacts associated with the 2016 AQMP, including CMB-05, were analyzed in Program Environmental Impact Report (PEIR) certified in March, 2017 . . . In other words, the environmental impacts of the entire RECLAIM Transition project . . . were analyzed in the 2016 AQMP and the associated PEIR, which was a program level analysis . . . Since the SCAQMD has already prepared a program-level CEQA analysis for the 2016 AQMP, including the RECLAIM Transition, no additional program-level analysis is required and further analysis will be tiered off the 2016 AQMP PEIR.  
(<http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/regxx/aqmd-response-letter-to-bizfed-042518.pdf?sfvrsn=6>).

2-6

Consistent with the staff’s explanation described above, SCAQMD staff has prepared a Draft Subsequent Environmental Assessment (“Draft SEA”) to analyze environmental impacts from the proposed amendments to Rules 2001 and 2002. (<http://www.aqmd.gov/home/research/documents-reports/lead-agency-scaqmd-projects>). The Draft SEA attempts to tier off of the March 2017 Final Program Environmental Impact Report for the 2016 AQMP and tries to obscure the issue by citing to several other previously certified CEQA documents, including the December 2015 Final Program Environmental Assessment completed for the amendments to the NOx RECLAIM program that were adopted on December 4, 2015, and the October 2016 Addendum to the December 2015 Final Program Environmental Assessment completed for amendments to Rule 2002 to establish criteria and procedures for facilities undergoing a shutdown and for the treatment of RTCs. Consistent with the staff’s earlier explanation, the Draft SEA states:

“The decision to transition from NOx RECLAIM into a source-specific command-and-control regulatory structure was approved by the SCAQMD Governing Board as control measure CMB-05 in

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the 2016 AQMP and the potential environmental impacts associated with the 2016 AQMP, including CMB-05, were analyzed in the Final Program EIR certified in March 2017. This Draft SEA relies on the analysis in the March 2017 Final Program EIR for the 2016 AQMP." (Draft SEA, p. 2-5).

2-6  
Cont

The proposed amendments to Rules 2001 and 2002 implement that portion of control measure CMB-05, written after the Governing Board's adoption of the 2016 AQMP that calls for the transition of the RECLAIM program to a command and control regulatory structure. As stated in the July 2018 Preliminary Draft Staff Report, "Proposed Amended Rules 2001 and 2002 will continue the efforts to transition RECLAIM facilities to a command-and-control regulatory structure . . ." (July 2018 Preliminary Draft Staff Report, p. 2). The problem with the proposal to tier the CEQA analysis for the currently proposed amendments to Rules 2001 and 2002 off from the March 2017 Final Program EIR for the 2016 AQMP is that control measure CMB-05 as proposed at the time the March 2017 Final Program EIR was prepared did not include a transition out of the RECLAIM program. That language was added well after the CEQA analysis was complete. Furthermore, no additional CEQA analysis was conducted to address the changes to CMB-05.

2-7

The Final Draft 2016 AQMP, which was ultimately presented to the SCAQMD Governing Board, was released in December 2016. Control measure CMB-05 called for an additional five tons per day of NOx reductions from sources covered by the RECLAIM program by the year 2031. CMB-05 also called for convening a Working Group to consider replacing the RECLAIM program with a more traditional command-and-control regulatory program, but did not include a mandate to undertake such a transition. SCAQMD Governing Board action on the Final Draft 2016 AQMP was noticed for February 3, 2017. When the 2016 AQMP item came up on the agenda, SCAQMD staff made a presentation, as is typical. No substantive questions were asked of the staff by Board Members, and no Board Members indicated an intention to offer amendments to the staff proposal. The public was then provided an opportunity to comment, and approximately five hours of public comment ensued.

2-8

Following the close of the public comment period, Board Member Mitchell stated her intention to introduce amendments to the staff proposal for control measure CMB-05 that would: i) accelerate the additional five TPD of reductions to 2025 from 2031; and ii) transition to a command-and-control program as soon as practicable. Board Member Mitchell did not provide any specific proposed language and did not make a formal motion to amend the staff proposal. For reasons that are not relevant here, action on the item was continued to the March 3, 2017 Governing Board hearing. The Governing Board stated its intention not to take additional public comment on the item at the March 3, 2017 hearing.

At the hearing on March 3, 2017, Board Member Mitchell introduced the following amendments to CMB-05 that included a direction to staff to develop a transition out of the RECLAIM program:

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BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby direct staff to modify the 2016 AQMP NOx RECLAIM measure (CMB-05) to achieve the five (5) tons per day NOx emission reduction commitment as soon as feasible, and no later than 2025, and to transition the RECLAIM program to a command and control regulatory structure requiring BARCT level controls as soon as practicable and to request staff to return in 60 days to report feasible target dates for sunseting the RECLAIM program.

2-8  
Cont

There was no Board Member discussion of the proposed amendments, and they were approved on a vote of 7-6.

The CEQA analysis supporting the 2016 AQMP commenced with a Notice of Preparation of a Draft Environmental Impact Report (“EIR”) released on July 5, 2016. The Draft EIR was released on September 16, 2016, with the comment period closing on November 15, 2016. In mid-November 2016, four public hearings related to the AQMP were held in each of the four counties within the SCAQMD territory, at which comments on the Draft EIR were taken. After incorporating comments and making minor textual changes, the Final EIR was released in January 2017. No material changes or additional analysis were undertaken subsequent to the release of the Final EIR, which was certified by the Governing Board on March 3, 2017 as the March 2017 Final Program Environmental Impact Report for the 2016 AQMP, upon which staff now seeks to rely.

2-9

Thus, the transition out of the RECLAIM program, which the currently proposed amendments to Rules 2001 and 2002 seek to implement, was not included in the version of CMB-05 presented to the Governing Board as part of the 2016 AQMP. The March 2017 Final Program EIR for the 2016 AQMP, which was completed in January 2018, did not analyze the transition of the RECLAIM program because that was not prescribed by the CMB-05 measure at that time. Therefore, tiering off of the March 2017 Final Program EIR for the 2016 AQMP to support rule amendments that seek to implement the transition is not possible since there is no analysis from which to tier off. In the absence of a program level CEQA analysis that includes the RECLAIM transition, staff’s segmented analysis of each proposed rulemaking action in the transition process constitutes classic “piecemealing” contrary to the requirements of CEQA.

Staff’s attempt to tier without having completed a programmatic analysis of the RECLAIM Transition Project ignores the fact that RECLAIM is a comprehensive program that includes an assessment of BARCT for all of the sources in the program. It was adopted as a whole, a single package, not as a series of individual rules and regulations. There are no separate BARCT regulations in the RECLAIM program. Because RECLAIM allows for BARCT to be implemented on an aggregate basis, all BARCT determinations had to be made together. Furthermore, all RECLAIM rules are dependent upon one another, and none of these can stand alone. By attempting to analyze the impact of a single RECLAIM rule, i.e., BARCT determination, staff is ignoring the interdependency of the program, and thus, improperly disregarding the impacts of the comprehensive program.

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In the draft SEA, staff claims that it is speculative to determine what BARCT may be for all the various sources under the RECLAIM program. This underscores the fact that a comprehensive program transitioning RECLAIM sources to command and control rules was never developed or analyzed. Rather, staff is piecemealing the analysis of the RECLAIM transition. Such an approach has been rejected by the courts: “Instead of itself providing an analytically complete and coherent explanation, the FEIR notes that a full analysis of the planned conjunctive use program must await environmental review of the Water Agency’s zone 40 master plan update, which was pending at the time the FEIR was released. The Board’s findings repeat this explanation. To the extent the FEIR attempted, in effect, to tier from a *future* environmental document, we reject its approach as legally improper under CEQA.” *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 440 [emphasis in original].

2-10

Furthermore, RECLAIM is an emissions trading program. It allows facilities to choose to implement specific controls or to purchase emissions credits. Staff’s piecemealing of the analysis does not account for those facilities that have implemented other means to comply with the program and the additional impacts the transition to individual command and control rules may have on these facilities. Additionally, these impacts cannot be captured in a single rule analysis. Rather, staff’s piecemealing further ignores the impacts on facilities that are subject to multiple BARCT determinations.

**Health & Safety Code Section 39616**

The current staff proposal for amending Rule 2002 to prevent former RECLAIM facilities from accessing offset exemptions in Rule 1304 would place former RECLAIM facilities at a significant disadvantage relative to other non-RECLAIM facilities. California Health & Safety Code Section 39616(c)(7) prohibits imposing disproportionate impacts, measured on an aggregate basis, on those stationary sources included in the RECLAIM program compared to other permitted stationary sources. Creating a new category of sources without access to either RTCs or Rule 1304 offset exemptions to satisfy NSR requirements runs afoul of this prohibition.

2-11

**Statement Pertaining to SCAQMD Rule 1306**

The July 2018 Preliminary Draft Staff Report contains the following statement: “Moreover, Rule 1306 – Emission Calculations would calculate emission increases of exiting RECLAIM facilities based on actual to potential emissions, thereby further exacerbating the need for offsets.” (Preliminary Draft Staff Report, p. 8). It is not clear why this would be the case. Furthermore, it is premature to make such assertions outside the context of an overall analysis of what the NSR requirements for former RECLAIM facilities might be. This is a critical issue that must be addressed in the overall development of the NSR program for former RECLAIM facilities.

2-12

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**Conclusion**

Thank you for considering these comments. We look forward to continuing to work with you on these rulemakings which are critically important to stakeholders as well as the regional economy. If you have any questions, please contact me at (714) 401-8105 or by email at michael.carroll@lw.com or Bridget McCann of WSPA at (310) 808-2146 or by email at bmccann@wspa.org.

2-12  
Cont

Sincerely,

  
Michael J. Carroll  
of LATHAM & WATKINS LLP

cc: Cathy Reheis-Boyd, WSPA  
Patty Senecal, WSPA  
Bridget McCann, WSPA  
Wayne Nastri, SCAQMD  
Barbara Baird, SCAQMD  
Michael Krause, SCAQMD

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**Responses to Comment Letter #2 – Latham & Watkins LLP****Response 2-1:**

This comment begins by introducing the parties represented by the letter; no response to this comment is necessary. SCAQMD staff appreciates your ongoing participation.

**Response 2-2:**

Staff understands that there is a priority to resolve the NSR issues. However, staff disagrees that the rulemakings that are currently underway in several categories should stop until NSR amendments are adopted. It is still possible for facilities to go through NSR permitting under current RECLAIM rules and furthermore, many emission reduction projects as a result of implementing BARCT would not trigger NSR. The CEQA and socioeconomic impacts will be evaluated for all the command and control rules identified as landing rules, including impacts for the installation of controls, as well as impacts for monitoring, reporting, and recordkeeping requirements. There will also be a CEQA and socioeconomic analysis conducted for any NSR (Regulation XIII) rulemaking. The amendments to PARs 2001 and 2002 are necessary because they establish a process that would be in place in order to transition facilities out of RECLAIM more efficiently once the NSR provisions for former RECLAIM facilities are adopted, as well as allowing facilities desiring to exit before NSR issues are resolved to do so.

**Response 2-3:**

While the amendments from January 2018 established the initial criteria for determining if RECLAIM facilities were ready to exit, the current proposed amendments provide revisions based on ongoing analysis of the RECLAIM universe. The January 2018 amendments contained an RTC analysis for the first 37 facilities that were identified as ready to exit. However, the analysis for the NSR rulemaking will consist of a different analysis and will apply to the entire universe of RECLAIM facilities. Comments about piecemealing CEQA and socioeconomic impacts were addressed in SCAQMD's response letter to BizFed on April 25, 2018, a copy of which is attached at the end of these responses.

**Response 2-4:**

The proposed amendments to Rule 2002 paragraph (f)(11) provide the option for a facility to remain in RECLAIM upon receipt of an initial determination notification. There is no discretion as to whether the Executive Officer would accept or deny the request. The only requirement aside from submitting a request to the Executive Officer is to provide a listing of any equipment information, as specified in the proposed rule language.

**Response 2-5:**

The socioeconomic analysis conducted for the January 2018 amendments focused on the impacts of RTCs on the facilities identified as ready to exit and on the existing RECLAIM market. The analysis required for an NSR rulemaking would be different and would be based on the demand for projects that would result in emission increases. A facility's RTC holdings are not entirely indicative or predictive of what future demand would be required. As such, even though an RTC analysis was conducted for the 37 facilities during the January 2018 amendments, an NSR rulemaking and ensuing analysis would apply to the entire universe of

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RECLAIM facilities. Staff believes that allowing facilities to remain in RECLAIM would provide them with the opportunity to offset emission increases under RECLAIM rules. It should be noted that the intent of the proposed amendments is to address emission offsets pertaining to NO<sub>x</sub> only and this clarification has been made in PAR 2002. Staff believes that while the potential for exceeding any CEQA thresholds for the internal bank that was analyzed for non-RECLAIM facilities is small, facilities would not be transitioned out of RECLAIM until NSR provisions governing former RECLAIM facilities are established. Facilities that still would like to exit RECLAIM, despite the restrictions to the internal bank for NO<sub>x</sub> offsets, can do so under the proposed amendments.

Response 2-6:

The commentator's suggestion that only one programmatic CEQA document should be prepared because future rule amendments to landing rules, or NSR (Regulation XIII) are related to PARs 2001 and 2002 is incorrect and inconsistent with SCAQMD past practice. SCAQMD past practice in conducting CEQA analyses for rule projects such as PARs 2001 and 2002 is that the project being contemplated undergoes its own CEQA analysis. All SCAQMD rules and regulations are related to each other in that they are adopted and/or amended to meet the clean air goals outlined in the 2016 AQMP. The CEQA document for the 2016 AQMP, the March 2017 Final Program EIR, contains the programmatic analyses of the overall effects of SCAQMD's clean air goals. However, CEQA neither requires the SCAQMD to simultaneously amend every rule that may be affected by a control measure in the 2016 AQMP nor requires one programmatic CEQA document to be prepared that encompasses every rule. Further, CEQA does not require delaying the adoption of BARCT rules until all BARCT rules have been developed.

The decision to transition from NO<sub>x</sub> RECLAIM into a source-specific command-and-control regulatory structure was approved by the SCAQMD Governing Board as control measure CMB-05 in the 2016 AQMP. CMB-05 is required by the California Health and Safety Code to implement BARCT in the RECLAIM program as well as other stationary sources, which will be completed upon rule amendment or adoption of various landing rules. CMB-05 identifies a series of approaches that can be explored to make the RECLAIM program more effective in ensuring equivalency with command-and-control regulations implementing BARCT and to generate further NO<sub>x</sub> emissions reductions at RECLAIM facilities.

CMB-05 specifically contemplates the unwinding of the RECLAIM program (see Appendix IV-A, pp. IV-A-67 to IV-A-71 - <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/appendix-iv-a.pdf>). In the Revised Draft 2016 AQMP, control measure CMB-05 was revised to include the following language: *"One approach under serious consideration is a long-term transition to a traditional command-and-control regulatory structure. As many of the program's original advantages appear to be diminishing and generating increased scrutiny, an orderly sunset of the RECLAIM program may be the best way to create more regulatory certainty and reduce compliance burdens for RECLAIM facilities, while also achieving more actual and SIP creditable emissions reductions."* Thus, the March 2017 Final Program EIR for the 2016 AQMP analyzed control measure CMB-05 which did contemplate

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the potential for sunsetting the RECLAIM program, even though the final decision was not made until the adoption of the 2016 AQMP at the March 2017 Governing Board hearing.

Furthermore, the potential environmental impacts associated with the 2016 AQMP, including CMB-05, were specifically analyzed in the March 2017 Final Program EIR. In particular, the March 2017 Final Program EIR addressed the environmental effects of future expansion and other actions of reasonably foreseeable environmental consequences for the RECLAIM Transition project and determined that the overall implementation has the potential to generate adverse environmental impacts to seven topic areas: air quality; energy; hazards and hazardous materials; hydrology and water quality; noise; solid and hazardous waste; and transportation. More specifically the March 2017 Final Program EIR evaluated and identified the impacts from the installation and operation of additional control equipment, such as selective catalytic reduction (SCR) equipment, potentially resulting in construction emissions, increased electricity demand, hazards from the additional ammonia transport and use, increase in water use and wastewater discharge, changes in noise volume, generation of solid waste from construction and disposal of old equipment and catalyst replacements, as well as changes in traffic patterns and volume. The commentator has not identified any additional impact areas, mitigation, or project alternatives from the RECLAIM Transition project that were excluded from the analysis in the March 2017 Final Program EIR for the 2016 AQMP. In any event, the time to challenge the assessments for the analyses of March 2017 Final Program EIR for the 2016 AQMP relied upon has passed (see Public Resources Code Sections 21167 and 21167.2).

The environmental impacts of the entire RECLAIM Transition project were analyzed in the 2016 AQMP and the associated March 2017 Final Program EIR was a program level analysis. The SCAQMD has and will continue to evaluate each individual RECLAIM Transition rule that is developed pursuant to the 2016 AQMP, to determine if any additional CEQA review is required. This has been consistent with SCAQMD's past practice and is not considered Piecemealing, as explained in SCAQMD's response letter to BizFed on April 25, 2018, a copy of which is attached at the end of these responses.

While PARs 2001 and 2002 are part of SCAQMD's Regulation XX - Regional Clean Air Incentives Market (RECLAIM) and the changes contains in PARs 2001 and 2002 contemplate other rules to be amended in the future, separate CEQA analyses will be conducted for these future rule amendments. Table 1-1 identifies several source-specific landing rules as identified by the SCAQMD in its monthly rule forecast report as scheduled to be undergoing separate, future rule amendments<sup>1</sup> from PARs 2001 and 2002.

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<sup>1</sup> SCAQMD, Draft Subsequent Environmental Assessment for PARs 2001 and 2002, August 2018, p. 1-6.

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**Table 1-1  
Rule Development Forecast for Source-Specific Rules  
Affected by NOx RECLAIM Transition**

<b>Rule Number</b>	<b>Rule Title</b>	<b>Rule Development Forecast (subject to change)</b>
1109.1	Emissions of Oxides of Nitrogen from Boilers and Process Heaters in Refineries	December 2019
1110.2	Emissions from Gaseous- and Liquid-Fueled Engines	1 <sup>st</sup> Quarter 2019
1118.1	Control of Emissions from Non-Refinery Flares	December 2018
1134	Emissions of Oxides of Nitrogen from Stationary Gas Turbines	1 <sup>st</sup> Quarter 2019
1135	Emissions of Oxides of Nitrogen from Electric Power Generating Systems	November 2018
1146	Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters	December 2018
1146.1	Emissions of Oxides of Nitrogen from Small Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters	
1146.2	Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters	
1147	NOx Reductions from Miscellaneous Sources	TBD 2019
1147.1	NOx Reductions from Metal Operations Facilities	TBD 2019
1147.2	NOx Reductions from Aggregate Facilities	TBD 2019
1153.1	Emissions of Oxides of Nitrogen from Commercial Food Ovens	TBD 2019

Key: TBD = to be determined

Pursuant to the SCAQMD's Certified Regulatory Program (CEQA Guidelines Section 15251(I); codified in SCAQMD Rule 110 - the rule which implements the SCAQMD's certified regulatory program), the SCAQMD typically prepares an Environmental Assessment (EA) to evaluate the environmental impacts for rule projects proposed for adoption or amendment. PARs 2001 and 2002, are considered a "rule" project that is subject to CEQA under the SCAQMD's Certified Regulatory Program.

As the commentator states, the Draft SEA for PARs 2001 and 2002 relies on the analyses in and incorporates by reference previous CEQA analyses conducted in the March 2017 Final Program EIR for the 2016 AQMP, October 2016 Addendum to the December 2015 Final Program EA for NOx RECLAIM, and the December 2015 Final Program EA for NOx RECLAIM, which is specifically allowed per CEQA Guidelines Section 15162. The preparation of a Draft SEA for PARs 2001 and 2002 in this manner in no way chops up the project into "bite-sized pieces" to avoid CEQA or obscure the effects of the project. To the contrary, the Draft SEA for PARs 2001 and 2002 identifies the previous CEQA analyses conducted, which already identified and analyzed significant adverse impacts, so as to not

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repeat or duplicate the information previously provided. The Draft SEA instead focuses on the changes proposed in PARs 2001 and 2002, which are administrative in nature and contain procedures for the transition of NOx RECLAIM facilities to a command-and-control regulatory structure where BARCT analyses will be conducted upon landing rules being amended or adopted, and do not themselves have significant environmental impacts.

Response 2-7:

As explained in Response 2-6, the March 2017 Final Program EIR for the 2016 AQMP evaluated and identified the impacts from the installation and operation of additional control equipment, which would be the same type of equipment and impacts that would occur under the RECLAIM Transition. Furthermore, the December 2015 Final Program EA for NOx RECLAIM also evaluated and identified the impacts from the installation and operation of additional control equipment to comply with BARCT, which is equivalent to command-and-control requirements. Thus, the environmental impacts analysis of complying with BARCT would be the same whether NOx RECLAIM continued in its present form or if NOx RECLAIM facilities transition to a command-and-control regulatory structure. Thus, even though the RECLAIM transition language was added to the 2016 AQMP, no changes were required to the March 2017 Final Program EIR since the impacts associated with implementing BARCT were already evaluated.

Response 2-8:

See Responses 2-6 and 2-7.

Response 2-9:

See Responses 2-6 and 2-7.

Response 2-10:

The Draft SEA for PARs 2001 and 2002 is unique in that there are multiple certified CEQA documents that apply to the project (e.g., the December 2015 Final Program EA and the October 2016 Addendum to the Final Program EA which were certified for the December 2015 and October 2016 amendments, respectively, to NOx RECLAIM; and the March 2017 Final Program EIR which was certified for the adoption of the 2016 AQMP). Concurrent to the rule development process for PARs 2001 and 2002, SCAQMD staff is also in the process of conducting a BARCT analysis and separate rule development and CEQA analysis for PAR 1146 series with PR 1100, and PAR 1135. Implementation of PARs 2001 and 2002 will mean that the environmental effects from affected facilities complying with PAR 1135, and PAR 1146 series with PR 1100, will occur according to the timing and analyses contained in their CEQA documents, upon their certification. The Final SEA for PARs 2001 and 2002 incorporates by reference the Draft SEA for PAR 1146 series with PR 1100 and the Draft Mitigated SEA for PAR 1135 per CEQA Guidelines Section 15150, since the environmental effects from implementing PAR 1146 series with PR 1100, and PAR 1135 would not be speculative for evaluation per CEQA Guidelines Section 15145. However, incorporating these CEQA documents by reference is not the same as tiering per CEQA Guidelines Section 15152 and thus, the Final SEA for PARs 2001 and 2002 is not tiering off of the CEQA documents for PAR 1146 series with PR 1100 and PAR 1135 since they have not yet been certified as of this publication date.

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As explained in Response 2-6, other rules have been identified for future rule development efforts, but as of the date of this publication, the BARCT analysis for these other rules has not yet begun. For the remainder of the rules listed in Table 1-1, SCAQMD staff has not begun the rule development process and as such, BARCT assessments have not yet been conducted. While an agency must use its best efforts to find out and disclose all that it reasonably can, foreseeing the unforeseeable is not possible. [CEQA Guidelines Section 15144]. Thus, potential environmental impacts, beyond those identified in the March 2017 Final Program EIR for the 2016 AQMP, the December 2015 Final PEA and the October 2016 Addendum to the Final PEA for the December 2015 and October 2016 NO<sub>x</sub> RECLAIM amendments, respectively, associated with complying with future rules where the BARCT assessments have not been completed, are not reasonably foreseeable at this time. Further, it would be speculative to assume what new BARCT will be for each of the remaining rules identified in Table 1-1 prior to conducting a full BARCT review during the rule development process. Thus, the SCAQMD finds that the additional impacts that may occur from implementing future BARCT is also too speculative now for evaluation per CEQA Guidelines Section 15145. As such, the analysis of the potential environmental effects associated with implementing PARs 2001 and 2002 is limited to known impacts for BARCT as established in the December 2015 and October 2016 amendments to NO<sub>x</sub> RECLAIM and impacts for new BARCT where the BARCT assessments have been completed or are near completion, which to date is PAR 1146 series and PR 1100, as well as PAR 1135. See also Response 2-6.

Response 2-11:

Staff disagrees with the comment that a new category of sources has been created that would not have access to either RTCs or Rule 1304 offset exemptions to satisfy NSR requirements. As stated in the response to comment 2-5, the rule language has been clarified that the intent of restricting access to the internal bank would only apply to NO<sub>x</sub> offsets only, if a RECLAIM facility elects to opt-out. A facility that elects to remain in RECLAIM can offset NO<sub>x</sub> emission increases with RTCs, while obtaining offset exemptions for other pollutants, if eligible under Rule 1304 requirements. A facility that elects to exit RECLAIM would temporarily not be allowed access to the internal bank for NO<sub>x</sub> offsets. There are some RECLAIM facilities that have expressed interest in exiting RECLAIM despite the fact that the NSR issues have not been resolved. To the extent that facilities choose to exit, they are voluntarily doing so and are not being forcibly deprived of access to RECLAIM.

Response 2-12:

Staff is committed to addressing all issues pertaining to NSR requirements for former RECLAIM facilities. It has been discussed at several of the RECLAIM working group meetings that there are inherent differences in how emission increases are calculated for both RECLAIM and non-RECLAIM facilities. This is one of many NSR aspects that will be evaluated during the Regulation XIII rulemaking.

*Appendix C – Comment Letters Received on the Draft SEA and Responses to Comments***Supplement to Response 2-3:  
SCAQMD's Response Letter to BizFed on April 25, 2018**

Office of the Executive Officer  
Wayne Nastri  
909.396.2100, fax 909.396.3340

April 25, 2018

Hilary Norton, et. al  
Biz Fed Chair  
Los Angeles County Business Federation  
6055 E. Washington Blvd., #260  
Commerce, CA 90040

Re: CEQA Analysis and Socioeconomic Analysis for RECLAIM Rulemaking

Dear Ms. Norton,

Thank you for your comment letter and participation during the rulemaking effort to transition facilities in the Regional Clean Air Incentives Market (RECLAIM or Regulation XX) to source-specific command and control rules pursuant to the 2016 Air Quality Management Plan (AQMP) approved by the South Coast Air Quality Management District (SCAQMD) Governing Board as control measure CMB-05 in the 2016 AQMP.

CMB-05 described equipment from all facilities in RECLAIM, including fluid catalytic cracking units, boilers, heaters, and furnaces, among others. The control measure identified a series of approaches that could be taken to ensure equivalency with command and control regulations implementing BARCT, with the expectation that there would be a 5 tpd NOx emission reduction commitment as soon as feasible, but no later than 2025.

The potential environmental impacts associated with the 2016 AQMP, including CMB-05, were analyzed in Program Environmental Impact Report (PEIR), certified in March, 2017. The 2016 AQMP PEIR determined that the overall implementation of CMB-05 has the potential to generate adverse environmental impacts to seven topic areas – air quality, energy, hazards and hazardous materials, hydrology and water quality, noise, solid and hazardous waste, and transportation. More specifically, the PEIR evaluated the impacts from installation and operation of additional control equipment and SCR or SNCR equipment potentially resulting in construction emissions, increased electricity demand, hazards from additional ammonia transport and use, increase in water use and wastewater discharge, changes in noise volume, generation of solid waste from construction and disposal of old equipment and catalysts replacements, as well as changes in traffic patterns and

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*Appendix C – Comment Letters Received on the Draft SEA and Responses to Comments*

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Hilary Norton

April 25, 2018

volume. In other words, the environmental impacts of the entire RECLAIM Transition project, as referenced by the commenter, were analyzed in the 2016 AQMP and the associated PEIR, which was a program level analysis. The commentator has not identified any additional impact areas, mitigation, or project alternatives from the RECLAIM Transition that were excluded from analysis in the 2016 AQMP PEIR. In any event, the time to challenge the 2016 AQMP PEIR has passed. (Pub. Res. Code §§ 21167, 21167.2.)

Since the SCAQMD has already prepared a program-level CEQA analysis for the 2016 AQMP, including the RECLAIM Transition, no additional program-level analysis is required and further analysis will be tiered off the 2016 AQMP PEIR. (CEQA Guidelines § 15168; *Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners* (1993) 18 Cal.App.4th 729, 740-41.) The SCAQMD has and will continue to evaluate each individual RECLAIM Transition rule that is developed pursuant to the 2016 AQMP, to determine if any additional CEQA review is required. (CEQA Guidelines § 15168.) Additional analysis could include the preparation of a project-level EIR or Subsequent EIR to the 2016 AQMP PEIR. (CEQA Guidelines §§ 15161, 15162.) Streamlined environmental review pursuant to a Program EIR is expressly allowed in CEQA and is not considered piecemealing. (CEQA Guidelines §§ 15165, 15168.) Furthermore, any such review would include consideration of potential cumulative impacts with other RECLAIM Transition rules, as well as other activities. (CEQA Guidelines § 15355.)

Similarly, the Final Socioeconomic Report for the 2016 AQMP fully analyzed the socioeconomic impacts for the 2016 AQMP, including the entire RECLAIM Transition project. The commenter notes that a single 2016 AQMP policy directive controls the entire RECLAIM transition project. That policy directive, CMB-05, was presented in the socioeconomic report where the potential cost of reducing 5 tpd NOx emissions were estimated and the associated regional economic impacts projected. Specifically, the costs presented were scaled from a thorough BARCT assessment conducted as part of the 2015 NOx RECLAIM Amendments, and the analysis conservatively assumed that the estimated cost per ton of NOx emission reduction would be 50 percent higher than the cost-per-ton estimate of installing all BARCT control equipment identified in the 2015 NOx RECLAIM Amendments. The analysis comports with applicable Governing Board resolutions and statutory requirements.

If you have any questions or would like to discuss these issues, please contact me at 909-396-3131, [wnastri@aqmd.gov](mailto:wnastri@aqmd.gov), or Dr. Philip Fine, Deputy Executive Officer, Planning, Rule Development and Area Sources, at 909-396-2239, [pfine@aqmd.gov](mailto:pfine@aqmd.gov).

Sincerely,



Wayne Nastri  
Executive Officer

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033950-0005

November 1, 2018

**VIA E-MAIL** (see attached distribution)

Governing Board  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765

Re: Proposed Amended Rules 1146, 1146.1 and 1146.2

Dear SCAQMD Governing Board Member:

We are submitting these comments on behalf of the Western States Petroleum Association (“WSPA”) regarding proposed amendments to Rules 1146, 1146.1 and 1146.2 (“PAR 1146 Series”). WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in five western states, including California. WSPA has been an active participant in air quality planning issues for over 30 years. WSPA-member companies operate petroleum refineries and other facilities in the South Coast Air Basin that will be impacted by the transition out of the RECLAIM program.

Equipment and WSPA member’s facilities will be subject primarily to Proposed Rule 1109.1 for Refinery Equipment. However, the PAR 1146 Series raise a number of issues that are relevant to other “landing rules,” including Proposed Rule 1109.1. Some of these are broader policy issues that cut across the entire RECLAIM transition process, and some are more specific to the types of equipment covered by the PAR 1146 Series and Proposed Rule 1109.1. Many of these issues have been raised with staff, and, in some cases, with Governing Board members, through written and verbal comments at working group meetings, public workshops, public hearings, committee meetings and individual company or coalition meetings. We will be raising these issues, and others, with greater specificity in the context of future rulemaking that more directly affects our member companies, including Proposed Rule 1109.1, but we want to take this opportunity to ensure that you are aware of our concerns early in the transition rulemaking process.

Section 1 of this letter provides brief summaries of each of the broader RECLAIM transition issues about which we have concerns. Attached to this letter are more detailed comment letters previously submitted to the SCAQMD on these issues. Section 2 of this letter identifies more specific comments on PAR 1146 Series that may have implications for Proposed Rule 1109.1.

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13-1

SCAQMD Governing Board Members  
November 1, 2018  
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### **Section 1 – Broader RECLAIM Transition Issues**

#### ***Mandating Equipment Replacement Exceeds The SCAQMD's Authority***

SCAQMD staff has taken the position that a best available retrofit control technology (“BARCT”) standard may require total replacement of the emitting piece of equipment. Mandating replacement projects exceeds the authority of the SCAQMD to adopt BARCT standards for *existing* sources, as set forth in the California Health & Safety Code, and, therefore, runs afoul of the well-established legal principle that a regulatory agency must act within the scope of the authority delegated to it by the legislature. This issue is addressed in more detail in the following attachments:

- Attachment 1: July 3, 2018 comments from WSPA
- Attachment 2: August 15, 2018 comments from Latham & Watkins LLP on behalf of WSPA
- Attachment 3: November 1, 2018 comments from Latham & Watkins LLP on behalf of WSPA and RFG

#### ***New Source Review Issues Must Be Addressed Comprehensively And Expeditiously***

Although SCAQMD staff has indicated that it is communicating with U.S. Environmental Protection Agency (“USEPA”) staff regarding the nature of the new source review (“NSR”) program that will apply to RECLAIM facilities once they exit the program, we are not aware of the specifics of those communications, and we have no reason to believe that material progress is being made to resolve this issue. Addressing fundamental programmatic issues, such as NSR, early in the transition process will result in a more orderly and efficient transition. This issue is addressed in more detail in the following attachments:

- Attachment 4: May 1, 2018 comments from WSPA
- Attachment 5: September 7, 2018 comments from Latham & Watkins LLP on behalf of WSPA

#### ***The California Environmental Quality Act Analysis For The Transition Project Is Being Piecemealed***

It is a fundamental principle of California Environmental Quality Act (“CEQA”) review that all environmental impacts for the whole of the project be analyzed together. In this case, the “project” is the RECLAIM transition as a whole, as required by Control Measure CMB-05 in the 2016 AQMP. Yet, staff is conducting the CEQA review through a series of Supplemental Environmental Assessments (“SEA”) that analyze only the impacts associated with the particular landing rule under consideration. Staff argues that this approach is acceptable because each SEA “tiers off” the March 2017 Final Program Environmental Impact Report for the 2016 AQMP and several other earlier certified CEQA documents, which, according to staff, analyzed the transition as a whole. However, the March 2017 Final Program EIR for the 2016 AQMP, which was completed in January 2018, did not analyze the transition of the RECLAIM program because the transition was not part of Control Measure CMB-05 as proposed at that time.

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Therefore, tiering off of the earlier CEQA documents to support rule amendments that seek to implement the transition is not possible because there is no comprehensive analysis of the transition in the earlier documents. In the absence of a program level CEQA analysis that includes the whole of the RECLAIM transition project, staff's segmented analysis of each proposed rulemaking action constitutes classic "piecemealing" in violation of CEQA. This issue is addressed in more detail in the following attachments:

- Attachment 4: May 1, 2018 comments from WSPA
- Attachment 5: September 7, 2018 comments from Latham & Watkins LLP on behalf of WSPA

13-2  
(cont'd)

***Incremental Socioeconomic Assessment***

By analyzing the socioeconomic impacts associated with the transition in an incremental fashion in the context of each rulemaking, as opposed to conducting a comprehensive analysis of the entire transition, staff is either underestimating the cumulative socioeconomic impacts or failing to identify them at all. An illustration of this problem can be found in staff's analysis of amendments to Rules 2001 and 2002 approved in January and October of 2018. In the January amendments, staff did not even address the impact that the removal of 38 facilities from the RECLAIM program, all of which would be eligible to take advantage of offset exemptions in Rule 1304, might have on the internal offset bank that supports those exemptions. In contrast, the Staff Report supporting the October 2018 amendments to the same rules expressed serious concerns about the potential impacts on the internal bank. Based on these concerns, staff proposed and the Governing Board adopted language prohibiting former RECLAIM facilities from utilizing offset exemptions that rely upon the internal bank. Either staff erred in January by failing to sufficiently analyze potential impacts on the internal bank and the credit market in general, or it overstated the potential impacts associated with the October amendments. In either case, this inconsistency illustrates the problem with undertaking analysis of the impacts associated with the RECLAIM transition in an incremental fashion. This issue is addressed in more detail in the following attachments:

13-3

- Attachment 4: May 1, 2018 comments from WSPA
- Attachment 5: September 7, 2018 comments from Latham & Watkins LLP on behalf of WSPA

***Inappropriate Cost-Effectiveness Methodology***

WSPA objects to certain aspects of the cost-effectiveness methodology that SCAQMD staff is using to determine BARCT requirements for the landing rules currently under development. First, staff typically assumes a useful life for equipment of 25 years even though rulemaking requires replacement of technology much sooner. Use of a 25-year assumption makes the control equipment appear more cost-effective by diluting the significant capital costs of required projects over a much longer time period than is likely to occur. Second, staff utilizes the discounted cash flow ("DCF") method instead of the levelized cash flow ("LCF") method as used by several other air districts. The LCF method is a better representation of cost-effectiveness than the DCF

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method. Finally, staff utilizes a \$50,000 per ton cost-effectiveness threshold for determining BARCT, which is much higher than that applied by other air quality agencies, and, in some cases, staff has concluded that controls with a cost-effectiveness above \$50,000 per ton constitute BARCT. This issue is addressed in more detail in the following attachment:

- Attachment 1: July 3, 2018 comments from WSPA

13-4  
(Cont'd)

***Staff Is Not Adequately Distinguishing Between Different Classes Of Sources In The Same Category***

An equipment category subject to a BARCT landing rule may consist of multiple classes defined by different design criteria or operational factors. Examples might include throughput ratings, duty cycles, or usage level (e.g., low v. high use). Such classifications within a category are necessary to establish what is technologically feasible and cost-effective as required in the determination of BARCT. Staff must exercise caution when referencing or applying a BARCT determination for one class to another class in the same category. This issue is addressed in more detail in the following attachments:

13-5

- Attachment 1: July 3, 2018 comments from WSPA
- Attachment 6: October 11, 2017 comments from WSPA

**Section 2 – Specific Comments Related To Proposed Amendments To 1146 Series**

***Staff's Preliminary NOx BARCT Recommendations For ≥75 MMBtu/hr***

WSPA agrees with staff's preliminary recommendations for NOx BARCT at a 5 ppm emission limit for boilers, steam generators and process heaters greater than or equal to 75 MMBtu/hr (Rule 1146 Group I) burning natural gas. Original equipment manufacturers ("OEMs") agree that this endpoint is a technically feasible emission limit using Selective Catalytic Reduction ("SCR") on a retrofit basis. The limit corresponds with manufacturer guarantees and was previously echoed by Norton Engineering Consultants, Inc. in their SCAQMD NOx RECLAIM – BARCT Feasibility and Analysis Review, which stated: "With the exception of Gas Turbine installations (which have an equivalent emission level of 6 ppmv @ 3% O2) most low emission SCRs in service today, being built today and even those being designed today carry manufacturer's guarantees to meet a NOx limit of 5 ppmv @ 3% O2." (NEC letter to SCAQMD (Dr. Fine), Comments on Preliminary Draft Staff Report Proposed Amendments to Regulation XX Regional Clean Air Incentives Market (RECLAIM) NOx RECLAIM – SCRs for Fired Heaters & Boilers, Document No. 14-045-8, 4 Sept 2018).

13-6

***Group II and Group III Fire-Tube Boilers***

Staff have not demonstrated that the preliminary recommendation of a 7 ppm limit is technical feasible for all Group II and Group III fire-tube boiler retrofits using Ultra Low NOx Burners (ULNB). As stated in the SCAQMD Preliminary Draft Staff Report issued September, 2018 ("Staff Report"), no examples of units fired with natural gas with a permit limit of 7 ppm or below utilizing ULNB retrofits were identified by the SCAQMD using the EPA, CARB, BAAQMD, SMAQMD, or VCAPCD Clearinghouses. Only one new (i.e., not a retrofit) natural gas fired unit

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utilizing only ULNB as control was identified within SCAQMD with a permit limit of 7 ppm. Furthermore, the Staff Report goes on to state that vendor discussions indicated that while retrofits on existing units could “potentially” meet 7 ppm or less, the report notes a number of potential caveats to that conclusion. These included furnace size, correct back and steam pressure, and additional required controls such as variable frequency drive and oxygen trim. Based on the Staff Report, it is unclear how the limitations listed by staff were taken into consideration in its analysis of existing fire-tube boilers in the SCAQMD. For example, if a fire tube boiler does not meet the size requirement for retrofitting to 7 ppm, replacement of basic equipment or retrofit with SCR will be required in order to meet the proposed rule limit. SCAQMD also purportedly bases the preliminary recommendation of 7 ppm on source test results. Those source tests reportedly suggested that only two of 73 retrofit Group III units (~3%) and only two of 44 retrofit Group II units (~5%) tested were found to be greater than 30% below the existing rule limit of 9 ppm. The Staff Report does not state whether these units are retrofit with ULNB.

13-7  
 (Cont'd)

***Cost-Effectiveness Analysis***

The cost-effectiveness determination in the Staff Report is based on an analysis using the average cost of equipment and installation for a range of sizes obtained from 5 vendors. This creates two issues:

- The Staff Report notes that the data include outliers that are factored into the average cost. These outliers may skew the cost-effectiveness determination. Therefore, the staff should provide all cost data from vendors so that stakeholders can understand how the outliers potentially impact cost-effectiveness.
- In addition, control costs vary significantly based on the size of the unit. Therefore, a single value average control cost does not adequately convey the range of control cost outcomes required for emission reductions. The staff’s cost-effectiveness results (Staff Report, Table 4, Cost Effectiveness Analysis) should include a range or other distributional analysis/analyses so that Governing Board members and other stakeholders have a full understanding of the costs associated with the staff proposal.

13-8

**Conclusion**

Thank you for considering these comments. We look forward to continuing to work with you on these rulemakings which are critically important to stakeholders as well as the regional economy. If you have any questions, please contact me at (714) 755-8105 or by email at

SCAQMD Governing Board Members  
November 1, 2018  
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[michael.carroll@lw.com](mailto:michael.carroll@lw.com) or Bridget McCann of WSPA at (310) 808-2146 or by email at [bmccann@wspa.org](mailto:bmccann@wspa.org).

Best regards,



Michael J. Carroll  
Of LATHAM & WATKINS LLP

Attachments

cc: Clerk of the Boards, SCAQMD  
Wayne Nastri, SCAQMD  
Philip Fine, SCAQMD  
Barbara Baird, SCAQMD  
Bridget McCann, WSPA

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**Response to Comment 13-1:**

This comment introduces the party represented by the letter; no response to this the comment is necessary. SCAQMD staff appreciates your comments and participation throughout the rulemaking for the transition of the RECLAIM program to a command-and-control regulatory structure.

**Response to Comment 13-2:**

Refer to response to Comment Letter #12. Response to May 1, 2018 Letter from WSPA can be found in the Final SEA of this board package.

**Response to Comment 13-3:**

Refer to response 12-3

**Response to Comment 13-4:**

Refer to response 12-6

**Response to Comment 13-5:**

PAR 1146, 1146.1 and 1146.2 takes into account of different classes of equipment such as, but not limited to, heat input ratings, fuels, and usage levels. Commenter attached comment letters dated July 3, 2018 and October 11, 2017 from WSPA are not applicable to PAR 1146 series.

**Response to Comment 13-6:**

Staff's primary considerations for determining best available retrofit technology (BARCT) is applicability, feasibility and cost-effectiveness based off of the impacted universe of facilities. While the staff recommendation for boilers, steam generators and process heaters subject to PAR 1146 rated to >75 MMBtu/hr is at a 5 ppm NOx emission limit, it is important to clarify that units rated to >75 MMBtu/hr subject to other industry specific rules will be subject to separate BARCT assessments. Staff determinations for units subject to PAR 1146 does not determine BARCT limits for other rules.

**Response to Comment 13-7:**

The goal of staff's assessment of source test results is to determine the technological feasibility of a 7 ppm BARCT. The District's current limit is at 9 ppm, so majority of the units are not required to meet 7 ppm. From Table 2 of this staff report, two units in Group II and two units in Group III demonstrated the ability to meet >30% below permitted limit of 9 ppm from burner retrofits demonstrating the technical feasibility to meet 7 ppm. Clearinghouse databases are only as effective as the frequency of updates. They are utilized as possible sources of technology implementation, but do not necessarily reflect the most recent information. Limitations noted in this staff report are presented by equipment vendors and serve as precautionary insight in to possible challenges in certain case by case scenarios. To obtain examples of real world applications, SCAQMD staff reached out to staff of San Joaquin Valley Air Pollution Control District (SJVAPCD) which adopted Rule 4320 on October 16, 2008 implementing 7 ppm NOx emission limit for all natural gas fired units rated to >20 MMBtu/hr. From discussions with SJVAPCD staff, most of the units located in SJVAPCD are complying with the 7 ppm NOx limit. SCAQMD Staff has reviewed source test results from 708 units located SJVAPCD for units rated between 5 to 300 MMBtu/hr that demonstrate compliance with 7 ppm with ultra-low NOx burner only. In total over 740 source test results were reviewed to support the feasibility of a 7 ppm BARCT.

**Response to Comment 13-8:**

Cost data from vendors is presented in Figures 4 through 9 in this staff report. Each data point is the average vendor cost with outliers for a natural gas unit of a given size. Utilizing an average cost from all vendors for the cost-effectiveness analysis is a more accurate representation of the

potential impact on affected sources, since the capital cost that all stakeholders will actually have depends on the vendor selected. Since not all stakeholders will elect to contract with the vendor with the highest costs, the cost-effectiveness analysis should be based on the average cost of all vendors, which is a better indication of the actual impacts on stakeholders. Nonetheless, the range of capital costs based on the vendor estimates has been provided in the cost-effectiveness analysis presented in Chapter 2 of this staff report.

Staff agrees that control cost vary according to the size of the unit. Therefore, the staff report has been updated with a range of the capital cost and present worth value for each size category. The emission reductions for the cost-effectiveness analysis was based on the actual fuel usage for each individual unit in RECLAIM. Due to the limit number of units in certain group categories, cost-effectiveness calculated based on individual unit sizes would not have statistical significance. Variations in unit sizes are accounted for in the established size categories of Rule 1146 Group I (+75 MMBtu/hr), Group II (20 – 75 MMBtu/hr), Group III (5 – 20 MMBtu/hr), and Rule 1146.1 (2 – 5 MMBtu/hr). Since staff has based the cost-effectiveness analysis according to these size groupings, differences in unit sizes are accounted for in the cost-effectiveness results.

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<sup>i</sup> RECLAIM BARCT as stated in Rule 2002 Table 3

ATTACHMENT L

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**Final Socioeconomic Impact Assessment for**

**Proposed Amended Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters;  
Proposed Amended Rule 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters;  
Proposed Amended Rule 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and  
Proposed Rule 1100 - Implementation Schedule for NOx Facilities**

**December 2018**

**Deputy Executive Officer**

Planning, Rule Development, and Area Sources  
Philip M. Fine, Ph.D.

**Assistant Deputy Executive Officer**

Planning, Rule Development, and Area Sources  
Sarah Rees, Ph.D.

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**HILDA L. SOLIS**  
Supervisor, First District  
County of Los Angeles

**EXECUTIVE OFFICER:**

**WAYNE NASTRI**

## EXECUTIVE SUMMARY

A socioeconomic analysis was conducted to assess the potential impacts of Proposed Amended Rules (PAR) 1146, 1146.1, and 1146.2 (collectively referred to herein as the PAR 1146 series), and Proposed Rule (PR) 1100 on the four-county region of Los Angeles, Orange, Riverside, and San Bernardino. A summary of the analysis and findings is presented below.

<p><b>Elements of Proposed Amendments</b></p>	<p>SCAQMD staff has begun the process of transitioning equipment at NOx Regional Clean Air Incentives Market (RECLAIM) facilities from a facility permit structure to an equipment-based command-and-control regulatory structure per SCAQMD Regulation XI – Source Specific Standards. PAR 1146 series will be amended to transition of equipment from the NOx RECLAIM program to a command-and-control regulatory structure while achieving Best Available Retrofit Control Technology (BARCT). PAR 1146 series would include proposed amendments to Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; and Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters. In addition, SCAQMD staff has developed PR 1100, an administrative rule which establishes the compliance schedule for facilities exiting the RECLAIM program.</p>
<p><b>Affected Facilities and Industries</b></p>	<p>Among the 259 facilities currently in the NOx RECLAIM program, approximately 103 RECLAIM facilities with at least one boiler or heater (a total of 291 permitted units) will be affected by PAR 1146 series and PR 1100. The PAR 1146 series could potentially affect non-RECLAIM facilities which also need to meet the BARCT limits. However, non-RECLAIM facilities, with the exception of the equipment category of thermal fluid heaters, would not need to demonstrate compliance with the lower emission limit until the unit’s burner replacement or 15 years after rule amendment, whichever occurs earlier.</p> <p>Of these 103 RECLAIM facilities, 65 are located in Los Angeles County, 20 in Orange County, five in Riverside, and the remaining 13 facilities are in San Bernardino County. The PAR 1146 series would affect a wide variety of operations in many sectors of economy such as manufacturing and non-manufacturing sectors.</p> <p>Among the 103 affected RECLAIM facilities, the sectors affected the most are paper manufacturing (NAICS 322) with approximately 10%, pipeline transportation (NAICS 486) with approximately 9%, food manufacturing (NAICS 311) with approximately 8%, chemical manufacturing (NAICS 325) with approximately 8%, transportation equipment manufacturing (NAICS 336) with approximately 8%, utilities (NAICS 22) with approximately 7%, and textile mills manufacturing (NAICS 313), fabricated metals manufacturing (NAICS 332), and petroleum and coal product manufacturing (NAICS 324),</p>

	<p>and oil and gas extraction each with approximately 6% of the total affected facilities, respectively. The remaining 28% of the affected facilities are spread among a large number of sectors in the economy.</p>
<p><b>Assumptions of Analysis</b></p>	<p>The Final Socioeconomic Report for the 2005 RECLAIM amendment fully analyzed the socioeconomic impacts of installing selective catalytic reduction (SCR) units and ultra-low NOx burners (ULNB) (the same type of technologies) that are currently proposed under the PAR 1146 series. However, few of the RECLAIM facilities actually installed the control equipment, achieving required BARCT emission reductions in other ways. Thus, for many of these RECLAIM facilities, they will actually undertake these costs of installation for the first time. Costs of installation and the current socioeconomic conditions have changed since 2005. As a result, staff conservatively analyzed these socioeconomic impacts using, to the extent data is available, current costs under the current socioeconomic conditions.</p> <p>PAR 1146 and 1146.1 would require 65 out of 103 facilities to meet emission limits by the compliance date of 2022. Twenty out of these 103 facilities would be eligible to meet the lower emission limits upon burner replacement or 15 years from date of rule amendment, whichever occurs earlier. The remaining 18 facilities may be subject to a change in Monitoring and Reporting and Recording (MRR) requirements after they exit from the RECLAIM program.<sup>1</sup></p> <p>Under PAR 1146 (Group I), it was assumed that two facilities would need to meet the NOx limits by SCR retrofits for three units. The average capital cost of a SCR unit is estimated at \$1.4 million (including installation and permitting). Each SCR unit is assumed to last for 25 years. It was assumed that each SCR unit is due for a catalyst replacement every nine years. Under PAR 1146 (Group II), it is assumed that 30 facilities would need a SCR retrofit for 52 units with an average capital cost of \$565,000 (including installation and permitting).</p> <p>For PAR 1146 (Group III), it is assumed that 36 facilities would need to meet the NOx limits with ULNBs. The average initial costs of retrofitting boilers with ULNBs are estimated at \$134,000 (including installation and permitting) per unit for Group III. Each burner is assumed to last for 15 years. The incremental cost of monitoring is assumed to be negligible.</p> <p>PAR 1146 would require the affected owners of Group I, Group II, and Group III units to apply for permit modifications and pay a one-time permit application fee of \$8,951, \$8,368, and \$5,641, respectively. Additional annual recurring costs specific to SCRs in PAR 1146 include operating and maintenance (O&amp;M), catalyst replacement (every nine years), electricity, ammonia usage, monitoring,<sup>2</sup> and annual permit renewal fees.</p>

<sup>1</sup> Changes to MRR requirements only apply to non-Title V facilities.

<sup>2</sup> Monitoring costs for ammonia slip tests are required quarterly in the first year for units down to 20 mmbtu/hr, and then annually if quarterly tests are passing.

	<p>20 facilities in RECLAIM facilities may defer compliance in the PAR 1146 series, which specifies that compliance will be required 15 years after rule adoption or upon burner replacement (whichever occurs first). This category represents 74 units that are expected to undergo a burner replacement, and capital and permitting costs were included in this analysis. Staff made the conservative assumption that retrofits would take place in 2021.</p> <p>For non-RECLAIM facilities, the proposed 7 ppm NOx emission limits only apply to Rule 1146 Group II and Group III and Rule 1146.1 fire-tube boilers and the 12 ppm NOx emission limit applies to thermal fluid heaters. However, with the exception of those with thermal fluid heaters currently complying with a NOx emission limit greater than 20 ppm, non-RECLAIM facilities would not need to demonstrate compliance with the lower emission limit until the unit’s burner replacement or 15 years after rule amendment, whichever occurs earlier.</p> <p>As of November 2018, there are 824 non-RECLAIM facilities that operate around 1,075 non-RECLAIM units subject to PAR 1146 and 732 non-RECLAIM units subject to PAR 1146.1 in the District (a total of 1,807). The proposed 7 ppm NOx emissions (which represents BARCT requirement) for Group II, Group III, and Rule 1146.1 units only applies to fire-tube boilers.</p> <p>While the number of affected fire-tube boilers cannot be quantified due to the lack of distinction in equipment category designations, it is assumed that the fraction of fire-tube units in RECLAIM is the same as that in non-RECLAIM, which is approximately 40% of the universe. In total, there are 722 units that are estimated to be impacted by PAR 1146 and 1146.1 within the non-RECLAIM universe.</p> <p>The additional annual O&amp;M cost for each SCR for Group I and Group II unit is estimated at \$7,100 and \$2,800, respectively. The cost of electricity is assumed to be \$0.13 per Kw/hr,<sup>3</sup> and is estimated at \$51,800 and \$11,900 for Group I and Group II SCR units, respectively. The annual cost of catalyst replacement is assumed to be \$13,900 for Group I and \$3,200 for Group II. Based on a 50% annual capacity and 8,760 hours of annual operation, costs of ammonia usage for Group I and Group II units is estimated at \$23,100 and \$5,300, respectively. Monitoring costs for both Group I and Group II are estimated at \$3,400 annually, and permit renewal fees are estimated at \$1,830 for SCRs in both groups. The cost savings estimated from the use of FGR is estimated at \$14,700 for Group I SCRs, and \$3,000 for Group II SCRs.</p> <p>Under PAR 1146.1, it was assumed that 10 affected RECLAIM facilities with 19 units will need to meet the NOx limits by ULNBs to achieve the existing rule limits. The average capital and installation costs of retrofitting boilers with</p>
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<sup>3</sup> \$0.13 per kW/hr is rounded from \$0.1268 per kW-hr based on the U.S. Energy Information Administration Electric Power Monthly Reports. Data for the monthly price of electricity for industrial sector in California was used to calculate the annual average for the months of June 2017 – June 2018.

	<p>ULNBs is estimated at \$61,000 per unit. Each burner is assumed to last for 15 years.</p> <p>PAR 1146.1 would require the owners of the affected units to apply for permit modifications and pay a one-time permit application fee of \$3,567.</p> <p>Under PAR 1146.2, it was assumed that three facilities will need to need to meet the NOx limits by ULNBs. Due to the lack of information available on the universe of affected sources under PAR 1146.2, and to account for the potential cost impacts of those affected facilities with non-permitted units, staff has included additional ULNB costs for a total of 850 units (estimated based on the equipment data provided from facility responses of initial determination notifications as of April 2018) to account for the non-permitted units that could be impacted by PAR 1146.2.</p> <p>The average capital and installation cost of retrofitting a boiler with a ULNBs is estimated at \$32,100 (including installation) within 1146.2. Each burner is assumed to last for 15 years.</p> <p>PR 1100 is an administrative rule and does not impose additional costs to affected facilities, as such, no additional costs or socioeconomic impacts were assumed here.</p>
<p><b>Compliance Costs</b></p>	<p>The main requirements of the PAR 1146 series that have cost impacts for affected facilities would include one-time costs and annual recurring costs. The one-time costs would include capital and installation of SCRs, ULNBs, and one-time permit modifications. Annual recurring cost estimates apply to 1146 Group I and Group II SCRs for catalyst replacement, additional electricity, ammonia usage, monitoring (ammonia slip tests), and annual permit renewal. The use of SCR retrofits assumes cost savings based on a reduction in flue-gas recirculation (FGR) use.</p> <p>The average annual cost of the PAR 1146 series is estimated at \$5.6 million (low cost scenario) to \$6.8 million (high cost scenario) between 2020 and 2045, depending on the real interest rate assumed (1% to 4%). Annual costs of installing SCRs and ULNBs would result in approximately \$4.1 million (74%) to \$5.4 million (78%) of overall annual compliance costs. The majority of the cost (\$2.5 to \$3.0 million or 44% and 43% low and high cost estimate, respectively) is expected to be incurred due to PAR 1146 Group II. The average annual costs of compliance for PAR 1146.1 is estimated to be \$78,000 to \$94,000 and that of PAR 1146.2 is estimated to be \$2.0 to 2.5 million.</p> <p>The SCRs used in 1146 Group I and Group II have estimated annual recurring costs of \$1.5 million (27% and 23% of total annualized costs in low and high cost estimates, respectively), which includes savings from a reduction in FGR use. Annual average recurring costs for SCR equipment by category are shown below in 2018 dollars.</p>

	1146 Group I Annual Costs	1146 Group II Annual Costs
Electricity	\$51,800	\$11,900
Ammonia	\$23,100	\$5,300
Catalyst	\$13,900	\$3,200
O&M	\$7,000	\$2,800
Monitoring	\$3,300	\$3,300
Annual Permit Renewal	\$1,800	\$1,800
FGR Savings	\$14,700 (savings)	\$3,000 (savings)

The majority of the overall annual compliance costs are expected to be incurred by the beverage sector (13%), textile product mills (13%), pipeline transportation (11%), paper manufacturing (10%), and aerospace product and parts manufacturing (7%). The cost-effectiveness of the overall PAR 1146 series is estimated at \$26,500 per ton per ton for Discounted Cash Flow (DCF).

In total, there are 722 units that are estimated to be impacted by PAR 1146 and 1146.1 within the non-RECLAIM universe. The total annualized cost of compliance for these fire-tube units is estimated at \$862,000. Because there is inadequate data to identify the type, location, and the number of fire-tube units at these facilities, a breakdown of costs by industry type could not be determined, which is a key input for the regional macroeconomic model for a socioeconomic impacts analysis. Therefore, such an analysis could not be done for the non-RECLAIM universe for the PAR 1146 series.

Proposed Amendments	DCF (\$/ton)
Rule 1146-Group I	\$26,000
Rule 1146-Group II	\$41,000
Rule 1146-Group III	\$25,000
Rule 1146.1	\$33,000
Rule 1146.2	\$7,000
<b>Average</b>	<b>\$26,500</b>

**Jobs and Other Socioeconomic Impacts**

Based on the above assumptions, the compliance cost of the PAR 1146 series, and the application of the Regional Economic Models, Inc. (REMI) model, it is projected that 57 to 72 jobs will be forgone annually, on average, between 2020 and 2045. The projected jobs loss impacts represent about 0.0021% of the total employment in the four-county region.

The sectors of textile mills and textile product mills (NAICS 313, 314), retail trade (NAICS 44-45), and food services (NAICS 722) are projected to incur a portion of compliance costs and thus experience some jobs forgone. The reduction in disposable income would dampen the demand for goods and services in the local economy, thus resulting in a small number of jobs forgone projected in sectors such as construction (NAICS 23) and wholesale trade (NAICS 42). The remainder of the projected reduction in employment would be across all major sectors of the economy from secondary and induced impacts of the PAR 1146 series.

<p><b>Competitiveness</b></p>	<p>It is projected that the manufacturing sector, where most of the affected facilities belong, would experience a rise in its relative cost of production and its delivered price by 0.001% in 2035. While these changes are relatively small, it should be noted that the delivered price change is a change in the index of all prices in the manufacturing sector. Delivered prices that a facility may charge for specific goods or services may increase at a greater rate than this, allowing incurred cost to be passed through to downstream industries and end-users. The rest of the sectors would experience minor increases in the relative cost of production and relative delivered price with respect to their counterparts in the rest of the U.S.</p>
<p><b>Impacts of CEQA Alternatives</b></p>	<p>There are five CEQA alternatives associated with the PAR 1146 and 1146.1. Alternative A, the no project alternative, means that the current version of Rules 1146, 1146.1, and 1146.2 would remain in effect. Under Alternative B (less stringent), the compliance deadline for meeting the NOx emissions limits would be extended by one year. Under Alternative C (more stringent), the NOx emission limits would remain the same as the proposed project, but facilities would need to meet 100 percent compliance by January 1, 2021. Under Alternative D, the Group I units would need to meet 9 ppm or (0.011 lb/MMBtu) instead of 5 ppm (0.0062 lb/MMBtu) and as a result they are expected to meet the NOx limits by ULNBs instead of SCR. Alternative D would also require PAR 1146 Group II units to meet 9 ppm (or 0.011 lb/MMBtu) instead of the proposed 5 ppm for Group II units with a NOx limit greater than 12 ppm or 7 ppm (or 0.00085 lb/MMBtu) for fire-tube boilers currently meeting a NOx limit less than or equal to 12 ppm. PAR 1146 Group III and 1146.1 units would be required to meet 9 ppm (or 0.011 lb/MMBtu) instead of the proposed 7 ppm (or 0.00085 lb/MMBtu) for fire-tube boilers. The NOx emission limit for thermal fluid heaters would also remain at 30 ppm (or 0.037 lb/MMBtu) instead of 12 ppm (0.015 lb/MMBtu). With Alternative E, the provisions are the same as Alternative D for PAR 1146 Group I, II, III, 1146.1, and thermal fluid heaters, except for three units in PAR 1146 Group I, which would be required to meet 5 ppm using SCR retrofits.</p> <p>Average annual compliance costs for the CEQA alternatives range from \$4.1 to \$5.7 million between 2020 and 2045. The cost-effectiveness of the PAR 1146 and 1146.1 and CEQA Alternatives range from \$11,000 to \$26,500 per ton of NOx reductions. Average annual jobs forgone for the CEQA alternatives range from 39 to 63 between 2020 and 2045.</p>
<p><b>Potential NOx RTC Market Impacts</b></p>	<p>If PAR 1146, 1146.1, and 1146.2 are adopted, 22 additional facilities are expected to receive an initial determination notification because, according to staff’s evaluation, all of their permitted RECLAIM NOx source equipment will be subject to these rules once the proposed amendments are adopted. The 22 RECLAIM facilities will need to begin complying with the PAR 1146 series while in RECLAIM and through the transition out of RECLAIM. <u>Facilities that received initial determination notifications and meet the proposed criteria to exit, would not receive a final determination notification to exit RECLAIM until key elements such as NSR and permitting are resolved. However, these</u></p>

facilities may request to opt-out of RECLAIM before these key elements are resolved, upon meeting specific conditions specified in subdivision (g) of Rule 2001.

~~Staff has committed to delay issuing a final determination notification to any facilities to exit them from RECLAIM until New Source Review (NSR) issues are resolved.~~

These 22 affected facilities currently account for only about 0.6% of annual NO<sub>x</sub> emissions and 0.8% of NO<sub>x</sub> RECLAIM trading credit (RTC) holdings in the NO<sub>x</sub> RECLAIM universe. As such, staff concludes that these facilities' compliance with Rule 2002(f)(10) would have a very small impact, if any, on the demand and supply of NO<sub>x</sub> RTC market. Specifically, while the transition of the 22 facilities out of the NO<sub>x</sub> RECLAIM program could potentially assert upward pressure on the discrete-year NO<sub>x</sub> RTC prices, it is unlikely to result in large price fluctuations in the NO<sub>x</sub> RTC market, nor is the transition expected to significantly affect the remaining NO<sub>x</sub> RECLAIM facilities that are not yet ready to exit the market-based program.

## INTRODUCTION

As a result of control measure CMB-05 from the SCAQMD's 2016 Air Quality Management Plan (AQMP) and Assembly Bills (AB) 617 and 398, SCAQMD staff has been directed by the Governing Board to begin the process of transitioning equipment at NO<sub>x</sub> RECLAIM facilities from a facility permit structure to an equipment-based command-and-control regulatory structure per SCAQMD Regulation XI – Source Specific Standards.

The PAR 1146 series in combination with PR 1100 will transition affected units at NO<sub>x</sub> RECLAIM facilities to a command-and-control regulatory structure. The PAR 1146 series would: 1) expand the applicability to include units that were not previously required to comply with Rules 1146/1146.1 because they were in the NO<sub>x</sub> RECLAIM program; 2) require RECLAIM facilities to submit a permit application for each unit that does not currently meet the NO<sub>x</sub> concentration limits in Rules 1146/1146.1; 3) require the affected equipment to meet the applicable NO<sub>x</sub> concentration limit for all Rule 1146/1146.1 units for a minimum of 75 percent of the total heat input by January 1, 2021 and 100 percent of the total heat input by January 1, 2022; 4) require RECLAIM facilities replacing Rule 1146/1146.1 units to meet NO<sub>x</sub> limits by January 1, 2023; 5) require RECLAIM facilities with Rule 1146.2 units to meet the rule's NO<sub>x</sub> emission limits by December 31, 2023 if a more stringent BARCT limit as determined by a technology assessment is not applicable; 6) limit ammonia emissions on units with applicable air pollution control equipment and require quarterly source testing for the first 12 months of operation and annually thereafter when four consecutive quarterly source tests demonstrate compliance, or in lieu of source testing, an ammonia Continuous Emission Monitoring System (CEMS) under an approved SCAQMD; and 7) require certain units at non-RECLAIM facilities to meet new NO<sub>x</sub> emission limits according to the compliance schedules specified in Rules 1146 and 1146.1

In addition, SCAQMD staff has developed Proposed Rule (PR 1100), an administrative rule which establishes the compliance schedule for the PAR 1146 series facilities exiting the RECLAIM program. The compliance schedule for PAR 1146 and 1146.1 will be a two to three year period depending on the equipment size and number of affected units at each facility. Implementation of the proposed project is estimated to reduce NO<sub>x</sub> emissions by 0.27 ton per day by January 1, 2023.

## LEGISLATIVE MANDATES

The socioeconomic impact assessments at SCAQMD have evolved over time to reflect the benefits and costs of regulations. The legal mandates directly related to the assessment of the proposed rule include the SCAQMD Governing Board resolutions and various sections of the California Health & Safety Code (H&SC).

### SCAQMD Governing Board Resolutions

On March 17, 1989 the SCAQMD Governing Board adopted a resolution that calls for an economic analysis of regulatory impacts that includes the following elements:

- Affected industries

- Range of probable costs
- Cost effectiveness of control alternatives
- Public health benefits

### **Health & Safety Code Requirements**

The state legislature adopted legislation that reinforces and expands the Governing Board resolutions for socioeconomic impact assessments. H&SC Sections 40440.8(a) and (b), which became effective on January 1, 1991, require that a socioeconomic analysis be prepared for any proposed rule or rule amendment that "will significantly affect air quality or emissions limitations." Specifically, the scope of the analysis should include:

- Type of affected industries
- Impact on employment and the regional economy
- Range of probable costs, including those to industry
- Availability and cost effectiveness of alternatives to the rule
- Emission reduction potential
- Necessity of adopting, amending or repealing the rule in order to attain state and federal ambient air quality standards

H&SC Section 40728.5, which became effective on January 1, 1992, requires the SCAQMD Governing Board to actively consider the socioeconomic impacts of regulations and make a good faith effort to minimize adverse socioeconomic impacts. It also expands Socioeconomic Impacts Assessments to include small business impacts, specifically:

- Type of industries or business affected, including small businesses
- Range of probable costs, including costs to industry or business, including small business

Finally, H&SC Section 40920.6, which became effective on January 1, 1996, requires that incremental cost effectiveness be performed for a proposed rule or amendment that imposes Best Available Retrofit Control Technology or "all feasible measures" requirements relating to ozone, carbon monoxide (CO), oxides of sulfur (SO<sub>x</sub>), oxides of nitrogen (NO<sub>x</sub>), and their precursors. Incremental cost effectiveness is defined as the difference in costs divided by the difference in emission reductions between a control alternative and the next more stringent control alternative.

The necessity analysis and the analysis of control alternatives and their incremental cost-effectiveness are presented in the Staff Report prepared for the proposed amendments.

## **REGULATORY HISTORY**

Rule 1146, which was originally adopted in September 1988, established a 40 ppm NO<sub>x</sub> emission limit for units with an annual heat input greater than 90,000 therms. Since the original adoption, the rule has been amended four times. The January 1989 amendments lowered the NO<sub>x</sub> emission limit to 30 ppm for units with rated heat input greater or equal to 40 million Btu/hr. The costs associated with this amendment included the retrofitting cost of boilers and heaters with Selective

Catalytic Reduction (SCR) and Flue Gas Recirculation (FGR). The total annualized cost of this amendment was estimated at \$44,500 to \$445,400. The January 1989 amendment were estimated to reduce 0.5 ton of NO<sub>x</sub> per day with an average cost-effectiveness of \$19,377 per ton of NO<sub>x</sub> reduced.

The May 1994 amendments added a tune-up procedure for natural-draft combustion units. The procedure had no cost or emission reductions associated with it because it had already been commonly used by operators of natural-draft units. In June 2000, Rule 1146 was amended to exempt one facility that exceeded the 90,000 therm fuel usage threshold from the NO<sub>x</sub> emission limit provided certain conditions were met. The amendment provided relief to the subject facility.

The rule amendments in November 2000 lowered the NO<sub>x</sub> limit from 40 to 30 ppm for units with rated heat input less than 40 million Btu/hr and burning gaseous fuel only, added annual testing requirement, and required fuel flow meters for all units. The total annualized cost of the proposed amendments was estimated at \$790,900. The amendments resulted in a reduction of 91 tons of NO<sub>x</sub> emissions per year with a cost-effectiveness of \$7,000 per ton of NO<sub>x</sub> reduced.

The September 2008 amendments lowered NO<sub>x</sub> emission limits from boilers, steam generators, and process heaters. Specifically, the amendments lowered NO<sub>x</sub> limits from 30 to 25 ppm for any units fired on landfill gas and 15 ppm for any units fired on digester gas. For units burning gaseous fuel other than digester and landfill gases, the amendments required NO<sub>x</sub> limits of 5 ppm for Group I (75 million Btu/hr or greater) units and 9 ppm for the Group II (at least 20 but less than 75 million Btu/hr) and Group III (from 5 to less than 20 million Btu/hr except atmospheric units) units, respectively. Atmospheric units were required to meet a 12 ppm NO<sub>x</sub> limit. It was expected that the amendments to reduce 1.2 tons per day of NO<sub>x</sub> emissions by 2015 will be achieved with an overall cost-effectiveness of \$21,750 per ton of NO<sub>x</sub> reduced.

The PAR 1146 series will be amended to transition of equipment from the NO<sub>x</sub> RECLAIM program to a command-and-control regulatory structure while achieving BARCT. The Final Socioeconomic Report for the 2005 RECLAIM fully analyzed the socioeconomic impacts of installing SCRs and ULNBs; the same type of technologies which will be used to comply with the amendments currently proposed for the PAR 1146 series. However, few of the RECLAIM facilities actually installed the control equipment, achieving required BARCT emission reductions in other ways. Thus, for many of these RECLAIM facilities, they will actually undertake these costs of installation for the first time. Costs of installation have changed since 2005. As a result, staff will now analyze these economic impacts using, to the extent data is available, current costs under current socioeconomic conditions.

The Final Socioeconomic Report for the 2016 AQMP fully analyzed the socioeconomic impacts for the 2016 AQMP, including the entire RECLAIM Transition project. *CMB-05- Further NO<sub>x</sub> Reductions from RECLAIM Assessment*, was presented in the Final Socioeconomic Report where the potential cost of reducing five tons per day NO<sub>x</sub> emissions were estimated and the associated regional economic impacts projected. Specifically, the costs presented were scaled from a thorough BARCT assessment conducted as part of the 2015 NO<sub>x</sub> RECLAIM Amendments, and the analysis conservatively assumed that the estimated cost per ton of NO<sub>x</sub> emission reduction would be 50% higher (\$17,000 to \$28,000) than the cost-per-ton estimate of installing all BARCT

control equipment identified in the 2015 NO<sub>x</sub> RECLAIM Amendments. That analysis is consistent with applicable Governing Board resolutions and statutory requirements.

### **Proposed Amendments to Rule 1146, 1146.1, 1146.2, and Proposed Rule 1100**

The proposed amendments will affect Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; and Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters.

Rule 1146 applies to boilers, steam generators, and process heaters of equal to or greater than 5 million BTUs per hour of rated heat input capacity used in all industrial, institutional, and commercial operations and currently exempts boilers used by electric utilities to generate electricity (electricity generating facilities, or EGFs), boilers and process heaters with a rated heat input capacity greater than 40 million BTUs per hour that are used in petroleum refineries, sulfur reaction plant boilers, and units operated at RECLAIM facilities pertaining to NO<sub>x</sub> emissions only. The proposed amendments to Rule 1146 would exempt units that are, or will be, covered by a rule for an industry-specific category and subject to an applicable NO<sub>x</sub> emission limit. PAR 1146 will exempt any unit at a RECLAIM or former RECLAIM facility covered in an industry-specific category as defined in PR 1100. Currently, this includes energy generating boilers at electricity generating facilities (EGFs) and refinery boilers with applicable NO<sub>x</sub> limits specified in the corresponding rule. Additionally, PAR 1146 will exempt units at municipal sanitation service facilities when a sector specific REG XI rule specifying the applicable NO<sub>x</sub> emission limits for these units is adopted.

Rule 1146.1 applies to boilers, steam generators, and process heaters that are greater than 2 million BTUs per hour and less than 5 million BTUs per hour of rated heat input capacity used in any industrial, institutional or commercial operation. PAR 1146.1 will exempt any unit at a RECLAIM or former RECLAIM facility covered in an industry-specific category as defined in PR 1100 and units at municipal sanitation service facilities when a sector specific REG XI rule is adopted.

Rule 1146.2 applies to large water heaters and small boilers and process heaters with a rated heat input capacity up to and including 2,000,000 BTUs per hour. There are both manufacturer and end-user requirements contained in the rule. PAR 1146.2 will exempt units at any RECLAIM or former RECLAIM facility that are subject to a NO<sub>x</sub> emission limit in a different rule for an industry-specific category as defined in PR 1100 and units at municipal sanitation service facilities when a sector specific REG XI rule is adopted.

PR 1100 would establish the implementation schedule for Regulation XX NO<sub>x</sub> RECLAIM facilities that are transitioning to a command-and-control regulatory structure. PR 1100 would apply to units that would be subject to the emission requirements of PARs 1146 and 1146.1. Definitions for a Rule 1146 unit and a Rule 1146.1 unit are included in PR 1100 that make reference to the definition of boiler and process heater contained in both Rule 1146 and Rule 1146.1. In addition, a definition for Industry-Specific Category has been specified that would list the types of RECLAIM facilities that would not be subject to the requirements of PR 1100.

## AFFECTED INDUSTRIES

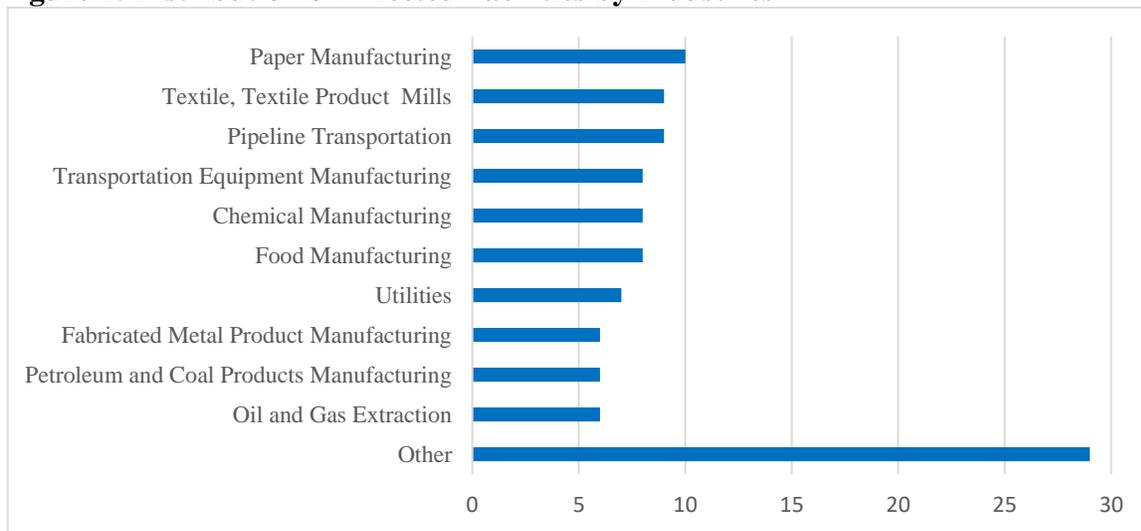
Among the 259 facilities currently in the NO<sub>x</sub> RECLAIM program, approximately 103 RECLAIM facilities with at least one boiler or heater (a total of 291 permitted units) will be affected by PAR 1146 series and PR 1100. Of these 103 affected facilities, 65 are located in Los Angeles County, 20 in Orange County, five in Riverside, and the remaining 13 facilities are in San Bernardino County.

PAR 1146 and 1146.1 would require 65 out of 103 facilities to meet the emission limits for 148 pieces equipment by the compliance date of 2022 unless equipment is replaced. Twenty out of these 103 facilities that comply with the applicable RECLAIM BARCT limit of 12 ppm would not need to demonstrate compliance with the compliance dates specified in Rule 1100 until the unit's burner replacement or 15 years after rule amendment, whichever occurs earlier. The remaining 18 facilities would be subject to Monitoring, Reporting, and Recording (MRR) requirements of the PAR 1146 series which imposes no additional costs. Figure 1 identifies the industry sectors, as classified by the NAICS, and the number of respective units subject to PAR 1146 series and PR 1100.

The PAR 1146 series could potentially affect non-RECLAIM facilities which also need to meet the BARCT limits. However, non-RECLAIM facilities, with the exception of the equipment category of thermal fluid heaters, would not need to demonstrate compliance with the lower emission limit until the unit's burner replacement or 15 years after rule amendment, whichever occurs earlier. As of November 2018, there are approximately 1,075 non-RECLAIM units subject to PAR 1146 and 732 non-RECLAIM units subject to PAR 1146.1 operating in the District. Staff assumes that approximately 40% of non-RECLAIM units consist of fire-tube boilers. Due to the uncertainty with the actual time of the burner replacement, the number of affected sources and the associated cost impacts cannot be determined at this time. For thermal fluid heaters, due to the lack of distinction in their permits that set them apart from other process heaters, the number of thermal fluid heaters cannot be quantified in the non-RECLAIM universe. However, thermal fluid heaters make up a very small portion of the RECLAIM facilities, and is an estimated 76 of the 1,807 total units in the RECLAIM universe, or about 4.2%.

Figure 1 and Table 1 present the industry classification and number of affected facilities by industry types. Among the 103 affected facilities, the sectors affected the most are paper manufacturing (NAICS 322) with approximately 10%, textile mills manufacturing (NAICS 313) with approximately 9%, pipeline transportation (NAICS 486) with approximately 9%, transportation equipment manufacturing (NAICS 336), chemical manufacturing (NAICS 325) with approximately 8%, food manufacturing (NAICS 311) with approximately 8%, utilities (NAICS 22) with approximately 7%, and petroleum and coal product manufacturing with approximately 6% of the total affected facilities, respectively. The remaining 26% of the affected facilities are spread among a large number of sectors in the economy.

**Figure 1: Distribution of Affected Facilities by Industries**



**Table 1: Potentially Affected Facilities by Industry**

Industry	NAICS	Number of Facilities
Accommodation	721	1
Real estate	531	1
Miscellaneous manufacturing	339	1
Nonmetallic mineral product manufacturing	327	1
Administrative and support services	561	1
Amusement, gambling, and recreation	713	1
Monetary authorities - central bank; Credit intermediation and related activities; Funds, trusts, & other financial vehicles	521-522, 525	1
Scenic and sightseeing transportation; Support activities for transportation	487-488	1
Professional, scientific, and technical services	54	1
Retail trade	44-45	2
Plastics and rubber product manufacturing	326	2
Beverage and tobacco product manufacturing	312	2
Personal and laundry services	812	3
Primary metal manufacturing	331	4
Computer and electronic product manufacturing	334	4
Oil and gas extraction	211	6
Petroleum and coal products manufacturing	324	6
Fabricated metal product manufacturing	332	6
Utilities	22	7
Food manufacturing	311	8
Chemical manufacturing	325	8
Other transportation equipment manufacturing	3364-3369	8
Pipeline transportation	486	9
Textile mills; Textile product mills	313-314	9
Paper manufacturing	322	10
<b>Total</b>		<b>103</b>

## Small Businesses

SCAQMD defines a “small business” in Rule 102, for purposes of fees, as one which employs 10 or fewer persons and which earns less than \$500,000 in gross annual receipts. SCAQMD also defines “small business” for the purpose of qualifying for access to services from SCAQMD’s Small Business Assistance Office as a business with an annual receipt of \$5 million or less, or with 100 or fewer employees. In addition to SCAQMD’s definition of a small business, the federal Clean Air Act Amendments (CAAA) of 1990 and the federal Small Business Administration (SBA) also provide definitions of a small business.

The California Health and Safety Code § 42323 classifies a business as a “small business stationary source” if it: (1) is owned or operated by a person who employs 100 or fewer individuals, (2) is a small business as defined under the federal Small Business Act (15 U.S.C. Sec. 631, et seq.), and (3) emits less than 10 tons per year of any single pollutant and less than 20 tons per year of all pollutants. The SBA definitions of small businesses vary by six-digit North American Industrial Classification System (NAICS) codes. In general terms, a small business must have no more than 500 employees for most manufacturing industries, and no more than \$7 million in average annual receipts for most nonmanufacturing industries.<sup>4</sup> A business with fewer than 500 employees is considered a small business by SBA.

Information on sales and employees for the 103 affected facilities were available in the 2018 Dun and Bradstreet Enterprise Database. Under SCAQMD’s stringent definition of small business, there are 18 small businesses affected by the PAR 1146 series. There are 69 small businesses under the small business definition for the purpose of qualifying for access to services from SCAQMD’s Small Business Assistance Office. Using the SBA definition of small business, 95 of the facilities are considered small businesses. Under the California Health and Safety Code § 42323 definition of small business, 40 of the facilities are classified as small businesses.

## COMPLIANCE COST

The main requirements of the PAR 1146 series that have cost impacts for affected facilities would include one-time costs and annual recurring costs. The one-time costs would include capital and installation of SCRs, ULNBs, and one-time permit modifications. Annual recurring cost estimates include annual operating and maintenance (O&M) costs of SCRs, catalysts replacement, additional electricity, and ammonia usage.

The average annual cost of the PAR 1146 series is estimated at \$5.6 to \$6.8 million between 2020 and 2045 across all groups in the PAR 1146 series. SCR capital and recurring costs are estimated at \$2.7 to \$3.2 million (annualized capital and installation costs plus recurring costs of O&M, electricity, ammonia and catalyst, and monitoring and annual permit renewal) across facilities in PAR 1146 Group I and II. ULNB installations have an estimated annual compliance cost of \$2.7 to \$3.5 million. PAR 1146 Group II incurs the majority of the compliance cost with \$2.4 to \$2.9 million or 43% in both low and high cost estimates. The average annual compliance costs of PAR

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<sup>4</sup> The latest SBA definition of small businesses by industry can be found at <http://www.sba.gov/content/table-small-business-size-standards>.

1146.1 is estimated at \$79,000 to \$95,000 and that of PAR 1146.2 is estimated at \$2.0 to \$2.6 million.

The majority of the overall annual compliance costs is expected to be incurred by the food and beverage sector (13%), textile product mills (12%), pipeline transportation by (11%), paper manufacturing (10%), utility sector (8%), air craft and transportation manufacturing (7%), and oil and gas extraction (6%).

Staff has used the following sources to estimate costs of capital, installation, operating and maintenance of SCRs and ULNBs:

- 1) Final Staff Report for Proposed Amended Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, September 5, 2008,
- 2) Final Staff Report for Proposed Amended Rule 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, September 5, 2008
- 3) Final Socioeconomic Report for Proposed Amended Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, September 5, 2008,
- 4) Final Staff Report to Proposed Amended Rule 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters May 5, 2006.
- 5) Vendors cost estimates<sup>5</sup>

## PAR 1146

Under PAR 1146, it was assumed that 32 facilities would meet the NO<sub>x</sub> limits by SCR retrofits for 55 units.<sup>6</sup> The average capital cost of a SCR unit is estimated at \$1.4 million and \$565,000 (including installation and permitting) for SCRs in Group I and Group II, respectively. Each SCR unit is assumed to last for 25 years. One-time permitting costs are estimated at \$8,951 and \$8,368 for Group I and Group II SCRs, respectively. Additional annual costs of PAR 1146 would include incremental operating and maintenance, catalyst replacement (every nine years), incremental electricity (at \$0.13 per Kw/hr), and ammonia usage for the applicable SCR units based on 50% annual capacity and 8,760 hours of annual operation. Monitoring costs in the first year require quarterly ammonia testing for units down to 20 mmbtu/hr, and then annually after the first year. Annual permit renewal costs are estimated at \$1,826 for SCRs in both Group I and Group II. SCR units have an estimated recurring cost of \$86,000 and \$25,000 (including savings from FGR) from Group I and Group II, respectively.

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<sup>5</sup> The following nine vendors and manufacturers (in alphabetical order) were contacted requesting cost information for ultra-low NO<sub>x</sub> burners and SCR systems: Alzeta, California Boiler, Heat Transfer Solutions, McGill AirClean, McKenna Boiler, Nationwide Boiler, Parker Boiler, RF MacDonald, Superior Boiler. The cost information used in this analysis was based on the cost estimates provided by five out of the nine vendors with responses.

<sup>6</sup> For the cost and job impacts analysis herein, staff used the initial conservative assumption of 55 SCR units by 32 facilities.

Under PAR 1146, it was also assumed that 67 units among 36 facilities would meet the NOx limits by ULNBs for Group III natural gas units. According to a recent vendors' cost estimate, the average capital and installation costs of retrofitting boilers with ULNBs are estimated at \$134,000 per unit (including installation and initial permitting).<sup>7</sup> Each burner is assumed to last for 15 years. PAR 1146 would require the affected owners of Group III units to apply for permit modifications and pay a one-time permit application fee of \$5,641.

The total average annual cost of PAR 1146 is estimated at \$3.4 to \$4.1 million across all affected facilities.

### **PAR 1146.1**

Under PAR 1146.1, it was assumed that ten affected facilities would meet the NOx limits by ULNBs for 19 units. According to a recent vendors' cost estimate, the average capital and installation costs of retrofitting boilers with ULNBs is estimated at \$61,000 (including installation) per unit. Each burner is assumed to last for 15 years. In addition, PAR 1146.1 would require the owners of the affected units to apply for permit modifications and pay a one-time permit application fee of \$3,567. Annual permit renewal costs are unchanged, and therefore no additional recurring permit costs were assumed.

The annualized total cost of PAR 1146.1 is estimated at \$78,000 to \$94,000.

### **PAR 1146.2**

Rule 1146.2 applies to large water heaters and small boilers and process heaters with a rated heat input capacity up to and including 2,000,000 BTUs per hour. There are both manufacturer and end-user requirements contained in the rule.

Rule 1146.2 units are exempt from SCAQMD permitting requirements per Rule 219 (Equipment Not Requiring a Written Permit Pursuant to Regulation II). Only a small portion of the Rule 1146.2 units are permitted due to unique circumstances, such as operators obtaining a lower emission factor for calculating the unit's potential to emit (PTE). Based on SCAQMD permit database, four of the permitted Rule 1146.2 RECLAIM units would be required to meet the NOx limits.

Due to the lack of information available on the universe of affected sources under PAR 1146.2, and to account for the potential cost impacts of those affected facilities with non-permitted units,

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<sup>7</sup> Cost estimates for one RECLAIM facility using a specialty boiler fired on natural gas and process gas, categorized in PAR 1146 Group III, were received after the release of the November 6<sup>th</sup> Draft Socioeconomic Impact Assessment for the PAR 1146 series. Due to the short timeframe of the information provided, the cost estimates could not be verified through solicitations of costs from other vendors, nor was it possible to incorporate the estimates into a comprehensive cost analysis. However, staff conducted a sensitivity analysis accepting the provided estimates at face value, where the single facility's total cost for burner replacements totaled about \$1.3 million, including \$200,000 for tuning the existing system, and about \$250,000 for contingency. The capital cost of equipment and installation was estimated at \$500,000, and is about 70% higher than the high end of capital cost estimates in the Group III provided in the staff report. The cost-effectiveness estimated for PAR 1146 Group III changed from \$25,000 per ton of NOx reduced to \$28,000 per ton. Staff concludes that despite accounting for the cost of the specialized equipment that is not typical of other facilities in that category, it was nonetheless cost-effective across the PAR 1146 Group III category.

staff has included additional ULNB costs for a total of 850 units (estimated based on the equipment data provided from facility responses of initial determination notifications as of April 2018) to account for the non-permitted units that could be impacted by the PAR 1146.2. The average capital and installation cost of retrofitting a boiler with a ULNBs is estimated at \$32,100 (including installation and permitting). Each burner is assumed to last for 15 years. No additional annual operating and maintenance costs were assumed. The total average annual cost of PAR 1146.2 is estimated at \$2.0 to \$2.6 million.

As presented in Table 2, PAR 1146 and PAR 1146.2 contribute to about \$4.1 million (60%) and \$2.6 million (38%) of the total annual costs, respectively.

### **Thermal Fluid Heaters**

For the thermal fluid heaters category in PARs 1146 and 1146.1, which requires compliance by 2021 to 2023 for RECLAIM facilities, depending on the applicable compliance schedule in PR 1100, a one-time capital cost of \$22,500 (2MMBtu/hr unit), \$31,000 (5 MMBtu/hr unit), and \$52,000 (10 MMBtu/hr unit) was assumed. Installation costs were estimated at \$13,500, \$16,500, and \$32,500, respectively, and permitting costs were estimated at \$3,567, \$5,641, and \$5,641, respectively. The total average annual compliance costs of thermal fluid heaters at RECLAIM facilities is estimated at \$11,000 to \$13,000.

### **Deferred Compliance for Burner Replacement in PAR 1146 series**

Beyond the group of facilities subject to PAR 1146 for immediate equipment retrofits, there are an additional 95 units that will be subject to PAR 1146 and 21 units that will be subject to 1146.1 upon burner replacement or 15 years after rule adoption, whichever comes first. It cannot be known when the burner replacement for each unit will occur, but staff has conservatively estimated burner replacement costs by assuming the same 3 year implementation schedule (starting in 2021, 75% of costs in first year, 20% in second, and 5% in the final year) as the group scheduled for immediate compliance.

The units in this category are spread across PAR 1146 Group II, Group III, 1146.1 and Thermal Fluid Heaters. Capital costs for burner replacement of \$21,000 for PAR 1146 Group II, \$10,000 for PAR 1146 Group III and Thermal Fluid Heaters, and \$3,000 for PAR 1146.1. A one-time permit modification fee of \$8,368 for PAR 1146 Group II, \$5,641 for PAR 1146 Group III and Thermal Fluid Heaters, and \$3,567 for 1146.1. All cost estimates are in 2018 dollars. It is expected that the majority of this group will undergo a burner replacement later in the 15 year period, however, staff conservatively assumed an implementation schedule beginning in 2021.

### **PAR 1100**

PR 1100 is an administrative rule and does not impose additional costs to affected facilities, as such, no additional costs or socioeconomic impacts were assumed here.

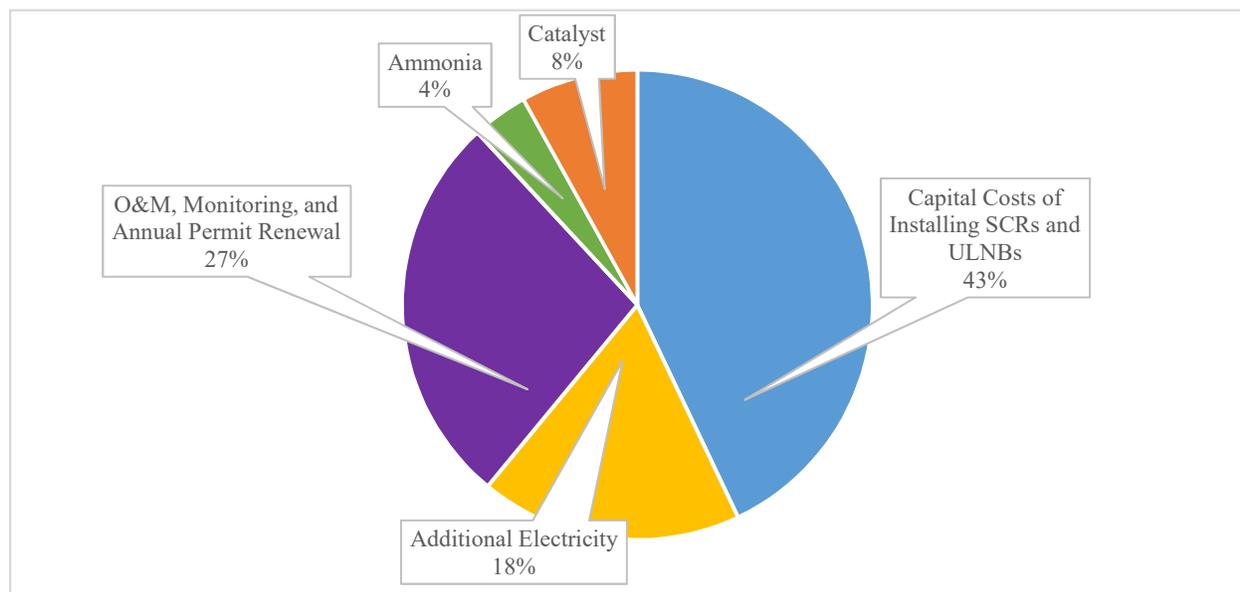
**Table 2: Total and Average Annual Cost of the PAR 1146 Series by Types of Amendments**

Proposed Amendments	Present Worth Value (2020)		Annual Average (2020-2045)	
	1% Discount Rate	4% Discount Rate	1% Real Interest Rate	4% Real Interest Rate
Rule 1146-Group I	\$14,810,000	\$10,781,000	\$404,000	\$468,000
Rule 1146-Group II	\$72,261,000	\$57,503,000	\$2,408,000	\$2,858,000
Rule 1146-Group III	\$9,280,000	\$8,431,000	\$614,000	\$743,000
<b>Total PAR 1146</b>	<b>\$100,351,000</b>	<b>\$76,715,000</b>	<b>\$3,426,000</b>	<b>\$4,069,000</b>
Rule 1146.1	\$1,194,000	\$1,085,000	\$79,000	\$96,000
Rule 1146.2	\$28,313,000	\$28,305,000	\$2,041,000	\$2,546,000
Thermal Fluid Heaters	\$460,000	\$418,000	\$30,000	\$37,000
<b>Total</b>	<b>\$128,737,000</b>	<b>\$105,081,000</b>	<b>\$5,690,000</b>	<b>\$6,874,000</b>

Table 3 and Figure 2 represent the distribution of the overall costs by selected cost categories. The majority of costs of the PAR 1146 series (\$4.2 to \$5.4 million or 74% to 78%, respectively) stem from the installation of SCR and ULNBs. The additional costs of electricity are estimated at \$0.7 million annually, and O&M, monitoring, and annual permit renewal are a combined \$0.4 million annually. Ammonia and catalyst replacement are estimated at about \$0.3 Million and \$0.2 million, respectively.

**Table 3: Total and Average Annual Cost of the PAR 1146 Series by Cost Categories**

Equipment Type	Present Worth Value (2020)		Annual Average (2020-2045)	
	1% Discount Rate	4% Discount Rate	1% Real Interest Rate	4% Real Interest Rate
<b>SCR</b>	\$33,056,348	\$30,019,331	\$1,375,727	\$1,883,480
<b>FGR Savings</b>	-\$7,473,845	-\$4,916,605	-\$181,404	-\$181,404
<b>ULNB</b>	\$39,645,151	\$38,599,526	\$2,790,908	\$3,453,189
<b>Electricity</b>	\$28,491,435	\$18,742,847	\$693,461	\$693,461
<b>O&amp;M</b>	\$6,032,763	\$3,968,602	\$148,471	\$148,471
<b>Ammonia</b>	\$12,709,500	\$8,360,836	\$309,341	\$309,341
<b>Catalyst</b>	\$7,643,075	\$5,027,932	\$186,028	\$186,028
<b>Monitoring (including NH<sub>3</sub> testing)</b>	\$6,598,984	\$4,341,085	\$164,235	\$164,235
<b>Annual Permit Renewal</b>	\$3,614,924	\$2,378,047	\$89,968	\$89,968
<b>Total</b>	<b>\$130,318,000</b>	<b>\$106,522,000</b>	<b>\$5,577,000</b>	<b>\$6,747,000</b>

**Figure 2: Annual Estimated Costs of the PAR 1146 Series by Cost Categories**

### Cost Impacts from Non-RECLAIM Facilities

The proposed amendments to Rule 1146 and Rule 1146.1 will establish NO<sub>x</sub> emission limits for boilers and heaters at RECLAIM, former RECLAIM, and non-RECLAIM facilities. PARs 1146 and 1146.1 establish NO<sub>x</sub> emission limits representative of current BARCT requirements. Of the revised NO<sub>x</sub> emission limits, only the proposed 7 ppm NO<sub>x</sub> emission limit for Rule 1146 Group II and Group III and Rule 1146.1 fire-tube boilers and the 12 ppm NO<sub>x</sub> emission limit for thermal fluid heaters will impact non-RECLAIM facilities. However, the non-RECLAIM facilities, with the exception of those with thermal fluid heaters currently complying with a NO<sub>x</sub> emission limit greater than 20 ppm, would not need to demonstrate compliance with the lower emission limit until the unit's burner replacement or 15 years after rule amendment, whichever occurs earlier.

As of November 2018, there are 824 non-RECLAIM facilities that operate around 1,075 non-RECLAIM units subject to PAR 1146 and 732 non-RECLAIM units subject to PAR 1146.1 operating in the District (a total of 1,807). The proposed 7 ppm NO<sub>x</sub> emissions (which represents BARCT requirement) for Group II, Group III, and Rule 1146.1 units only applies to fire-tube boilers. Units designated as Group I or designated as non-fire-tubes will not be affected by the proposed amendments since the NO<sub>x</sub> emission limits for this category is not changing.

While the type of affected fire-tube boilers cannot be quantified due to the lack of distinction in equipment category designations, it is assumed that the fraction of fire-tube units in RECLAIM is the same as that in non-RECLAIM, which is approximately 40% of the universe. Table 4 presents the total units and potential cost impacts for each boiler category that will need to meet the lower emission limit upon burner replacement 15 years from rule adoption. In total, there are 722 units that are estimated to be impacted by PAR 1146 and 1146.1 within the non-RECLAIM universe. The total annualized cost of compliance for these fire-tube units is estimated at \$861,751.

**Table 4: Potential Cost impacts on Non-RECLAIM Units**

<b>Non-RECLAIM Group</b>	<b>Total # of Units</b>	<b>Estimated # of Fire-Tubes Units</b>	<b>One-Time Capital Cost of ULNB</b>	<b>One-time Permit Cost</b>	<b>Total Annualized Cost</b>
Rule 1146 Group I	4	0 <sup>+</sup>	----	----	----
Rule 1146 Group II	171	69	\$21,000	\$8,368	\$182,256
Rule 1146 Group III	900	360	\$10,000	\$5,641	\$506,437
Rule 1146.1	732	293	\$3,000	\$3,567	\$173,058
<b>Total</b>	<b>1,807</b>	<b>722</b>			<b>\$861,751</b>

\*Rounded up to the nearest 1

\*Group I units are not affected by proposed 7 ppm BARCT

\*\*ULNB and Permitting costs were annualized over 15 years with four percent real interest rate.

Because there is inadequate data to identify the type, location, and the number of fire-tube units at these facilities, a breakdown of costs by industry type could not be determined, which is a key input for the regional macroeconomic model for a socioeconomic impacts analysis. Therefore, such an analysis could not be done for the PAR 1146 series.

PAR 1146 series would also affect thermal fluid heaters within the non-RECLAIM universe. It is not feasible to quantify the total number of affected units that are thermal fluid heaters within the non-RECLAIM universe. This is mainly due to the lack of distinction in their permits that set them apart from other process heaters. However, it is reasonable to assume the same fraction of thermal fluid heaters in RECLAIM applies to the non-RECLAIM universe. The total fraction of RECLAIM thermal fluid heaters makes up about 4.2% of the total universe. Since thermal fluid heaters are not limited in total heat input, the same fraction is applied to the total universe of 1,807 units which estimated at 76 total thermal fluid heaters in the non-RECLAIM universe. The capital cost for a non-RECLAIM retrofit is estimated at \$50,000 for units reduced from 30 ppm to 12 ppm with a compliance date of January 1, 2022, and is estimated at \$10,000 for units reduced from 20 ppm to 12 ppm upon burner replacement or 15 years from rule adoption, whichever occurs earlier. Based on the staff estimates, only a small fraction of the affected 76 thermal fluid heaters would be required to meet 12 ppm by 2022. As such, the cost impacts from this category is not expected to be substantial.

### **Cost-Effectiveness**

As presented in Table 5, the cost-effectiveness of the PAR 1146 series is estimated to range from \$7,000 to \$41,000 per ton of NO<sub>x</sub> reduced by rule/group based on the Discount Cash Flow (DCF) method. DCF utilizes the present value, or a stream of all present and future costs discounted to and summed up in the same initial year, and cost-effectiveness is calculated as a function of present value costs versus emissions reduced during the life of the equipment. The cost-effectiveness of the overall PAR 1146 series is estimated at \$26,500.

**Table 5: Cost-Effectiveness<sup>8</sup>**

<b>Proposed Amendment</b>	<b>DCF (\$/ton)</b>
Rule 1146-Group I	\$26,000
Rule 1146-Group II	\$41,000
Rule 1146-Group III	\$25,000
Rule 1146.1	\$33,000
Rule 1146.2	\$7,000
<b>Average</b>	<b>\$26,500</b>

Table 6 presents the total and average annual compliance costs of the PAR 1146 series by industry types. The majority of the overall annual compliance costs is expected to be incurred by the beverage manufacturing sector (13%), textile product mills (12%), pipeline transportation (11%), paper manufacturing (10%), utility sector (8%), and aerospace products (7%).

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<sup>8</sup> The cost-effectiveness values presented in this analysis differ slightly from that of the SCAQMD Staff report for PAR 1146. The analysis used in this Draft SIA assumes a staggered implementation costs from 2020 to 2023 where 75% of capital costs are assumed in the first year, 20% in the second year, and 5% in the final year of implementation. Cost effectiveness calculations will differ as a function of using DCF costs rather than static costs in the numerator of the equation: *Cost Effectiveness = (cost)/(annual emission reduction potential\*years of life of equipment)*

**Table 6: Projected Total and Average Annual Compliance Costs by Industry for Affected Facilities (2018 Dollars)**

Industry that Typically Uses the Equipment	NAICS Codes	Present Worth Value		Annual Average (2020-2045)	
		1% Discount Rate	4% Discount Rate	1% Real Interest Rate	4% Real Interest Rate
Oil and gas extraction	211	\$5,775,000	\$5,003,000	\$324,000	\$393,000
Electric power generation, transmission, and distribution	2211	\$6,812,000	\$5,536,000	\$288,000	\$348,000
Natural gas distribution	2212	\$400,000	\$378,000	\$27,000	\$34,000
Water, sewage, and other systems	2213	\$3,406,000	\$2,768,000	\$144,000	\$174,000
Clay product and refractory manufacturing	3271	\$199,000	\$187,000	\$14,000	\$17,000
Steel product manufacturing from purchased steel	3312	\$47,000	\$44,000	\$3,000	\$4,000
Alumina and aluminum production and processing	3313	\$397,000	\$373,000	\$27,000	\$33,000
Nonferrous metal (except aluminum) production and processing	3314	\$23,000	\$22,000	\$2,000	\$2,000
Forging and stamping	3321	\$2,529,000	\$1,940,000	\$75,000	\$91,000
Boiler, tank, and shipping container manufacturing	3324	\$2,532,000	\$1,943,000	\$75,000	\$91,000
Coating, engraving, heat treating, and allied activities	3328	\$222,000	\$209,000	\$15,000	\$19,000
Other fabricated metal product manufacturing	3329	\$3,893,000	\$3,227,000	\$177,000	\$215,000
Communications equipment manufacturing	3342	\$39,000	\$37,000	\$3,000	\$3,000
Semiconductor and other electronic component manufacturing	3344	\$5,167,000	\$4,428,000	\$274,000	\$332,000
Aerospace product and parts manufacturing	3364	\$6,987,000	\$6,135,000	\$388,000	\$473,000
Other miscellaneous manufacturing	3399	\$397,000	\$373,000	\$27,000	\$33,000
Animal food manufacturing	3111	\$23,000	\$22,000	\$2,000	\$2,000
Dairy product manufacturing	3115	\$2,529,000	\$1,940,000	\$75,000	\$91,000
Animal slaughtering and processing	3116	\$2,573,000	\$1,981,000	\$78,000	\$94,000
Bakeries and tortilla manufacturing	3118	\$596,000	\$560,000	\$41,000	\$50,000
Other food manufacturing	3119	\$44,000	\$41,000	\$3,000	\$4,000
Beverage manufacturing	3121	\$16,999,000	\$13,646,000	\$709,000	\$848,000
Textile mills and textile product mills	313, 314	\$16,916,000	\$13,727,000	\$695,000	\$841,000
Pulp, paper, and paperboard mills	3221	\$15,234,000	\$11,968,000	\$544,000	\$654,000
Converted paper product manufacturing	3222	\$2,532,000	\$1,943,000	\$75,000	\$91,000
Petroleum and coal products manufacturing	324	\$897,000	\$843,000	\$61,000	\$75,000
Basic chemical manufacturing	3251	\$5,394,000	\$4,195,000	\$173,000	\$210,000
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	3252	\$397,000	\$373,000	\$27,000	\$33,000
Pharmaceutical and medicine manufacturing	3254	\$2,573,000	\$1,981,000	\$78,000	\$94,000
Plastics product manufacturing	3261	\$4,393,000	\$3,700,000	\$221,000	\$267,000
Retail trade	44-45	\$794,000	\$747,000	\$54,000	\$66,000
Pipeline transportation	486	\$14,057,000	\$11,478,000	\$597,000	\$723,000
Monetary authorities, credit intermediation, and related activities	521, 522	\$90,000	\$85,000	\$6,000	\$8,000
Real estate	531	\$47,000	\$44,000	\$3,000	\$4,000
Computer systems design and related services	5415	\$397,000	\$373,000	\$27,000	\$33,000
Office administrative services; Facilities support services	5611, 5612	\$743,000	\$698,000	\$51,000	\$62,000
Amusement, gambling, and recreation industries	713	\$1,143,000	\$1,075,000	\$78,000	\$95,000
Accommodation	721	\$20,000	\$18,000	\$1,000	\$2,000
Dry-cleaning and laundry services	8123	\$3,104,000	\$2,481,000	\$114,000	\$139,000
<b>Total</b>		<b>\$130,320,000</b>	<b>\$106,522,000</b>	<b>\$5,576,000</b>	<b>\$6,748,000</b>

## JOBS AND OTHER SOCIOECONOMIC IMPACTS

The REMI model (PI+ v2.2) was used to assess the total socioeconomic impacts of a policy change (i.e., the proposed rule). The model links the economic activities in the counties of Los Angeles, Orange, Riverside, and San Bernardino, and for each county, it is comprised of five interrelated blocks: (1) output and demand, (2) labor and capital, (3) population and labor force, (4) wages, prices and costs, and (5) market shares.<sup>9</sup>

The assessment herein is performed relative to a baseline (“business as usual”) where the proposed amendments would not be implemented. The proposed amendments would create a policy scenario under which the affected facilities would incur an average annual compliance costs totaling \$5.6 to \$6.8 million to comply with other requirements of the PAR 1146 series. Direct effects of the proposed amendments have to be estimated and used as inputs to the REMI model in order for the model to assess secondary and induced impacts for all the actors in the four-county economy on an annual basis and across a user-defined horizon (2020 to 2045). Direct effects of the proposed amendments include additional costs to the affected entities and additional sales, by local vendors, of equipment, devices, or services that would meet the proposed requirements.

While compliance expenditures may increase the cost of doing business for affected facilities, the purchase of additional SCRs and ULNBs combined with spending on operating and maintenance, may increase sales in other sectors. Table 7 lists the industry sectors modeled in REMI that would either incur cost or benefit from the compliance expenditures.<sup>10</sup>

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<sup>9</sup> Within each county, producers are made up of 156 private non-farm industries, three government sectors, and a farm sector. Trade flows are captured between sectors as well as across the four counties and the rest of U.S. Market shares of industries are dependent upon their product prices, access to production inputs, and local infrastructure. The demographic/migration component has 160 ages/gender/race/ethnicity cohorts and captures population changes in births, deaths, and migration. (For details, please refer to REMI online documentation at <http://www.remi.com/products/pi.>)

<sup>10</sup> It is worth mentioning that improved public health due to reduced air pollution emissions may also result in a positive effect on worker productivity and other economic factors; however, public health benefit assessment requires the modeling of air quality improvements. Therefore, it is conducted for AQMPs and not for individual rules or rule amendments.

**Table 7: Industries Incurring vs. Benefitting from Compliance Costs/Spending**

Source of Compliance Costs	REMI Industries Incurring Compliance Costs (3 or 4-digit NAICS)	REMI Industries Benefitting from Compliance Spending (NAICS)
SCR and Ultra-Low NOx Burners	211 Oil and gas extraction 2211 Electric power generation, transmission, and distribution 2212 Natural gas distribution 2213 Water, sewage, and other systems 3271 Clay product and refractory manufacturing	<i>One-time-Capital:</i> Machinery Manufacturing (333414)
Catalyst	3312 Steel product manufacturing from purchased steel 3313 Alumina and aluminum production and processing 3314 Nonferrous metal (except aluminum) production and processing 3321 Forging and stamping 3324 Boiler, tank, and shipping container manufacturing 3328 Coating, engraving, heat treating, and allied activities	Machinery Manufacturing
SCR (Maintenance)	3329 Other fabricated metal product manufacturing 3342 Communications equipment manufacturing 3344 Semiconductor and other electronic component manufacturing 3364 Aerospace product and parts manufacturing 3399 Other miscellaneous manufacturing	<i>Recurring Cost:</i> Professional, Scientific, and Technical Services (541)
Permit Modifications/Permit Renewal	3111 Animal food manufacturing 3115 Dairy product manufacturing 3116 Animal slaughtering and processing 3118 Bakeries and tortilla manufacturing 3119 Other food manufacturing 3121 Beverage manufacturing 313, 314 Textile mills and textile product mills 3221 Pulp, paper, and paperboard mills 3222 Converted paper product manufacturing	<i>One-time-Capital:</i> Public Administration (92) <sup>11</sup>
Monitoring	324 Petroleum and coal products manufacturing 3251 Basic chemical manufacturing 3252 Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing 3254 Pharmaceutical and medicine manufacturing 3261 Plastics product manufacturing	<i>Recurring Cost:</i> Professional, Scientific, and Technical Services (541)
Utilities (Electricity)	44-45 Retail trade 486 Pipeline transportation 521, 522 Monetary authorities, credit intermediation, and related activities 531 Real estate	<i>Recurring Cost:</i> Utilities (221)
Ammonia	5415 Computer systems design and related services 5611, 5612 Office administrative services; Facilities support services 713 Amusement, gambling, and recreation industries 721 Accommodation 8123 Dry-cleaning and laundry services	<i>Recurring Cost:</i> Chemical Manufacturing (325)

<sup>11</sup> Instead of using the default “local government spending” policy variable in REMI, staff elected to use a “custom local government spending” policy variable that it considers to more accurately reflect the SCAQMD spending portfolio. This custom policy variable has a lower proportion of local government spending going into the construction industry and proportionately allocates the difference to local government and professional services sectors. The simulation using this custom policy variable results in a prediction of a lower net job gain than would have been found with the default policy variable. This follows the approach taken in the Socioeconomic Impact Assessment of the PAR Regulation III Fees from June 2017.

As discussed earlier, the total average (2020 to 2045) annual compliance costs for affected facilities by the PAR 1146 series was estimated to range from \$5.6 to \$6.8 million per year, depending on the real interest rate assumed (1% to 4%).

PAR 1146 series is expected to result in approximately 57 to 72 jobs forgone annually, on average between 2020 and 2045, depending on the real interest rate assumed (1% to 4%). The projected jobs loss impacts represent about 0.0021 percent of the total employment in the four-county region.

As presented in Table 8, in 2021, 162 additional jobs could be created in the overall economy. This is mainly due to additional purchase and spending on installation of SCRs and ULNBs provided by the industries of machinery industry, and construction, and professional and technical services sectors. As the cost of doing business kicks in and is maintained, and the positive impact of spending gradually subsides, jobs forgone are expected to begin.

Although the manufacturing sector (NAICS 31-33) would bear the majority of the estimated total compliance costs of the PAR 1146 series, the industry job impact is projected to be relatively small (annual average of 16 jobs foregone between 2020 and 2045). This is because other businesses in the manufacturing sector, specifically in the machinery manufacturing and fabricated metals industry, are expected to benefit from the increased sale of various types of control equipment (SCRs and ULNBs), thus offsetting the direct effect of compliance costs incurred by other manufacturing facilities. In earlier years, the sector of machinery, construction and professional and technical services (NAICS 541) are projected to gain jobs on an annual average from additional demand for equipment installation and maintenance made by the affected facilities.

The remainder of the projected reduction in employment would be across all major sectors of the economy from secondary and induced impacts of the proposed amendments. In earlier years positive job impacts from the expenditures made by the affected facilities would more than offset the jobs forgone from the additional cost of doing business. Jobs foregone in the later years are due to additional costs of doing business by affected facilities.

The sectors of pipeline transportation (486), textile mills and products (NAICS 313), transportation equipment (NAICS 336), food services (NAICS 311), are projected to incur portion of compliance costs and thus experience a minor share of jobs forgone. As the cost of doing business kicks in and is maintained, and positive impact of spending gradually subsides, jobs foregone are expected to begin. The reduction in disposable income would dampen the demand for goods and services in the local economy, thus resulting in a small number of jobs forgone projected in sectors such as construction (NAICS 23), retail trade (NAICS 44-45), wholesale (NAICS 42), and accommodation and food services (NAICS 72).

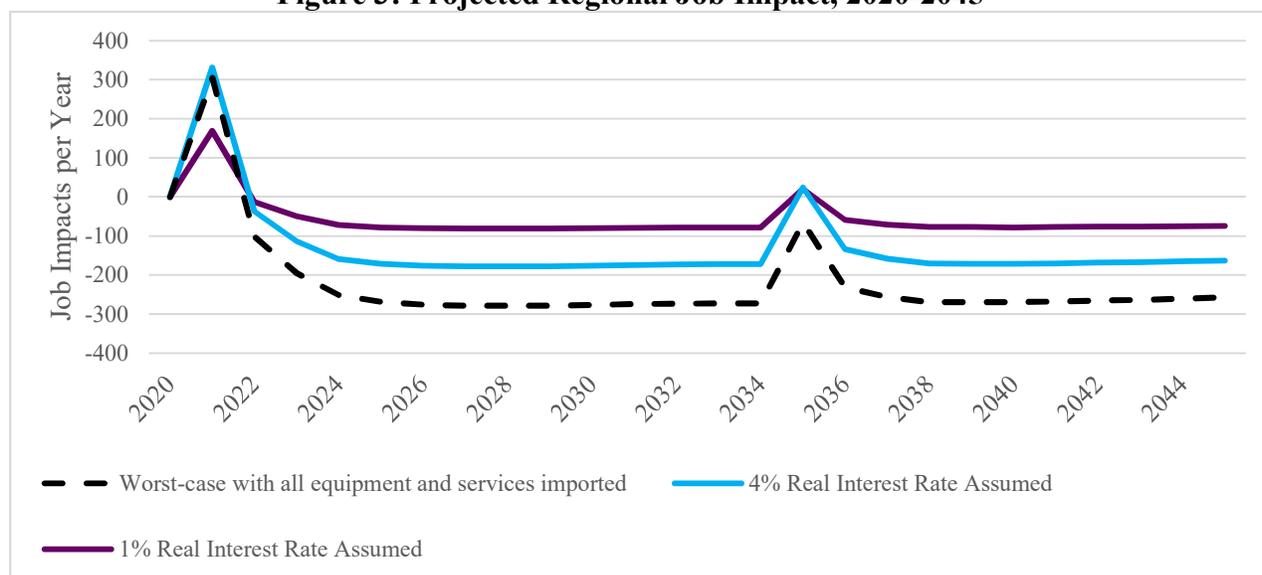
**Table 8: Job Impacts of PAR 1146 Series**

Industries (NAICS)	2020*	2021	2025	2035	2045	Average Annual Jobs (2020-2045)	Average Annual Baseline Jobs (2020-2045)	% Change from Baseline Jobs
Oil and gas extraction (211)	0	0	-1	-1	-1	-1	23,173	-0.0074%
Water, sewage, and other systems (2213)	0	0	0	-1	-1	0	1,786	-0.0023%
Construction (23)	0	58	-16	26	-4	-3	473,605	-0.0009%
Forging and stamping (3321)	0	0	0	0	0	0	5,690	-0.0018%
Boiler, tank, and shipping container manufacturing (3324)	0	0	0	0	0	0	2,732	-0.0032%
Coating, engraving, heat treating, and allied activities (3328)	0	0	0	0	0	0	10,652	-0.0004%
Other fabricated metal product manufacturing (3329)	0	0	-1	-1	-1	-1	14,134	-0.0008%
Aerospace product and parts manufacturing (3364)	0	0	0	0	0	0	47,115	-0.0011%
Animal food manufacturing (3111)	0	0	0	0	0	0	4,318	-0.0013%
Bakeries and tortilla manufacturing (3118)	0	0	0	0	0	0	17,926	-0.0014%
Other food manufacturing (3119)	0	0	0	0	0	0	11,168	-0.0029%
Beverage manufacturing (3121)	0	0	0	0	-1	0	12,733	-0.0006%
Tobacco manufacturing (3122)	0	0	0	0	0	0	23	-0.0015%
Textile mills and textile product mills (313, 314)	0	-2	-8	-12	-11	-10	13,518	-0.0009%
Apparel, leather and allied product manufacturing (315, 316)	0	0	-1	-1	-1	-1	48,486	-0.0038%
Pulp, paper, and paperboard mills (3221)	0	0	0	0	0	0	388	-0.0005%
Converted paper product manufacturing (3222)	0	0	0	0	0	0	10,571	-0.0711%
Petroleum and coal products manufacturing (324)	0	0	0	0	0	0	4,051	-0.0469%
Basic chemical manufacturing (3251)	0	0	0	0	0	0	1,263	-0.0041%
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing (3252)	0	0	0	0	0	0	1,108	-0.0007%
Pharmaceutical and medicine manufacturing (3254)	0	0	0	0	0	0	13,745	-0.0029%
Wholesale trade (42)	0	6	-4	0	-3	-3	480,708	-0.0006%
Retail trade (44-45)	0	7	-11	-4	-10	-9	987,522	-0.0016%
Pipeline transportation (486)	0	0	-1	-1	-1	-1	906	-0.0008%
Monetary authorities, credit intermediation, and related activities (521, 522)	0	2	-1	0	-1	-1	142,004	-0.0005%
Real estate (531)	0	4	-2	-1	-3	-2	575,156	-0.0003%
Accommodation (721)	0	1	-1	0	-1	-1	104,874	0.0000%
Food services and drinking places (722)	0	5	-4	-2	-6	-4	729,280	-0.0003%
State and Local Government (92)	0	13	-4	1	-6	-4	909,568	-0.0004%
<b>Total</b>	<b>0</b>	<b>162</b>	<b>-93</b>	<b>4</b>	<b>-89</b>	<b>-72</b>	<b>11,260,000</b>	<b>-0.0021%</b>

\*There are no job impacts in 2020 since the PAR 1146 series implementation dates start from 2021. However, one of the CEQA Alternatives (Alternative C) assumed that affected facilities would install SCRs and ULNBs in 2020. For the purpose of consistency in comparing the CEQA Alternatives with the proposed amendments, average annual costs and associated job impacts were presented from 2020 to 2045.

Figure 3 presents a trend of job gain and losses over the 2020 to 2045 time frame. The upticks in positive jobs in 2021 and 2036 are due to additional spending on installation of ULNBs replacements. In addition, staff has analyzed an alternative scenario (worst case) where the affected facilities would not purchase any control or service from providers within the Basin. This scenario would result in an average of 68 jobs forgone annually.

**Figure 3: Projected Regional Job Impact, 2020-2045**



**Competitiveness**

The additional cost brought on by the PAR 1146 series would increase the cost of services rendered by the affected industries in the region. The magnitude of the impact depends on the size and diversification of, and infrastructure in a local economy as well as interactions among industries. A large, diversified, and resourceful economy would absorb the impact described above with relative ease.

Changes in production/service costs would affect prices of goods produced locally. The relative delivered price of a good is based on its production cost and the transportation cost of delivering the good to where it is consumed or used. The average price of a good at the place of use reflects prices of the good produced locally and imported elsewhere.

It is projected that the manufacturing sector, where most of the affected facilities belong, would experience a rise in its relative cost of production and its delivered price by 0.001% in 2035, respectively. While these changes are relatively small, it should be noted that the delivered price change is a change in the index of all prices in the manufacturing sector. Delivered prices that a facility may charge for specific goods or services may increase at a greater rate than this, allowing incurred cost to be passed through to downstream industries and end-users.

**CEQA ALTERNATIVES**

There are five CEQA alternatives associated with the proposed amendments to the PAR 1146 series. Alternative A, the no project alternative, means that the current version of Rules 1146, 1146.1, and 1146.2 would remain in effect. Under Alternative B (less stringent, starting at 2022), the compliance deadline for meeting the NOx emissions limits would be extended by one year. Under Alternative C (more stringent), the NOx emission limits would remain the same as the proposed project, but facilities would need to meet 100 percent compliance by January 1, 2021.

Under Alternative D, the Group I units would need to meet 9 ppm or (0.011 lb/MMBtu) instead of 5 ppm (0.0062 lb/MMBtu) and as a result they are expected to meet the limits by ULNBs versus SCRs. Alternative D would also require PAR 1146 Group II units to meet 9 ppm (or 0.011 lb/MMBtu) instead of the proposed 5 ppm for Group II units with a NO<sub>x</sub> limit greater than 12 ppm or 7 ppm (or 0.00085 lb/MMBtu) for fire-tube boilers currently meeting a NO<sub>x</sub> limit less than or equal to 12 ppm. PAR 1146 Group III and 1146.1 units would be required to meet 9 ppm (or 0.011 lb/MMBtu) instead of the proposed 7 ppm (or 0.00085 lb/MMBtu) for fire-tube boilers. The NO<sub>x</sub> emission limit for thermal fluid heaters would also remain at 30 ppm (or 0.037 lb/MMBtu) instead of 12 ppm (0.015 lb/MMBtu). With Alternative E, the provisions are the same as Alternative D for PAR 1146 Group II, III, 1146.1, and thermal fluid heaters, except for PAR 1146 Group I, which would be required to meet 5 ppm using SCR retrofits.

Average annual compliance costs for the CEQA alternatives range from \$4.1 to \$5.7 million between 2020 and 2045, as shown in Table 9. The cost-effectiveness of the PAR 1146 series and CEQA Alternatives range from \$11,000 to \$26,500 per ton of NO<sub>x</sub> reductions. Jobs forgone for the CEQA alternatives range from 39 to 63 between 2020 and 2045.

Alternative B and Alternative C have the same cost-effectiveness and both would achieve the same emission reductions. Even though Alternative C has later compliance dates the cost-effectiveness evaluation is time neutral. Alternative D has the lower average annual cost and jobs forgone than the proposed amendments because under this alternative no SCRs are required. Alternative E uses ULNB to achieve most of the NO<sub>x</sub> reductions, and PAR 1146 Group I uses SCRs for 3 units in this alternative. The cost savings that apply to the use of FGR mitigates the cost impact for the SCR facilities, and renders Alternative E as slightly more cost-effective compared with Alternative D.

**Table 9: Cost and Job Impacts of CEQA Alternatives (in millions of dollars)**

Alternatives	Average Annual (2020-2045)		
	Cost	Cost-Effectiveness \$/ton (NO <sub>x</sub> )	Jobs
Proposed Amendments	\$6,748,000	\$26,500	-72
Alternative A—No Project	\$0.00	N/A	N/A
Alternative B—Implementation in 2022	\$4,118,000	\$26,500	-56
Alternative C—100% implementation in 2021	\$4,466,000	\$26,500	-63
Alternative D—No SCRs, smaller NO <sub>x</sub> reductions using only ULNB	\$5,028,000	\$11,000	-48
Alternative E—Lower Limits compared to Alt. D, 3 SCRs Group I	\$5,786,000	\$11,000	-39

## UPDATED COST IMPACTS ASSESSMENT FOR COMPLIANCE WITH RULE 2002

### Potential Impacts for NO<sub>x</sub> RECLAIM Facilities Ready to Exit

Rule 2002(f)(10) prohibits a RECLAIM facility from selling any future compliance year RTCs upon receipt of a final determination notification that it is ready to exit the NO<sub>x</sub> RECLAIM program. If PAR 1146, 1146.1, and 1146.2 are adopted, 22 facilities are expected to receive an initial determination notification because, according to staff's evaluation, all of their permitted RECLAIM NO<sub>x</sub> source equipment will be subject to these rules once adopted.<sup>12</sup> Facilities that received initial determination notifications and meet the proposed criteria to exit, would not receive a final determination notification to exit RECLAIM until key elements such as NSR and permitting are resolved. However, these facilities may request to opt-out of RECLAIM before these key elements are resolved, upon meeting specific conditions specified in subdivision (g) of Rule 2001.

~~Final determination notifications will not be issued, however, until New Source Review (NSR) issues are resolved. In addition, staff has amended Rules 2001 and 2002 that will allow a facility to remain in RECLAIM to allow time for the SCAQMD to address NSR and permitting for the transition from RECLAIM to a command and control regulatory structure.~~

All 22 facilities were allocated NO<sub>x</sub> RTCs (no cost or fee when RTCs were allocated) at the outset of the NO<sub>x</sub> RECLAIM program. The initial allocations for the 22 facilities amounted to approximately 1.821 tons per day (TPD). Due to past adjustments including reductions in allocations or "shaves," and more importantly, the sale of these initial allocations as infinite-year block (IYB) RTCs to other NO<sub>x</sub> RECLAIM facilities and brokers/investors, the total NO<sub>x</sub> RTCs currently held by these 22 facilities is 0.174 TPD for compliance years 2019 and later.<sup>13</sup> At the same time, total NO<sub>x</sub> emissions from these same facilities have declined to 0.120 TPD in 2016.

If these 22 facilities receive final determination notifications in 2018, they will not be able to sell their NO<sub>x</sub> RTCs for compliance year 2019 and onwards. For the purpose of this analysis, it is assumed that none of the 22 facilities would acquire additional NO<sub>x</sub> RTCs or sell their current NO<sub>x</sub> RTC holdings of 0.174 TPD before receiving a final determination notification. However, it is foreseeable that at least some of these NO<sub>x</sub> RTC holdings may be sold or transferred before they are frozen due to receipt of final determination notifications. In addition, staff has committed to not issuing any final determination notifications until NSR issues are resolved. Lastly, as they pertain to SCAQMD, RTCs are not property rights. It is known to all market participants that purchasing RTCs beyond the current compliance year is accompanied by known investment risks that are embedded within the RECLAIM programs. The risk factors include, but may not be

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<sup>12</sup> An earlier version of the PARs 1146, 1146.1 and 1146.2, and PR 1100 Draft Socioeconomic Impact Assessment considered the impact of 62 facilities potential exit from RECLAIM. These 62 facilities included 26 PAR 1146 series facilities and 36 facilities expected to receive an initial determination notification as a result of the adoption of PAR 2001 and PAR 2002. Four PAR 1146 facilities have been removed from the analysis due to facility shutdown. We have also excluded all 36 PAR 2001 and 2002 facilities from the analysis to focus only on the effects of the adoption of the PAR 1146 series.

<sup>13</sup> According to the NO<sub>x</sub> RTC holdings data as of July 31, 2018 and excluding any transactions that may have occurred after this date.

limited to, programmatic allocation shaves, potential RTC trade freezes, and the eventual sunset of either RECLAIM program.

Since there were no costs associated with the initially allocated NO<sub>x</sub> RTCs for a RECLAIM facility, the facilities would not incur financial losses as a result of complying with Rule 2002(f)(10) if their frozen future compliance year NO<sub>x</sub> RTC holdings are at or below their respective adjusted initial allocations. However, it was estimated that, out of the total 0.174 TPD of future compliance year NO<sub>x</sub> RTCs currently held by the 22 facilities, at least 0.021 TPD were acquired by some of the affected facilities in addition to their initial allocations, either through purchases with positive prices or transfers at no cost. If these facilities continue to stay in the NO<sub>x</sub> RECLAIM program and their NO<sub>x</sub> emissions remain between 5% above and below their 2016 levels,<sup>14</sup> then 0.056 - 0.017 TPD of these additionally acquired RTCs were estimated to be used for compliance purposes, with the remaining 0.004 - 0.015 TPD being potential surplus RTCs available for sale or transfer. Applying the most recent 12-month rolling average NO<sub>x</sub> RTC price for compliance year 2017 of \$2,530 per ton,<sup>15</sup> the total value of all potential surplus RTCs would be approximately \$3,700 - \$13,900 in RECLAIM compliance year 2019 and all subsequent RECLAIM compliance years. These facilities can elect to transfer or sell these RTCs prior to receiving a final determination notification. If the facility is holding these RTCs at or after the issuance of a final determination notification they will not be able to sell, use, or transfer the RTCs.

In addition, 6 - 7 out of the 22 facilities are estimated to have insufficient NO<sub>x</sub> RTC holdings if they were to continue to stay in the NO<sub>x</sub> RECLAIM program and their NO<sub>x</sub> emissions remain between 5% above and below their 2016 levels. By exiting the NO<sub>x</sub> RECLAIM program, these facilities would avoid the need to acquire about 0.012 - 0.015 TPD of NO<sub>x</sub> RTCs which, if valued at \$2,530 per ton, would imply potential total cost-savings worth approximately \$10,900 - \$13,900 in RECLAIM compliance year 2019 and for all subsequent RECLAIM compliance years.<sup>16</sup>

The dollar figures for the potential costs and savings for facilities exiting RECLAIM are highly sensitive to the assumed RTC price of \$2,530 per ton. In general, RTC prices are highly variable, with prices typically decreasing as their expiration dates approach and during the 60 days after expiration during which they can be traded. This general trend has been repeated every year since 1994 except for compliance years 2000 and 2001 (during the California energy crisis). Prices for NO<sub>x</sub> RTCs that expired in calendar year 2017 also followed this general trend. The general declining trend of RTC prices nearing and just past expiration indicates there was an adequate supply to meet RTC demand during the final reconciliation period following the end of the compliance years. Further uncertainty has been introduced due to the SCAQMD Governing Board's decision to transition to a command-and-control regulatory structure.

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<sup>14</sup> In order to estimate the number of RTCs needed for compliance in future years, it is necessary to project the emissions levels of all affected facilities. We analyze three scenarios; 1) emissions are 5% below 2016 levels; 2) emissions remain at 2016 levels; and 3) emissions are 5% above 2016 levels.

<sup>15</sup> 12-month rolling average of Compliance Year 2017 NO<sub>x</sub> RTCs, as calculated from July 2017 to July 2018. See Table I of "Twelve-Month and Three-Month Rolling Average Price of Compliance Years 2017 and 2018 NO<sub>x</sub> and SO<sub>x</sub> RTCs," available at: <http://www.aqmd.gov/docs/default-source/reclaim/nox-rolling-average-reports/nox-and-sox-rtcs-rolling-avg-price-cy-2017-18---jul-2018.pdf>

<sup>16</sup> Cost savings vary based on the projected emissions in compliance year 2019. The range in cost savings presented represents 5% below/above 2016 emission levels.

## Potential NOx RTC Market Impacts

Since the SCAQMD Governing Board's March 2017 adoption of the 2016 AQMP, which includes the sunset of NOx RECLAIM, the number of NOx IYB trades has decreased significantly. The IYB price has also declined rapidly, from a 12-month rolling average of \$380,057 per ton in January 2017 to \$20,103 per ton in July 2018, which largely reflects the remaining years of the NOx RECLAIM program life that is expected by the market participants. However, the short-term price impact of facility exit on the discrete-year RTC market may not go hand-in-hand with the overall impact of the NOx RECLAIM program transition on the IYB market, as evidenced by the surge in discrete-year NOx RTC prices in 2017.

The analysis below will focus on the potential impacts to the discrete-year NOx RTC market due to compliance with Rule 2002. The potential exit of the 22 facilities from the NOx RECLAIM program could possibly affect the demand and supply in the NOx RTC market for compliance year 2019 and beyond, as well as the future prevailing NOx RTC prices. Therefore, the remaining NOx RECLAIM facilities may be indirectly impacted as a result.

Table 10 reports the potentially foregone market demand and supply for three different NOx emission scenarios. The first scenario assumes future NOx emissions of the 22 facilities would be 5% below their respective 2016 levels; the second scenario assumes the same emission levels as in 2016; and the third scenario assumes their future NOx emissions would be 5% above their respective 2016 levels. These scenarios are consistent with the variations of overall NOx emissions from the RECLAIM universe, which had a maximum year-over-year difference of approximately 5% during the period of 2011 - 2016.

The foregone market demand, as estimated by the shortage of a facility's future compliance year NOx RTC holdings for NOx emissions reconciliation, would be about 0.012 - 0.015 TPD. At the same time, the potential foregone market supply from all facilities with potential surplus RTC holdings is estimated at 0.063 - 0.072 TPD, or about 317% - 507% greater than the estimated foregone market demand. However, some of these facilities with potential surplus NOx RTCs have never sold or transferred NOx RTCs to another NOx RECLAIM facility since the NOx RECLAIM program began in 1994. Therefore, it is reasonable to assume that they will not participate in the market even if they continue to stay in the NOx RECLAIM program. When estimated by the potential surplus NOx RTC holdings from only the facilities with a historical record of NOx RTC sales and/or transfers, the foregone market supply is estimated to be lower at 0.062 - 0.070 TPD, or about 309% - 494% greater than the estimated foregone market demand.

Additionally, when compared to the 7.00 TPD of discrete-year NOx RTCs traded in calendar year 2017, the estimated net foregone market supply of 0.048 - 0.060 TPD represents 0.6% - 0.8% of the total traded volume.<sup>17</sup>

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<sup>17</sup> In calendar year 2017, a total of 2,556 tons of discrete year NOx RTCs were traded (2556 tons/365 days = 7.00 TPD). See page ES-2 of "Annual RECLAIM Audit Report for 2016 Compliance Year," available at <http://www.aqmd.gov/docs/default-source/reclaim/reclaim-annual-report/2016-reclaim-report.pdf>. Notice, however, that some of the RTCs might have been traded more than once in the same year.

Given the analysis above and the fact that the 22 facilities currently account for 0.6% of annual NOx emissions and 0.8% of the NOx RTC holdings in the NOx RECLAIM universe in compliance year 2019, the simultaneous transition of the 22 facilities out of the NOx RECLAIM program would have a very small impact, if any, on the demand and supply of NOx RTC market. Specifically, while the transition of the 22 facilities could potentially assert upward pressure on the discrete-year NOx RTC prices, it is unlikely to result in large price fluctuations in the NOx RTC market, nor is the transition expected to significantly affect the remaining NOx RECLAIM facilities that are not yet ready to exit.

There are currently procedures in place to intervene if the NOx RTC price becomes excessively high. Rule 2002(f)(1)(H) specifies that in the event that the NOx RTC price exceeds \$22,500 per ton based on the 12-month rolling average, or exceeds \$35,000 per ton based on the 3-month rolling average calculated pursuant to subparagraph (f)(1)(E), the Executive Officer will report the determination to the Governing Board. If the Governing Board finds that the 12-month rolling average RTC price exceeds \$22,500 per ton or the 3-month rolling average RTC price exceeds \$35,000 per ton, then the Non-tradable/Non-usable NOx RTCs, as specified in subparagraphs (f)(1)(B) and (f)(1)(C) valid for the period in which the RTC price is found to have exceeded the applicable threshold, shall be converted to Tradable/Usable NOx RTCs upon Governing Board concurrence.

**Table 10: Potential Impacts on NOx RTC Market Demand and Supply**

		NOx Emission Scenarios for Future Compliance Years		
		<i>5% Below 2016 NOx Emissions</i>	<i>Same as 2016 NOx Emissions</i>	<i>5% Above 2016 NOx Emissions</i>
<b>A</b>	<b>Foregone Market Demand</b>	0.012	0.013	0.015
<b>B</b>	<b>Foregone Market Supply</b> <i>– From All Facilities with Surplus RTC Holdings</i>	0.072	0.067	0.063
<b>C</b>	<b>Net Foregone Market Supply</b> (= B - A)	0.060	0.054	0.048
	<b>Percent Difference:</b> <i>(Supply – Demand)/Demand</i> (= C / A)	507%	402%	317%
<b>D</b>	<b>Foregone Market Supply</b> <i>– From Facilities with Surplus RTC Holdings &amp; Historical Record of RTC Sales/Transfers</i>	0.070	0.066	0.062
<b>E</b>	<b>Net Foregone Market Supply</b> (= D - A)	0.058	0.052	0.047
	<b>Percent Difference:</b> <i>(Supply – Demand)/Demand</i> (= E / A)	494%	392%	309%

Note: The supply and demand of NOx RTCs are expressed in TPD and rounded to the nearest thousandth. Percent differences are rounded to the nearest integer.

It is possible that the vast majority of facilities will opt to remain in RECLAIM following the adoption of the PAR 1146 series. The decision to remain in RECLAIM coincides with more favorable NSR provisions and those facilities with surplus RTCs may wish to remain in order to sell excess credits. Conversely, those facilities with insufficient RTC holdings have incentive to opt out of RECLAIM and forego acquiring the necessary RTCs to comply with RECLAIM requirements. Under this scenario, the adoption of the PAR 1146 series could potentially result in a net cost savings as it pertains to the RTCs currently held by RECLAIM facilities.

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**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**Final Subsequent Environmental Assessment for Proposed Amended Rules 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and Proposed Rule 1100 – Implementation Schedule for NOx Facilities**

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## PREFACE

This document constitutes the Final Subsequent Environmental Assessment (SEA) for Proposed Amended Rules 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters (referred to herein as PARs 1146 series); and Proposed Rule 1100 – Implementation Schedule for NOx Facilities (PR 1100). A Draft SEA was circulated for a 45-day public review and comment period from April 3, 2018 to May 18, 2018 (referred to herein as the original Draft SEA) and four comment letters were received. Changes were made to the project description after the comment period for the original Draft SEA ended, SCAQMD staff revised the original Draft SEA and prepared a Revised Draft SEA which included a revised project description, a revised environmental analysis, the four comment letters received relative to the original Draft SEA and responses to the comments. The Revised Draft SEA, which superseded the original Draft SEA, was circulated for a 45-day public review and comment period from September 27, 2018 to November 13, 2018; no comment letters were received relative to the Revised Draft SEA. The comment letters and responses relative to the original Draft SEA have been included in Appendix G of this Final SEA.

Analysis of PARs 1146 series and PR 1100 in the original Draft SEA and the Revised Draft SEA indicated that while reducing NOx emissions is an environmental benefit, secondary significant adverse environmental impacts were also expected for the topic area of hazards and hazardous materials. Since significant adverse impacts were identified, an alternatives analysis and mitigation measures are required and are included in the Final SEA. [CEQA Guidelines Section 15252].

To facilitate identification of the changes between the original Draft SEA and the Revised Draft SEA, modifications to the document were included as underlined text and text removed from the document was indicated by ~~strikethrough~~. Subsequent to the release of the Revised Draft SEA for public review and comment, minor modifications were made to PARs 1146 series and PR 1100 and some of the revisions were made in response to verbal and written comments received during the rule development process. The minor modifications include: 1) the addition, revision, and removal of definitions for clarification; 2) rewording and renumbering of rule language; 3) the addition of requirements to conduct either quarterly or annual source tests (after a facility demonstrates compliance with four consecutive quarterly source tests) to demonstrate compliance with the ammonia emissions limit for new or modified air pollution control devices using ammonia; and 4) allowing units at municipal sanitation service facilities to maintain existing NOx emission limits until a Regulation XI rule is adopted or amended. To facilitate identification of these additional changes, modifications made in this Final SEA are included as double underlined text and text removed from the document is indicated by ~~double-strikethrough~~. To avoid confusion, minor formatting changes are not shown in underline or strikethrough mode.

Staff has reviewed the modifications to PARs 1146 series and PR 1100 and concluded that none of the revisions: 1) constitute significant new information; 2) constitute a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the Revised Draft SEA. In addition, revisions to the proposed project in response to verbal or written comments during the rule development process would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Revised Draft SEA pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Therefore, the Revised Draft SEA has been revised to include the aforementioned modifications such that is now the Final SEA for PARs 1146 series and PR 1100.

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## **CHAPTER 1**

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### **EXECUTIVE SUMMARY**

**Introduction**

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**Areas of Controversy**

**Executive Summary**

## INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (SCAQMD) in 1977<sup>1</sup> as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin (Basin) and portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin. In 1977, amendments to the federal Clean Air Act (CAA) included requirements for submitting State Implementation Plans (SIPs) for nonattainment areas that fail to meet all federal ambient air quality standards (CAA Section 172), and similar requirements exist in state law (Health and Safety Code Section 40462). The federal CAA was amended in 1990 to specify attainment dates and SIP requirements for ozone, carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), and particulate matter with an aerodynamic diameter of less than 10 microns (PM<sub>10</sub>). In 1997, the United States Environmental Protection Agency (U.S. EPA) promulgated ambient air quality standards for particulate matter with an aerodynamic diameter less than 2.5 microns (PM<sub>2.5</sub>). The U.S. EPA is required to periodically update the national ambient air quality standards (NAAQS).

In addition, the California Clean Air Act (CCAA), adopted in 1988, requires the SCAQMD to achieve and maintain state ambient air quality standards for ozone, CO, sulfur dioxide (SO<sub>2</sub>), and NO<sub>2</sub> by the earliest practicable date. (Health and Safety Code Section 40910.) The CCAA also requires a three-year plan review, and, if necessary, an update to the SIP. The CCAA requires air districts to achieve and maintain state standards by the earliest practicable date and for extreme non-attainment areas, to include all feasible measures pursuant to Health and Safety Code Sections 40913, 40914, and 40920.5. The term “feasible” is defined in the Title 14 of the California Code of Regulations, Section 15364, as a measure “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.”

By statute, the SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all federal and state ambient air quality standards for the areas under the jurisdiction of the SCAQMD<sup>2</sup>. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP<sup>3</sup>. The AQMP is a regional blueprint for how the SCAQMD will achieve air quality standards and healthful air and the 2016 AQMP<sup>4</sup> contains multiple goals promoting reductions of criteria air pollutants, greenhouse gases (GHGs), and toxic air contaminants (TACs). In particular, the 2016 AQMP states that both NO<sub>x</sub> and volatile organic compounds (VOC) emissions need to be addressed, with the emphasis that NO<sub>x</sub> emission reductions are more effective to reduce the formation of ozone and PM<sub>2.5</sub>. Ozone is a criteria pollutant shown to adversely affect human health and is formed when VOCs react with NO<sub>x</sub> in the atmosphere. NO<sub>x</sub> is a precursor to the formation of ozone and PM<sub>2.5</sub>, and NO<sub>x</sub> emission reductions are necessary to achieve the ozone standard attainment. NO<sub>x</sub> emission reductions also contribute to attainment of PM<sub>2.5</sub> standards.

In October 1993, the SCAQMD Governing Board adopted Regulation XX – Regional Clean Air Incentives Market (RECLAIM) to reduce NO<sub>x</sub> and oxides of sulfur (SO<sub>x</sub>) emissions from

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<sup>1</sup> The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., Ch. 324 (codified at Health and Safety Code Section 40400-40540).

<sup>2</sup> Health and Safety Code Section 40460(a).

<sup>3</sup> Health and Safety Code Section 40440(a).

<sup>4</sup> SCAQMD, Final 2016 Air Quality Management Plan, March 2017. <http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>

facilities. The RECLAIM program was designed to take a market-based approach to achieve emission reductions, as an aggregate. The RECLAIM program was created to be equivalent to achieving emissions reductions under a command-and-control approach, but by providing facilities with the flexibility to seek the most cost-effective solution to reduce their emissions. The market-based approach used in RECLAIM was based on using a supply-and-demand concept, where the cost to control emissions and reduce a facility's emissions would eventually become less than the diminishing supply of NO<sub>x</sub> RECLAIM trading credits (RTCs). However, analysis of the RECLAIM program over the long term has shown that the ability to achieve actual NO<sub>x</sub> emission reductions has diminished, due to a large amount of RTCs resulting from shutdowns being re-introduced into the market prior to amendments to Rule 2002 in October 2016 to address this issue.

In the 2016 AQMP, control measure CMB-05 - Further NO<sub>x</sub> Reductions from RECLAIM Assessment, committed NO<sub>x</sub> emission reductions of five tons per day to occur by 2025. The process of transitioning NO<sub>x</sub> RECLAIM facilities to a command-and-control regulatory structure will ensure that the affected equipment will meet Best Available Retrofit Control Technology (BARCT) level equivalency as soon as practicable.

The Governor approved Assembly Bill (AB) 617 on July 26, 2017, which addresses non-vehicular air pollution including criteria pollutants and TACs. AB 617 is a companion legislation to approved AB 398, which extends California's cap-and-trade program for reducing GHG emissions from stationary sources. AB 617 requires Air Districts to develop by January 1, 2019 an expedited schedule for the implementation of BARCT by December 31, 2023 for cap-and-trade facilities. A subset of RECLAIM facilities will be subject to the requirements of ABs 617 and 398. To address these requirements, SCAQMD staff completed an analysis of the RECLAIM equipment at each facility, giving a higher priority to older, higher polluting units that need to install retrofit controls. To have all units achieve BARCT level equivalency, it was concluded that command-and-control rules would need to be adopted and/or amended, along with an implementation schedule.

As a result of control measure CMB-05 from the 2016 AQMP and ABs 617 and 398, SCAQMD staff has been directed by the Governing Board to begin the process of transitioning equipment at NO<sub>x</sub> RECLAIM facilities from a facility permit structure to an equipment-based command-and-control regulatory structure per SCAQMD Regulation XI – Source Specific Standards. Thus, SCAQMD has begun this transition process by proposing amendments to Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; and Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters. Proposed Amended Rules (PAR) 1146, 1146.1, and 1146.2 (collectively referred to herein as the PARs 1146 series)-will be is one of the first set of rules to be amended to initiate the transition of equipment from the NO<sub>x</sub> RECLAIM program to a command-and-control regulatory structure while achieving BARCT. As a result of the BARCT assessment conducted for PARs 1146 and 1146.1, some units at non-RECLAIM facilities will also be affected and will be required to meet BARCT NO<sub>x</sub> emissions equivalency according to the compliance schedule specified in PARs 1146 and 1146.1.

In addition, SCAQMD staff has developed Proposed Rule (PR 1100), an administrative rule which establishes the compliance schedule for the Rule 1146 and 1146.1 units at RECLAIM facilities~~PARs 1146 series facilities exiting the RECLAIM program.~~ The compliance schedule for

PARs 1146 and 1146.1 ~~PARs 1146 series~~ will be a ~~two three-five-~~ two three-five- to ~~four~~six- year period depending on the equipment size, ~~and~~ number of affected units at each facility, and based on how the facility will meet the compliance schedule and NOx emission limits (e.g., burner retrofit, SCR system installation, or equipment replacement). In addition, facilities with multiple units subject to multiple source-specific landing rules (e.g., SCAQMD rules other than the PARs 1146 series) will also be taken into consideration. Implementation of the proposed project is estimated to reduce NOx emissions by 0.20 ton per day by January 1, 2021 and 0.23-0.27 ton per day by January 1, 2023 and it is expected to be achieved by the installation of selective catalytic reduction (SCR) technology/systems and ultra-low NOx burners.

## CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA) requires that all potential adverse environmental impacts of proposed projects be evaluated and that methods to reduce or avoid identified significant adverse environmental impacts of these projects be implemented, if feasible. The purpose of the CEQA process is to inform the SCAQMD Governing Board, public agencies, and interested parties of potential adverse environmental impacts that could result from implementing the proposed project and to identify feasible mitigation measures or alternatives, when an impact is significant.

Public Resources Code Section 21080.5 allows public agencies with regulatory programs to prepare a plan or other written documents in lieu of a negative declaration or environmental impact report once the secretary of the resources agency has certified the regulatory program. The SCAQMD's regulatory program was certified by the secretary of resources agency on March 1, 1989 and has been adopted as SCAQMD Rule 110 – Rule Adoption Procedures to Assure Protection and Enhancement of the Environment. Pursuant to Rule 110 (the rule which implements the SCAQMD's certified regulatory program), the SCAQMD typically prepares an Environmental Assessment (EA) to evaluate the environmental impacts for rule projects proposed for adoption or amendment.

PARs 1146 series and PR 1100 are considered a “project” as defined by CEQA. PARs 1146 series contains amendments that revise existing requirements included in Rules 1146 and 1146.1, as amended in September 2008 and November 2013, and Rule 1146.2 as amended in May 2006.

PARs 1146 series in combination with PR 1100 will transition affected units at NOx RECLAIM facilities to a command-and-control regulatory structure. NOx RECLAIM facilities with equipment subject to PARs 1146 and, 1146.1, ~~and 1146.2~~ will be required to meet the NOx emission limits in these rules in accordance with the implementation schedule outlined in PR 1100. In addition, a subset of units at non-RECLAIM facilities will be required to meet new NOx emission limits according to the compliance schedule specified in PARs 1146 and 1146.1. The decision to transition from NOx RECLAIM into a source-specific command-and-control regulatory structure was approved by the SCAQMD Governing Board as control measure CMB-05 in the 2016 AQMP and the potential environmental impacts associated with the 2016 AQMP, including CMB-05, were analyzed in the Final Program Environmental Impact Report (Program EIR) certified in March 2017<sup>5</sup>.

<sup>5</sup> SCAQMD, Final Program Environmental Impact Report for the 2016 Air Quality Management Plan, March 2017. <http://www.aqmd.gov/home/research/documents-reports/lead-agency-scaqmd-projects/scaqmd-projects---year-2017>

Analysis of PARs 1146 and 1146.1 indicates that the estimated NOx emission reductions that were originally projected to be achieved as part of the September 2008 amendments to both Rules 1146 and 1146.1 will be greater than originally projected in the September 2008 Final Environmental Assessments (EAs)<sup>6,7</sup> because additional facilities that were originally subject to the NOx RECLAIM program will now be subject to the NOx emission limits contained in PARs 1146 and 1146.1.

Initial analysis of the baseline inventory for RECLAIM facilities with Rule 1146.2 units estimates NOx emissions to be minimal relative to the emission inventory from Rules 1146 and 1146.1 units, as indicated in Chapter 3, Table 3-1. However, it is important to note that Rule 1146.2 units are smaller units that are exempt from permitting requirements under Rule 219 - Equipment Not Requiring a Written Permit Pursuant to Regulation II. Non-RECLAIM facilities currently register Rule 1146.2 equipment from one up to and including two MMBtu per hour under Rule 222 - Filing Requirements For Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II. RECLAIM facilities are currently exempt from this provision. Additionally, the RECLAIM NOx emissions for combustion sources not requiring a written permit are reported on a quarterly basis as an aggregate sum for these devices. As a result, the permitted Rule 1146.2 universe may not fully represent the actual number of Rule 1146.2 units at RECLAIM facilities because the majority of the Rule 1146.2 units in RECLAIM are not currently registered or permitted with SCAQMD. Therefore, it is difficult to establish a precise inventory of the Rule 1146.2 units at RECLAIM facilities at this time. However, the additional Rule 1146.2 units (permitted and unpermitted) that will transition out of the NOx RECLAIM program and instead meet the NOx emissions limits in PAR 1146.2 were not projected in the May 2006 Final EA<sup>8</sup>. A RECLAIM facility with Rule 1146.2 units will be required to meet the applicable NOx concentration limit as specified in Rule 1146.2 by December 31, 2023. SCAQMD staff will conduct additional BARCT research along with obtaining updated emission inventory data if that is available. If the research shows that BARCT is more stringent so that significant additional NOx emissions reductions can be obtained, then staff will initiate a subsequent rule development process. Implementation of the proposed project is estimated to reduce NOx emissions by 0.20 ton per day by January 1, 2021 and ~~0.23~~0.27 ton per day by January 1, 2023.

SCAQMD staff has determined that PARs 1146 series and PR 1100 contain new information of substantial importance which was not known and could not have been known at the time: 1) the Final EAs were certified for the September 2008 amendments to Rules 1146 and 1146.1 (referred to herein as the September 2008 Final EAs for Rules 1146 and 1146.1); 2) the Final EA was certified for the May 2006 amendments to Rule 1146.2 (referred to herein as the May 2006 Final EA); and 3) the Final Program EIR was certified for the March 2017 adoption of the 2016 AQMP (referred to herein as the March 2017 Final Program EIR. However, PARs 1146 series is not expected to create new significant effects that were not discussed in the previous September 2008 Final EAs for Rules 1146 and 1146.1, the May 2006 Final EA for Rule 1146.2, and the March 2017 Final Program EIR for the 2016 AQMP.

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<sup>6</sup> Final Environmental Assessment for Proposed Amended Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; SCH No. 2008011127; Certified September 5, 2008.

<sup>7</sup> Final Environmental Assessment for Proposed Amended Rule 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; SCH No. 2008071014; Certified September 5, 2008.

The September 2008 Final EA for Rule 1146 identified significant adverse environmental impacts in the areas of air quality and hazards and hazardous materials. The analysis in the September 2008 Final EA determined the amendments to Rule 1146 had the potential to create significant adverse hazards and hazardous materials impacts associated with the use and storage of aqueous ammonia. Mitigation measures were identified to minimize the significant, adverse hazards and hazardous materials impacts, but would not reduce the potentially significant impacts to a level of insignificance. No other feasible mitigation measures were identified. As such, mitigation measures were made a condition of the approval of this project. Findings, a Statement of Overriding Considerations, and Mitigation Monitoring Plan were adopted for this project.

The September 2008 Final EA for Rule 1146.1 concluded that September 2008 amendments to Rule 1146.1 would not generate any significant adverse environmental impacts. Since no significant adverse environmental impacts were identified, no alternatives analysis and no mitigation measures were required by CEQA. Mitigation measures were not made a condition of the approval of this project and a Mitigation Monitoring Plan was not adopted for this project. Findings were not made and a Statement of Overriding Considerations was not adopted for this project.

As with the September 2008 amendments to Rule 1146.1, the May 2006 Final EA for Rule 1146.2 also concluded that May 2006 amendments to Rule 1146.2 would not generate any significant adverse environmental impacts. Since no significant adverse environmental impacts were identified, no alternatives analysis and no mitigation measures were required by CEQA. Mitigation measures were not made a condition of the approval of this project and a Mitigation Monitoring Plan was not adopted for this project. Findings were not made and a Statement of Overriding Considerations was not adopted for this project.

The March 2017 Final Program EIR for the 2016 AQMP determined that the overall implementation of CMB-05 has the potential to generate adverse environmental impacts to seven topic areas – air quality, energy, hazards and hazardous materials, hydrology and water quality, noise, solid and hazardous waste and transportation. More specifically, the March 2017 Final Program EIR evaluated the impacts from installation and operation of additional control equipment and SCR or SNCR equipment potentially resulting in construction emissions increased electricity demand, hazards from additional ammonia transport and use, increase in water use and wastewater discharge, changes in noise volume, generation of solid waste from construction and disposal of old equipment and catalysts replacements, as well as changes in traffic patterns and volume. For the entire 2016 AQMP, the analysis concluded that significant and unavoidable adverse environmental impacts from the project are expected to occur after implementing mitigation measure for the following environmental topic areas: 1) aesthetics from increased glare and from the construction and operation of catenary lines and use of bonnet technology for ships; 2) construction air quality and GHGs; 3) energy (due to increased electricity demand); 4) hazards and hazardous materials due to (a) increased flammability of solvents; (b) storage, accidental release and transportation of ammonia, (c) storage and transportation of liquefied natural gas (LNG); and (d) proximity to schools; 5) hydrology (water demand); 6) construction noise and vibration; 7) solid construction waste and operational waste from vehicle and equipment scrapping; and, 8) transportation and traffic during construction and during operation on roadways with catenary lines and at the harbors. Since significant adverse environmental impacts were identified, mitigation measures were identified and applied. However, the March 2017 Final Program EIR concluded that the 2016 AQMP would have significant and unavoidable adverse environmental impacts even after mitigation measures were identified and applied. As such, mitigation measures were made a

condition of project approval and a Mitigation Monitoring and Reporting Plan was adopted. Findings were made and a Statement of Overriding Considerations was prepared and adopted for this project.

PAR 1146 is expected to have: 1) significant effects that were not discussed in the previous September 2008 Final EA for Rule 1146 and March 2017 Final Program EIR for the 2016 AQMP (CEQA Guidelines Section 15162(a)(3)(A)); and 2) significant effects that were previously examined that will be substantially more severe than what was discussed in the September 2008 Final EA for Rule 1146 and the March 2017 Final Program EIR for the 2016 AQMP (CEQA Guidelines Section 15162(a)(3)(B)).

Similarly, PAR 1146.1 is also expected to have significant effects that were not discussed in the previous September 2008 Final EA for Rule 1146.1 and March 2017 Final Program EIR for the 2016 AQMP (CEQA Guidelines Section 15162(a)(3)(A)). However, PAR 1146.2 is not expected to create new significant effects that were not discussed in the previous May 2006 Final EA for Rule 1146.2 and the March 2017 Final Program EIR for the 2016 AQMP.

Further, PARs 1146 series and PR 1100 contain new information of substantial importance as they relate to PARs 1146, 1146.1, and 1146.2, and control measure CMB-05. Thus, analysis of the proposed project indicates that the type of CEQA document appropriate for the proposed project is a Subsequent Environmental Assessment (SEA), in lieu of an EA. The SEA is a substitute CEQA document, prepared in lieu of a Subsequent Environmental Impact Report with significant impacts (CEQA Guidelines Section 15162(b)), pursuant to the SCAQMD's Certified Regulatory Program (CEQA Guidelines Section 15251(l); codified in SCAQMD Rule 110). The SEA is also a public disclosure document intended to: 1) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental impacts of the proposed project; and 2) be used as a tool by decision makers to facilitate decision making on the proposed project.

Because the new potentially significant adverse effects to hazards and hazardous materials that may result from implementing PARs 1146 and 1146.1 were not analyzed at the project level in the September 2008 Final EAs for Rules 1146 and 1146.1 or the March 2017 Final Program EIR for the 2016 AQMP, and because PAR 1146.2 and PR 1100 contain new information that was not previously considered, the SCAQMD, as lead agency for the proposed project has prepared this SEA with significant impacts pursuant to its Certified Regulatory Program. Because PARs 1146 series and PR 1100 may have statewide, regional or areawide significance, a CEQA scoping meeting is required pursuant to Public Resources Code Section 21083.9(a)(2) and was held at the SCAQMD's Headquarters in conjunction with the Public Workshop on February 14, 2018. One oral, CEQA-related comment was made at the Public Workshop/CEQA scoping meeting relative to PARs 1146 series and PR 1100. The comment and response are included in Appendix F of this ~~Revised Draft~~ Final SEA. Further, pursuant to CEQA Guidelines Section 15252, since significant adverse impacts have been identified, an alternatives analysis and mitigation measures are required.

~~The~~ Draft SEA ~~was~~ ~~has~~ ~~been~~ released and circulated for a 45-day public review and comment period from ~~Tuesday~~, April 3, 2018 to May 18, 2018 (referred to herein as the original Draft SEA) at 5:00 p.m. However, changes were made to the project description after the comment period ended. SCAQMD staff revised the environmental analysis in the original Draft SEA and prepared ~~this~~ a Revised Draft SEA which ~~was~~ ~~is~~ ~~now~~ ~~being~~ circulated for an additional 45-day public review and comment period. The Revised Draft SEA includes a revised project description and a revised

~~analysis of potential adverse environmental impacts that could be generated from the proposed project. This The Revised Draft SEA supersedes superseded the original Draft SEA. Four comment letters were received relative to the original Draft SEA during the public comment period from April 3, 2018 to May 18, 2018 and responses have been were prepared. The comment letters and responses relative to the original Draft SEA have been were included in Appendix G of this the Revised Draft SEA relative to the analysis presented in this Draft SEA will be included in an appendix and responded to in the. The Revised Draft SEA was has been released for a 45-day public review and comment period from September 27, 2018 to November 13, 2018 at 5:00 pm. and nNo Comment letters were received during the new public comment period of September 27, 2018 to November 13, 2018 relative to the analysis presented in the Revised Draft SEA.~~

The September 2008 Final EA for Rule 1146, the September 2008 Final EA for Rule 1146.1, the May 2006 Final EA for Rule 1146.2, and the March 2017 Final Program EIR for the 2016 AQMP upon which this SEA relies, are available from the SCAQMD's website at:

September 2008 Final EA for Rule 1146: <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2008/final-environmental-assessment-for-proposed-amended-rule-1146.pdf>

September 2008 Final EA for Rule 1146.1: <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2008/final-environmental-assessment-for-proposed-amended-rule-1146-1.pdf>

May 2006 Final EA for Rule 1146.2: <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2006/final-ea-for-proposed-amended-rule-1146-2.doc>

March 2017 Final Program EIR for the 2016 AQMP:  
<http://www.aqmd.gov/home/research/documents-reports/lead-agency-scaqmd-projects/scaqmd-projects---year-2017>

The above documents may also be obtained by visiting the Public Information Center at SCAQMD Headquarters located at 21865 Copley Drive, Diamond Bar, CA 91765; or by contacting Fabian Wesson, Public Advisor by phone at (909) 396-2039 or by email at [PICrequests@aqmd.gov](mailto:PICrequests@aqmd.gov).

Subsequent to the release of the Revised Draft SEA for public review and comment, minor modifications were made to PARs 1146 series and PR 1100 and some of the revisions were made in response to verbal and written comments received during the rule development process. The minor modifications include: 1) the addition, revision, and removal of definitions for clarification; 2) rewording and renumbering of rule language; 3) quarterly source testing of the ammonia emissions limit for new or modified air pollution control devices using ammonia instead of annual source testing (if a facility demonstrates compliance with four consecutive quarterly source tests, the facility can source test annually); and 4) allowing units at municipal sanitation service facilities to maintain existing NOx emission limits until a Regulation XI rule is adopted or amended.

Staff has reviewed the modifications to PARs 1146 series and PR 1100 and concluded that none of the revisions: 1) constitute significant new information; 2) constitute a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the Revised Draft SEA. The Revised Draft SEA concluded significant adverse hazards and hazardous materials impacts for the storage and use of aqueous ammonia and the revisions to PARs 1146 series and PR 1100 in response to verbal or written comments from the rule

development process would not create new/additional or avoidable significant effects or make the aforementioned hazards and hazardous materials impacts worse. As a result, these minor revisions do not require recirculation of the Revised Draft SEA pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Therefore, the Revised Draft SEA has been revised to include the aforementioned modifications such that is now the Final SEA for PARs 1146 series and PR 1100.

Prior to making a decision on the adoption of PARs 1146 series and PR 1100, the SCAQMD Governing Board must review, consider, and certify the Final SEA, including responses to comments, as providing adequate information on the potential adverse environmental impacts that may occur as a result of adopting PARs 1146 series and PR 1100.

## PREVIOUS CEQA DOCUMENTATION

This ~~Final Revised Draft~~ SEA is a comprehensive environmental document that analyzes potential environmental impacts from PARs 1146 series and PR 1100. SCAQMD rules, as ongoing regulatory programs, have the potential to be revised over time due to a variety of factors (e.g., regulatory decisions by other agencies, new data, and lack of progress in advancing the effectiveness of control technologies to comply with requirements in technology forcing rules, etc.). Rule 1146 was adopted in September 1988 and amended in January 1989, May 1994, June 2000, November 2000, September 2008, and November 2013. Rule 1146.1 was adopted in October 1990 and was amended July 1992, May 1994, September 2008, and November 2013. Rule 1146.2 was adopted January 1998 and amended January 2005 and May 2006. Several previous environmental analyses have been prepared that analyzed the past amendments to Rule 1146, 1146.1, and 1146.2. Also, the 2016 AQMP was adopted in March 2017 and an environmental analysis for the entire 2016 AQMP, including control measure CMB-05, was addressed in the March 2017 Final Program EIR. However, because PR 1100 is a new rule, there is no previous CEQA documentation available; but PR 1100 is integrally related to the PARs 1146 series, since PR 1100 simply specifies an implementation schedule for the PARs 1146 and 1146.1 series.

The following summarizes the contents of the CEQA documents prepared for previous versions of Rules 1146, 1146.1, and 1146.2 and for the 2016 AQMP in reverse chronological order and are included for informational purposes. For the CEQA documents that were prepared after January 1, 2000, a link for downloading files from the SCAQMD's website is provided immediately following the summaries. In addition, hardcopies of these CEQA documents can be obtained by submitting a Public Records Act request to the SCAQMD's Public Records Unit.

**Final Program Environmental Impact Report for the 2016 Air Quality Management Plan; March 2017 (2016071006):** The 2016 AQMP identified control measures and strategies to bring the region into attainment with the revoked 1997 8-hour NAAQS (standard) (80 ppb) for ozone by 2024; the 2008 8-hour ozone standard (75 ppb) by 2032; the 2012 annual PM<sub>2.5</sub> standard (12 µg/m<sup>3</sup>) by 2025; the 2006 24-hour PM<sub>2.5</sub> standard (35 µg/m<sup>3</sup>) by 2019; and the revoked 1979 1-hour ozone standard (120 ppb) by 2023. The 2016 AQMP consists of three components: 1) the SCAQMD's Stationary, Area, and Mobile Source Control Measures; 2) State and Federal Control Measures provided by the California Air Resources Board; and 3) Regional Transportation Strategy and Control Measures provided by the Southern California Association of Governments. The 2016 AQMP includes emission inventories and control measures for stationary, area and mobile sources, the most current air quality setting, updated growth projections, new modeling techniques, demonstrations of compliance with state and federal Clean Air Act requirements, and an implementation schedule for adoption of the proposed control strategy. A Final Program EIR

was prepared for the project which identified potential adverse impacts that may result from implementing the project for the following environmental topic areas: 1) aesthetics; 2) air quality and GHGs; 3) energy; 4) hazards and hazardous materials; 5) hydrology and water quality; 6) noise; 7) solid and hazardous waste; and 8) transportation and traffic. The analysis concluded that significant and unavoidable adverse environmental impacts from the project are expected to occur after implementing mitigation measures for the following environmental topic areas: 1) aesthetics from increased glare and from the construction and operation of catenary lines and use of bonnet technology for ships; 2) construction air quality and GHGs; 3) energy (due to increased electricity demand); 4) hazards and hazardous materials due to: (a) increased flammability of solvents; (b) storage, accidental release and transportation of ammonia; (c) storage and transportation of liquefied natural gas (LNG); and (d) proximity to schools; 5) hydrology (water demand); 6) construction noise and vibration; 7) solid construction waste and operational waste from vehicle and equipment scrapping; and 8) transportation and traffic during construction and during operation on roadways with catenary lines and at the harbors. Since significant adverse environmental impacts were identified, an alternatives analysis was required by CEQA and prepared. The March 2017 Final Program EIR concluded that the project would have significant and unavoidable adverse environmental impacts even after mitigation measures were identified and applied. As such, mitigation measures were made a condition of the approval of the project and a Mitigation Monitoring and Reporting Plan was adopted. Findings were made and a Statement of Overriding Considerations was prepared and adopted. The SCAQMD Governing Board certified the Final Program EIR and approved the project on March 3, 2017.

**Notice of Exemption From CEQA for Proposed Amended Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; and, Proposed Amended Rule 1146.1 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; November 2013:** The November 2013 amendments to Rule 1146 and 1146.1 addressed a SIP approvability issue that was raised by the U.S. EPA regarding the use of source test data and portable analyzers test results to prove a violation of the emission standard. Also included in the November 2013 amendments were the following minor changes: 1) a clarification that Rules 1146 and 1146.1 do not apply to NO<sub>x</sub> sources subject to the SCAQMD's Regulation XX – RECLAIM; 2) the identification of certain equipment that are not included under boiler or steam generator category; 3) an enhanced description pertaining to the types of operations that would be subject to Rule 1146; 4) a clarification that low fuel usage equipment are only subject to periodic tune-up requirements; and 5) a prohibition from derating equipment to a level at or below two million British Thermal Units (MMBtu) per hour.

The project was reviewed pursuant to CEQA Guidelines Section 15002(k)(1) and SCAQMD staff concluded that it could be seen with certainty that there was no possibility that the project had the potential to create any significant adverse impacts on the environment. Therefore, the SCAQMD determined that the project was exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) - Review for Exemption. The project was approved on November 1, 2013 and a Notice of Exemption was filed with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties. This document can be obtained by visiting the following website at: <http://www.aqmd.gov/docs/default-source/ceqa/notices/notices-of-exemption/2013/par1146noe.pdf>.

**Final Environmental Assessment for Proposed Amended Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; September 2008 (SCH No. 200811127/SCAQMD No. 01308BAR):** SCAQMD staff concluded the project would result in significant adverse environmental impacts in the areas of hazards and hazardous materials and air quality. The September 2008 amendments reduced the allowable NOx emission limits for boilers, steam generators and process heaters from 30 parts per million (ppm) to either 12 ppm, nine ppm or five ppm, depending on equipment size and operational characteristics. The September 2008 amendments also added NOx compliance limits for units burning landfill or digester gases at 25 ppm and 15 ppm, respectively. Other changes included: 1) establishing a weighted average formula for dual fueled co-fired units; 2) allowing existing units to be de-rated to no less than two MMBtu per hour per unit; 3) requiring compliance with a 30 ppm NOx limit for low fuel usage equipment by January 1, 2015 or burner replacement, whichever occurs later; 4) allowing a later compliance date for health facilities complying with seismic safety requirements; 5) establishing a staged compliance schedule over a multi-year period which varies by equipment size range and unit operation; 6) making the frequency of compliance testing compatible with sources subject to the RECLAIM program for the same equipment size range; and 7) allowing NOx emissions monitoring with a portable analyzer. The SCAQMD prepared a Draft EA, which identified significant adverse environmental impacts for air quality and hazards and hazardous materials. The Draft EA was released for a 45-day public review and comment period from June 13, 2008 to July 29, 2008 and one comment letter was received. The Final EA, including the comment letter and responses to comments, was certified by the SCAQMD Governing Board on September 5, 2008. Findings were made and a Statement of Overriding Considerations was also adopted for this project. This document can be obtained by visiting the following website at: <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2008/final-environmental-assessment-for-proposed-amended-rule-1146.pdf>.

**Final Environmental Assessment for Proposed Amended Rule 1146.1– Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; September 2008 (SCH No. 2008071014/SCAQMD No. 070108BAR):** The September 2008 amendments to Rule 1146.1 further reduced the NOx emission limits, included new NOx limits for atmospheric units to be 12 ppm or 0.015 pound per MMBtu, and units burning landfill or digester gases at 25 ppm and 15 ppm, respectively. The amendments also: 1) established a weighted average formula for dual fueled co-fired units; 2) allowed existing units to be de-rated to no less than two MMBtu per hour per unit; 3) made the frequency of compliance testing compatible with RECLAIM sources for the same equipment size range; 4) allowed for monitoring of NOx and CO emissions with a portable analyzer; 5) for low-fuel usage units, required compliance with a 30 ppm NOx limit by January 1, 2015 or burner replacement, whichever occurs later; 6) allowed thermal fluid heaters to continue compliance with the 30 ppm NOx limits; and 7) allowed a later compliance date for health facilities complying with seismic safety requirements. The SCAQMD prepared a Draft EA, which identified no significant adverse environmental impacts, to evaluate potential adverse impacts from the project. The Draft EA was released for a 30-day public review period from July 2, 2008 to July 31, 2008 and no comments were received. The Final EA was certified by the SCAQMD Governing Board on September 5, 2008. This document can be obtained by visiting the following website at: <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2008/final-environmental-assessment-for-proposed-amended-rule-1146-1.pdf>.

**Final Environmental Assessment for Proposed Amended Rule 1146.2– Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; May 2006 (SCAQMD No. 032206BAR):** The May 2006 amendments to Rule 1146.2 were crafted to partially offset the NO<sub>x</sub> emission reductions foregone from the previous amendments to Rule 1146.2 that were adopted on January 7, 2005. The amendments required: 1) Type 2 units (equipment with heat input ratings greater than 400,000 Btu per hour) to meet a NO<sub>x</sub> emission limit of 20 ppm on or after January 1, 2010; and 2) Type 1 units (equipment with a heat input rating equivalent to or less than 400,000 Btu per hour) to meet a NO<sub>x</sub> emission limit of 20 ppm on or after January 1, 2012. Other changes included: 1) providing more detailed specifications for demonstrating compliance with an existing exemption from retrofit requirements for equipment operating less than 9,000 therms per year; 2) clarifying rule applicability; 3) a specific recordkeeping requirement for larger units; 4) enhancing compliance and enforceability; and 5) improving clarity. The SCAQMD prepared a Draft EA, which identified no significant adverse environmental impacts, to evaluate potential adverse impacts from the project. The Draft EA was released for a 30-day public review period from March 23, 2006 to April 21, 2006 and no comments were received. The Final EA was certified by the SCAQMD Governing Board on May 5, 2006. This document can be obtained by visiting the following website at: <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2006/final-ea-for-proposed-amended-rule-1146-2.doc>.

**Final Environmental Assessment for Proposed Amended Rule 1146.2– Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; January 2005 (SCAQMD No. 120104KCS):** The January 2005 amendments to Rule 1146.2 extended the compliance date from January 1, 2005 to January 1, 2006 for existing units with a rated heat input greater than one MMBtu per hour but less than or equal to two MMBtu per hour manufactured on or after January 1, 1992. Specifically, on or after January 1, 2006, no person would be allowed to operate any existing unit with a rated heat input greater than one MMBtu per hour but less than or equal to two MMBtu per hour more than 15 years old based on the date of manufacture, unless the certified NO<sub>x</sub> emissions are less than or equal to 30 ppm. Further, on or after January 1, 2006, no person would be allowed operate in the District any unit more than 15 years old, based on the original date of manufacture with a rated heat input greater than 400,000 Btu per hour, but less than or equal to one MMBtu per hour manufactured prior to January 1, 2000 unless the certified NO<sub>x</sub> emissions are less than or equal to 30 ppm.

The SCAQMD prepared a Draft EA, which identified significant adverse environmental impacts for air quality, to evaluate potential adverse impacts from the project. The Draft EA was released for a 45-day public review period from October 8, 2004 to November 23, 2004 and one comment letter was received. The Final EA, including the comment letter and responses to comments, was certified by the SCAQMD Governing Board on January 7, 2005. Findings were made and a Statement of Overriding Considerations was also adopted for this project. This document can be obtained by visiting the following website at: [http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2005/fea-1146/fea\\_1146.pdf](http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2005/fea-1146/fea_1146.pdf).

**Notice of Exemption From CEQA for Proposed Amended Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; November 2000:** The November 2000 amendments to Rule 1146: 1) reduced the emission limit for gaseous fueled units to 30 ppm NO<sub>x</sub>; 2) reduced the emission limit for dual-fueled units to 30 ppm NO<sub>x</sub> or an average of 30 ppm to 40 ppm NO<sub>x</sub> weighted by fuel use; and 3) added annual emissions testing requirements and require totalizing fuel meters on all dual-fueled

units where operators elect to meet the fuel-weighted average. An air quality benefit of approximately 90 tons per year of NO<sub>x</sub> was estimated to result from implementation of the November 2000 amendments.

The project was reviewed pursuant to CEQA Guidelines Section 15002(k)(1). Because no substantial physical change to the existing setting was anticipated and no additional secondary control was required, the SCAQMD concluded that it could be seen with certainty that there was no possibility that the project had the potential to create any significant adverse impacts on the environment. Therefore, the SCAQMD determined that the project was exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) - Review for Exemption. The project was approved on November 17, 2000 and a Notice of Exemption was filed with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties. This document can also be obtained by visiting the following website at: <http://www.aqmd.gov/docs/default-source/ceqa/notices/notices-of-exemption/2000/noe-rule-1146.doc>.

**Final Environmental Assessment for Proposed Amended Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; June 2000 (SCAQMD No. 000502MK):** The SCAQMD prepared a Draft EA, which identified no significant adverse environmental impacts, to evaluate potential adverse impacts from the proposed amendment to Rule 1146. The Draft EA was released for a 30-day public review period from May 1, 2000 to May 31, 2000 and no comments were received. The Final EA was certified by the SCAQMD Governing Board on June 16, 2000. This document can be obtained by visiting the following website at: <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2000/final-ea-for-proposed-amended-rule-1146---emissions-of-oxides-of-nitrogen-from-industrial-institutional-and-commercial-boilers-steam-generators-and-process-heaters.doc>.

**Notice of Exemption From CEQA for Proposed Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; January 1998:** The adoption of Rule 1146.2 established NO<sub>x</sub> emission limits for water heaters and small boilers with a rated heat input between 75,000 and two MMBtu per hour. Rule 1146.2 was estimated to reduce NO<sub>x</sub> emissions by nine tons per day. Rule 1146.2 was reviewed pursuant to CEQA Guidelines Section 15061(b)(3) and SCAQMD staff determined that the project would not have any significant adverse impacts to the environment. The project was approved on January 9, 1998 and a Notice of Exemption was filed with the country clerks of Los Angeles, Orange, Riverside, and San Bernardino counties.

**Notice of Exemption From CEQA for Proposed Amended Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; May 1994:** The May 1994 amendments to Rule 1146: 1) added a tune-up procedure for natural draft boilers; 2) added a provision to allow permit owners and operators to tune their equipment once per year, instead of twice per year, provided that the equipment is used for six continuous months or less per year; 3) added a provision to exempt units from tune-up requirements provided that they are not in use during the entire calendar year; 4) deleted the Alternate Emission Control Plan (AECPP) provision since rule compliance dates have expired; and 5) extended the applicability of the rule to include solid fuels.

The project was reviewed pursuant to CEQA Guidelines Section 15061(b)(3) and SCAQMD staff determined that the project would not have any significant adverse impacts on the environment.

Further, SCAQMD staff also determined the project to be categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment and CEQA Guidelines Section 15321 – Enforcement Actions by Regulatory Agencies. The project was approved on May 13, 1994 and a Notice of Exemption was filed with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties.

**Notice of Exemption From CEQA for Proposed Amended Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; May 1994:** The May 1994 amendments to Rule 1146.1: 1) added a tune-up procedure for natural draft boilers; 2) added a provision to exempt units from tune-up requirements provided that they are not in use during the entire calendar year; and 3) extended the applicability of the rule to include solid fuels.

The project was reviewed pursuant to CEQA Guidelines Section 15061(b)(3) and SCAQMD staff determined that the project would not have any significant adverse impacts on the environment. Further, SCAQMD staff determined the project to be categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment and CEQA Guidelines Section 15321 – Enforcement Actions by Regulatory Agencies. The project was approved on May 13, 1994 and a Notice of Exemption was filed with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties.

**Notice of Exemption From CEQA for Proposed Amended Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; July 1992:** The July 1992 amendments to Rule 1146.1: 1) specified test methods; 2) required written approval of alternative test methods by the California Air Resources Board (CARB) and U.S. EPA; 3) provided a method to convert NO<sub>x</sub> concentrations to pounds of NO<sub>x</sub> per MMBtu, 4) limited the exemption period during startups and shutdowns to a maximum of six hours; and 5) clarified rule requirements.

The project was reviewed pursuant to District CEQA Guidelines Section 15061(b)(3) and SCAQMD staff determined that the project would not have any significant adverse impacts on the environment. The project was approved on July 10, 1992 and a Notice of Exemption was filed with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties.

**Notice of Exemption From CEQA for Proposed Amended Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; October 1990:** The October 1990 amendments to Rule 1146.1 established limits on NO<sub>x</sub> emissions from small industrial, institutional, and commercial boilers, steam generators, and process heaters with greater than two, but less than five MMBtu per hour heat input capacity. A “Notice of Intent to File a Determination of No Significant Impacts” (Determination), including the “Initial Study”, was prepared in accordance with state and District CEQA Guidelines. SCAQMD staff determined that no potentially significant impacts to the environment would occur as a result of implementing the project. The Determination was circulated for public review from August 22, 1990 through September 11, 1990 and no comments were received.

**Final Supplemental Environmental Impact Report: Proposed Amended Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; January 1989 (SCH No. 87110404):** Pursuant to CEQA, the SCAQMD prepared a Draft Supplemental Environmental Impact Report (SEIR) for the January 1989 amendments to Rule 1146. The Draft SEIR was a supplement to the March 1988 Final EIR prepared for Rule 1146 (SCH No. 87110404) and was circulated for a 45-day public review and comment period. Findings were made and a Statement of Overriding Considerations was adopted for the project. The Final SEIR was certified by the SCAQMD Governing Board on January 6, 1989.

**Final Environmental Impact Report for Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; September 1988 (SCH No. 87110404):** Pursuant to CEQA, the SCAQMD prepared a Draft Environmental Impact Report (EIR) for the September 1988 adoption of Rule 1146. The Draft EIR for Rule 1146 and was circulated for a 45-day public review. Findings were made and a Statement of Overriding Considerations was adopted for the project. The Final EIR was certified by the SCAQMD Governing Board on September 9, 1988.

## INTENDED USES OF THIS DOCUMENT

In general, a CEQA document is an informational document that informs a public agency's decision-makers and the public generally of potentially significant adverse environmental effects of a project, identifies possible ways to avoid or minimize the significant effects, and describes reasonable alternatives to the project (CEQA Guidelines Section 15121). A public agency's decision-makers must consider the information in a CEQA document prior to making a decision on the project. Accordingly, this ~~Final Revised Draft~~ SEA is intended to: a) provide the SCAQMD Governing Board and the public with information on the environmental effects of the proposed project; and b) be used as a tool by the SCAQMD Governing Board to facilitate decision-making on the proposed project.

Additionally, CEQA Guidelines Section 15124(d)(1) requires a public agency to identify the following specific types of intended uses of a CEQA document:

1. A list of the agencies that are expected to use the SEA in their decision-making;
2. A list of permits and other approvals required to implement the project; and
3. A list of related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies.

In addition to the SCAQMD's Governing Board which will consider the SEA for PARs 1146 series and PR 1100 in their decision-making, the CARB, a state agency, and the U.S. EPA, a federal agency, will be reviewing PARs 1146 series and PR 1100 and all supporting documents, including the SEA, as part of the process for considering the inclusion of PARs 1146 series and PR 1100 into the SIP. Moreover, PARs 1146 series and PR 1100 is not subject to any other related environmental review or consultation requirements.

To the extent that local public agencies, such as cities, county planning commissions, et cetera, are responsible for making land use and planning decisions related to projects that must comply with the requirements in PARs 1146 series and PR 1100, they could possibly rely on this SEA during

their decision-making process. Similarly, other single purpose public agencies approving projects that utilize compliant equipment subject to PARs 1146 series and PR 1100 may rely on this SEA.

## AREAS OF CONTROVERSY

CEQA Guidelines Section 15123(b)(2) requires a public agency to identify the areas of controversy in the CEQA document, including issues raised by agencies and the public. Over the course of developing the proposed project, concerns regarding PARs 1146 series and PR 1100 were expressed by representatives of industry and environmental groups, either in public meetings or in written comments, which are highlighted in Table 1-1.

**Table 1-1**  
**Areas of Controversy**

Areas of Controversy	Topics Raised by the Public	SCAQMD Evaluation
<u><b>New Source Review (NSR)</b></u>	<u>NSR issues related to the transition of RECLAIM facilities before BARCT rules are adopted or amended</u>	<u>Some industry stakeholders have requested that rulemaking with BARCT rule amendments should be suspended until NSR issues have been resolved. Staff believes that rulemaking should proceed while NSR issues are being addressed. State law (AB 617) requires implementation of BARCT for facilities in the state greenhouse gas cap and trade program by December 31, 2023. In addition, RECLAIM facilities will be able to begin implementing BARCT requirements while still in the RECLAIM program. Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx) was amended on October 5, 2018 to provide an option for RECLAIM facilities to remain in the RECLAIM program, until future provisions in Regulation XIII – New Source Review pertaining to RECLAIM are adopted. If an NSR event is triggered while the facilities elected to remain in RECLAIM, the facility will be subject to NSR provisions under Rule 2005 – New Source Review for RECLAIM.</u>
<u><b>Availability of Burner Retrofits</b></u>	<u>Availability of burner retrofits that can achieve a NOx limit of seven ppm</u>	<u>Some industry stakeholders have commented on the limited availability for ultra-low NOx burner retrofits that will be able to meet the proposed seven ppm NOx concentration limit. Staff has confirmed that three equipment vendors have burner retrofits that can achieve seven ppm. 708 units within the San Joaquin Valley Air Pollution Control District (SJVAPCD) are currently meeting a seven ppm NOx emission limit. Staff has also reviewed over 2,400 source test results from both SCAQMD and SJVAPCD to evaluate the feasibility of seven ppm BARCT.</u>
<u><b>Cost of Burner Retrofits</b></u>	<u>Cost associated with seven ppm burner retrofits (higher than staff estimates)</u>	<u>Some industry stakeholders have commented that the price quotations obtained from vendors for burner retrofits are higher than those of staff estimates. Staff's cost estimates are averages provided by five equipment vendors based on conventional equipment and standard installations. Facilities might experience higher than average costs if operators decide to stay with one specific vendor or retrofitting highly specialized units that would require specific engineering.</u>

<p><b>Compliance Dates</b></p>	<p><del>RECLAIM facility stakeholders raised concerns over the ability to comply with the proposed compliance dates in PARs 1146 series.</del></p>	<p><del>SCAQMD proposes a tiered approach to the compliance dates (75 percent compliance by January 1, 2021 and 100 percent compliance by January 1, 2022 or by January 1, 2023 for replacement units) to lessen the financial impact to businesses and consumers. In addition, units that are subject to Rules 1146 and 1146.1 have been grouped together in the compliance schedule to allow facilities to decide which units they can demonstrate compliance with by earlier (January 1, 2021). Thus, providing them more flexibility for demonstrating compliance. SCAQMD is proposing to extend the compliance date to submit a complete permit application by 12 months after the date of rule adoption. In addition, certain units will be allowed 15 years after the date of rule adoption or during burner replacement to meet the applicable NOx emissions limit.</del></p>
<p><b>New Source Review (NSR)</b></p>	<p><del>The availability of Emission Reduction Credits (ERCs) for NSR events</del></p>	<p><del>RECLAIM Facilities with a Potential to Emit (PTE) of less than four tons per year will have access to the SCAQMD’s internal bank for any projects that require offsets under Regulation XIII – NSR. The NSR issues will be resolved for facilities with a PTE greater than or equal to four tons per year. For this reason, PARs 1146 series and PR 1100 will only allow facilities with a PTE of less than four tons per year to exit the RECLAIM program. Staff acknowledges that rulemaking regarding the transition has many complexities. However, staff has found it necessary to continue with the approach of amending command and control NOx rules concurrently with addressing NSR issues. The reason for this approach is to avoid delay in adopting implementation schedules for BARCT to give facilities adequate time to comply with command and control NOx emission limits. Resolving NSR is a significant issue as it requires involvement and approval from U.S. EPA. In the interim, facilities have two options. A facility that receives an initial determination notification can remain in RECLAIM and if there are emission increases that would trigger a New Source Review event, the facility would comply with RECLAIM NSR. Staff is committed to not exit facilities until the NSR issues are resolved. If however, a facility elects to exit before NSR issues are resolved if they had an emissions increase that would trigger a New Source Review event, the facility would need to purchase offsets in the open market.</del></p>
<p><b>Monitoring, Reporting and Recordkeeping (MRR) Requirements for Title V Facilities</b></p>	<p><del>The timeline for potentially eliminating some RECLAIM-specific MRR requirements</del></p>	<p><del>For Title V facilities, the U.S. EPA public review process is triggered by modifications on monitoring and recordkeeping requirements. The SCAQMD is committed to re-evaluate monitoring and recordkeeping requirements for Title V facilities. Staff is recommending that Title V facilities will maintain existing monitoring and recordkeeping requirements while the transition process proceeds.</del></p>

Pursuant to CEQA Guidelines Section 15131(a), “[e]conomic or social effects of a project shall not be treated as significant effects on the environment.” CEQA Guidelines Section 15131(b) states further, “[e]conomic or social effects of a project may be used to determine the significance of physical changes caused by the project.” Physical changes that may be caused by PARs 1146

series and PR 1100 have been evaluated in Chapter 4 of this ~~Revised Draft~~ Final SEA. No direct or indirect physical changes resulting from economic or social effects have been identified as a result of implementing PARs 1146 series and PR 1100.

To date, no other controversial issues relevant to the CEQA analysis were raised as a part of developing the proposed project.

## **EXECUTIVE SUMMARY**

CEQA Guidelines Section 15123 requires a CEQA document to include a brief summary of the proposed actions and their consequences. In addition, areas of controversy must also be included in the executive summary (see preceding discussion). This ~~Revised Draft~~ Final SEA consists of the following chapters: Chapter 1 – Executive Summary; Chapter 2 – Project Description; Chapter 3 – Existing Setting, Chapter 4 – Potential Environmental Impacts and Mitigation Measures; Chapter 5 – Project Alternatives; and various appendices. The following subsections briefly summarize the contents of each chapter.

### **Summary of Chapter 1 – Executive Summary**

Chapter 1 includes an introduction of the proposed project and a discussion of the legislative authority that allows the SCAQMD to amend and adopt air pollution control rules, identifies general CEQA requirements and the intended uses of this CEQA document, and summarizes the remaining four chapters that comprise this SEA.

### **Summary of Chapter 2 - Project Description**

SCAQMD staff has been directed by the Governing Board to begin the process of transitioning equipment at facilities that are currently subject to facility permit requirements per SCAQMD Regulation XX – RECLAIM for NOx to instead be subject to an equipment-based command-and-control regulatory structure per SCAQMD Regulation XI. As such, SCAQMD staff has begun this process by proposing amendments to Rules 1146, 1146.1, and 1146.2 (e.g., PARs 1146 series) and to adopt PR 1100. PARs 1146 series and PR 1100 reflects the proposed project which is a culmination of recommendations made throughout the public engagement process including seven ~~six~~ ~~three~~ working group meetings held at SCAQMD headquarters in Diamond Bar on November 30, 2017, January 16, 2018, ~~and~~ March 7, 2018, April 12, 2018, August 2, 2018, and August 29, 2018, and October 16, 2018. The working group is composed of representatives from the manufacturers, trade organizations, permit stakeholders, businesses, environmental groups, public agencies, consultants, and other interested parties. In addition, staff also discussed concepts for PARs 1146 series and PR 1100 at the RECLAIM working group meetings held on July 13, 2017, September 14, 2017, October 12, 2017, January 11, 2018, February 8, 2018, ~~and~~ March 8, 2018, April 12, 2018, June 14, 2018, July 12, 2018, and September 13, 2018. A Public Workshop and CEQA Scoping Meeting was held February 14, 2018. After changes were made to the proposed project evaluated in the original Draft SEA, another Public Workshop was held on September 20, 2018. PARs 1146 series and PR 1100 would require equipment at RECLAIM facilities that are not subject to a Regulation XI rule to meet current NOx emission limits and demonstrate BARCT NOx emissions equivalency, and transition from RECLAIM to an equipment-based command-and-control regulatory structure. PARs 1146 series would: 1) expand the applicability to include units at NOx RECLAIM facilities; 2) require RECLAIM facilities to submit a permit application for each unit that does not currently meet the NOx concentration limits in Rules 1146 and 1146.1; 3) extend the compliance date for RECLAIM facilities replacing Rule 1146 or 1146.1 units and

~~require a permit application submittal for unit(s) being replaced; 4) require RECLAIM facilities with Rule 1146.2 units to meet applicable NOx emission limits by December 31, 2023, unless a more stringent BARCT limit is subsequently adopted; 5) limit ammonia emissions on new or modified units with applicable air pollution control equipment and require quarterly ~~annual~~ ammonia source testing (if four consecutive quarterly source tests demonstrate compliance, an annual source test may be conducted); ~~and~~ 6) require certain units at non-RECLAIM facilities to meet new NOx emission limits according to the compliance schedules specified in Rules 1146 and 1146.1; and 7) allow units at municipal sanitation service facilities to maintain existing NOx emission limits until a Regulation XI rule is adopted or amended. PR 1100 is an administrative rule which establishes the compliance schedule for RECLAIM facilities with Rule 1146 and/or 1146.1 units. 1) ~~expand the applicability to include units that were not previously required to comply with Rules 1146 and 1146.1 because they were in the NOx RECLAIM program; 2) require RECLAIM facilities to submit a permit application within 12 months of the date of rule adoption for each unit that does not currently meet the NOx concentration limits in Rules 1146 and/or 1146.1; 3) require the affected equipment to meet the applicable NOx concentration limit for all Rule 1146 and Rule 1146.1 units for a minimum of 75 percent of the total heat input by January 1, 2021 and 100 percent of the total heat input by January 1, 2022; 4) require RECLAIM facilities replacing Rule 1146 or Rule 1146.1 units to notify the Executive Officer which unit(s) will be replaced; and 5) require RECLAIM facilities with Rule 1146.2 units to meet NOx emission limits by December 31, 2023 if a more stringent BARCT limit is not applicable. PR 1100 is an administrative rule which establishes the compliance schedule for facilities exiting the RECLAIM program and allows facilities with Rule 1146/1146.1 units until January 1, 2022 to retrofit all existing units and until January 1, 2023 to replace any existing units, upon notification to the Executive Officer. Implementation of the proposed project is estimated to reduce NOx emissions by 0.20 ton per day by January 1, 2021 and ~~0.23~~ 0.27 ton per day by January 1, 2023. Other minor changes are also proposed for clarity and consistency throughout the rules. The analysis of the proposed project in the Revised Draft SEA indicated that while reducing NOx emissions is an environmental benefit, potentially secondary significant adverse environmental impacts ~~are~~ were also expected for the topic areas of air quality and hazards and hazardous materials. However, after the analysis was completed, only the topic of hazards and hazardous materials for the storage and use of aqueous ammonia was concluded in the Final SEA to have potentially significant adverse impacts.~~~~

A copy of PARs 1146, 1146.1, and 1146.2, and PR 1100 can be found in Appendix A of this ~~Revised Draft~~ Final SEA.

### **Summary of Chapter 3 - Existing Setting**

Pursuant to the CEQA Guidelines Section 15125, Chapter 3 – Existing Setting includes a description of the environmental topics areas as being potentially adversely affected by the proposed project. As previously explained, the proposed project is a revision to the previously approved projects that were analyzed in the September 2008 Final EAs for Rules 1146 and 1146.1 and May 2006 Final EA for Rule 1146.2. The September 2008 Final EA for Rule 1146 concluded that significant adverse air quality and hazards and hazardous materials impacts would occur. However, all other environmental topic areas analyzed in the September 2008 Final EA for Rule 1146 were shown to have less than significant or no significant impacts. Both the September 2008 Final EA for Rule 1146.1 and the May 2006 Final EA for Rule 1146.2 concluded that no significant adverse environmental impacts would occur not from the respective projects. Since the analysis of the proposed project in the Revised Draft SEA initially ~~indicated~~ that additional potentially

significant adverse air quality and hazards and hazardous materials impacts will occur, the focus of the analysis in ~~this~~ the Revised Draft SEA ~~is~~ was limited to the environmental topics of air quality and hazards and hazardous materials. The following discussion briefly highlights the existing setting for the topics of air quality and hazards and hazardous materials.

### **Air Quality**

Air quality in the area of the SCAQMD's jurisdiction has shown substantial improvement over the last two decades. Nevertheless, some federal and state air quality standards are still exceeded frequently and by a wide margin. Of the NAAQS established for seven criteria pollutants (ozone, lead, sulfur dioxide, nitrogen dioxide, carbon monoxide, PM10 and PM2.5), the area within the SCAQMD's jurisdiction is only in attainment with the NAAQS for carbon monoxide, sulfur dioxide, and nitrogen dioxide. Chapter 3 provides a brief description of the existing air quality setting for each criteria pollutant, as well as the human health effects resulting from exposure to each criteria pollutant.

### **Hazards and Hazardous Materials**

The 2016 AQMP contains control measures intended to improve overall air quality; however, the implementation of some control measures, such as CMB-05, may result in adverse hazards and hazardous materials impacts, either directly or indirectly. Hazard concerns are related to the potential for fires, explosions or the release of hazardous materials/substances in the event of an accident or upset conditions. The potential for hazards exist in the production, use, storage, and transportation of hazardous materials. Hazardous materials may be found at industrial production and processing facilities. Some facilities produce hazardous materials as their end product, while others use such materials as an input to their production process. Examples of hazardous materials used as consumer products include gasoline, solvents, and coatings/paints. Hazardous materials are stored at facilities that produce such materials and at facilities where hazardous materials are a part of the production process. Specifically, storage refers to the bulk handling of hazardous materials before and after they are transported to the general geographical area of use. Currently, hazardous materials are transported throughout the Basin in large quantities via all modes of transportation including rail, highway, water, air, and pipeline. Incidents of harm to human health and the environment associated with hazardous materials have created a public awareness of the potential for adverse effects from careless handling and/or use of these substances. As a result, a number of federal, state, and local laws have been enacted to regulate the use, storage, transportation, and management of hazardous materials and wastes. Chapter 3 discusses the existing hazards and hazardous materials setting.

### **Summary of Chapter 4 - Environmental Impacts**

CEQA Guidelines Section 15126(a) requires a CEQA document to identify and focus on the “significant environmental effects of the proposed project.” Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. In addition, CEQA Guidelines Section 15126(b) requires a CEQA document to identify the significant environmental effects that cannot be avoided if the proposed project is implemented. CEQA Guidelines Section 15126(c) also requires a CEQA document to consider and discuss the significant irreversible environmental changes that would be involved if the proposed project is implemented. Further, CEQA Guidelines Section 15126(e) requires a CEQA document to consider and discuss mitigation measures proposed to minimize the significant effects. Finally, CEQA Guidelines Section 15130 requires a CEQA document to discuss whether the proposed project has cumulative impacts. Chapter 4

considers and discusses each of these requirements.

### **Potential Environmental Impacts Found To Be Significant**

Air quality from construction activities and hazards and hazardous materials ~~are~~ were the only environmental topic areas that have been identified in ~~this~~ the Revised Draft SEA as having potentially significant adverse impacts if the proposed project is implemented. However, after the analysis was completed, only the topic of hazards and hazardous materials for the storage and use of aqueous ammonia was concluded in the Final SEA to have potentially significant adverse impacts. These environmental topic areas are analyzed in Chapter 4.

### **Potential Environmental Impacts Found Not To Be Significant**

Because this SEA is a subsequent CEQA document to the September 2008 Final EAs for Rules 1146 and 1146.1, the May 2006 Final EA for Rule 1146.2, and the March 2017 Final Program EIR for the 2016 AQMP, this SEA relies on the conclusions reached in these documents as evidence for environmental areas where impacts were found not to be significant. All of these previous CEQA documents reviewed approximately 17 environmental topic areas and analyzed whether the respective projects would create potentially significant adverse impacts. While the analyses in the September 2008 Final EA for 1146.1 and May 2006 Final EA for Rule 1146.2 identified no significant adverse environmental impacts for any environmental topic area, the analysis in the September 2008 Final EA for Rule 1146 identified two environmental topic areas as having significant adverse environmental impacts: 1) air quality; and 2) hazards and hazardous materials.

Also, the analysis in the March 2017 Final Program EIR for the 2016 AQMP concluded that significant and unavoidable adverse environmental impacts from the project are expected to occur after implementing mitigation measures for the following environmental topic areas: 1) aesthetics from increased glare and from the construction and operation of catenary lines and use of bonnet technology for ships; 2) construction air quality and GHGs; 3) energy (due to increased electricity demand); 4) hazards and hazardous materials due to: (a) increased flammability of solvents; (b) storage, accidental release and transportation of ammonia; (c) storage and transportation of liquefied natural gas (LNG); and (d) proximity to schools; 5) hydrology (water demand); 6) construction noise and vibration; 7) solid construction waste and operational waste from vehicle and equipment scrapping; and, 8) transportation and traffic during construction and during operation on roadways with catenary lines and at the harbors. It is important to note, however, that for these environmental topic areas, not all of the conclusions of significance are applicable to this currently proposed project, PARs 1146 series and PR 1100. Please see Chapter 4, Table 4-14, for a summary of the significant and unavoidable adverse environmental impacts identified in the March 2017 Final Program EIR and which ones apply to the proposed project.

PAR 1146 is expected to have: 1) significant effects that were not discussed in the previous September 2008 Final EA for Rule 1146 and March 2017 Final Program EIR for the 2016 AQMP (CEQA Guidelines Section 15162(a)(3)(A)); and 2) significant effects that were previously examined that will be substantially more severe than what was discussed in the September 2008 Final EA for Rule 1146 and the March 2017 Final Program EIR for the 2016 AQMP (CEQA Guidelines Section 15162(a)(3)(B)). Similarly, PAR 1146.1 is also expected to have significant effects that were not discussed in the previous September 2008 Final EA for Rule 1146.1 and March 2017 Final Program EIR for the 2016 AQMP (CEQA Guidelines Section 15162(a)(3)(A)). However, PAR 1146.2 is not expected to create new significant effects that were not discussed in

the previous May 2006 Final EA for Rule 1146.2 and the March 2017 Final Program EIR for the 2016 AQMP.

By preparing a SEA for the proposed project, since the topics of air quality and hazards and hazardous materials are the only environmental topic areas that would be affected by PARs 1146 series and PR 1100, no other environmental topic areas have been evaluated in this SEA.

Thus, the conclusions reached in this ~~Revised Draft~~ Final SEA are consistent with the conclusions reached in the previously certified CEQA documents (e.g., the September 2008 Final EAs for Rules 1146 and 1146.1, the May 2006 Final EA for Rule 1146.2, and the March 2017 Final Program EIR for the 2016 AQMP) that aside from the topics of air quality during construction and hazards and hazardous materials, there would be no other significant adverse effects from the implementation of the proposed project. Thus, the proposed project would have no significant or less than significant direct or indirect adverse effects on the following environmental topic areas:

- aesthetics
- air quality and greenhouse gases during operation
- agriculture and forestry resources
- biological resources
- cultural resources
- energy
- geology and soils
- hydrology and water quality
- land use and planning
- mineral resources
- noise
- population and housing
- public services
- recreation
- solid and hazardous waste
- transportation and traffic

The September 2008 Final EAs for Rules 1146 and 1146.1, the May 2006 Final EA for Rule 1146.2, and the March 2017 Final Program EIR for the 2016 AQMP can be found using the links referenced in Chapter 2.

### **Other CEQA Topics**

CEQA documents are also required to consider and discuss the potential for growth-inducing impacts (CEQA Guidelines Section 15126(d)) and to explain and make findings about the project's relationship between short-term and long-term environmental goals. (CEQA Guidelines Section 15065(a)(2).) Additional analysis confirms that the proposed project would not result in irreversible environmental changes or the irretrievable commitment of resources, foster economic

or population growth or the construction of additional housing. Further, implementation of the proposed project is not expected to achieve short-term goals to the disadvantage of long-term environmental goals.

### Summary Chapter 5 - Alternatives

CEQA Guidelines Section 15126(e) requires a CEQA document to consider and discuss alternatives to the proposed project. Five alternatives to the proposed project are summarized in Table 1-2: 1) Alternative A - No Project; 2) Alternative B - Compliance Deadline Extension; 3) Alternative C - 100% of Units by January 1, 2021; 4) Alternative D - All Ultra-Low NOx Burners; and 5) Alternative E – NOx RECLAIM Facilities Transitioning to Command-and-Control Regulatory Structure at Current Limits Lowering Limit for  $\geq 40$  and  $< 75$  MMBtu/hr. Table 1-3 shows the emission factors relevant to Rules 1146 and 1146.1, which have been extracted from Rule 2002 - Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx) Emission Factor Table 1 and 3. Air quality from construction activities and hazards and hazardous materials were the only environmental topic areas that were identified in the Revised Draft SEA as having potentially significant adverse impacts if the proposed project is implemented. Pursuant to the requirements in CEQA Guidelines Section 15126.6(b) to mitigate or avoid the significant effects that a project may have on the environment, a comparison of the potentially significant adverse impacts from air quality and hazards and hazardous materials from each of the project alternatives for the individual rule components that comprise the proposed project is provided in Table 1-4. Aside from potentially significant adverse impacts to air quality during construction and hazards and hazardous materials from the catastrophic failure of an aqueous ammonia tank, no other potentially significant adverse impacts were identified for the proposed project or any of the project alternatives. However, after the analysis was completed, within the proximity of sensitive receptors only the topic of hazards and hazardous materials for the storage and use of aqueous ammonia was concluded in the Final SEA to have potentially significant adverse impacts.

The proposed project is considered to provide the best balance between achieving NOx emission reductions and the secondary adverse environmental impacts that may occur due to activities associated with construction and the storage of hazardous materials associated with operating air pollution control equipment (e.g., SCR systems) while meeting the overall objectives of the project. Therefore, the proposed project is preferred over the project alternatives.

**Table 1-2  
Summary of the Proposed Project and Alternatives**

Rule No.	Group No.	Heat Input or Equipment Type	Fuel Type	Proposed Project (for NOx RECLAIM facilities transitioning to command and control regulatory structure)	Alternative A: No Project	Alternative B: Compliance Deadline Extension	Alternative C: 100% of units by January 1, 2021
1146	-	≥ 5 MMBtu/hr	Gaseous Fuel (excluding Landfill or Digester Gas)	30 ppm or 0.036 lb/MMBtu	75% of the cumulative total heat input capacity of all Rules 1146 and 1146.1 units at the facility by January 1, 2021 and 100% by January 1, 2022, unless unit replacement by January 1, 2023  *(If the unit is located at a non-RECLAIM facility compliance can be deferred until burner replacement or within 15 years of the date of rule adoption, whichever is earlier, unless the unit is a thermal fluid heater currently permitted at >20 ppm (these units must meet 12 ppm by January 1, 2022).)	See Rule 2002 Emission Factor, Table 1 and 3**	75% of the cumulative total heat input capacity of all Rules 1146 and 1146.1 units at the facility by January 1, 2022 and 100% by January 1, 2023
1146	-	≥ 5 MMBtu/hr	Non-Gaseous Fuels	40 ppm			
1146	-	≥ 5 MMBtu/hr	Landfill Gas	25 ppm			
1146	-	≥ 5 MMBtu/hr	Digester Gas	15 ppm			
1146	I	≥ 75 MMBtu/hr (excluding Thermal Fluid Heaters)	Natural Gas	5 ppm or 0.0062 lb/MMBtu			
1146	II	≥ 20 and < 75 MMBtu/hr (All others with an existing NOx limit > 12 ppm (excluding Thermal Fluid Heaters)	Gaseous Fuel (excluding Landfill or Digester Gas)	59 ppm or 0.006244 lb/MMBtu			
1146	II	≥ 20 and < 75 MMBtu/hr (Fire-tube boilers with an existing NOx limit ≤ 9.42 ppm and > 5 ppm)	Gaseous Fuel (excluding Landfill or Digester Gas)	7 ppm or 0.0085 lb/MMBtu			
1146	II	≥ 20 and < 75 MMBtu/hr (All others with a previous NOx limit < 12 ppm and > 5 ppm)	Gaseous Fuel (excluding Landfill or Digester Gas)	9 ppm or 0.011 lb/MMBtu			
1146	III	≥ 5 and < 20 MMBtu/hr (Fire-tube boilers, only excluding units with a previous NOx limit > 9 and < 12 ppm) (excluding Thermal Fluid Heaters, but including Units at Schools and Universities rated ≥ 5 MMBtu/hr)	Gaseous Fuel (excluding Landfill or Digester Gas)	7 ppm or 0.0085 lb/MMBtu			
1146	III	≥ 5 and < 20 MMBtu/hr (excluding Fire-tube boilers)	Gaseous Fuel (excluding Landfill or Digester Gas)	9 ppm or 0.011 lb/MMBtu			
1146	III	Atmospheric Unit (≤ 10 MMBtu/hr)	Natural Gas	12 ppm or 0.015 lb/MMBtu			
1146	-	Low Fuel Usage (≤ 90,000 therms/year)	Any Fuel	1230 ppm, 15 years after the date of rule adoption by January 1, 2022 or when 50 percent or more of the unit's burners are replaced, whichever is earlier (occurs later)			
1146	-	≥ 5 MMBtu/hr Thermal Fluid Heaters	Natural Gas	12 ppm or 0.015 lb/MMBtu			

**Table 1-2: Summary of the Proposed Project and Alternatives (continued)**

<u>Rule No.</u>	<u>Group No.</u>	<u>Heat Input or Equipment Type</u>	<u>Fuel Type</u>	<u>Proposed Project</u>	<u>Alternative A: No Project</u>	<u>Alternative B: Compliance Deadline Extension</u>	<u>Alternative C: 100% of units by January 1, 2021</u>	
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Gaseous Fuel (excluding Landfill or Digester Gas)	30 ppm or 0.037 lb/MMBtu	<p>75% of the cumulative total heat input capacity of all Rules 1146 and 1146.1 units at the facility by January 1, 2021 and 100% by January 1, 2022, unless unit replacement by January 1, 2023</p> <p>*(If the unit is located at a non-RECLAIM facility compliance can be deferred until burner replacement or within 15 years of the date of rule adoption, whichever is earlier, unless the unit is a thermal fluid heater currently permitted at &gt;20 ppm (these units must meet 12 ppm by January 1, 2022).)</p>	<p>See Rule 2002 Emission Factor, Table 1 and 3**</p> <p>(Only emission factors relevant to Rules 1146 and 1146.1 have been extracted from Rule 2002 Emission Factors Tables 1 and 3 and are shown in Table 1-3)</p>	<p>75% of the cumulative total heat input capacity of all Rules 1146 and 1146.1 units at the facility by January 1, 2022 and 100% by January 1, 2023</p>	<p>100% of units by January 1, 2021</p>
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Landfill Gas	25 ppm				
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Digester Gas	15 ppm				
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr (Atmospheric Units)	Natural Gas	12 ppm or 0.015 lb/MMBtu				
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr (excluding Fire-tube boilers, Atmospheric Units and Thermal Fluid Heaters)	Natural Gas	9 ppm or 0.011 lb/MMBtu				
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr (Any Fire-Tube Boilers, excluding units with a previous NOx limit >9 and <12 ppm)	Natural Gas	7 ppm or 0.0085 lb/MMBtu				
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr (Thermal Fluid Heaters)	Natural Gas	12 ppm or 0.015 lb/MMBtu				
1146.1	-	Low Fuel Usage (≤ 18,000 therms/year)	Any Fuel	12 ppm, 15 years after the date of rule adoption or when 50 percent or more of the unit's burners are replaced, whichever is earlier				
1146.2	-	≤ 2 MMBtu/hr	Natural Gas	30 ppm, unless a more stringent limit is applicable, by December 31, 2023	-	No Change	No Change	
1100	-	Rule 1146 and 1146.1 Units only	-	Permit application submittal by 12 months within date of rule adoption and compliance with implementation schedule	-	Compliance deadline would be extended by one year	Compliance deadline would be shortened by one year for 25% of units	

**Table 1-2: Summary of the Proposed Project and Alternatives (continued/Concluded)**

Rule No.	Group No.	Heat Input or Equipment Type	Fuel Type	Proposed Project (for NOx RECLAIM facilities transitioning to command and control regulatory structure)	Alternative D: All Ultra-Low NOx Burners	Alternative E: Lowering Limit for NOx RECLAIM Facilities Transitioning to Command-and-Control Regulatory Structure at Current Limits ≥ 40 and < 75 MMBtu/hr		
1146	-	≥ 5 MMBtu/hr	Gaseous Fuel (excluding Landfill or Digester Gas)	30 ppm or 0.036 lb/MMBtu	75% of the cumulative total heat input capacity of all Rules 1146 and 1146.1 units at the facility by January 1, 2021 and 100% by January 1, 2022, unless unit replacement by January 1, 2023	No Change		
1146	-	≥ 5 MMBtu/hr	Non-Gaseous Fuels	40 ppm		No Change		
1146	-	≥ 5 MMBtu/hr	Landfill Gas	25 ppm		No Change		
1146	-	≥ 5 MMBtu/hr	Digester Gas	15 ppm		No Change		
1146	I	≥ 75 MMBtu/hr (excluding Thermal Fluid Heaters)	Natural Gas	5 ppm or 0.0062 lb/MMBtu	<p>9 ppm or 0.011 lb/MMBtu; 75% of units by January 1, 2021 and 100% by January 1, 2022</p> <p>9 ppm or 0.011 lb/MMBtu; No Change</p> <p>9 ppm or 0.011 lb/MMBtu; 5 ppm for units &gt; 40 MMBtu/hr; No Change</p>	No Change		
1146	II	≥ 20 and < 75 MMBtu/hr (All others) with an existing NOx limit ≥ 12 ppm (excluding Thermal Fluid Heaters)	Gaseous Fuel (excluding Landfill or Digester Gas)	59 ppm or 0.006244 lb/MMBtu		<p>9 ppm or 0.011 lb/MMBtu; No Change</p> <p>No Change</p>	No Change	
1146	II	≥ 20 and < 75 MMBtu/hr with an existing NOx limit < 9 ppm and > 5 ppm	Gaseous Fuel (excluding Landfill or Digester Gas)	7 ppm or 0.0085 lb/MMBtu			<p>9 ppm or 0.011 lb/MMBtu; No Change</p> <p>No Change</p>	No Change
1146	II	≥ 20 and < 75 MMBtu/hr (All others with a previous NOx limit < 12 ppm and > 5 ppm)	Gaseous Fuel (excluding Landfill or Digester Gas)	9 ppm or 0.011 lb/MMBtu				No Change
1146	III	≥ 5 and < 20 MMBtu/hr (Fire-tube boilers only, excluding units with a previous NOx limit > 9 and < 12 ppm) (excluding Thermal Fluid Heaters, but including Units at Schools and Universities rated ≥ 5 MMBtu/hr)	Gaseous Fuel (excluding Landfill or Digester Gas)	7 ppm or 0.0085 lb/MMBtu	<p>9 ppm or 0.011 lb/MMBtu; No Change</p> <p>No Change</p> <p>No Change</p> <p>No Change</p>	No Change		
1146	III	Atmospheric Unit (≤ 10 MMBtu/hr)	Natural Gas	12 ppm or 0.015 lb/MMBtu		No Change		
1146	-	Low Fuel Usage (≤ 90,000 therms/year)	Any Fuel	1230 ppm, 15 years after the date of rule adoption by January 1, 2022 or when 50 percent or more of the unit's burners are replaced, whichever is earlier		No Change		
1146	-	≥ 5 MMBtu/hr Thermal Fluid Heaters	Natural Gas	12 ppm or 0.015 lb/MMBtu		30 ppm or 0.037 lb/MMBtu		
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Gaseous Fuel (excluding Landfill or Digester Gas)	30 ppm or 0.037 lb/MMBtu	No Change	No Change		

**Table 1-2: Summary of the Proposed Project and Alternatives (concluded)**

<u>Rule No.</u>	<u>Group No.</u>	<u>Heat Input or Equipment Type</u>	<u>Fuel Type</u>	<u>Proposed Project</u>	<u>Alternative D: All Ultra-Low NOx Burners</u>	<u>Alternative E: NOx RECLAIM Facilities Transitioning to Command- and-Control Regulatory Structure at Current Limits</u>	
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Landfill Gas	25 ppm	<p><u>75% of the cumulative total heat input capacity of all Rules 1146 and 1146.1 units at the facility by January 1, 2021 and 100% by January 1, 2022, unless unit replacement by January 1, 2023</u></p> <p><u>*(If the unit is located at a non-RECLAIM facility compliance can be deferred until burner replacement or within 15 years of the date of rule adoption, whichever is earlier, unless the unit is a thermal fluid heater currently permitted at &gt;20 ppm (these units must meet 12 ppm by January 1, 2022))</u></p>	No Change	No Change
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Digester Gas	15 ppm		No Change	No Change
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr (Atmospheric Units)	Natural Gas	12 ppm or 0.015 lb/MMBtu		No Change	No Change
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr (excluding Fire-tube boilers, Atmospheric Units and Thermal Fluid Heaters, but including at Schools/Universities)	Natural Gas	9 ppm or 0.011 lb/MMBtu		No Change	9 ppm or 0.011 lb/MMBtu
<u>1146.1</u>	-	<u>&gt; 2 MMBtu/hr and &lt; 5 MMBtu/hr (Any Fire-Tube Boilers, excluding units with a previous NOx limit &gt;9 and ≤ 12 ppm)</u>	<u>Natural Gas</u>	<u>7 ppm or 0.0085 lb/MMBtu</u>		<u>9 ppm or 0.011 lb/MMBtu</u>	No Change
<u>1146.1</u>	-	<u>&gt; 2 MMBtu/hr and &lt; 5 MMBtu/hr (Thermal Fluid Heaters)</u>	<u>Natural Gas</u>	<u>12 ppm or 0.015 lb/MMBtu</u>		<u>30 ppm or 0.037 lb/MMBtu</u>	<u>30 ppm or 0.037 lb/MMBtu</u>
1146.1	-	Low Fuel Usage (≤ 18,000 therms/year)	Any Fuel	12 ppm, 15 years after the date of rule adoption or when 50 percent or more of the unit's burners are replaced, whichever is earlier 30 ppm by January 1, 2022 or burner replacement, whichever occurs later	No Change	No Change	
1146.2	-	≤ 2 MMBtu/hr	Natural Gas	30 ppm, unless a more stringent limit is applicable, by December 31, 2023	No Change	No Change	
1100	-	Rule 1146 and 1146.1 Units only	-	Permit application submittal by 12 months within date of rule adoption and compliance with implementation schedule	No Change	No Change	

~~\*\*\*Note: Only emission factors relevant to Rules 1146 and 1146.1 have been extracted from Rule 2002 Emission Factor Tables 1 and 3 and are shown in Table 1-3.~~

1146. 1	-	> 2 MMBtu/hr and < 5 MMBtu/hr (excluding Atmospheric Units and Thermal Fluid Heaters, but including at Schools/Universities)	Natural Gas	9 ppm or 0.011 lb/MMBtu			
1146. 1	-	Low Fuel Usage (≤ 18,000 therms/year)	Any Fuel	30 ppm by January 1, 2022 or burner replacement, whichever occurs later			
1146. 2	-	≤ 2 MMBtu/hr	Natural Gas	30 ppm, unless a more stringent limit is applicable, by December 31, 2023	-	No Change	No Change
1100	-	Rule 1146 and 1146.1 Units only	-	Permit application submittal by 12 months within date of rule adoption and compliance with implementation schedule	-	Compliance deadline would be extended by one year	Compliance deadline would be shortened by one year for 25% of units

**Table 1-3**  
**RECLAIM NO<sub>x</sub> Emission Factors<sup>1,2</sup>**

Rule No.:	Heat Input	Fuel Type	Year 2000 (Tier 1) Ending NO <sub>x</sub> Emission Factor (lbs)	Fuel Throughput Units
1146/1146.1	> 2 MMBtu/hr	Natural Gas	47.57	Mmcf
1146/1146.1	> 2 MMBtu/hr	LPG, Propane, Butane	4.26	1,000 gallons
1146/1146.1	> 2 MMBtu/hr	Diesel Light Dist. (0.05% Sulfur)	6.21	1,000 gallons
1146/1146.1	> 2 MMBtu/hr	Refinery Gas	49.84	Mmcf
1146.1	> 2 MMBtu/hr and < 5 MMBtu/hr	Natural Gas	39.46	Mmcf
1146.1	> 2 MMBtu/hr and < 5 MMBtu/hr	Refinery Gas	41.34	Mmcf
1146.1	> 2 MMBtu/hr and < 5 MMBtu/hr	LPG, Propane, Butane	3.53	1,000 gallons
1146.1	> 2 MMBtu/hr and < 5 MMBtu/hr	Diesel Light Dist. (0.05% Sulfur)	5.15	1,000 gallons
1146	≥ 5 MMBtu/hr	Natural Gas	47.75	Mmcf
1146	≥ 5 MMBtu/hr	Refinery Gas	50.03	Mmcf
1146	≥ 5 MMBtu/hr	LPG, Propane, Butane	4.28	1,000 gallons
1146	≥ 5 MMBtu/hr	Diesel Light Dist. (0.05% Sulfur)	6.23	1,000 gallons
1146	< 90,000 Therms	Natural Gas	47.75	Mmcf
1146	< 90,000 Therms	Refinery Gas	50.03	Mmcf
1146	< 90,000 Therms	LPG, Propane, Butane	4.28	1,000 gallons
1146	< 90,000 Therms	Diesel Light Dist. (0.05% Sulfur)	6.23	1,000 gallons
1146.1	< 18,000 Therms	Natural Gas	39.46	Mmcf
1146.1	< 18,000 Therms	Refinery Gas	41.34	Mmcf
1146.1	< 18,000 Therms	LPG, Propane, Butane	3.53	1,000 gallons
1146.1	< 18,000 Therms	Diesel Light Dist. (0.05% Sulfur)	5.15	1,000 gallons
1146/1146.1	2 to 20 MMBtu/hr	Any	12 ppm or 0.015 lb/MMBtu	
1146	>20 MMBtu/hr	Any	9 ppm or 0.010 lb/MMBtu	

## Note:

1. Some units that began allocations pursuant to Rule 2002(c)(1) may have higher emission factors; however the units met BACT limits effective at the time of installation.
2. Facilities were required to have either met the emission factors for their units or purchased RECLAIM trading credits (RTCs) for compliance.
3. Mmcf = million cubic feet

**Table 1-4  
Comparison of Adverse Environmental Impacts of the Proposed Project and Alternatives**

Category	Proposed Project	Alternative A: No Project	Alternative B: Compliance Deadline Extension	Alternative C: 100% of Units by January 1, 2021	Alternative D: All Ultra-Low NOx Burners	Alternative E: <del>Lowering Limit for <math>\geq 40</math> and <math>&lt; 75</math> MMBtu/hr</del> NOx RECLAIM Facilities Transitioning to Command-and-Control Regulatory Structure at Current Limits
Air Quality	<u>Expected to result in NOx emission reductions of 0.20 ton per day by January 1, 2021 and 0.27 ton per day by January 1, 2023. Affected RECLAIM facilities will transition to a command-and-control regulatory structure. Certain non-RECLAIM facilities will meet NOx emission limits during replacement or within 15 years of the date of rule adoption, whichever is earlier. Thermal fluid heaters currently permitted at &gt;20 ppm must meet 12 ppm by January 1, 2022. All units will meet BARCT NOx emissions equivalency from the implementation of command-and control regulatory structure.</u>	No new NOx emission reductions will be achieved. RECLAIM facilities would not transition to a command-and control regulatory structure and all (including some non-RECLAIM) units would not meet BARCT level equivalency.	Expected to result in equivalent NOx emissions reductions as the proposed project except the reductions would be delayed by one year. Affected RECLAIM facilities will transition to a command-and-control regulatory structure and all (including some non-RECLAIM) units will meet BARCT level equivalency.	Expected to result in equivalent NOx emissions reductions as the proposed project, but emissions would be achieved sooner (by January 1, 2021). Affected RECLAIM facilities will transition to a command-and-control regulatory structure and all units (including some non-RECLAIM) will meet BARCT level equivalency.	Expected to result in lesser NOx emission reductions than the proposed project. Affected RECLAIM facilities would transition to a command-and-control regulatory structure. Some facilities would not meet BARCT level equivalency.	Expected to result in <del>less more</del> NOx emissions reductions than the proposed project. Affected RECLAIM facilities would transition to a command-and control regulatory structure, <del>but and units will be equal to or more stringent than would not reach BARCT level equivalency.</del>
Signifi- cance of Air Quality Impacts	<u>Less than Significant: Exceeds the SCAQMD's regional air quality significance threshold for NOx during construction due to overlapping construction of SCR systems and ultra-low NOx burners, but these significant impacts will be reduced to less than significant levels because a concurrent operational air quality benefit would result due to the project's overall NOx emission reductions.</u>	Not Significant: This would not result in an exceedance of SCAQMD's regional air quality CEQA significance threshold for NOx. The SCAQMD will not achieve any emissions reductions; thus, attainment for the SCAQMD for ozone is unlikely to occur.	<u>Significant: Exceeds the SCAQMD's regional air quality significance threshold for NOx during construction due to overlapping construction of SCR systems and ultra-low NOx burners. While a concurrent operational air quality benefit would result due to the project's overall NOx emission reductions, and these significant is equivalent to the amount in the proposed project but with a the delay in the operational benefit is may not fully reduce the overlapping construction emissions to less than significant levels.</u>	<u>Significant: Exceeds the SCAQMD's regional air quality significance threshold for NOx during construction due to the overlapping construction of SCR systems and ultra-low NOx burners, but these significant impacts will be reduced to less than significant levels because a concurrent operational air quality benefit would result due to the project's overall NOx emission reductions. This alternative is equivalent in benefit to the amount in the proposed project but achieves the operational benefits sooner which may cause peak daily construction emissions to be greater than the proposed project.</u>	<del>Less than Not</del> Significant: This would result in an amount that is less significant than the proposed project and would not exceed SCAQMD's regional air quality CEQA significance threshold for NOx.	<u>Less than Significant: Exceeds the SCAQMD's regional air quality significance threshold for NOx during construction, due to the overlapping construction of additional SCR systems and ultra-low NOx burners, but these significant impacts will be reduced to less than significant levels because a concurrent operational air quality benefit would result. However, to meet the current NOx emission limits, the impacts are at an amount that is less more significant than the proposed project and NOx emissions reductions would be less than the proposed project, but with more operational benefits.</u>

**Table 1-4  
Comparison of Adverse Environmental Impacts of the Proposed Project and Alternatives (concluded)**

Category	Proposed Project	Alternative A: No Project	Alternative B: Compliance Deadline Extension	Alternative C: 100% of Units by January 1, 2021	Alternative D: All Ultra-Low NOx Burners	Alternative E: NOx RECLAIM Facilities Transitioning to Command- and-Control Regulatory Structure at Current Limits
Signifi- cance of Hazards and Hazard- ous Materials Impacts	Significant: To operate, SCR systems require ammonia. Ammonia is considered a hazardous material. At <del>two</del> <sup>two</sup> 32 facilities, the estimated distance of the toxic endpoint from the catastrophic failure of an aqueous ammonia storage tank to sensitive receptors would result in significant impacts.	Not Significant: The construction of SCR systems would not be necessary; thus, the storage of aqueous ammonia would be eliminated. No hazards or hazardous materials impacts would occur.	Significant: The operation of an SCR system requires the use of ammonia; thus, facilities would need to store ammonia on-site. Depending on the vicinity of the ammonia storage tank(s) to sensitive receptors, during catastrophic failure sensitive receptors could be within the toxic endpoint distance. <u>The number of affected facilities would be the same as the proposed project. The level of significance in this alternative is equivalent to the amount in the proposed project.</u>	Significant: The operation of an SCR system requires the use of ammonia; thus, facilities would need to store ammonia on-site. Depending on the vicinity of the ammonia storage tank(s) to sensitive receptors, during catastrophic failure sensitive receptors could be within the toxic endpoint distance. <u>The number of affected facilities would be the same as the proposed project. The level of significance in this alternative is equivalent to the amount in the proposed project.</u>	<del>Less than Not</del> Significant: The construction of SCR systems would not be necessary; thus, the storage of aqueous ammonia would be eliminated. <u>All facilities with affected units would need to retrofit with ultra-low NOx burners; thus, n</u> No hazards or hazardous materials impacts would occur.	Significant: The operation of an SCR system requires the use of ammonia; thus, facilities would need to store ammonia on-site. <u>Less stringent NOx emission limits would result in fewer affected facilities constructing SCR systems; thus, a fewer number of ammonia storage tanks would be needed.</u> However, <del>d</del> Depending on the vicinity of the ammonia storage tank(s) to sensitive receptors, during catastrophic failure sensitive receptors could be within the toxic endpoint distance and- thus still result in significant impacts, but at an equivalent amount of the proposed project. <u>It is estimated four facilities would be affected from this alternative. Additional facilities would be subject to the lower NOx emission limit. As a result, the construction of more SCR systems and ammonia storage tanks would occur. The significance is greater than the amount in the proposed project.</u>

## **CHAPTER 2**

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### **PROJECT DESCRIPTION**

**Project Location**

**Project Background**

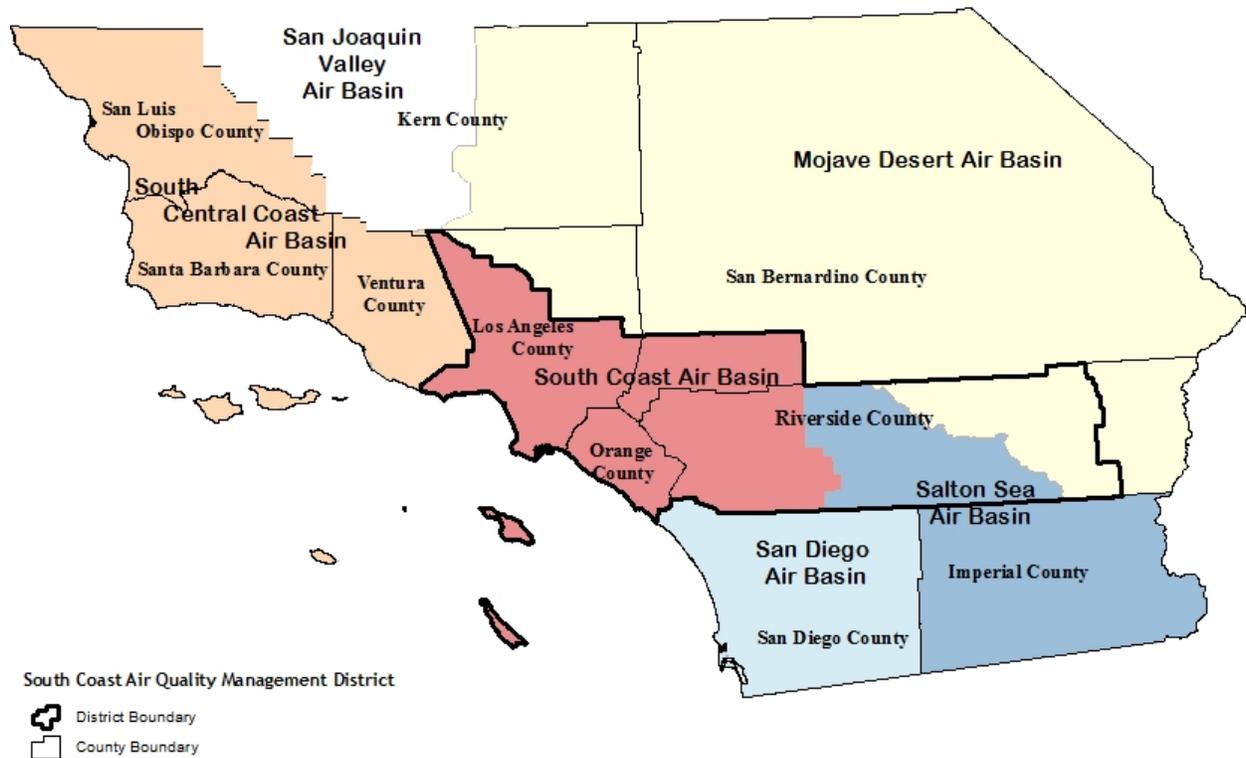
**Project Objectives**

**Project Description**

**Summary of Affected Equipment**

## PROJECT LOCATION

PARs 1146 series and PR 1100 applies to a RECLAIM facility with any unit subject to Rules 1146, 1146.1, and 1146.2. The proposed project will begin the process of transitioning equipment under RECLAIM to an equipment-based command-and-control regulatory structure per SCAQMD Regulation XI – Source Specific Standards. The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of 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. It includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. A federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of Riverside County and the SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (see Figure 2-1).



**Figure 2-1**  
**Southern California Air Basins**

## PROJECT BACKGROUND

Rules 1146, 1146.1, and 1146.2 impose NO<sub>x</sub> emission limits on various sizes of boilers, steam generators, and process heaters. Rule 1146 applies to boilers, steam generators, and process heaters used in industrial, institutional, and commercial operations, with a rated heat input capacity greater than or equal to five MMBtu per hour. However, Rule 1146 currently does not regulate NO<sub>x</sub> emissions from: 1) boilers operated at electric utilities to generate electricity; 2) boilers and process heaters with a rated heat input capacity greater than 40 MMBtu per hour that are used in petroleum refineries; ~~and; and~~ 3) sulfur plant reaction boilers; and 4) RECLAIM facilities (NO<sub>x</sub> only). Rule 1146 defines three groups (Group I, Group II, and Group III) of units burning natural gas or gaseous fuels. The current NO<sub>x</sub> emission limits in Rule 1146 vary by the rated heat input (Group number) ~~and the number of units at a facility~~. For example, a Group I unit includes any unit burning natural gas with a rated heat input greater than or equal to 75 MMBtu per hour, excluding thermal fluid heaters, and is required to meet a NO<sub>x</sub> emission limit of five ppm or 0.0062 pound per MMBtu by January 1, 2013. A Group II unit includes any unit burning gaseous fuels, excluding digester and landfill gases, and thermal heaters, with a rated heat input less than 75 MMBtu per hour and greater than or equal 20 MMBtu per hour, and is required to meet a NO<sub>x</sub> emission limit of nine ppm or 0.011 pound per MMBtu. A minimum of 75 percent of Group II units (by heat input) were required to meet the NO<sub>x</sub> emission limit by January 1, 2012 and 100 percent were required to meet the NO<sub>x</sub> emission limit by January 1, 2014. Group III units include any unit burning gaseous fuels, excluding digester and landfill gases, and thermal fluid heaters with a rated heat input less than 20 MMBtu per hour and greater than or equal to five MMBtu per hour and all units operated at schools and universities greater than or equal to five MMBtu per hour. Group III units are also required to meet a NO<sub>x</sub> emission limit of nine ppm or 0.011 pound per MMBtu with 75 percent or more units (by heat input) meeting the limit by January 1, 2013 and 100 percent meeting the limit by January 1, 2015. Rule 1146 also requires any units fired on non-gaseous fuels, landfill gas, or digester gas to meet a NO<sub>x</sub> emission limits of 40 ppm, 25 ppm, or 15 ppm, respectively. Finally, atmospheric units are required to meet a 12 ppm or 0.015 pound per MMBtu NO<sub>x</sub> emission limit.

Rule 1146.1 was adopted in October 1990 and established NO<sub>x</sub> emission limits for smaller units with a rated heat input capacity greater than two MMBtu per hour and less five MMBtu per hour. Similar to Rule 1146, units using landfill gas or digester gas are also required to meet a NO<sub>x</sub> emission limit of 25 ppm or 15 ppm, respectively. Under Rule 1146.1, atmospheric units are also required to meet a 12 ppm NO<sub>x</sub> emission limit and all other units fired on natural gas would need to meet a nine ppm or 0.011 pound per MMBtu NO<sub>x</sub> emission limit.

In September 2008, Rules 1146 and 1146.1 were amended to obtain NO<sub>x</sub> emission reductions by lowering the applicable NO<sub>x</sub> emission limits for various equipment, fuel and burner types. In November 2013, Rules 1146 and 1146.1 were amended to clarify that source test results showing emissions in excess of rule limits are considered a rule violation and allow diagnostic emissions checks for boiler maintenance purposes.

In January 1998, Rule 1146.2 was adopted to reduce NO<sub>x</sub> emissions from small boilers and large water heaters with a rated heat input capacity of less than or equal two MMBtu per hour. Rule 1146.2 included an exemption for units used in recreational vehicles and units subject to SCAQMD Rule 1121 - Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters. Initially, the Rule 1146.2 required new water heaters, boilers, or process heaters with a rated heat input capacity less than or equal to 400,000 Btu per hour (also known as Type 1 units) to meet a

NOx emission limit of 55 ppm (at three percent oxygen (O<sub>2</sub>), dry) or 40 nanograms (ng) per Joule (J) of heat output. New water heaters, boilers, or process heaters with a rated heat input capacity greater than 400,000 Btu per hour and less than or equal to two MMBtu per hour (or Type 2 units) were required to meet a NOx emission limit of 30 ppm (at three percent O<sub>2</sub>, dry) and a CO emission limit of 400 ppm. However, Rule 1146.2 was amended in January 2005 to address technical and cost issues associated with retrofitting existing units and to delay compliance dates for existing in-use equipment until an affected unit was 15 years old as of the equipment manufacture date. Rule 1146.2 was amended again in May 2006 to lower the NOx emission limit for new units to 20 ppm and set a compliance date of January 1, 2012 for new Type 1 units and January 1, 2010 for new Type 2 units. For pool heaters rated at less than or equal to 400,000 Btu per hour, the existing NOx emission limit of 55 ppm (or 40 ng per J heat output) remained unchanged.

In October 1993, the SCAQMD Governing Board adopted Regulation XX –RECLAIM to reduce NOx and SOx emissions from facilities. The RECLAIM program was designed to take a market-based approach to achieve emission reductions, as an aggregate. The RECLAIM program was created to be equivalent to achieving emissions reductions under a command-and-control approach, but by providing facilities with the flexibility to seek the most cost-effective solution to reduce their emissions. The market-based approach used in RECLAIM was based on using a supply-and-demand concept, where the cost to control emissions and reduce a facility's emissions would eventually become less than the diminishing supply of NOx RTCs. However, analysis of the RECLAIM program over the long term has shown that the ability to achieve actual NOx emission reductions has diminished.

In the 2016 AQMP, control measure CMB-05 - Further NOx Reductions from RECLAIM Assessment, committed to achieving NOx emission reductions of five tons per day by 2025, along with achieving BARCT level equivalency for all facilities through a command-and-control regulatory structure, while alleviating facilities from installing technology that would quickly become obsolete or serve as an intermediate technology. The process of transitioning NOx RECLAIM facilities to a command-and-control regulatory structure will ensure that the affected equipment will meet BARCT level equivalency as soon as practicable. As a result of control measure CMB-05 from the 2016 AQMP and ABs 617 and 398, SCAQMD staff has been directed by the Governing Board to begin the process of transitioning equipment at NOx RECLAIM facilities from a facility permit structure to an equipment-based command-and-control regulatory structure per SCAQMD Regulation XI – Source Specific Standards. SCAQMD staff has begun this transition process by proposing amendments to Rules 1146, 1146.1, and 1146.2 (e.g., the PARs 1146 series) and this is one of the first sets of rules to be amended to initiate the transition of equipment from the NOx RECLAIM program to a command-and-control regulatory structure, while achieving BARCT. ~~PARs 1146 series will transition 27 facilities out of the RECLAIM program.~~

In addition, SCAQMD staff has developed PR 1100 to establish the compliance schedule for Rules 1146 and 1146.1 units~~the PARs 1146 series at RECLAIM facilities exiting the RECLAIM program.~~ It is important to note that the procedures for transitioning out of RECLAIM and addressing a facility's RTCs holdings are in Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx).

As part of the rule development process, a BARCT assessment was conducted for Rules 1146 ~~and 1146.1, and 1146.2,~~ which concluded that the current NOx emissions limits in Rules 1146 and 1146.1 represent BARCT for only some categories of equipment. However, SCAQMD staff's

analysis concluded that the NOx emission limits for other equipment categories subject to either Rules 1146 or 1146.1 would need to be lowered to meet BARCT level equivalency. In the 2006 amendments to Rule 1146.2, a technology assessment was conducted and SCAQMD staff determined that there is a potential that the NOx limits could be lowered pending further evaluation. In order to achieve NOx emission reductions at the earliest possible date, SCAQMD staff has focused their rule development efforts on the larger pieces of equipment which are subject to Rules 1146 and 1146.1. As such, PARs 1146 series and PR 1100 will require applicable equipment at RECLAIM facilities to meet ~~proposed~~existing NOx emission limits. SCR ~~technology~~/systems and ultra low-NOx burners are expected to be the main technologies employed to achieve the ~~current~~ NOx emission limits for equipment that will become subject to Rules 1146, 1146.1, and 1146.2. PR 1100 also includes a provision for allowing extra time (January 1, 2023) to comply with the existing NOx emission limits in Rules 1146 and 1146.1 for any operator that commits to fully replacing the affected equipment, in lieu of retrofitting existing equipment by installing ultra-low NOx burners or SCR systems.

If RECLAIM facilities elect to install equipment or air pollution control equipment in order to meet the current Rule 1146.2 NOx emission limits prior to amending Rule 1146.2 to incorporate lower NOx emission limits, the units might not comply with the final NOx limit that is incorporated into the rule. As such, facilities electing to install these units would run the risk of installing equipment that would likely need to be further modified in order to comply with the anticipated future amendments to Rule 1146.2. In order to consider the viability of lowering the NOx emission limits in Rule 1146.2, SCAQMD staff will conduct additional BARCT research along with obtaining updated emission inventory data if that is available. If the research shows BARCT is more stringent so that significant additional emissions reductions can be obtained, then staff will initiate a subsequent rule development process. ~~PAR 1146.2 will require affected facilities to exit RECLAIM. To assist in future rulemaking efforts, PAR 1146.2 will require RECLAIM facilities with units subject to Rule 1146.2 to provide equipment data to the Executive Officer by September 1, 2018.~~

In addition, PARs 1146 series and PR 1100 will exempt any unit at a RECLAIM facility subject to a NOx emission limit in a different rule for an industry-specific category, since BARCT requirements would be established in the industry-specific landing rule. ~~In addition, PARs 1146 series and PR 1100 are not expected to create additional monitoring, reporting, and recordkeeping requirements that differ from existing requirements at current RECLAIM facilities.~~

## **PROJECT OBJECTIVES**

The main objectives of the PARs 1146 series are to transition various sizes of boilers, steam generators, process heaters, and large water heaters operating at RECLAIM facilities from a facility permit structure to an equipment-based command-and-control regulatory structure by requiring compliance with the applicable NOx emission limits in SCAQMD Rules 1146, 1146.1, 1146.2 to achieve BARCT NOx emissions equivalency for these units. Another objective of the proposed project is to implement control measure CMB-05 from the 2016 AQMP to achieve NOx emission reductions of five tons per day by 2025.

## **PROJECT DESCRIPTION**

If adopted, PARs 1146 series would: 1) expand the applicability to include units at NOx RECLAIM facilities; 2) require RECLAIM facilities to submit a permit application for each unit that does not currently meet the NOx concentration limits in Rules 1146 and 1146.1; 3) extend the

compliance date for RECLAIM facilities replacing Rule 1146 or 1146.1 units and require a permit application submittal for unit(s) being replaced; 4) require RECLAIM facilities with Rule 1146.2 units to meet applicable NOx emission limits by December 31, 2023, unless a more stringent BARCT limit is subsequently adopted; 5) limit ammonia emissions on new or modified units with applicable air pollution control equipment and require quarterly ~~annual~~ ammonia source testing (if four consecutive quarterly source tests demonstrate compliance, an annual source test may be conducted); ~~and~~ 6) require certain units at non-RECLAIM facilities to meet new NOx emission limits according to the compliance schedules specified in Rules 1146 and 1146.1; and 7) allow units at municipal sanitation service facilities to maintain existing NOx emission limits until a Regulation XI rule is adopted or amended. PR 1100 is an administrative rule which establishes the compliance schedule for RECLAIM facilities with Rule 1146 and/or 1146.1 units. Implementation of the proposed project is estimated to reduce NOx emissions by 0.20 ton per day by January 1, 2021 and 0.27 ton per day by January 1, 2023. ~~1) expand the applicability to include units that were not previously required to comply with Rules 1146 and 1146.1 because they were in the NOx RECLAIM program; 2) require RECLAIM facilities to submit a permit application within 12 months of the date of rule adoption for each unit that does not currently meet the NOx concentration limits in Rules 1146 and/or 1146.1; 3) require the affected equipment to meet the applicable NOx concentration limit for all Rule 1146 and Rule 1146.1 units for a minimum of 75 percent of the total heat input by January 1, 2021 and 100 percent of the total heat input by January 1, 2022; 4) require RECLAIM facilities replacing Rule 1146 or Rule 1146.1 units to notify the Executive Officer which unit(s) will be replaced; and 5) require RECLAIM facilities with Rule 1146.2 units to meet NOx emission limits by December 31, 2023 if a more stringent BARCT limit is not applicable. PR 1100 is an administrative rule which establishes the compliance schedule for facilities exiting the RECLAIM program and allows facilities with Rule 1146/1146.1 units until January 1, 2022 to retrofit all existing units and until January 1, 2023 to replace any existing units, upon notification to the Executive Officer. Implementation of the proposed project is estimated to reduce NOx emissions by 0.23 ton per day by January 1, 2023.~~

The following is a detailed summary of key elements contained in PARs 1146 series and PR 1100. A copy of PARs 1146, 1146.1, and 1146.2, and PR 1100 can be found in Appendix A.

## **PAR 1146**

### **Applicability - Subdivision (a)**

The exemptions contained in subdivision (a) are proposed to be moved to new subdivision (f) – Exemptions. Upon the date of adoption, PAR 1146 will clarify that the exemption of RECLAIM (NOx emissions only) facilities applies only to any RECLAIM or former RECLAIM facility that is in an industry specific category specified in Rule 1100 – Implementation Schedule for NOx Facilities.

### **Definitions - Subdivision (b)**

NewThe definitions of Fire-tube Boiler; Former RECLAIM Facility; Modification; Municipal Sanitation Services; Non-RECLAIM Facility; and RECLAIM Facility are proposed be added. The following definitions are proposed to be revised including: Annual Heat Input; Group I Unit; Group II Unit; Group III Unit; Heat Input; NOx Emissions; Rated Heat Input Capacity; and Thermal Fluid Heater. The definitions of Annual Capacity Factor and Standby Boiler are proposed to be removed.

**Requirements - Subdivision (c)**

Subdivision (c) proposes to require the owner or operator of any unit(s) subject to Rule 1146 to meet applicable emission limits specified in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4); notwithstanding the exemptions contained in Rule 2001 – Applicability, Table 1 – ~~Existing Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NOx Emissions If Rule Was Adopted or Amended Prior to October 5, 2018, of subdivision (j) of Rule 2001.~~ A change to paragraph (c)(1) proposes to require the owner or operator of a RECLAIM or former RECLAIM facility to comply with the applicable NOx emission limits specified in Table 1146-1 in accordance with the schedule specified in Rule 1100.

Table 1146-1 – ~~Standard NOx Emission Limits and Compliance Schedule Limits~~ is proposed to be modified to include new NOx emission limits and compliance schedules for certain Group II or Group III units and thermal fluid heaters. As such, the following subparagraphs have been changed as follows:

<u>Rule Reference</u>	<u>Category</u>	<u>Limit<sup>1</sup></u>	<u>Compliance Schedule<sup>2</sup> for NON-RECLAIM Facilities</u>	<u>Compliance Schedule for RECLAIM and FORMER RECLAIM Facilities</u>
(c)(1)(G)	Group II Units (Fire-tube boilers with a previous NOx limit < 12 ppm and > 5 ppm prior to [date of amendment]) <del>with an existing NOx limit &gt; 12 ppm</del>	7 ppm or 0.0085 lbs/10 <sup>6</sup> Btu-ppm <del>or 0.0062 lb/10<sup>6</sup> Btu</del>	See (c)(7)(A) <del>January 1, 2016</del>	See PR 1100 – Implementation Schedule for NOx Facilities
(c)(1)(H)	Group II Units (All others with a previous NOx limit < 12 ppm and > 5 ppm prior to [date of amendment]) <del>with an existing NOx limit &lt; 12 ppm</del>	<del>7 ppm or 0.0085 lb/10<sup>6</sup> Btu for fire-tube boilers only;</del> 9 ppm or 0.011 lb/10 <sup>6</sup> Btu for all others	January 1, 2014 <del>or See subparagraph (c)(7)(A)</del>	
(c)(1)(I)	Group II Units (All Others)	5 ppm or 0.0062 lbs/10 <sup>6</sup> Btu	Date of amendment	
(c)(1)(J) <del>(H)</del>	Group III Units (Fire-tube Boilers Only, excluding units with a previous NOx limit < 12 ppm and > 9 ppm prior to [date of amendment])	7 ppm or 0.0085 lb/10 <sup>6</sup> Btu	Date of amendment or See <del>subparagraph (c)(7)(B)</del> for units with a previous NOx limit < 9 ppm prior to [date of amendment]	
(c)(1)(K) <del>(H)</del> ‡	Group III Units (All Others) <del>(Excluding Fire-tube Boilers)</del>	9 ppm or 0.001 lb/10 <sup>6</sup> Btu	January 1, 2015 or See (c)(8) for units with a previous NOx limit < 12 ppm prior to September 5, 2008	

<u>Rule Reference</u>	<u>Category</u>	<u>Limit<sup>1</sup></u>	<u>Compliance Schedule<sup>2</sup> for NON-RECLAIM Facilities</u>	<u>Compliance Schedule for RECLAIM and FORMER RECLAIM Facilities</u>
<del>(c)(1)(L)</del> <del>(K)</del>	<u>Thermal Fluid Heaters</u>	<u>12 ppm or 0.015 lbs/10<sup>6</sup> Btu</u>	<u>Date of amendment or See <del>subparagraph (c)(7)(C) for units with a previous an existing NOx limit ≤ 20 ppm prior to [date of amendment] or See paragraph (e)(2) for units with a previous an existing NOx limit &gt;20 ppm prior to [date of amendment] ≥ 20 ppm</del></u>	
<sup>1</sup> All parts per million (ppm) emission limits are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.				

~~(c)(1)(K), as shown below is proposed to be added to Table 1146-1 Standard Compliance Limits and Schedule.~~

<u>Rule Reference</u>	<u>Category</u>	<u>Limit</u>
<del>(e)(1)(K)</del>	<u>RECLAIM Units</u>	<u>As specified in this Table</u>

Paragraph (c)(2) is proposed to be removed and replaced with requirements for units with air pollution control equipment resulting in ammonia emissions in the exhaust. The ammonia emissions would be limited to less than five ppm (referenced at three percent volume stack gas oxygen on a dry basis averaged over a period of ~~15~~ 60 consecutive minutes), except for units complying with paragraph (c)(9). ~~proposes to exempt a RECLAIM or former RECLAIM facility subject to Rule 1100, from the requirements in Table 1146-2. Requirements in Table 1146.2, which specify an enhanced compliance schedule would not apply for a RECLAIM facility subject to Rule 1100.~~

Paragraph (c)(3) clarifies that a weighted average emission limit calculated by Equation 1146-1 may be used in lieu of the emission limits of Table 1146-1f or dual fuel co-fired combustion units provided a totalizing fuel flow meter is installed pursuant to paragraph (c)(10).

Paragraph (c)(4) clarifies that the carbon monoxide (CO) emission limit of 400 ppm is referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.

Paragraph (c)(5) proposes to allow a provision for low fuel usage units (annual heat input less than or equal to 90,000 therms per year) that have been in operation prior to September 5, 2008 for non-RECLAIM facilities or in operation prior to 12 months from the date of rule adoption at a RECLAIM or former RECLAIM facility subject to Rule 1100, in lieu of complying with the applicable NOx emission limits specified in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4), (e)(1), and (e)(2).

Subparagraph (c)(5)(B) proposes to require the owner of any unit(s) selecting the tune-up option, to maintain records for a rolling 24-month period in order to verify that the required tune-ups have been performed.

~~Paragraph (c)(7) proposes to allow a RECLAIM or former RECLAIM facility that installs or modifies a Group III natural gas fired unit prior to the date of rule adoption and complying with the applicable BACT emission limit of 12 ppm or less of NO<sub>x</sub> to defer compliance with the compliance dates specified in Rule 1100 until the unit's burner(s) replacement.~~

Paragraph (c)(6) proposes notwithstanding the exemptions contained in Rule 2001 – Applicability, Table 1- Existing Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NO<sub>x</sub> Emissions, of subdivision (j) of Rule 2001-If Rule Was Adopted or Amended Prior to October 5, 2018, any unit with a rated heat input capacity greater than or equal to 40 million Btu per hour and with an annual heat input greater than 200 x 10<sup>9</sup> Btu per year to have a continuous in-stack nitrogen oxides monitor or equivalent verification system in compliance with to Rules 218 and 218.1, and 40 CFR Part 60 Appendix B Specification 2. Maintenance and emission records will be required to be maintained and made accessible for two years.

~~Paragraph (c)(7) proposes to allow an owner or operator of a non-RECLAIM facility that has installed, or modified, been issued a SCAQMD Permit to Construct or Permit to Operate for certain units prior to the date of rule adoption at a non-RECLAIM facility to defer compliance with the specified NO<sub>x</sub> emission limit until the replacement of at least 50 percent of the unit's burners or 15 years from the date of rule adoption, whichever is earlier. The units allowed to defer compliance include the following: Group II units fire-tube boilers subject to subparagraph (c)(1)(G) ~~(c)(2)(H)~~ complying with a previous NO<sub>x</sub> emission limit of less than or equal to nine ppm or less as specified in a SCAQMD Permit to Operate; or Group III units fire-tube boilers subject to either subparagraph (c)(1)(J)~~(I)~~ or (c)(1)(K)~~(J)~~ complying with a previous NO<sub>x</sub> emission limit of less than or equal to 9 ~~12~~ ppm or less as specified in a SCAQMD Permit to Operate; or thermal fluid heaters subject to subparagraph (c)(1)(L)~~(K)~~ complying with a previous NO<sub>x</sub> emission limit of less than or equal to 20 ppm or less as specified in a SCAQMD Permit to Operate.~~

Paragraph (c)(8) proposes to not allow an owner or operator that has been issued a SCAQMD Permit to Operate prior to September 5, 2008 for a Group III natural gas fired unit complying with a previous NO<sub>x</sub> emission limit of 12 ppm or less and greater than 9 ppm to operate in a manner that discharges NO<sub>x</sub> emissions (reference at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) in excess of 9 ppm, by [15 years after the date of amendment] or when 50 percent or more of the unit's burners are replaced, whichever is earlier.

~~Paragraph (c)(9)~~(8)~~ proposes to allow an owner or operator of a non-RECLAIM facility that has installed or modified, been issued a SCAQMD Permit to Construct or Permit to Operate prior to the date of rule adoption, for any unit(s) operating with an air pollution control equipment that results in ammonia emissions in the exhaust complying, as specified in a SCAQMD Permit to Operate and with an emission limit greater than five 5 ppm, to defer compliance with the ammonia emission limit (as specified in paragraph (c)(2)) until the air pollution control equipment is replaced or modified and during the first 12 months of operation, demonstrate compliance according to the schedule specified in paragraph (d)(3).~~

Paragraph (c)(10)~~(9)~~ proposes to remove the reference to paragraph (c)(2), since it is no longer applicable.

Paragraph (c)(11)~~(10)~~ proposes to require units using landfill or digester gas (biogas) co-fired with natural gas at a RECLAIM or former RECLAIM facility to comply with emission limits in subparagraphs (c)(1)(C) or (c)(1)(D) Table 1146-1, provided that the facility monthly average biogas usage by the biogas units is 90 percent or more, based on the higher heating value of the fuels used, ~~by the applicable compliance date specified in Rule 1100.~~

Paragraph (c)(12) proposes, until a Regulation XI rule referenced in paragraph (f)(5) is adopted or amended and notwithstanding the NOx emission limits specified in Table 1146-1 of paragraphs (c)(1) and (e)(3), to require units at a municipal sanitation service facility to be limited to nine ppm for Group II and Group III units; or nine ppm, upon burner replacement, for Group III units that were installed or modified prior to September 5, 2008 complying with a previous NOx emission limit of 12 ppm or less; or 30 ppm for thermal fluid heaters; or 30 ppm for a thermal fluid heater, upon burner replacement, for any low-fuel use unit complying with paragraph (c)(5).

#### **Compliance Determination - Subdivision (d)**

Paragraphs (d)(1), (d)(4), and (d)(5) and subparagraph (d)(8)(A) propose to remove references to previous paragraph (c)(2), since it is no longer applicable.

Paragraph (d)(2) proposes to limit the time needed for start-ups or shut downs, to not last longer than necessary to reach stable conditions.

Paragraph (d)(3) proposes to require the owner or operator of ~~the~~ new or modified air pollution control equipment subject to the ammonia emission limit to conduct quarterly source testing to demonstrate compliance with the ammonia emission limit, within 12 months of unit operation after the date of rule adoption and annually within 12 months thereafter when four consecutive quarterly source tests demonstrate compliance with the ammonia emission limit, according to the procedures in District Source Test Method 207.1 for Determination of Ammonia Emissions from Stationary Sources. If an annual test is failed, four consecutive quarterly source tests will be required to demonstrate compliance with the ammonia emission limits prior to resuming annual source testing or an ammonia CEMS certified under an approved SCAQMD protocol could be utilized to demonstrate compliance with the ammonia emission limit.

Paragraph (d)(5) proposes to allow the owner of a unit, to select the lb/MMBtu heat input compliance option, in order to calculate the NOx and CO emissions according to the specified procedure and protocol.

Paragraph (d)(8) proposes to ~~include an~~clarify that exception for units subject to paragraph (c)(6) from conducting periodic monitoring for NOx emissions. ~~, any owner or operator subject to this rule is required to perform diagnostic emission checks of NOx emissions with a portable NOx, CO, and oxygen analyzer according to the Protocol for the Periodic Monitoring of NOx, CO, and Oxygen from Units Subject to SCAQMD Rules 1146 and 1146.1 by the applicable schedule specified in subparagraphs (d)(8)(A) to (d)(8)(D).~~Subparagraph (d)(8)(A) proposes new requirements for owners and operations checking NOx emissions of units subject to paragraphs (c)(1), (c)(3), or (c)(4). Subparagraph (d)(8)(B) proposes ~~on or after 15 years after the date of rule adoption or when 50 percent or more of the unit's burners are replaced, whichever is earlier,~~ to require owner or operators complying with the requirements in paragraph (c)(5) to verify NOx emissions according to the tune-up schedule specified in subparagraph (c)(5)(B).

~~Subparagraph (d)(8)(A) proposes to allow six months after the applicable compliance date specified in Rule 1100 for a RECLAIM or former RECLAIM facility to conduct periodic monitoring for NOx emissions.~~

Paragraph (d)(9) proposes to use the phrase “million Btu per hour” instead of “mmbtu/hr” to describe the units to provide consistency within the rule.

~~Subparagraph (d)(8)(B) proposes to allow a RECLAIM or former RECLAIM facility until the applicable compliance date specified in Rule 1100 or during a burner replacement, whichever occurs later, to conduct NOx emission checks for low fuel usage units according to the existing tune-up schedule contained in subparagraph (e)(5)(B).~~

### **Compliance Schedule - Subdivision (e)**

~~SubParagraph (e)(1) proposes to require the owner or operator of exempt any unit(s) subject to paragraph (c)(1) at a RECLAIM or former RECLAIM facility to meet the applicable NOx emission limit in Table 1146-1 according to the subject to Rule 1100 from the compliance schedule specified in PR 1100 Table 1146-1.~~

~~SubParagraph (e)(2) proposes to require owners or operators of any thermal fluid heater at a non-RECLAIM facility with a NOx emission limit greater than 20 ppm to submit a complete SCAQMD permit application for each unit within 12 months from the date of rule adoption and by January 1, 2022 to meet the applicable NOx emission limit in Table 1146-1.~~

~~exempt units at a RECLAIM or former RECLAIM facility subject to Rule 1100 from the compliance schedule specified in Table 1146-2.~~

~~SubParagraph (e)(3) proposes to prohibit units complying with paragraph (c)(5) to discharge greater than 12 ppm in NOx emissions ~~on or after~~ by 15 years after the date of rule ~~amendment adoption~~ or when 50 percent of more of the unit’s burners are replaced, whichever is earlier. ~~proposes to allow low fuel usage unit(s) at a RECLAIM or former RECLAIM facility until the applicable compliance date specified in Rule 1100 or during burner replacement, whichever occurs later, to install a burner meeting the NOx emission limit of 30 ppm as specified in Table 1146-1 or subparagraph (e)(1)(A).~~~~

Paragraph (e)(4) proposes that any unit complying with the requirements specified in paragraph (c)(5) that exceeds 90,000 therms of annual heat input from all fuels used in any 12 month period would constitute a violation of this rule. In addition, subparagraph (e)(4)(A) requires that within four months after exceeding 90,000 therms of annual heat input, the facility would be required to submit applications for Permits to Construct and Operate, and subparagraph (e)(4)(B) requires that within 18 months after exceeding 90,000 therms of annual heat input, the facility would be required to demonstrate compliance with paragraph (c)(4) (CO emissions) for the life of the unit.

### **Exemptions - Subdivision (f)**

New subdivision (f) is proposing to exempt the following units: boilers used by electric utilities to generate electricity; boilers and process heaters with a rated heat input capacity greater than 40 million Btu per hour that are used in petroleum refineries; sulfur plant reaction boilers; and any unit at a RECLAIM or former RECLAIM facility that is subject to a NOx emission limit in a different rule for an industry-specific category defined in PR 1100; or any unit at a municipal sanitation service facility that is subject to a NOx emission limit in a Regulation XI rule adopted or amended after [date of amendment].

**PAR 1146.1****Applicability - Subdivision (a)**

The exemptions contained in subdivision (a) are proposed to be moved to new subdivision (f) – Exemptions.

Effective upon the date of adoption, PAR 1146.1 will clarify that the exemption of RECLAIM (NO<sub>x</sub> emissions only) facilities applies only to any RECLAIM facility or former RECLAIM facility that is in an industry specific category specified in Rule 1100 – Implementation Schedule for NO<sub>x</sub> Facilities.

**Definitions - Subdivision (b)**

New~~The~~ definitions of Fire-Tube Boiler; Former RECLAIM Facility; Heat Input; Modification; Municipal Sanitation Services; Non-RECLAIM Facility; and RECLAIM Facility are proposed be added.

The following definitions are proposed to be modified: Annual Heat Input; Boiler or Steam Generator; NO<sub>x</sub> Emissions; Rated Heat Input Capacity; and Thermal Fluid Heater.

The definition of School is proposed to be removed.

Because of the addition of new definitions, the definitions in subdivision (b) have been renumbered; thus, a reference to a paragraph in the one of the definitions has been modified.

**Requirements - Subdivision (c)**

Subdivision (c) requires units to meet emission limits specified in paragraphs (c)(1) through (c)(3), notwithstanding the exemptions contained in ~~subdivision (j)~~ of Rule 2001 – Applicability, Table 1 – Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NO<sub>x</sub> Emissions If Rule Was Adopted or Amended Prior to October 5, 2018.

Paragraph (c)(1) proposes to exempt units at a RECLAIM or former RECLAIM facility subject to Rule 1100 from the NO<sub>x</sub> emission limit of 30 ppm. However, ~~Paragraph (c)(12)~~ is proposed to be removed and subsumed into Table 1146.1-1. Table 1146.1-1 is proposed to be changed as follows~~proposes to require the owner or operator of a RECLAIM or former RECLAIM facility subject to Rule 1100 to meet the applicable NO<sub>x</sub> emission limits specified in Table 1146.1-1 in accordance with the schedule specified in Rule 1100. As such the following is proposed to be added to Table 1146.1-1:-~~

<u>Rule Reference</u>	<u>Category</u>	<u>Limit<sup>1</sup></u>	<u>Compliance Schedule for NON-RECLAIM Facilities</u>	<u>Compliance Schedule for RECLAIM and former RECLAIM Facilities</u>
<u>(c)(1)(A)</u>	<u>All Other Units</u>	<u>30 ppm or for natural gas fired units 0.036 lb/10<sup>6</sup> Btu</u>	<u>September 5, 2008</u>	<u>See PR Rule 1100 – Implementation Schedule for NOx Facilities</u>
<u>(c)(1)(B)</u>	<u>Any Units Fired on Landfill Gas</u>	<u>25 ppm</u>	<u>January 1, 2015</u>	
<u>(c)(1)(c)</u>	<u>Any Units Fired on Digester Gas</u>	<u>15 ppm</u>	<u>January 1, 2015</u>	
<u>(c)(1)(D)</u>	<u>Atmospheric Units</u>	<u>12 ppm or 0.015 lb/10<sup>6</sup> Btu</u>	<u>January 1, 2014</u>	
<u>(c)(1)(Ee)</u>	<u>Any Units Fired on Natural Gas, excluding Fire-tube Boilers subject to (c)(1)(F), Atmospheric Units, and Thermal Fluid Heaters</u>	<u>9 ppm or 0.011 lb/10<sup>6</sup> Btu</u>	<u>January 1, 2014 or See <del>subparagraph</del> (c)(5)(A)</u>	
<u>(c)(2)(F)</u>	<u>Any Fire-tube Boilers Fired on Natural Gas, excluding units with a previous NOx limit &gt;9 and ≤ 12 ppm prior to [date of amendment]</u>	<u>7 ppm or 0.0085 lb/10<sup>6</sup> Btu</u>	<u>Date of amendment or See (c)(6) for units with a previous NOx limit &gt;9 and ≤ 12 ppm prior to September 5, 2008</u>	
<u>(c)(2)(G)</u>	<u>Thermal Fluid Heaters</u>	<u>12 ppm or 0.015 lb/10<sup>6</sup> Btu</u>	<u>Date of amendment or <del>See subparagraph</del> (c)(5)(B) for units with a previous <del>an</del> existing NOx limit ≤ 20 ppm prior to [date of amendment] or <del>See paragraph</del> (e)(2) for units with a previous <del>an</del> existing NOx limit &gt;20 ppm prior to [date of amendment] ≥ 20 ppm</u>	
<sup>1</sup> All parts per million (ppm) emission limits are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.				
<b>RECLAIM Units</b>	As specified in this Table			

Paragraph (c)(2) clarifies that a weighted average emission limit calculated by Equation 1146.1-1 may be used in lieu of the emission limits of Table 1146.1-1 provided a totalizing fuel flow meter is installed pursuant to paragraph (c)(6), for units burning a combination of both fuels.

Paragraph (c)(3) proposes to specify that CO emissions will need to be referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.

Paragraph (c)(45) proposes to ~~relieve~~ allow a provision for low fuel usage unit(s) with an ~~(annual heat input of less than or equal to 18,000 therms per calendar year that have been)~~ in operation prior to September 5, 2008 for non-RECLAIM facilities ~~or at a RECLAIM or former RECLAIM facility that has been~~ in operation 12 months prior to the date of rule amendment adoption for RECLAIM or former RECLAIM facilities, from having to otherwise ~~in lieu of complying~~ comply with the applicable emission limits specified in paragraphs (c)(1), (c)(2), (c)(3), ~~(e)(1), and (e)(24).~~

Paragraph (c)(56) proposes to allow an owner or operator of a non-RECLAIM facility that has ~~installed, or modified,~~ been issued a SCAQMD Permit to Construct or Permit to Operate prior to the date of rule adoption, ~~fire-tube boilers fired on a natural gas-fired unit~~ subject to subparagraph ~~(c)(1)(E) or (c)(1)(F)~~ complying with a previous NOx emission limit of 9 ~~12~~ ppm or less, or a thermal fluid heater subject to subparagraph (c)(1)(G) complying with a previous NOx emission limit of 20 ppm or less to defer compliance with the applicable NOx emission limits until replacement of at least 50 percent of the unit's burners or 15 years from the date of rule adoption, whichever is earlier occurs, ~~or former RECLAIM facility that installs or modifies a natural gas fired unit prior to the date of rule adoption and complying with the BACT emission limit of 12 ppm or less of NOx to defer compliance with paragraph (c)(2) or the compliance dates in Rule 1100 until the unit's burner(s) replacement.~~

Paragraph (c)(6) proposes to not allow an owner or operator that has been issued a SCAQMD Permit to Operate prior to September 5, 2008 for a natural gas fired unit complying with a previous NOx emission limit of 12 ppm or less and greater than 9 ppm to operate in a manner that discharges NOx emissions (reference at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) in excess of 9 ppm, by [15 years after the date of amendment] or when 50 percent or more of the unit's burners are replaced, whichever is earlier.

Paragraph (c)(8)(78) proposes to remove the reference to the compliance date January 1, 2015 since the date has already passed. ~~proposes to require units using landfill or digester gas (biogas) co-fired with natural gas at a RECLAIM or former RECLAIM facility to comply with the emission limits in Table 1146.1-1, provided that the facility monthly average biogas usage by the biogas units is 90 percent or more, based on the higher heating value of the fuels used, by the applicable compliance date specified in Rule 1100.~~

Paragraph (c)(9) proposes until a Regulation XI rule referenced in paragraph (f)(2) is adopted or amended and, notwithstanding the NOx emission limits specified in Table 1146.1-1 of paragraphs (c)(1) and (e)(3), to require units at a municipal sanitation service facility to meet NOx emission limits of nine ppm for natural gas fired units; or nine ppm, upon burner replacement; for natural gas fired units that were installed or modified prior to September 5, 2008 complying with a previous NOx emission limit of 12 ppm or less; or 30 ppm for thermal fluid heaters; or 30 ppm, upon burner replacement, for any low-fuel use unit complying with paragraph (c)(4).

### **Compliance Determination - Subdivision (d)**

Paragraph (d)(2) proposes to remove allowing start-up or shutdown intervals to last as long as necessary to reach stable temperatures.

Paragraph (d)(3) is proposed to be removed since Table 1146.1-1 is proposed to incorporate the requirement that the emission limits as ppm will be referenced at three percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes.

Subparagraph (d)(6)(A) proposes to remove the compliance date that has passed and add paragraph (c)(2) for determining weighted average.

Subparagraph (d)(6)(B) proposes to require low fuel usage unit(s) complying with paragraph (c)(4) ~~on or after 15 years from the date of rule adoption or when 50 percent or more of the unit's burners are replaced, whichever is earlier,~~ to verify NOx emissions according to the tune-up schedule in subparagraph (c)(4)(B).

Subparagraph (d)(7)(A) proposes to remove the reference to the compliance date July 1, 2009 since the date has already passed. ~~proposes to allow six months after the compliance date specified in Rule 1100 for a RECLAIM or former RECLAIM facility to conduct periodic monitoring for NOx emissions.~~

Subparagraph (d)(7)(B) ~~proposes to allow a RECLAIM or former RECLAIM facility until the applicable compliance date specified in Rule 1100 or during a burner replacement, whichever occurs later, to conduct NOx emission checks for low fuel usage units according to the existing tune up schedule contained in subparagraph (e)(5)(B).~~

### **Compliance Schedule – Subdivision (e)**

Paragraph(e)(1) proposes to require a unit at a RECLAIM facility or former RECLAIM facility with any unit subject to paragraph (c)(1) to meet the applicable NOx emission limit in Table 1146.1-1 in accordance with the schedule specified with PR 1100.

Paragraph (e)(2) proposes to ~~require~~allow any thermal fluid heaters at a non-RECLAIM facility with an emission limit greater than 20 ppm to submit a complete permit application on or before 12 months from the date of rule adoption and to meet the NOx emission limit in Table 1146.1-1 as specified in subparagraph (c)(1)(G). ~~low fuel usage unit at a RECLAIM or former RECLAIM facility until the applicable compliance date specified in Rule 1100 during burner replacement, whichever occurs later, to install a burner meeting the NOx emission level of 30 ppm, as specified in paragraph (c)(1).~~

Paragraph (e)(3) proposes to prohibit NOx emissions in excess of 12 ppm, ~~on or after~~ by 15 years after the date of rule adoption or when 50 percent or more of the unit's burners are replaced, whichever is earlier.

Paragraph (e)(4) proposes that any unit complying with the requirements specified in paragraph (c)(4) that exceeds 18,000 therms of annual heat input from all fuels used would constitute a violation of this rule.

### **Exemptions - Subdivision (f)**

New subdivision (f) is proposed to include an exemption of any unit at a RECLAIM or former RECLAIM facility that is subject to a NOx emission limit in a different rule for an industry-specific

category as defined in PR 1100; or any unit at a municipal sanitation service facility that is subject to a NOx emission limit in a Regulation XI rule adopted or amended after [date of amendment].

## **PAR 1146.2**

### **Definitions - Subdivision (b)**

The definitions of Best Available Retrofit Control Technology (BARCT); Former RECLAIM Facility and RECLAIM Facility are proposed be added. The definitions of Fire-Tube Boiler; Heat Input; NOx Emissions; Thermal Fluid Heater are proposed to be modified.

### **Requirements - Subdivision (c)**

Paragraph (c)(3) proposes to exempt units at a RECLAIM or former RECLAIM facility rated at a heat input capacity of greater than one MMBtu per hour but less than or equal to two MMBtu per hour that do not meet the NOx emission limit of 30 ppm (0.036 pound NOx per MMBtu) and 400 ppm of CO (at three percent oxygen (O2), dry) as specified in paragraph (c)(1).

Paragraph (c)(4) proposes to exempt units at a RECLAIM or former RECLAIM facility greater than 15 years old, based on the original date of manufacture, and with a rated heat input capacity of greater than one MMBtu per hour but less than or equal to two MMBtu per hour that do not meet the NOx emission limit of 30 ppm (0.036 pound NOx per MMBtu) and 400 ppm of CO (at three percent oxygen (O2), dry) as specified in paragraph (c)(1).

Paragraph (c)(5) proposes to exempt units at a RECLAIM or former RECLAIM facility greater than 15 years old, based on the original date of manufacture, and with a rated heat input capacity greater than 400,000 Btu per hour but less than or equal to one MMBtu per hour that do not meet the NOx emission limit of 30 ppm (0.036 pound NOx per MMBtu) and 400 ppm of CO (at three percent oxygen (O2), dry) as specified in paragraph (c)(1).

Paragraphs (c)(9) and (c)(10) propose to incorporate the exemptions currently contained in Rule 2001 – Applicability ~~subdivision (j)~~ and its accompanying Table 1 – Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NOx Emissions If Rule Was Adopted or Amended Prior to October 5, 2018, which contains maintenance requirements for Type 2 units and a copy of all documents identifying the unit’s rated heat input capacity, respectively.

Paragraph (c)(13) proposes to require a technology assessment to be conducted by January 1, 2022 to determine if the NOx emission limits in subdivision (c) represent BARCT. If the NOx emission limits are confirmed or verified that they represent BARCT, notwithstanding the exemptions contained in Rule 2001 – Applicability ~~subdivision (j)~~ and its accompanying Table 1 – Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NOx Emissions If Rule Was Adopted or Amended Prior to October 5, 2018, units at RECLAIM or former RECLAIM facilities with any Type 2 units will be required to meet the NOx emission limits by December 21, 2023. However, if it is determined a more stringent BARCT requirement is needed, SCAQMD will be required to initiate rule development within six months of the completion of the technology assessment.

### **Exemptions - Subdivision (h)**

Subparagraph (h)(1)(C) proposes to exempt units at a RECLAIM or former RECLAIM facility subject to a NOx emission limit in a different rule for an industry-specific category defined in Rule 1100 – Implementation Schedule for NOx Facilities.

Subparagraph (h)(1)(D) proposes to exempt units at a municipal sanitation service facility subject to a NO<sub>x</sub> emission limit in a Regulation XI rule adopted or amended after [date of amendment].

~~Paragraph (h)(3) is proposed to exempt any RECLAIM facility or former RECLAIM facility, that is subject to a NO<sub>x</sub> emission limit in a different rule for in an industry-specific category specified in PR Rule 1100 from the requirement to comply with NO<sub>x</sub> emissions limits contained in of paragraphs (c)(1) to (c)(5).~~

## **PR 1100**

### **Purpose – Subdivision (a)**

Subdivision (a) defines the purpose of Rule 1100 is to establish the implementation schedule for when Regulation XX NO<sub>x</sub> RECLAIM facilities transition to a command-and-control regulatory structure.

### **Applicability – Subdivision (b)**

Subdivision (b) establishes the applicability to include any owner or operator of a RECLAIM or former RECLAIM facilities that owns or operates equipment that meets the applicability provisions specified in Rules 1146 and, 1146.1, and 1146.2.

### **Definitions - Subdivision (c)**

The following new definitions are proposed: Annual Heat Input; Btu; Heat Input; Former RECLAIM Facility; Heat Input; Industry-Specific Category; NO<sub>x</sub> Emissions, Rated Heat Input Capacity; RECLAIM Facility; Rule 1146 Unit; Rule 1146.1 Unit; and Title V Facility; and Rule 1146.2 Unit.

### **Rule 1146 and Rule 1146.1 Implementation Schedule - Subdivision (d)**

Paragraph (d)(1) is proposed to establish the timing when an owner or operator of a RECLAIM facility with any Rule 1146 or any Rule 1146.1 units will need to comply with the following requirements:

- On or before 12 months ~~after from~~ the date of rule adoption, submit complete permit applications for Rule 1146 and Rule 1146.1 units that do not currently meet the NO<sub>x</sub> concentration limits established in Rules 1146 and 1146.1 at the facility;
- On or before January 1, 2021, meet the applicable NO<sub>x</sub> concentration limit for a minimum of 75 percent of the cumulative total rated heat input for capacity for all Rule 1146 and Rule 1146.1 units; and
- On or before January 1, 2022, meet the applicable NO<sub>x</sub> concentration limit of 100 percent of Rule 1146 and Rule 1146.1 units (by heat input) at the facility.

Paragraph (d)(2) proposes to allow uUnits that are not retrofitted and will undergo complete replacement ~~to can defer compliance~~ until January 1, 2023 to meet the applicable NO<sub>x</sub> emission limits, provided the facility submits a complete permit application on or before 12 months after the date of rule adoption for any new Rule 1146 and/or Rule 1146.1 unit, as well as accepts a permit condition that identifies which unit(s) will be replaced and no longer operated when the new units are installed or after January 1, 2023, whichever is earlier; and replaces the existing unit on or before January 1, 2023. ~~notifies the Executive Officer (including Facility Name, Facility Identification Number, Permit Number for the unit(s) being replaced; size of the existing and new units (MMBtu/hr), and fuel type) within 12 months after the date of rule adoption; on or before 12~~

months of the date of rule adoption submits a complete permit application for the new Rule 1146 and Rule 1146.1 unit(s); and demonstrates that the heat input capacity of the new unit does not exceed the total heat input capacity of existing units being replaced.

SubParagraph (d)(3)1(E) is proposed to establish the applicable NOx concentration limits for units meeting the minimum compliance deadline of 75 percent of the cumulative total heat input for all Rule 1146 and Rule 1146.1 units by January 1, 2021 and 100 percent by January 1, 2022. Rules 1146 and 1146.1 units would be required to meet the NOx concentration limit in Rule 1146, Table 1146-1 and Rule 1146.1, Table 1146.1-1, respectively. ~~Rule 1146 units that meet the applicability provisions specified in Rule 1146 paragraph (e)(2) will also be required to meet the ammonia emission limit specified in Rule 1146 paragraph (e)(2). In addition Rule 1146.1 units meeting the applicability provisions in Rule 1146.1 paragraph (e)(78) will be required to meet the NOx concentration limit specified in Rule 1146.1 paragraph (e)(78).~~

Paragraph (d)(4) is proposed to allow owner or operators of unit(s) in operation prior to 12 months after the date of rule adoption, in lieu of complying with paragraph (d)(3), to meet NOx emission limits and source testing requirements as specified in the SCAQMD Permit to Operate as of the date of rule adoption for units that are 90,000 therms per year and complying with Rule 1146 paragraph (c)(5) or 18,000 therms per year and complying with Rule 1146.1 paragraph (c)(4).

Paragraph (d)(5)2) is proposed to require an owner or operator of a RECLAIM or former RECLAIM facility with any Rule 1146 or Rule 1146.1 unit that has been installed or modified prior to the date of rule adoption to meet the specified NOx emission limit within 15 years after the date of rule adoption or when 50 percent or more of the unit's burners are replaced, whichever is earlier. The following are Rule 1146 units:

- ~~• Units subject to subparagraph (c)(1)(F) with a previous NOx emission limit of less than or equal to seven ppm or less as specified in a SCAQMD Permit to Operate; or~~
- Fire-tube boilers subject to Rule 1146 subparagraph (c)(1)(G) or (c)(1)(J) complying with a previous NOx emission limit that is less than or equal to 9 ppm and greater than 5 ppm; or
- Units subject to Rule 1146.1 subparagraph (c)(1)(E) complying with a previous NOx emission limit that is less than or equal to 12 ppm and greater than 9 ppm; or
- Fire-tube boilers fired on natural gas subject to Rule 1146.1 subparagraph (c)(1)(F) complying with a previous NOx emission limit that is less than or equal to 9 ppm; or
- Units subject to subparagraph (c)(1)(G), (c)(1)(H), or (c)(1)(K) complying with a previous NOx emission limit of less than or equal to 12 ppm and greater than five ppm; or
- Thermal fluid heaters, as defined in Rule 1146 paragraph (b)(26)27), subject to Rule 1146 subject to Rule 1146 subparagraph (c)(1)(L) complying with a previous NOx emission limit of less than or equal to 20 ppm or less as specified in SCAQMD Permit to Operate.

The following are Rule 1146.1 units:

- Units subject to Rule 1146.1 subparagraph (c)(1)(E) or (c)(1)(F) complying with a previous NOx emission limit of less than or equal to 12 ppm or less as specified in a SCAQMD Permit to Operate; or
- Thermal fluid heaters, as defined in Rule 1146.1 subparagraph (c)(1)(G) complying with a previous NOx emission limit of less than or equal to 20 ppm or less as specified in a SCAQMD Permit to Operate. Rule 1146.2 Type 2 units to meet the NOx concentration limit specified in Rule 1146.2, paragraph (c)(1) unless a more stringent limit is applicable by December 31, 2023. A unit may be modified or demonstrated to meet the NOx emission limits pursuant to the provisions of Rule 1146.2, subdivision (e).

Paragraph (d)(53) proposes to exempt any unit at a RECLAIM or former RECLAIM facility that is subject to a NOx emission limit in a different rule for identified in an industry-specific category identified.

Paragraph (d)(6) proposes for an owner or operator that has been issued a SCAQMD Permit to Construct or Permit to Operate prior to [date of adoption] for the following units, notwithstanding paragraph (d)(1), by [15 years after the date of adoption] or when 50 percent or more of the unit's burners are replaced, whichever is earlier, the units shall not operate in a manner that discharges NOx emissions (reference at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes) in excess of the following:

- 7 ppm for Rule 1146 Group I units operating without air pollution control equipment for the after treatment of the emissions in the exhaust complying with a previous NOx emission limit of 7 ppm or less and greater than 5 ppm; or
- 9 ppm for Rule 1146 Group III or Rule 1146.1 natural gas fired units complying with a previous NOx emission limit of 12 ppm or less and greater than 9 ppm.

Paragraph (d)(7) proposes to require the owner or operator of any Rule 1146 Group I unit complying with the requirements specified in subparagraph (d)(6)(A) that exceeds 300,000 therms of annual heat input from all fuels used shall:

- within 4 months after exceeding 300,000 therms of annual heat input, submit complete SCAQMD permit applications for the unit that does not meet the applicable NOx concentration limit specified in paragraph (d)(3); and
- within 18 months after exceeding 300,000 therms of annual heat input, demonstrate and maintain compliance with the applicable NOx concentration limit specified in paragraph (d)(3) for the life of the unit.

Paragraph (d)(8) proposes to allow any unit at a RECLAIM or former RECLAIM facility that is subject to a NOx emission limit in a different rule for an industry-specific category to not be subject to the requirements contained in this subdivision.

### **Monitoring, Reporting, and Recordkeeping Requirements - Subdivision (e)**

Paragraph (e)(1)(d)(4) is proposed to require Title V facilities to comply with the monitoring, reporting, and recordkeeping requirements specified in Rule 2012.

Paragraph (e)(2)(d)(5) is proposed to require for a non-Title V RECLAIM facilities that becomes a former RECLAIM facilities to comply with the monitoring, reporting, and recordkeeping requirements in the applicable rule(s) as specified in subdivision (b), upon the date the RECLAIM facility becomes a former RECLAIM facility.

## SUMMARY OF AFFECTED EQUIPMENT

Among the 266 facilities currently in the NOx RECLAIM program, approximately 103444 RECLAIM facilities will be affected by PARs 1146 series and PR 1100. Of the 103444 RECLAIM facilities, overall 291 323 permitted units will be affected by PARs 1146 series and PR 1100. Of the 291 permitted units, 148 units are projected to be retrofitted in order to meet the NOx emission limits. It is estimated PARs 1146 series and PR 1100 will reduce NOx by 0.20 ton per day by January 1, 2021 and 0.23-0.27 ton per day by January 1, 2023. It is noteworthy that there are units at 824 non-RECLAIM facilities that are expected to be affected by PARs 1146 series and these units are projected to either be retrofitted or replaced. Certain units would need to meet the NOx emission limits either during burner replacement or 15 years after the date of rule adoption. Thermal fluid heaters currently permitted at greater than 20 ppm must submit a permit application within 12 months of rule adoption and must meet the NOx emission limit of 12 ppm by January 1, 2022. However, because the replacement of a burner or retrofitting a boiler would be dependent on facility-specific variables (e.g., age of burner, ability to retrofit, cost, etc.), it is difficult to quantify the number of units at non-RECLAIM facilities that would be affected by PARs 1146 series and PR 1100 and determine when any burner replacements or boiler retrofits would occur.

~~predict and speculative when and the number of units at non-RECLAIM facilities that would be affected by PARs 1146 series.~~ Table 2-1 identifies the industry sectors, as classified by the North American Industry Classification System (NAICS) code, and the number of respective units at RECLAIM facilities subject to PARs 1146 series and PR 1100.

**Table 2-1  
Affected Industry Subject to PARs 1146 series and PR 1100**

<u>NAICS</u>	<u>NAICS Description</u>	<u>Count</u>
<u>111339</u>	<u>Apricot Farming</u>	<u>2</u>
<u>112111</u>	<u>Backgrounding, Cattle</u>	<u>1</u>
<u>115310</u>	<u>Cruising Timber</u>	<u>1</u>
<u>211111</u>	<u>Coal Gasification At Mine Site</u>	<u>3</u>
<u>211120</u>	<u>Crude Petroleum Extraction</u>	<u>4</u>
<u>212321</u>	<u>Common Sand Quarrying And/Or Beneficiating</u>	<u>1</u>
<u>221112</u>	<u>Electric Power Generation, Fossil Fuel (e.g., Coal, Oil, Gas)</u>	<u>4</u>
<u>221118</u>	<u>Electric Power Generation, Tidal</u>	<u>1</u>
<u>221210</u>	<u>Blue Gas, Carbureted, Production And Distribution</u>	<u>2</u>
<u>221310</u>	<u>Canal, Irrigation</u>	<u>9</u>
<u>221320</u>	<u>Collection, Treatment, And Disposal Of Waste Through A Sewer System</u>	<u>14</u>
<u>221330</u>	<u>Air-Conditioning Supply</u>	<u>1</u>
<u>236115</u>	<u>Cabin Construction General Contractors</u>	<u>1</u>
<u>236220</u>	<u>Addition, Alteration And Renovation For-Sale Builders, Commercial And Institutional Building</u>	<u>2</u>
<u>237110</u>	<u>Aqueduct Construction</u>	<u>1</u>
<u>237210</u>	<u>Building Lot Subdividing</u>	<u>7</u>
<u>237310</u>	<u>Abutment Construction</u>	<u>1</u>
<u>238110</u>	<u>Chimney, Concrete, Construction</u>	<u>1</u>
<u>238210</u>	<u>Airport Runway Lighting Contractors</u>	<u>1</u>
<u>238220</u>	<u>Air System Balancing And Testing</u>	<u>1</u>
<u>238320</u>	<u>Bridge Painting</u>	<u>1</u>
<u>238990</u>	<u>Artificial Turf Installation</u>	<u>4</u>
<u>311111</u>	<u>Animal Feed Mills, Dog And Cat, Manufacturing</u>	<u>4</u>
<u>311119</u>	<u>Alfalfa Meal, Dehydrated, Manufacturing</u>	<u>1</u>
<u>311224</u>	<u>Canola (Rapeseed) Oil, Cake And Meal, Made In Crushing Mills</u>	<u>1</u>
<u>311225</u>	<u>Canola (Rapeseed) Oil, Cake And Meal, Made From Purchased Oils</u>	<u>3</u>
<u>311411</u>	<u>Blast Freezing On A Contract Basis</u>	<u>3</u>
<u>311412</u>	<u>Chop Suey, Frozen, Manufacturing</u>	<u>6</u>
<u>311421</u>	<u>Artichokes, Canned, Manufacturing</u>	<u>6</u>
<u>311422</u>	<u>Baby Foods (Including Meats) Canning</u>	<u>2</u>
<u>311423</u>	<u>Bouillon Made In Dehydration Plants</u>	<u>1</u>
<u>311511</u>	<u>Acidophilus Milk Manufacturing</u>	<u>9</u>
<u>311513</u>	<u>Cheese (Except Cottage Cheese) Manufacturing</u>	<u>3</u>
<u>311520</u>	<u>Custard, Frozen, Manufacturing</u>	<u>1</u>
<u>311611</u>	<u>Abattoirs</u>	<u>1</u>
<u>311612</u>	<u>Bacon, Slab And Sliced, Made From Purchased Carcasses</u>	<u>6</u>
<u>311613</u>	<u>Animal Fats Rendering</u>	<u>2</u>
<u>311710</u>	<u>Cannery, Seafood</u>	<u>2</u>

**Table 2-1: Affected Industry Subject to PARs 1146 series and PR 1100 (continued)**

<u>NAICS</u>	<u>NAICS Description</u>	<u>Count</u>
<u>311811</u>	<u>Bakeries With Baking From Flour On The Premises, Retailing Not For Immediate Consumption</u>	<u>1</u>
<u>311812</u>	<u>Bagels Made In Commercial Bakeries</u>	<u>2</u>
<u>311824</u>	<u>Batters, Prepared, Made From Purchased Flour</u>	<u>2</u>
<u>311919</u>	<u>Cheese Curls And Puffs Manufacturing</u>	<u>2</u>
<u>311930</u>	<u>Beverage Bases Manufacturing</u>	<u>2</u>
<u>311941</u>	<u>Cheese Based Salad Dressing Manufacturing</u>	<u>3</u>
<u>311942</u>	<u>Chili Pepper Or Powder Manufacturing</u>	<u>1</u>
<u>311999</u>	<u>Almond Pastes Manufacturing</u>	<u>10</u>
<u>312111</u>	<u>Artificially Carbonated Waters Manufacturing</u>	<u>7</u>
<u>312112</u>	<u>Beverages, Naturally Carbonated Bottled Water, Manufacturing</u>	<u>2</u>
<u>312120</u>	<u>Ale Brewing</u>	<u>2</u>
<u>313210</u>	<u>Blankets And Bedspreads Made In Broadwoven Fabric Mills</u>	<u>5</u>
<u>313240</u>	<u>Bags And Bagging Fabrics Made In Warp Or Weft Knitting Mills</u>	<u>1</u>
<u>313310</u>	<u>Bleaching Textile Products, Apparel, And Fabrics</u>	<u>15</u>
<u>314110</u>	<u>Bath Mats And Bath Sets Made In Carpet Mills</u>	<u>3</u>
<u>315190</u>	<u>Athletic Clothing Made In Apparel Knitting Mills</u>	<u>1</u>
<u>321211</u>	<u>Hardwood Plywood Composites Manufacturing</u>	<u>1</u>
<u>321920</u>	<u>Ammunition Boxes, Wood, Manufacturing</u>	<u>1</u>
<u>322121</u>	<u>Absorbent Paper Stock Manufacturing</u>	<u>3</u>
<u>322130</u>	<u>Binder's Board Manufacturing</u>	<u>4</u>
<u>322211</u>	<u>Boxes, Corrugated And Solid Fiber, Made From Purchased Paper Or Paperboard</u>	<u>19</u>
<u>322212</u>	<u>Boxes, Folding (Except Corrugated), Made From Purchased Paperboard</u>	<u>1</u>
<u>322219</u>	<u>Bobbins, Fiber, Made From Purchased Paperboard</u>	<u>1</u>
<u>322299</u>	<u>Cards, Die-Cut (Except Office Supply) Made From Purchased Paper Or Paperboard</u>	<u>1</u>
<u>324121</u>	<u>Asphalt Paving Blocks Made From Purchased Asphaltic Materials</u>	<u>3</u>
<u>324122</u>	<u>Asphalt Roofing Cements Made From Purchased Asphaltic Materials</u>	<u>2</u>
<u>324191</u>	<u>Brake Fluids, Petroleum, Made From Refined Petroleum</u>	<u>3</u>
<u>325110</u>	<u>Acyclic Hydrocarbons (e.g., Butene, Ethylene, Propene) (Except Acetylene) Made From Refined Petroleum Or Liquid Hydrocarbons</u>	<u>1</u>
<u>325120</u>	<u>Acetylene Manufacturing</u>	<u>2</u>
<u>325180</u>	<u>Alkalis Manufacturing</u>	<u>7</u>
<u>325193</u>	<u>Denatured Alcohol Manufacturing</u>	<u>1</u>
<u>325211</u>	<u>Acetal Resins Manufacturing</u>	<u>5</u>
<u>325314</u>	<u>Compost Manufacturing</u>	<u>1</u>
<u>325320</u>	<u>Ant Poisons Manufacturing</u>	<u>1</u>
<u>325411</u>	<u>Acetylsalicylic Acid Manufacturing</u>	<u>2</u>
<u>325412</u>	<u>Adrenal Medicinal Preparations Manufacturing</u>	<u>9</u>

**Table 2-1: Affected Industry Subject to PARs 1146 series and PR 1100 (continued)**

<b>NAICS</b>	<b>NAICS Description</b>	<b>Count</b>
<u>325414</u>	<u>Agar Culture Media Manufacturing</u>	<u>2</u>
<u>325611</u>	<u>Bar Soaps Manufacturing</u>	<u>1</u>
<u>325612</u>	<u>Air Fresheners Manufacturing</u>	<u>1</u>
<u>325620</u>	<u>After-Shave Preparations Manufacturing</u>	<u>6</u>
<u>325991</u>	<u>Custom Compounding (I.E., Blending And Mixing) Of Purchased Plastics Resins</u>	<u>1</u>
<u>325998</u>	<u>Activated Carbon Or Charcoal Manufacturing</u>	<u>3</u>
<u>326113</u>	<u>Acrylic Film And Unlaminated Sheet (Except Packaging) Manufacturing</u>	<u>1</u>
<u>326130</u>	<u>Laminated Plastics Plate, Rod, And Sheet, Manufacturing</u>	<u>2</u>
<u>326140</u>	<u>Coolers Or Ice Chests, Polystyrene Foam, Manufacturing</u>	<u>4</u>
<u>326150</u>	<u>Cushions, Carpet And Rug, Urethane And Other Foam Plastics (Except Polystyrene), Manufacturing</u>	<u>1</u>
<u>326199</u>	<u>Awnings, Rigid Plastics Or Fiberglass, Manufacturing</u>	<u>3</u>
<u>326299</u>	<u>Balloons, Rubber, Manufacturing</u>	<u>2</u>
<u>327120</u>	<u>Adobe Bricks Manufacturing</u>	<u>2</u>
<u>327213</u>	<u>Beer Bottles, Glass, Manufacturing</u>	<u>1</u>
<u>327331</u>	<u>Architectural Block, Concrete (e.g., Fluted, Ground Face, Screen, Slump, Split), Manufacturing</u>	<u>2</u>
<u>327390</u>	<u>Architectural Wall Panels, Precast Concrete, Manufacturing</u>	<u>7</u>
<u>331210</u>	<u>Boiler Tubes, Wrought, Made From Purchased Iron</u>	<u>1</u>
<u>331222</u>	<u>Barbed And Twisted Wire Made In Wire Drawing Plants</u>	<u>1</u>
<u>331315</u>	<u>Aluminum Foil Made By Flat Rolling Purchased Aluminum</u>	<u>1</u>
<u>331492</u>	<u>Alloying Purchased Nonferrous Metals (Except Aluminum, Copper)</u>	<u>2</u>
<u>331512</u>	<u>Foundries, Steel Investment</u>	<u>1</u>
<u>332111</u>	<u>Cold Forgings Made From Purchased Iron Or Steel, Unfinished</u>	<u>2</u>
<u>332431</u>	<u>Aerosol Cans, Light Gauge Metal, Manufacturing</u>	<u>1</u>
<u>332811</u>	<u>Annealing Metals And Metal Products For The Trade</u>	<u>1</u>
<u>332812</u>	<u>Aluminum Coating Of Metal Products For The Trade</u>	<u>2</u>
<u>332813</u>	<u>Anodizing Metals And Metal Products For The Trade</u>	<u>8</u>
<u>332996</u>	<u>Bends, Pipe, Made From Purchased Metal Pipe</u>	<u>1</u>
<u>332999</u>	<u>Aluminum Freezer Foil Not Made In Rolling Mills</u>	<u>2</u>
<u>333241</u>	<u>Bakery Machinery And Equipment Manufacturing</u>	<u>2</u>
<u>333318</u>	<u>Adding Machines Manufacturing</u>	<u>2</u>
<u>333414</u>	<u>Baseboard Heating Equipment Manufacturing</u>	<u>1</u>
<u>334220</u>	<u>Airborne Radio Communications Equipment Manufacturing</u>	<u>3</u>
<u>334412</u>	<u>Circuit Boards, Printed, Bare, Manufacturing</u>	<u>1</u>
<u>334413</u>	<u>Diodes, Solid-State (e.g., Germanium, Silicon), Manufacturing</u>	<u>2</u>
<u>334418</u>	<u>Loaded Computer Boards Manufacturing</u>	<u>1</u>
<u>334510</u>	<u>Arc Lamp Units, Electrotherapeutic (Except Infrared, Ultraviolet), Manufacturing</u>	<u>3</u>

**Table 2-1: Affected Industry Subject to PARs 1146 series and PR 1100 (continued)**

<b>NAICS</b>	<b>NAICS Description</b>	<b>Count</b>
<u>335312</u>	<u>Armature Rewinding On A Factory Basis</u>	<u>1</u>
<u>336411</u>	<u>Aircraft Conversions (I.E., Major Modifications To System)</u>	<u>6</u>
<u>336412</u>	<u>Aircraft Engine And Engine Parts (Except Carburetors, Pistons, Piston Rings, Valves) Manufacturing</u>	<u>2</u>
<u>336413</u>	<u>Aircraft Assemblies, Subassemblies, And Parts (Except Engines) Manufacturing</u>	<u>4</u>
<u>336414</u>	<u>Developing And Producing Prototypes For Complete Guided Missiles And Space Vehicles</u>	<u>1</u>
<u>336419</u>	<u>Airframe Assemblies For Guided Missiles Manufacturing</u>	<u>2</u>
<u>339112</u>	<u>Anesthesia Apparatus Manufacturing</u>	<u>1</u>
<u>339991</u>	<u>Coaxial Mechanical Face Seals Manufacturing</u>	<u>1</u>
<u>339992</u>	<u>Accordions And Parts Manufacturing</u>	<u>1</u>
<u>339999</u>	<u>Amusement Machines, Coin-Operated, Manufacturing</u>	<u>1</u>
<u>423110</u>	<u>All-Terrain Vehicles (ATVs) Merchant Wholesalers</u>	<u>1</u>
<u>423220</u>	<u>Antique Home Furnishing Merchant Wholesalers</u>	<u>1</u>
<u>423720</u>	<u>Boilers (e.g., Heating, Hot Water, Power, Steam) Merchant Wholesalers</u>	<u>1</u>
<u>423840</u>	<u>Abrasives Merchant Wholesalers</u>	<u>2</u>
<u>423920</u>	<u>Children's Vehicles (Except Bicycles) Merchant Wholesalers</u>	<u>1</u>
<u>423990</u>	<u>Ammunition (Except Sporting) Merchant Wholesalers</u>	<u>1</u>
<u>424130</u>	<u>Bags, Paper And Disposable Plastics, Merchant Wholesalers</u>	<u>3</u>
<u>424310</u>	<u>Apparel Trimmings Merchant Wholesalers</u>	<u>1</u>
<u>424410</u>	<u>General-Line Groceries Merchant Wholesalers</u>	<u>1</u>
<u>424420</u>	<u>Bakery Products, Frozen, Merchant Wholesalers</u>	<u>1</u>
<u>424430</u>	<u>Butter Merchant Wholesalers</u>	<u>3</u>
<u>424470</u>	<u>Cutting Of Purchased Carcasses (Except Boxed Meat Cut On An Assembly-Line Basis) Merchant Wholesalers</u>	<u>1</u>
<u>424480</u>	<u>Berries, Fresh, Merchant Wholesalers</u>	<u>4</u>
<u>424490</u>	<u>Baby Foods, Canned, Merchant Wholesalers</u>	<u>7</u>
<u>424590</u>	<u>Animal Hair Merchant Wholesalers</u>	<u>1</u>
<u>424690</u>	<u>Acids Merchant Wholesalers</u>	<u>4</u>
<u>424710</u>	<u>Bulk Gasoline Stations</u>	<u>1</u>
<u>424910</u>	<u>Agricultural Chemicals Merchant Wholesalers</u>	<u>1</u>
<u>424950</u>	<u>Calcimines, Merchant Wholesalers</u>	<u>2</u>
<u>424990</u>	<u>Art Goods Merchant Wholesalers</u>	<u>1</u>
<u>441110</u>	<u>Automobile Dealers, New Only Or New And Used</u>	<u>1</u>
<u>443142</u>	<u>Audio Equipment Stores (Except Automotive)</u>	<u>1</u>
<u>444190</u>	<u>Building Materials Supply Dealers</u>	<u>5</u>
<u>445110</u>	<u>Commissaries, Primarily Groceries</u>	<u>6</u>
<u>445299</u>	<u>Coffee And Tea (I.E., Packaged) Stores</u>	<u>1</u>
<u>447190</u>	<u>Gasoline Stations Without Convenience Stores</u>	<u>1</u>

**Table 2-1: Affected Industry Subject to PARs 1146 series and PR 1100 (continued)**

<b>NAICS</b>	<b>NAICS Description</b>	<b>Count</b>
<u>448120</u>	<u>Apparel Stores, Women's And Girls' Clothing</u>	<u>1</u>
<u>448150</u>	<u>Apparel Accessory Stores</u>	<u>1</u>
<u>448190</u>	<u>Bridal Gown Shops (Except Custom)</u>	<u>2</u>
<u>452111</u>	<u>Department Stores (Except Discount Department Stores)</u>	<u>1</u>
<u>453220</u>	<u>Balloon Shops</u>	<u>2</u>
<u>453910</u>	<u>Feed Stores, Pet</u>	<u>1</u>
<u>453998</u>	<u>Art Supply Stores</u>	<u>1</u>
<u>454390</u>	<u>Bazaars (I.E., Temporary Stands)</u>	<u>4</u>
<u>481111</u>	<u>Air Commuter Carriers, Scheduled</u>	<u>1</u>
<u>484110</u>	<u>Bulk Mail Truck Transportation, Contract, Local</u>	<u>4</u>
<u>484121</u>	<u>Bulk Mail Truck Transportation, Contract, Long-Distance (TL)</u>	<u>2</u>
<u>485113</u>	<u>Bus Line, Local (Except Mixed Mode)</u>	<u>1</u>
<u>486110</u>	<u>Booster Pumping Station, Crude Oil Transportation</u>	<u>4</u>
<u>486210</u>	<u>Booster Pumping Station, Natural Gas Transportation</u>	<u>3</u>
<u>486910</u>	<u>Booster Pumping Station, Refined Petroleum Products Transportation</u>	<u>2</u>
<u>488111</u>	<u>Air Traffic Control Services (Except Military)</u>	<u>1</u>
<u>488190</u>	<u>Aircraft Ferrying Services</u>	<u>1</u>
<u>488210</u>	<u>Freight Car Cleaning Services</u>	<u>2</u>
<u>488320</u>	<u>Loading And Unloading Services At Ports And Harbors</u>	<u>1</u>
<u>488490</u>	<u>Bridge, Tunnel, And Highway Operations</u>	<u>1</u>
<u>488999</u>	<u>Arrangement Of Car Pools And Vanpools</u>	<u>1</u>
<u>493190</u>	<u>Automobile Dead Storage</u>	<u>1</u>
<u>512110</u>	<u>Animated Cartoon Production</u>	<u>3</u>
<u>512131</u>	<u>Cinemas</u>	<u>1</u>
<u>519120</u>	<u>Archives</u>	<u>2</u>
<u>522110</u>	<u>Banks, Commercial</u>	<u>2</u>
<u>522120</u>	<u>Associations, Savings And Loan</u>	<u>1</u>
<u>522310</u>	<u>Agencies, Loan</u>	<u>1</u>
<u>523991</u>	<u>Administrators Of Private Estates</u>	<u>1</u>
<u>523999</u>	<u>Clearinghouses, Commodity Exchange Or Securities Exchange</u>	<u>1</u>
<u>524113</u>	<u>Accidental Death And Dismemberment Insurance Carriers, Direct</u>	<u>1</u>
<u>524114</u>	<u>Dental Insurance Carriers, Direct</u>	<u>1</u>
<u>524210</u>	<u>Agencies, Insurance</u>	<u>2</u>
<u>525920</u>	<u>Bankruptcy Estates</u>	<u>1</u>
<u>531110</u>	<u>Apartment Building Rental Or Leasing</u>	<u>7</u>
<u>531120</u>	<u>Arena, No Promotion Of Events, Rental Or Leasing</u>	<u>16</u>
<u>531190</u>	<u>Agricultural Property Rental Leasing</u>	<u>1</u>
<u>531210</u>	<u>Agencies, Real Estate</u>	<u>25</u>
<u>531312</u>	<u>Commercial Property Managing</u>	<u>4</u>

**Table 2-1: Affected Industry Subject to PARs 1146 series and PR 1100 (continued)**

<b>NAICS</b>	<b>NAICS Description</b>	<b>Count</b>
<u>532411</u>	<u>Aircraft Rental And Leasing</u>	<u>1</u>
<u>532412</u>	<u>Bulldozer Rental Or Leasing Without Operator</u>	<u>1</u>
<u>532490</u>	<u>Agricultural Machinery And Equipment Rental Or Leasing</u>	<u>1</u>
<u>541330</u>	<u>Acoustical Engineering Consulting Services</u>	<u>1</u>
<u>541380</u>	<u>Acoustics Testing Laboratories Or Services</u>	<u>2</u>
<u>541511</u>	<u>Applications Software Programming Services, Custom Computer</u>	<u>1</u>
<u>541611</u>	<u>Administrative Management Consulting Services</u>	<u>4</u>
<u>541618</u>	<u>Telecommunications Management Consulting Services</u>	<u>2</u>
<u>541711</u>	<u>Biotechnology Research And Development Laboratories Or Service In Botany</u>	<u>1</u>
<u>541990</u>	<u>Appraisal (Except Real Estate) Services</u>	<u>3</u>
<u>551112</u>	<u>Agreement Corporation (Except International Trade Financing)</u>	<u>2</u>
<u>561110</u>	<u>Administrative Management Services</u>	<u>6</u>
<u>561210</u>	<u>Base Facilities Operation Support Services</u>	<u>2</u>
<u>561450</u>	<u>Commercial Credit Reporting Bureaus</u>	<u>1</u>
<u>561499</u>	<u>Address Bar Coding Services</u>	<u>4</u>
<u>561720</u>	<u>Aircraft Janitorial Services</u>	<u>3</u>
<u>561990</u>	<u>Auctioneers, Independent</u>	<u>4</u>
<u>562211</u>	<u>Acid Waste Disposal Facilities</u>	<u>1</u>
<u>562212</u>	<u>Dumps, Nonhazardous Solid Waste (e.g., Trash)</u>	<u>3</u>
<u>562213</u>	<u>Combustors, Nonhazardous Solid Waste</u>	<u>1</u>
<u>562219</u>	<u>Compost Dumps</u>	<u>3</u>
<u>562910</u>	<u>Asbestos Abatement Services</u>	<u>1</u>
<u>611110</u>	<u>Academies, Elementary Or Secondary</u>	<u>40</u>
<u>611210</u>	<u>Academies, Junior College</u>	<u>15</u>
<u>611310</u>	<u>Academies, College Or University</u>	<u>20</u>
<u>611519</u>	<u>Air Traffic Control Schools</u>	<u>2</u>
<u>611699</u>	<u>Bible Schools (Except Degree Granting)</u>	<u>1</u>
<u>621111</u>	<u>Acupuncturists' (MDs Or DOs) Offices (e.g., Centers, Clinics)</u>	<u>9</u>
<u>621310</u>	<u>Chiropractors' Offices (e.g., Centers, Clinics)</u>	<u>1</u>
<u>621399</u>	<u>Acupuncturists' (Except MDs Or DOs) Offices (e.g., Centers, Clinics)</u>	<u>1</u>
<u>621491</u>	<u>Group Hospitalization Plans Providing Health Care Services</u>	<u>3</u>
<u>621493</u>	<u>Ambulatory Surgical Centers And Clinics, Freestanding</u>	<u>2</u>
<u>621511</u>	<u>Bacteriological Laboratories, Diagnostic</u>	<u>2</u>
<u>621610</u>	<u>Home Care Of Elderly, Medical</u>	<u>1</u>
<u>621999</u>	<u>Blood Pressure Screening Facilities</u>	<u>5</u>
<u>622110</u>	<u>Children's Hospitals, General</u>	<u>71</u>
<u>622210</u>	<u>Alcoholism Rehabilitation Hospitals</u>	<u>3</u>
<u>622310</u>	<u>Cancer Hospitals</u>	<u>5</u>
<u>623110</u>	<u>Convalescent Homes Or Convalescent Hospitals (Except Psychiatric)</u>	<u>5</u>

**Table 2-1: Affected Industry Subject to PARs 1146 series and PR 1100 (continued)**

<b><u>NAICS</u></b>	<b><u>NAICS Description</u></b>	<b><u>Count</u></b>
<u>623220</u>	<u>Alcoholism Rehabilitation Facilities (Except Licensed Hospitals), Residential</u>	<u>1</u>
<u>623311</u>	<u>Assisted-Living Facilities With On-Site Nursing Facilities</u>	<u>2</u>
<u>623990</u>	<u>Boot Camps For Delinquent Youth</u>	<u>1</u>
<u>624110</u>	<u>Adoption Agencies</u>	<u>1</u>
<u>624120</u>	<u>Activity Centers For Disabled Persons, The Elderly, And Persons Diagnosed With Intellectual And Developmental Disabilities</u>	<u>1</u>
<u>624410</u>	<u>Babysitting Services In Provider's Own Home, Child Day Care</u>	<u>1</u>
<u>711212</u>	<u>Automobile Racetracks</u>	<u>1</u>
<u>711310</u>	<u>Air Show Managers With Facilities</u>	<u>3</u>
<u>712110</u>	<u>Art Galleries (Except Retail)</u>	<u>3</u>
<u>713110</u>	<u>Amusement Parks (e.g., Theme, Water)</u>	<u>2</u>
<u>713910</u>	<u>Country Clubs</u>	<u>1</u>
<u>713940</u>	<u>Aerobic Dance And Exercise Centers</u>	<u>3</u>
<u>721110</u>	<u>Alpine Skiing Facilities With Accommodations (I.E., Ski Resort)</u>	<u>22</u>
<u>722310</u>	<u>Airline Food Services Contractors</u>	<u>2</u>
<u>722330</u>	<u>Beverage Stands, Nonalcoholic, Mobile</u>	<u>1</u>
<u>722410</u>	<u>Alcoholic Beverage Drinking Places</u>	<u>1</u>
<u>722511</u>	<u>Bagel Shops, Full Service</u>	<u>6</u>
<u>722513</u>	<u>Carryout Restaurants</u>	<u>2</u>
<u>811111</u>	<u>Automotive Engine Repair And Replacement Shops</u>	<u>3</u>
<u>811192</u>	<u>Automotive Detailing Services (I.E., Cleaning, Polishing)</u>	<u>2</u>
<u>811198</u>	<u>Automotive Air-Conditioning Repair Shops</u>	<u>1</u>
<u>811219</u>	<u>Dental Equipment Repair And Maintenance Services</u>	<u>2</u>
<u>811310</u>	<u>Agricultural Machinery And Equipment Repair And Maintenance Services</u>	<u>3</u>
<u>811490</u>	<u>Bicycle Repair And Maintenance Shops Without Retailing New Bicycles</u>	<u>2</u>
<u>812310</u>	<u>Automatic Laundries, Coin-Operated</u>	<u>1</u>
<u>812320</u>	<u>Agents, Laundry And Dry cleaning</u>	<u>5</u>
<u>812331</u>	<u>Apron Supply Services</u>	<u>24</u>
<u>812332</u>	<u>Clean Room Apparel Supply Services</u>	<u>9</u>
<u>812930</u>	<u>Automobile Parking Garages Or Lots</u>	<u>1</u>
<u>812990</u>	<u>Astrology Services</u>	<u>2</u>
<u>813110</u>	<u>Bible Societies</u>	<u>5</u>
<u>813212</u>	<u>Disease Awareness Fundraising Organizations</u>	<u>1</u>
<u>813410</u>	<u>Alumni Associations</u>	<u>2</u>
<u>813990</u>	<u>Athletic Associations, Regulatory</u>	<u>7</u>
<u>921110</u>	<u>Advisory Commissions, Executive Government</u>	<u>8</u>
<u>921120</u>	<u>Advisory Commissions, Legislative</u>	<u>1</u>
<u>921190</u>	<u>Auditor's Offices, Government</u>	<u>7</u>
<u>922110</u>	<u>Administrative Courts</u>	<u>3</u>

**Table 2-1: Affected Industry Subject to PARs 1146 series and PR 1100 (Concluded)**

<u>NAICS</u>	<u>NAICS Description</u>	<u>Count</u>
922120	<u>Alcohol, Tobacco, And Firearms Control</u>	<u>5</u>
922130	<u>Attorney Generals' Offices</u>	<u>1</u>
922140	<u>Correctional Boot Camps</u>	<u>7</u>
922150	<u>Pardon Boards And Offices</u>	<u>1</u>
922160	<u>Ambulance And Fire Service Combined</u>	<u>2</u>
923120	<u>Cancer Detection Program Administration</u>	<u>1</u>
923130	<u>Community Social Service Program Administration</u>	<u>1</u>
924110	<u>Enforcement Of Environmental And Pollution Control Regulations</u>	<u>4</u>
926110	<u>Arts And Cultural Program Administration, Government</u>	<u>1</u>
926120	<u>Aircraft Inspection, Government</u>	<u>1</u>
928110	<u>Air Force</u>	<u>3</u>
Unknown	<u>#N/A</u>	<u>24</u>
	<u>Total</u>	<u>927</u>

**Table 2-1**  
~~**Affected Industry Subject to PARs 1146 series and PR 1100 (Concluded)**~~

<u>NAICS Code</u>	<u>Description of Industry</u>	<u>Number of Units</u>
<del>211111</del>	<del>Oil and Gas Extraction</del>	<del>78</del>
<del>211120</del>	<del>Crude Petroleum Extraction</del>	<del>78</del>
<del>221112</del>	<del>Fossil Fuel Electric Power Generation</del>	<del>54</del>
<del>221210</del>	<del>Natural Gas Distribution</del>	<del>3</del>
<del>221330</del>	<del>Steam and Air-Conditioning Supply</del>	<del>69</del>
<del>311111</del>	<del>Dog and Cat Food Manufacturing</del>	<del>1</del>
<del>311511</del>	<del>Fluid Milk Manufacturing</del>	<del>2</del>
<del>311611</del>	<del>Animal (except Poultry) Slaughtering</del>	<del>3</del>
<del>311613</del>	<del>Rendering and Meat Byproduct Processing</del>	<del>38</del>
<del>311812</del>	<del>Commercial Bakeries</del>	<del>3</del>
<del>311824</del>	<del>Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour</del>	<del>5</del>
<del>311930</del>	<del>Flavoring Syrup and Concentrate Manufacturing</del>	<del>1</del>
<del>312120</del>	<del>Breweries</del>	<del>67</del>
<del>313210</del>	<del>Broadwoven Fabric Mills</del>	<del>65</del>
<del>313310</del>	<del>Textile and Fabric Finishing Mills</del>	<del>12</del>
<del>314110</del>	<del>Carpet and Rug Mills</del>	<del>12</del>
<del>322110</del>	<del>Pulp Mills</del>	<del>1</del>
<del>322121</del>	<del>Paper (except Newsprint) Mills</del>	<del>4</del>
<del>322130</del>	<del>Paperboard Mills</del>	<del>67</del>
<del>322211</del>	<del>Corrugated and Solid Fiber Box Manufacturing</del>	<del>5</del>
<del>324110</del>	<del>Petroleum Refineries</del>	<del>4</del>
<del>324121</del>	<del>Asphalt Paving Mixture and Block Manufacturing</del>	<del>612</del>
<del>324122</del>	<del>Asphalt Shingle and Coating Materials Manufacturing</del>	<del>712</del>
<del>324191</del>	<del>Petroleum Lubricating Oil and Grease Manufacturing</del>	<del>4</del>

<del>325120</del>	<del>Chemical Manufacturing</del>	<del>6</del>
<del>325180</del>	<del>Other Basic Inorganic Chemical Manufacturing</del>	<del>3</del>
<del>325211</del>	<del>Plastics Material and Resin Manufacturing</del>	<del>2</del>
<del>325411</del>	<del>Medicinal and Botanical Manufacturing</del>	<del>1</del>
<del>325412</del>	<del>Pharmaceutical Preparation Manufacturing</del>	<del>12</del>

<b>NAICS Code</b>	<b>Description of Industry</b>	<b>Number of Units</b>
<del>325414</del>	<del>Biological Product (except Diagnostic) Manufacturing</del>	<del>2</del>
<del>326140</del>	<del>Polystyrene Foam Product Manufacturing</del>	<del>6</del>
<del>327120</del>	<del>Clay Building Material and Refractories Manufacturing</del>	<del>1</del>
<del>331222</del>	<del>Steel Wire Drawing</del>	<del>2</del>
<del>331315</del>	<del>Aluminum Sheet, Plate, and Foil Manufacturing</del>	<del>2</del>
<del>331492</del>	<del>Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)</del>	<del>2</del>
<del>331529</del>	<del>Other Nonferrous Metal Foundries (except Die-Casting)</del>	<del>1</del>
<del>332111</del>	<del>Iron and Steel Forging</del>	<del>3</del>
<del>332431</del>	<del>Metal Can Manufacturing</del>	<del>3</del>
<del>332811</del>	<del>Metal Heat Treating</del>	<del>1</del>
<del>332812</del>	<del>Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers</del>	<del>2</del>
<del>332996</del>	<del>Fabricated Pipe and Pipe Fitting Manufacturing</del>	<del>5</del>
<del>334220</del>	<del>Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing</del>	<del>25</del>
<del>334412</del>	<del>Bare Printed Circuit Board Manufacturing</del>	<del>2</del>
<del>334413</del>	<del>Semiconductor and Related Device Manufacturing</del>	<del>7</del>
<del>336411</del>	<del>Aircraft Manufacturing</del>	<del>3237</del>
<del>336412</del>	<del>Aircraft Engine and Engine Parts Manufacturing</del>	<del>2</del>
<del>336413</del>	<del>Other Aircraft Parts and Auxiliary Equipment Manufacturing</del>	<del>3</del>
<del>336419</del>	<del>Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing</del>	<del>2</del>
<del>339991</del>	<del>Gasket, Packing, and Sealing Device Manufacturing</del>	<del>2</del>
<del>445110</del>	<del>Supermarkets and Other Grocery (except Convenience) Stores</del>	<del>4</del>
<del>486110</del>	<del>Pipeline Transportation of Crude Oil</del>	<del>78</del>
<del>486210</del>	<del>Pipeline Transportation of Natural Gas</del>	<del>9</del>
<del>486910</del>	<del>Pipeline Transportation of Refined Petroleum Products</del>	<del>3</del>
<del>488111</del>	<del>Air Traffic Control</del>	<del>2</del>
<del>522120</del>	<del>Savings Institutions</del>	<del>1</del>
<del>531210</del>	<del>Offices of Real Estate Agents and Brokers</del>	<del>2</del>
<del>541511</del>	<del>Custom Computer Programming Services</del>	<del>2</del>
<del>541990</del>	<del>All Other Professional, Scientific, and Technical Services</del>	<del>1</del>
<del>561110</del>	<del>Office Administrative Services</del>	<del>3</del>
<del>713110</del>	<del>Amusement and Theme Parks</del>	<del>19</del>
<del>721110</del>	<del>Hotels (except Casino Hotels) and Motels</del>	<del>24</del>
<del>812331</del>	<del>Linen Supply</del>	<del>35</del>
<del>812332</del>	<del>Industrial Launderers</del>	<del>2</del>
	<b>Total</b>	<b><u>291323</u></b>

## **CHAPTER 3**

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### **EXISTING SETTING**

**Introduction**

**Existing Setting**

**Air Quality**

**Hazards and Hazardous Materials**

## INTRODUCTION

In order to determine the significance of the impacts associated with a proposed project, it is necessary to evaluate the project's impacts against the backdrop of the environment as it exists at the time the environmental analysis is commenced. The CEQA Guidelines define "environment" as "the physical conditions that exist within the area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance." (CEQA Guidelines Section 15360; *see also* Public Resources Code Section 21060.5.) Furthermore, a CEQA document must include a description of the physical environment in the vicinity of the project, as it exists at the time the environmental analysis is commenced, from both a local and regional perspective. (CEQA Guidelines Section 15125.) Therefore, the "environment" or "existing setting" against which a project's impacts are compared consists of the immediate, contemporaneous physical conditions at and around the project site. (Remy, et al; 1996.)

The following sections summarize the existing setting for control measure CMB-05 and the existing rules that will be affected by the proposed project (e.g., PARs 1146 series) as well as the regional existing setting for air quality and hazards and hazardous materials which were the only environmental topics identified that may be adversely affected by the proposed project.

The March 2017 Final Program EIR for the 2016 AQMP also contains comprehensive information on existing and projected regional environmental settings for the topic of air quality and hazards and hazardous materials. The March 2017 Final Program EIR for the 2016 AQMP can be obtained by visiting the following website at: <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2016/2016aqmpfProgram EIR.pdf>.

Hard copies of the above referenced document as well as the other documents referenced in the following sections are also available by visiting the SCAQMD's Public Information Center at SCAQMD Headquarters located at 21865 Copley Drive, Diamond Bar, CA 91765; by contacting Fabian Wesson, Public Advisor by calling (909) 396-2039 or by emailing at [PICrequests@aqmd.gov](mailto:PICrequests@aqmd.gov).

## EXISTING SETTING

In general, Rules 1146, 1146.1, and 1146.2 were developed to reduce NO<sub>x</sub> emissions from boilers, steam generators, process heaters, and natural gas-fired water heaters. Control measure CMB-05 in the 2016 AQMP was also developed to identify a series of approaches that can be explored to ensure equivalency with equipment-based command-and-control regulations implementing BARCT, and to generate further NO<sub>x</sub> emission reductions at RECLAIM facilities. The following summarizes the existing setting for control measure CMB-05 as well as the current version of Rules 1146, 1146.1, and 1146.2.

### CMB-05

The 2016 AQMP identifies control measures and strategies to bring the region into attainment with the revoked 1997 8-hour NAAQS (standard) (80 parts per billion (ppb)) for ozone by 2024; the 2008 8-hour ozone standard (75 ppb) by 2032; the 2012 annual PM<sub>2.5</sub> standard (12 microgram per cubic meter (ug/m<sup>3</sup>)) by 2025; the 2006 24-hour PM<sub>2.5</sub> standard (35 ug/m<sup>3</sup>) by 2019; and the revoked 1979 1-hour ozone standard (120 ppb) by 2023. The 2016 AQMP consists of three

components: 1) the SCAQMD's Stationary, Area, and Mobile Source Control Measures; 2) State and Federal Control Measures provided by the CARB; and 3) Regional Transportation Strategy and Control Measures provided by the Southern California Association of Governments. The 2016 AQMP includes emission inventories and control measures for stationary, area and mobile sources, the most current air quality setting, updated growth projections, new modeling techniques, demonstrations of compliance with state and federal Clean Air Act requirements, and an implementation schedule for adoption of the proposed control strategy. Control measure CMB-05, one of several components in the 2016 AQMP, was developed to identify a series of approaches that can be explored to ensure equivalency with command-and-control regulations implementing BARCT, and to generate five tons per day of further NO<sub>x</sub> emission reductions at RECLAIM facilities as soon as feasible, and no later than 2025, and to transition to a command-and-control regulatory structure requiring BARCT level controls as soon as practicable. Because many of the RECLAIM program's original advantages appeared to be diminishing, CMB-05 prescribed an orderly sunset of the RECLAIM program to create more regulatory certainty and reduce compliance burdens for RECLAIM facilities, while also achieving more actual and SIP creditable emissions reductions. A NO<sub>x</sub> RECLAIM re-assessment working group was convened to examine the functionality, benefits, and challenges of the RECLAIM program and options for an orderly transition to a command-and-control structure. The conclusion from these working groups indicated a necessity to first amend Rules 1146, 1146.1 and 1146.2 as the first step in achieving the goals of CMB-05.

The analysis in the March 2017 Final Program EIR for the 2016 AQMP identified potential adverse impacts that may result from implementing the various components in the plan for the following environmental topic areas: 1) aesthetics; 2) air quality and GHGs; 3) energy; 4) hazards and hazardous materials; 5) hydrology and water quality; 6) noise; 7) solid and hazardous waste; and 8) transportation and traffic. The analysis concluded that significant and unavoidable adverse environmental impacts were expected to occur after implementing mitigation measures for the following topic areas: 1) aesthetics from increased glare and from the construction and operation of catenary lines and use of bonnet technology for ships; 2) construction air quality and GHGs; 3) energy (due to increased electricity demand); 4) hazards and hazardous materials due to: a) increased flammability of solvents; b) storage, accidental release and transportation of ammonia (which is specific to CMB-05); c) storage and transportation of liquefied natural gas (LNG); d) proximity to schools; 5) hydrology (water demand); 6) construction noise and vibration; 7) solid construction waste and operational waste from vehicle and equipment scrapping; and, 8) transportation and traffic during construction and during operation on roadways with catenary lines and at the harbors. Mitigation measures for the potentially significant impacts were required and were made a condition of the approval. Findings, a Statement of Overriding Considerations, and a Mitigation Monitoring Program were adopted.

### **Rule 1146**

Specifically, Rule 1146 applies to boilers, steam generators, and process heaters used at industrial, institutional, and commercial operations with a rated heat input capacity greater than or equal to five MMBtu per hour. Rule 1146 does not regulate NO<sub>x</sub> emissions from boilers used by electric utilities to generate electricity, boilers and process heaters with a rated heat input capacity greater than 40 MMBtu per hour, and sulfur plant reactor boilers. Rule 1146 establishes three groups (Group I, Group II, and Group III) for units burning natural gas or gaseous fuels. Group I unit includes any unit burning natural gas with a rated heat input greater than or equal to 75 MMBtu per hour, excluding thermal fluid heaters, and is required to meet a NO<sub>x</sub> emission limit of five

ppm or 0.0062 pound per MMBtu. Group II unit includes any unit burning gaseous fuels, excluding digester and landfill gases, with a rated heat input less than 75 MMBtu per hour and greater than or equal 20 MMBtu per hour, excluding thermal heaters. Group III units include any unit burning gaseous fuels, excluding digester and landfill gases, ~~and thermal fluid heaters~~ with a rated heat input less than 20 MMBtu per hour and greater than or equal to five MMBtu per hour and all units operated at schools and universities greater than or equal to five MMBtu per hour, excluding atmospheric units and thermal fluid heaters. Group II and Group III units are required to meet a NOx emission limit of nine ppm or 0.011 pound per MMBtu. Rule 1146 also establishes that any units fired on non-gaseous fuels, landfill gas, or digester gas are required to meet NOx emission limits of 40 ppm, 25 ppm, or 15 ppm, respectively. Atmospheric units are required to meet a 12 ppm or 0.015 pound per MMBtu NOx emission limit.

The most recent two amendments to Rule 1146 were in September 2008 and November 2013. In the September 2008 amendments to Rule 1146, the allowable NOx emission limits for boilers, steam generators and process heaters were reduced from 30 ppm to either 12 ppm, nine ppm or five ppm, depending on equipment size and operational characteristics. The September 2008 amendments also added NOx compliance limits for units burning landfill or digester gases at 25 ppm and 15 ppm, respectively. Other changes included: 1) establishing a weighted average formula for dual fueled co-fired units; 2) allowing existing units to be de-rated to no less than two MMBtu per hour per unit; 3) requiring compliance with a 30 ppm NOx limit for low fuel usage equipment by January 1, 2015 or burner replacement, whichever occurs later; 4) allowing a later compliance date for health facilities complying with seismic safety requirements; 5) establishing a staged compliance schedule over a multi-year period which varies by equipment size range and unit operation; 6) making the frequency of compliance testing compatible with sources subject to the RECLAIM program for the same equipment size range; and 7) allowing NOx emissions monitoring with a portable analyzer. The analysis in the September 2008 Final EA for Rule 1146 concluded that the project would achieve NOx emission reductions of approximately 1.17 tons per day of NOx emissions by 2016 by relying on currently available NOx control technologies (e.g., low NOx burners and SCR systems). The September 2008 Final EA for Rule 1146 also concluded that the project would have a significant effect on the environment for air quality during construction (before applying the NOx emission reductions) and hazards and hazardous materials associated with the use and storage of aqueous ammonia. Mitigation measures for the potentially significant hazards and hazardous materials impacts were required and were made a condition of the approval. Findings, a Statement of Overriding Considerations, and a Mitigation Monitoring Program were adopted.

The November 2013 amendments to Rule 1146 addressed a SIP approvability issue that was raised by the U.S. EPA regarding the use of source test data and portable analyzers test results to prove a violation of the emission standard. Also included in the November 2013 amendments were the following minor changes: 1) a clarification that Rules 1146 and 1146.1 do not apply to NOx sources subject to the SCAQMD's Regulation XX – RECLAIM; 2) the identification of certain equipment that are not included under boiler or steam generator category; 3) an enhanced description pertaining to the types of operations that would be subject to Rule 1146; 4) a clarification that low fuel usage equipment are only subject to periodic tune-up requirements; and, 5) a prohibition from derating equipment to a level at or below two million MMBtu per hour. No NOx emission reductions were attributed to the November 2013 amendments to Rule 1146. The project was reviewed pursuant to CEQA Guidelines Section 15002(k)(1) and SCAQMD staff concluded that it could be seen with certainty that there was no possibility that the project had the

potential to create any significant adverse impacts on the environment. Therefore, the SCAQMD determined that the project was exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) - Review for Exemption. A Notice of Exemption was filed with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties.

### **Rule 1146.1**

As with Rule 1146, Rule 1146.1 also applies to boilers, steam generators, and process heaters at industrial, institutional, and commercial operations, but for units with a rated heat input capacity greater than two ~~but~~ and less than five MMBtu per hour. Similar to Rule 1146, units using landfill gas or digester gas would also need to meet the NOx emission limit of 25 ppm or 15 ppm, respectively. Atmospheric units would also be required to meet a 12 ppm NOx emission limit. All other units, excluding thermal fluid heaters, fired on natural gas would need to meet a nine ppm or 0.011 pound per MMBtu NOx emission limit.

The most recent two amendments to Rule 1146.1 were also in September 2008 and November 2013. Similar to Rule 1146, but applicable to units with smaller rated heat inputs, the September 2008 amendments to Rule 1146.1 further reduced the NOx emission limits, included new NOx limits for atmospheric units to be 12 ppm or 0.015 pound per MMBtu, and units burning landfill or digester gases at 25 ppm and 15 ppm, respectively. The amendments also: 1) established a weighted average formula for dual fueled co-fired units; 2) allowed existing units to be de-rated to no less than two MMBtu per hour per unit; 3) made the frequency of compliance testing compatible with RECLAIM sources for the same equipment size range; 4) allowed for monitoring of NOx and CO emissions with a portable analyzer; 5) for low-fuel usage units, required compliance with a 30 ppm NOx limit by January 1, 2015 or burner replacement, whichever occurs later; 6) allowed thermal fluid heaters to continue compliance with the 30 ppm NOx limits; and, 7) allowed a later compliance date for health facilities complying with seismic safety requirements. The analysis in the September 2008 Final EA for Rule 1146.1 concluded that the project would achieve NOx emission reductions of approximately 0.28 tons per day by 2015 by relying on currently available NOx control technologies (e.g., low NOx burners). The September 2008 Final EA for Rule 1146.1 identified no significant adverse environmental impacts for any environmental topic areas. Since there were no significant adverse environmental impacts identified, mitigation measures were not required and Findings, a Statement of Overriding Considerations, and a Mitigation Monitoring Program were not adopted.

The November 2013 amendments to Rule 1146.1 were combined with the November 2013 amendments to Rule 1146, and addressed a SIP approvability issue that was raised by the U.S. EPA regarding the use of source test data and portable analyzers test results to prove a violation of the emission standard. Also included in the November 2013 amendments were the following minor changes: 1) a clarification that Rules 1146 and 1146.1 do not apply to NOx sources subject to the SCAQMD's Regulation XX – RECLAIM; 2) the identification of certain equipment that are not included under boiler or steam generator category; 3) an enhanced description pertaining to the types of operations that would be subject to Rule 1146; 4) a clarification that low fuel usage equipment are only subject to periodic tune-up requirements; and, 5) a prohibition from derating equipment to a level at or below two million MMBtu per hour. No NOx emission reductions were attributed to the November 2013 amendments to Rule 1146. The project was reviewed pursuant to CEQA Guidelines Section 15002(k)(1) and SCAQMD staff concluded that it could be seen with certainty that there was no possibility that the project had the potential to create any significant adverse impacts on the environment. Therefore, the SCAQMD determined that the project was

exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) - Review for Exemption. A Notice of Exemption was filed with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties.

### **Rule 1146.2**

Rule 1146.2 addresses natural gas-fired water heaters, boilers, and process heaters less than or equal to two MMBtu per hour. Rule 1146.2 exempts units used in recreational vehicles and units subject to SCAQMD Rule 1121. Rule 1146.2 requires new Type 2 units (rated heat input capacity greater than 400,000 Btu per hour and less than or equal to two MMBtu per hour) and Type 1 (rated heat input capacity less than or equal to 400,000 Btu per hour) to meet a NOx emission limit of 30 ppm and 20 ppm, respectively. Pool heaters rated at less than or equal to 400,000 Btu per hour are required to meet the NOx emission limit of 55 ppm (or 40 ng per J heat output). However, the current amendments to Rule 1146.2 will not require RECLAIM facilities to meet NOx emission limits in Rule 1146.2 by December 31, 2023 unless a more stringent BARCT limit is applicable.

The most recent amendments to Rule 1146.2 occurred in May 2006 and partially offset the NOx emission reductions foregone from the January 2005 amendments to Rule 1146.2. The May 2006 amendments to Rule 1146.2 required: 1) Type 2 units (equipment with heat input ratings greater than 400,000 Btu per hour) to meet a NOx emission limit of 20 ppm on or after January 1, 2010; and 2) Type 1 units (equipment with a heat input rating equivalent to or less than 400,000 Btu per hour) to meet a NOx emission limit of 20 ppm on or after January 1, 2012. Other changes included: 1) providing more detailed specifications for demonstrating compliance with an existing exemption from retrofit requirements for equipment operating less than 9,000 therms per year; 2) clarifying rule applicability; 3) a specific recordkeeping requirement for larger units; 4) enhancing compliance and enforceability; and, 5) improving clarity. The analysis in the May 2006 Final EA for Rule 1146.2 concluded that the project would achieve annual NOx emission reductions beginning in 2010, culminating in an overall reduction of 1.8 tons per day of NOx emissions by January 1, 2027 by relying on currently available NOx control technologies (e.g., low NOx burners). The May 2006 Final EA for Rule 1146.2 identified no significant adverse environmental impacts for any environmental topic areas. Since there were no significant adverse environmental impacts identified, mitigation measures were not required and Findings, a Statement of Overriding Considerations, and a Mitigation Monitoring Program were not adopted.

### **NOx Emission Inventory for Rules 1146, 1146.1 and 1146.2**

The total baseline NOx emission inventory for equipment at RECLAIM facilities subject to Rules 1146 and 1146.1 are summarized in Table 3-1 and is estimated to be ~~0.424136~~ ton per day based on the SCAQMD RECLAIM inventory database from calendar year 2016. The inventory excludes facilities that would be subject to sector specific command-and-control regulation (electricity generating facilities and refineries). Thirty-two Rule 1146.2 units are currently permitted in the RECLAIM program with most of the units (~~29~~28 out of 32) meeting the Rule 1146.2 NOx emission limits. ~~Three~~Four of the 32 units do not meet the NOx emission limits and these units would require retrofitting or replacement by December 31, 2023 under the proposed project. However, it is important to note that Rule 1146.2 units are smaller units that are exempt from permitting requirements under Rule 219 -Equipment Not Requiring a Written Permit Pursuant to Regulation II. Non-RECLAIM facilities currently register Rule 1146.2 equipment from one up to and including two MMBtu per hour under Rule 222 - Filing Requirements For Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II. RECLAIM facilities are currently exempt from this provision. Additionally, the RECLAIM NOx emissions for combustion

sources not requiring a written permit are reported on a quarterly basis as an aggregate sum for these devices. As a result, the permitted Rule 1146.2 universe may not fully represent the actual number of Rule 1146.2 units at RECLAIM facilities because the majority of the Rule 1146.2 units in RECLAIM are not currently registered or permitted with SCAQMD. Therefore, it is difficult to establish a precise inventory of the Rule 1146.2 units at RECLAIM facilities at this time. To aid in assessing the baseline emissions for future rulemaking efforts, RECLAIM facilities are required to submit their inventory of all small boilers and process heaters that would be subject to Rule 1146.2 requirements for Type 2 units as part of the initial determination notification process, pursuant to Rule 2002, paragraph (f)(6). The proposed amendments to Rules 1146, 1146.1, and 1146.2 affect a wide variety of RECLAIM facilities. For the lists of industry sectors and number of units affected by the proposed amendments to Rules 1146, 1146.1, and 1146.2, see Table 2-1.

**Table 3-1**  
**NOx Baseline Emission Inventory for Rules 1146, 1146.1, and 1146.2 Units in RECLAIM**

<b>Category</b>	<b>NOx Baseline Emission Inventory (tons/day)</b>	<b><u>Number of Affected Units</u></b>
Rule 1146 – Group I ( $\geq 75$ MMBtu/hour)	0.085	<u>3</u>
Rule 1146 – Group II ( $\geq 20$ to $< 75$ MMBtu/hour)	0.2149	<u>52</u>
Rule 1146 – Group III ( $\geq 5$ to $< 20$ MMBtu/hour)	0.10	<u>69</u>
<u>Rule 1146 – Thermal Fluid Heaters</u>	<u>0.0030</u>	<u>2</u>
Rule 1146.1 ( $> 2$ to $< 5$ MMBtu/hour)	0.0112	<u>19</u>
Rule 1146.2 ( $\leq 2$ MMBtu/hour)	0.008087	<u>3</u>
<b>Total Emission Inventory</b>	<b>0.4236</b>	<b><u>148149</u></b>

Over half the NOx emissions inventory can be attributed to Rule 1146 units in Group II. The Rule 1146 Group I units contribute to 20 percent of NOx baseline emissions, ~~however, on average each unit accounts for more than double the amount of emissions than a Rule 1146 Group II unit.~~ The Rule 1146 Group III units make up 24 percent of the emissions inventory, which is equivalent to with 0.10 ton per day of NOx. A majority of the NOx baseline emission inventory comes from larger units subject to Rule 1146. Rule 1146.1 units make up the second majority of NOx baseline emissions inventory. Units subject to Rule 1146.2 make up thea smallest amount of the emission inventory. Thus, the compliance deadlines as proposed in Rule 1100 are expected to achieve greater NOx emissions reductions earlier from units subject to Rule 1146 and 1146.1.

## **AIR QUALITY**

It is the responsibility of SCAQMD to ensure that state and federal ambient air quality standards are achieved and maintained in its geographical jurisdiction. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone, CO, NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, and lead. These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are more stringent than the federal standards and in the case of PM<sub>10</sub> and SO<sub>2</sub>, far more stringent. California has also established standards for sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. The state and NAAQS for each of these pollutants and their effects on health are summarized in Table 3-2. SCAQMD monitors levels of various criteria pollutants at 38 monitoring stations. The 2016 air quality data (the latest data available) from SCAQMD's monitoring stations are presented in Table 3-3.

**Table 3-2  
State and Federal Ambient Air Quality Standards**

<b>Pollutant</b>	<b>Averaging Time</b>	<b>State Standard<sup>a</sup></b>	<b>Federal Primary Standard<sup>b</sup></b>	<b>Most Relevant Effects</b>
<b>Ozone (O<sub>3</sub>)</b>	1-hour	0.09 ppm (180 µg/m <sup>3</sup> )	0.12 ppm	(a) Short-term exposures: 1) Pulmonary function decrements and localized lung edema in humans and animals; and 2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; and (d) Property damage.
	8-hour	0.070 ppm (137 µg/m <sup>3</sup> )	0.070 ppm (137 µg/m <sup>3</sup> )	
<b>Suspended Particulate Matter (PM<sub>10</sub>)</b>	24-hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; and (b) Excess seasonal declines in pulmonary function, especially in children.
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>	No Federal Standard	
<b>Suspended Particulate Matter (PM<sub>2.5</sub>)</b>	24-hour	No State Standard	35 µg/m <sup>3</sup>	(a) Increased hospital admissions and emergency room visits for heart and lung disease; (b) Increased respiratory symptoms and disease; and (c) Decreased lung functions and premature death.
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>	
<b>Carbon Monoxide (CO)</b>	1-Hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
	8-Hour	9 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	

**Table 3-2 (Concluded)**  
**State and Federal Ambient Air Quality Standards**

Pollutant	Averaging Time	State Standard <sup>a</sup>	Federal Primary Standard <sup>b</sup>	Most Relevant Effects
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>	1-Hour	0.18 ppm (339 µg/m <sup>3</sup> )	0.100 ppm (188 µg/m <sup>3</sup> )	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
	Annual Arithmetic Mean	0.030 ppm (57 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> )	
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>	1-Hour	0.25 ppm (655 µg/m <sup>3</sup> )	75 ppb (196 µg/m <sup>3</sup> )–	Broncho-constriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
	24-Hour	0.04 ppm (105 µg/m <sup>3</sup> )	No Federal Standard	
<b>Sulfates</b>	24-Hour	25 µg/m <sup>3</sup>	No Federal Standard	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage
<b>Hydrogen Sulfide (H<sub>2</sub>S)</b>	1-Hour	0.03 ppm (42 µg/m <sup>3</sup> )	No Federal Standard	Odor annoyance.
<b>Lead (Pb)</b>	30-Day Average	1.5 µg/m <sup>3</sup>	No Federal Standard	(a) Increased body burden; and (b) Impairment of blood formation and nerve conduction.
	Calendar Quarter	No State Standard	1.5 µg/m <sup>3</sup>	
	Rolling 3-Month Average	No State Standard	0.15 µg/m <sup>3</sup>	
<b>Visibility Reducing Particles</b>	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when relative humidity is less than 70 percent.	No Federal Standard	The statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. This is a visibility based standard not a health based standard. Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent.
<b>Vinyl Chloride</b>	24-Hour	0.01 ppm (26 µg/m <sup>3</sup> )	No Federal Standard	Highly toxic and a known carcinogen that causes a rare cancer of the liver.

ppb = parts per billion parts of air, by volume  
 ppm = parts per million parts of air, by volume

µg/m<sup>3</sup> = micrograms per cubic meter  
 mg/m<sup>3</sup> = milligrams per cubic meter

<sup>a</sup> The California ambient air quality standards for O<sub>3</sub>, CO, SO<sub>2</sub> (1-hour and 24-hour), NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

<sup>b</sup> The national ambient air quality standards, other than O<sub>3</sub> and those based on annual averages are not to be exceeded more than once a year. The O<sub>3</sub> standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standards is equal to or less than one.

**Table 3-3**  
**2016 Air Quality Data – South Coast Air Quality Management District**

<b>CARBON MONOXIDE (CO)<sup>a</sup></b>				
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. in ppm 1-hour	Max. Conc. in ppm, 8-hour
<b>LOS ANGELES COUNTY</b>				
1	Central Los Angeles	361	1.9	1.4
2	Northwest Coastal Los Angeles County	366	2.2	1.1
3	Southwest Coastal Los Angeles County	362	1.6	1.3
4	South Coastal Los Angeles County 1	--	--	--
4	South Coastal Los Angeles County 2	--	--	--
4	South Coastal Los Angeles County 3	363	3.3	2.2
4	I-710 Near Road <sup>##</sup>	--	--	--
6	West San Fernando Valley	366	2.4	1.9
8	West San Gabriel Valley	366	1.5	1
9	East San Gabriel Valley 1	366	1.3	1.2
9	East San Gabriel Valley 2	364	1.1	1
10	Pomona/Walnut Valley	361	1.7	1.3
11	South San Gabriel Valley	366	2.8	1.7
12	South Central Los Angeles County	366	4.4	3.9
13	Santa Clarita Valley	366	1.3	1.1
<b>ORANGE COUNTY</b>				
16	North Orange County	366	3.1	1.5
17	Central Orange County	355	2.6	2.1
17	I-5 Near Road <sup>##</sup>	360	3.7	2.2
18	North Coastal Orange County	366	2.1	1.7
19	Saddleback Valley	353	1.3	0.7
<b>RIVERSIDE COUNTY</b>				
22	Corona/Norco Area	--	--	--
23	Metropolitan Riverside County 1	359	1.7	1.3
23	Metropolitan Riverside County 3	366	1.9	1.4
24	Perris Valley	--	--	--
25	Elsinore Valley	298*	1.2	0.6
26	Temecula Valley	--	--	--
29	San Gorgonio Pass	--	--	--
30	Coachella Valley 1**	361	3.1	1.5
30	Coachella Valley 2**	--	--	--
30	Coachella Valley 3**	--	--	--
<b>SAN BERNARDINO COUNTY</b>				
32	Northwest San Bernardino Valley	366	1.7	1.3
33	I-10 Near Road <sup>##</sup>	366	1.7	1.3
33	CA-60 Near Road <sup>##</sup>	--	--	--
34	Central San Bernardino Valley 1	359	1.7	1
34	Central San Bernardino Valley 2	358	2.2	1.7
35	East San Bernardino Valley	--	--	--
37	Central San Bernardino Mountains	--	--	--
38	East San Bernardino Mountains	--	--	--
<b>DISTRICT MAXIMUM</b>			<b>4.4</b>	<b>3.9</b>
<b>SOUTH COAST AIR BASIN</b>			<b>4.4</b>	<b>3.9</b>
ppm = parts per million		**Salton Sea Air Basin		
-- = Pollutant not monitored		*Incomplete Data		
<sup>##</sup> = Four near-road sites measuring one or more of the pollutants PM2.5, CO, and/or NO2 are operating near the following freeways: I-1, I-10, CA-60, and I-710.				

<sup>a</sup> The federal 8-hour standard (8-hour average CO > 9 ppm) and state 8-hour standard (8-hour average CO > 9.0 ppm) were not exceeded. The federal and state 1-hour standards (35 ppm and 20 ppm) were not exceeded either.

**Table 3-3 (Continued)**  
**2016 Air Quality Data – South Coast Air Quality Management District**

<b>OZONE (O3)</b>										
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. in ppm 1-hr	Max. Conc. in ppm 8-hr	4th High Conc. ppm 8-hr	No. Days Standard Exceeded				
						Federal			State	
						Old > 0.124 ppm 1-hr	Current > 0.070 ppm 8-hr*	2008 > 0.075 ppm 8-hr	Current > 0.09 ppm 1-hr	Current > 0.070 ppm 8-hr
<b>LOS ANGELES COUNTY</b>										
1	Central LA	364	0.103	0.078	0.071	0	4	1	2	4
2	Northwest Coastal LA County	365	0.085	0.073	0.066	0	2	0	0	2
3	Southwest Coastal LA County	361	0.087	0.08	0.067	0	2	1	0	3
4	South Coastal LA County 1	--	--	--	--	--	--	--	--	--
4	South Coastal LA County 2	--	--	--	--	--	--	--	--	--
4	South Coastal LA County 3	365	0.079	0.059	0.055	0	0	0	0	0
4	I-710 Near Road##	--	--	--	--	--	--	--	--	--
6	West San Fernando Valley	364	0.122	0.098	0.086	0	23	14	9	23
8	West San Gabriel Valley	358	0.126	0.09	0.082	1	18	15	12	19
9	East San Gabriel Valley 1	366	0.146	0.106	0.095	4	39	25	30	40
9	East San Gabriel Valley 2	362	0.148	0.114	0.098	6	52	31	38	55
10	Pomona/Walnut Valley	360	0.127	0.092	0.087	1	26	14	20	29
11	South San Gabriel Valley	359	0.111	0.081	0.074	0	6	2	9	6
12	South Central LA County	365	0.098	0.071	0.064	0	1	0	1	1
13	Santa Clarita Valley	366	0.13	0.115	0.1	2	57	35	29	59
<b>ORANGE COUNTY</b>										
16	North Orange County	365	0.103	0.078	0.075	0	6	3	3	7
17	Central Orange County	354	0.103	0.074	0.071	0	4	0	2	4
17	I-5 Near Road##	--	--	--	--	--	--	--	--	--
18	North Coastal Orange County	366	0.09	0.069	0.065	0	0	0	0	0
19	Saddleback Valley	365	0.122	0.093	0.079	0	13	6	5	13
<b>RIVERSIDE COUNTY</b>										
22	Corona/Norco Area	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	357	0.142	0.104	0.097	1	69	47	33	71
23	Metropolitan Riverside County 3	365	0.14	0.106	0.095	1	65	43	34	70
24	Perris Valley	366	0.131	0.098	0.092	1	55	30	23	56
25	Elsinore Valley	360	0.124	0.093	0.087	0	44	25	15	45
26	Temecula Valley	355	0.092	0.081	0.077	0	19	6	0	20
29	San Geronio Pass	358	0.128	0.106	0.094	1	52	39	26	54
30	Coachella Valley 1**	363	0.103	0.092	0.087	0	46	20	6	48
30	Coachella Valley 2**	331	0.099	0.089	0.081	0	27	12	3	29
30	Coachella Valley 3**	--	--	--	--	--	--	--	--	--
<b>SAN BERNARDINO COUNTY</b>										
32	Northwest San Bernardino Valley	366	0.156	0.116	0.11	10	88	65	53	89
33	I-10 Near Road##	--	--	--	--	--	--	--	--	--
33	CA-60 Near Road##	--	--	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	362	0.139	0.105	0.098	3	49	39	34	52
34	Central San Bernardino Valley 2	366	0.158	0.118	0.114	10	106	76	70	108
35	East San Bernardino Valley	364	0.145	0.119	0.103	3	97	71	55	100
37	Central San Bernardino Mountains	365	0.163	0.121	0.116	9	101	80	64	103
38	East San Bernardino Mountains	--	--	--	--	--	--	--	--	--
<b>DISTRICT MAXIMUM</b>			<b>0.163</b>	<b>0.121</b>	<b>0.116</b>	<b>10</b>	<b>106</b>	<b>80</b>	<b>70</b>	<b>108</b>
<b>SOUTH COAST AIR BASIN</b>			<b>0.163</b>	<b>0.121</b>	<b>0.116</b>	<b>17</b>	<b>132</b>	<b>103</b>	<b>83</b>	<b>132</b>
ppm = parts per million				**Salton Sea Air Basin						
-- = Pollutant not monitored				*Incomplete data						
## = Four near-road sites measuring one or more of the pollutants PM2.5, CO, and/or NO2 are operating near the following freeways: I-1, I-10, CA-60, and I-710.										



**Table 3-3 (Continued)**  
**2016 Air Quality Data – South Coast Air Quality Management District**

<b>SULFUR DIOXIDE (SO<sub>2</sub>)<sup>c</sup></b>				
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Maximum Conc. ppb, 1-hour	99 <sup>th</sup> Percentile Conc. ppb, 1-hour
<b>LOS ANGELES COUNTY</b>				
1	Central LA	366	13.4	2.5
2	Northwest Coastal LA County	--	--	--
3	Southwest Coastal LA County	363	9.7	5.7
4	South Coastal LA County 1	--	--	--
4	South Coastal LA County 2	--	--	--
4	South Coastal LA County 3	366	17.8	12
4	I-710 Near Road <sup>##</sup>	--	--	--
6	West San Fernando Valley	--	--	--
8	West San Gabriel Valley	--	--	--
9	East San Gabriel Valley 1	--	--	--
9	East San Gabriel Valley 2	--	--	--
10	Pomona/Walnut Valley	--	--	--
11	South San Gabriel Valley	--	--	--
12	South Central LA County	--	--	--
13	Santa Clarita Valley	--	--	--
<b>ORANGE COUNTY</b>				
16	North Orange County	--	--	--
17	Central Orange County	--	--	--
17	I-5 Near Road <sup>##</sup>	--	--	--
18	North Coastal Orange County	366	3.3	2.1
19	Saddleback Valley	--	--	--
<b>RIVERSIDE COUNTY</b>				
22	Corona/Norco Area	--	--	--
23	Metropolitan Riverside County 1	366	5.6	2
23	Metropolitan Riverside County 3	--	--	--
24	Perris Valley	--	--	--
25	Elsinore Valley	--	--	--
26	Temecula Valley	--	--	--
29	San Gorgonio Pass	--	--	--
30	Coachella Valley 1**	--	--	--
30	Coachella Valley 2**	--	--	--
30	Coachella Valley 3**	--	--	--
<b>SAN BERNARDINO COUNTY</b>				
32	Northwest San Bernardino Valley	--	--	--
33	I-10 Near Road <sup>##</sup>	--	--	--
33	CA-60 Near Road <sup>##</sup>	--	--	--
34	Central San Bernardino Valley 1	363	6.3	2
34	Central San Bernardino Valley 2	--	--	--
35	East San Bernardino Valley	--	--	--
37	Central San Bernardino Mountains	--	--	--
38	East San Bernardino Mountains	--	--	--
<b>DISTRICT MAXIMUM</b>			<b>17.8</b>	<b>12</b>
<b>SOUTH COAST AIR BASIN</b>			<b>17.8</b>	<b>12</b>
ppb = parts per billion				
-- = Pollutant not monitored				
<sup>##</sup> = Four near-road sites measuring one or more of the pollutants PM <sub>2.5</sub> , CO, and/or NO <sub>2</sub> are operating near the following freeways: I-1, I-10, CA-60, and I-710.				
** Salton Sea Air Basin				

<sup>c</sup> The federal SO<sub>2</sub> 1-hour standard is 75 ppb (0.075 ppm). The state standards are 1-hour average SO<sub>2</sub> > 0.25 ppm (250 ppb) and 24-hour average SO<sub>2</sub> > 0.04 ppm (40 ppb).

**Table 3-3 (Continued)**  
**2016 Air Quality Data – South Coast Air Quality Management District**

SUSPENDED PARTICULATE MATTER PM10 <sup>d</sup>						
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. $\mu\text{g}/\text{m}^3$ , 24-hour	No. (%) Samples Exceeding Standard		Annual Average AAM Conc. <sup>e</sup> $\mu\text{g}/\text{m}^3$
				Federal $> 150 \mu\text{g}/\text{m}^3$ , 24-hour	State $> 50 \mu\text{g}/\text{m}^3$ , 24-hour	
<b>LOS ANGELES COUNTY</b>						
1	Central LA	277*	67	0	18(6%)	32.4
2	Northwest Coastal LA County	--	--	--	--	--
3	Southwest Coastal LA County	60	43	0	0(0%)	21.6
4	South Coastal LA County 1	--	--	--	--	--
4	South Coastal LA County 2	60	56	0	3(5%)	27.8
4	South Coastal LA County 3	59	75	0	8(14%)	31.9
4	I-710 Near Road <sup>##</sup>	--	--	--	--	--
6	West San Fernando Valley	--	--	--	--	--
8	West San Gabriel Valley	--	--	--	--	--
9	East San Gabriel Valley 1	60	74	0	12(20%)	33.7
9	East San Gabriel Valley 2	362	74	0	21(6%)	29.8
10	Pomona/Walnut Valley	--	--	--	--	--
11	South San Gabriel Valley	--	--	--	--	--
12	South Central LA County	--	--	--	--	--
13	Santa Clarita Valley	60	96	0	1(2%)	23.4
<b>ORANGE COUNTY</b>						
16	North Orange County	--	--	--	--	--
17	Central Orange County	353	74	0	3(1%)	24.4
17	I-5 Near Road <sup>##</sup>	--	--	--	--	--
18	North Coastal Orange County	--	--	--	--	--
19	Saddleback Valley	59	59	0	1(2%)	21
<b>RIVERSIDE COUNTY</b>						
22	Corona/Norco Area	51*	62	0	7(14%)	31.7
23	Metropolitan Riverside County 1	302*	82	0	58(19%)	36.9
23	Metropolitan Riverside County 3	356 <sup>+</sup>	116	0	175(49%)	49
24	Perris Valley	57	76	0	5(9%)	32.2
25	Elsinore Valley	366	99	0	4(1%)	21.4
26	Temecula Valley	--	--	--	--	--
29	San Geronio Pass	57	65	0	3(5%)	24
30	Coachella Valley 1**	355 <sup>+</sup>	113	0	6(2%)	20.8
30	Coachella Valley 2**	313**	137	0	56(18%)	36.9
30	Coachella Valley 3**	272**	150	0	76(28%)	43
<b>SAN BERNARDINO COUNTY</b>						
32	Northwest San Bernardino Valley	363	72	0	5(1%)	25
33	I-10 Near Road <sup>##</sup>	--	--	--	--	--
33	CA-60 Near Road <sup>##</sup>	--	--	--	--	--
34	Central San Bernardino Valley 1	61	94	0	15(25%)	38.1
34	Central San Bernardino Valley 2	333*	91	0	33(10%)	33.1
35	East San Bernardino Valley	56	72	0	4(7%)	27.8
37	Central San Bernardino Mountains	61	46	0	0(0%)	17.1
38	East San Bernardino Mountains	--	--	--	--	--
<b>DISTRICT MAXIMUM</b>			<b>150<sup>+</sup></b>	<b>0<sup>+</sup></b>	<b>175<sup>+</sup></b>	<b>49.0<sup>+</sup></b>
<b>SOUTH COAST AIR BASIN</b>			<b>116<sup>+</sup></b>	<b>0<sup>+</sup></b>	<b>181<sup>+</sup></b>	<b>49.0<sup>+</sup></b>
$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter of air AAM = Annual Arithmetic Mean -- = Pollutant not monitored **Salton Sea Air Basin *Incomplete Data <sup>##</sup> = Four near-road sites measuring one or more of the pollutants PM2.5, CO, and/or NO2 are operating near the following freeways: I-1, I-10, CA-60, and I-710. <sup>+</sup> = High PM10 ( $\geq 155 \mu\text{g}/\text{m}^3$ ) data recorded in Coachella Valley (due to high winds) and the Basin (due to Independence Day fireworks) are excluded in accordance with the U.S. EPA Exceptional Event Rule.						

<sup>d</sup> Federal Reference Method (FRM) PM10 samples were collected every 6 days at all sites except for Stations 4144 and 4157, where samples were collected every 3 days. PM10 statistics listed above are for the FRM data only. Federal Equivalent Method (FEM) PM10 continuous monitoring instruments were operated at some of the above locations. Max 24-hour average PM10 at sites with FEM monitoring was 152  $\mu\text{g}/\text{m}^3$ , at Indio.

<sup>e</sup> State standard is annual average (AAM)  $> 20 \mu\text{g}/\text{m}^3$ . Federal annual PM10 standard (AAM  $> 50 \mu\text{g}/\text{m}^3$ ) was revoked in 2006.

**Table 3-3 (Continued)**  
**2016 Air Quality Data – South Coast Air Quality Management District**

<b>SUSPENDED PARTICULATE MATTER PM2.5<sup>f</sup></b>						
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. $\mu\text{g}/\text{m}^3$ , 24-hour	98 <sup>th</sup> Percentile Conc. in $\mu\text{g}/\text{m}^3$ 24-hr	No. (%) Samples Exceeding Federal Std $> 35 \mu\text{g}/\text{m}^3$ , 24-hour	Annual Average AAM Conc. <sup>g</sup> $\mu\text{g}/\text{m}^3$
<b>LOS ANGELES COUNTY</b>						
1	Central LA	357	44.39	27.3	2(0.6%)	11.83
2	Northwest Coastal LA County	--	--	--	--	--
3	Southwest Coastal LA County	--	--	--	--	--
4	South Coastal LA County 1	356	29.37	23.56	0	10.36
4	South Coastal LA County 2	350	28.93	22.05	0	9.62
4	South Coastal LA County 3	--	--	--	--	--
4	I-710 Near Road <sup>##</sup>	352	33.31	26.09	0	12.03
6	West San Fernando Valley	113	30.05	24.59	0	9.23
8	West San Gabriel Valley	119	29.21	25.38	0	9.59
9	East San Gabriel Valley 1	122	32.17	29.01	0	10.15
9	East San Gabriel Valley 2	--	--	--	--	--
10	Pomona/Walnut Valley	--	--	--	--	--
11	South San Gabriel Valley	120	46.59	25.13	2(1.7%)	11.75
12	South Central LA County	115	36.35	26.35	1(0.9%)	11.13
13	Santa Clarita Valley	--	--	--	--	--
<b>ORANGE COUNTY</b>						
16	North Orange County	--	--	--	--	--
17	Central Orange County	349	44.45	24.02	1(0.3%)	9.47
17	I-5 Near Road <sup>##</sup>	--	--	--	--	--
18	North Coastal Orange County	--	--	--	--	--
19	Saddleback Valley	117	24.79	13.41	0	7.36
<b>RIVERSIDE COUNTY</b>						
22	Corona/Norco Area	--	--	--	--	--
23	Metropolitan Riverside County 1	357 <sup>+</sup>	39.12	31.65	4(1.1%)	12.54
23	Metropolitan Riverside County 3	352 <sup>+</sup>	45.64	35.14	6(1.7%)	14.02
24	Perris Valley	--	--	--	--	--
25	Elsinore Valley	--	--	--	--	--
26	Temecula Valley	--	--	--	--	--
29	San Gorgonio Pass	--	--	--	--	--
30	Coachella Valley 1 <sup>**</sup>	112	14.71	12.43	0	5.53
30	Coachella Valley 2 <sup>**</sup>	115	25.84	15.04	0	7.74
30	Coachella Valley 3 <sup>**</sup>	--	--	--	--	--
<b>SAN BERNARDINO COUNTY</b>						
32	Northwest San Bernardino Valley	--	--	--	--	--
33	I-10 Near Road <sup>##</sup>	--	--	--	--	--
33	CA-60 Near Road <sup>##</sup>	347 <sup>**</sup>	44.14	33.02	6(1.7%)	14.73
34	Central San Bernardino Valley 1	111 <sup>+</sup>	30.45	26.25	0	12.04
34	Central San Bernardino Valley 2	113 <sup>+</sup>	32.54	27.12	0	10.84
35	East San Bernardino Valley	--	--	--	--	--
37	Central San Bernardino Mountains	--	--	--	--	--
38	East San Bernardino Mountains	55	28.42	22.14	0	6.83
<b>DISTRICT MAXIMUM</b>			<b>46.6<sup>+</sup></b>	<b>35.1<sup>+</sup></b>	<b>6<sup>+</sup></b>	<b>14.73<sup>+</sup></b>
<b>SOUTH COAST AIR BASIN</b>			<b>46.6<sup>+</sup></b>	<b>35.1<sup>+</sup></b>	<b>9<sup>+</sup></b>	<b>14.73<sup>+</sup></b>
$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter of air AAM = Annual Arithmetic Mean -- = Pollutant not monitored **Salton Sea Air Basin *Incomplete Data						
<sup>##</sup> = Four near-road sites measuring one or more of the pollutants PM2.5, CO, and/or NO2 are operating near the following freeways: I-1, I-10, CA-60, and I-710 <sup>+</sup> = High PM10 ( $\geq 155 \mu\text{g}/\text{m}^3$ ) data recorded in Coachella Valley (due to high winds) and the Basin (due to Independence Day fireworks) are excluded in accordance with the U.S. EPA Exceptional Event Rule.						

<sup>f</sup> PM2.5 samples were collected every 3 days at all sites except for station numbers 072, 077, 087, 3176, 4144 and 4165, where samples were taken daily, and station number 5818 where samples were taken every 6 days. PM2.5 statistics listed above are for the FRM data only. FEM PM2.5 continuous monitoring instruments were operated at some of the above locations for special purposes studies.

<sup>g</sup> Both federal and state standards are annual average (AAM)  $> 12.0 \mu\text{g}/\text{m}^3$ .

**Table 3-3 (Concluded)**  
**2016 Air Quality Data – South Coast Air Quality Management District**

Source Receptor Area No.	Location of Air Monitoring Station	LEAD <sup>h</sup>		SULFATES (SO <sub>x</sub> ) <sup>i</sup>	
		Max. Monthly Average Conc. <sup>m)</sup> $\mu\text{g}/\text{m}^3$	Max. 3-Month Rolling Average <sup>m)</sup> $\mu\text{g}/\text{m}^3$	No. Days of Data	Max. Conc. $\mu\text{g}/\text{m}^3$ , 24-hour
<b>LOS ANGELES COUNTY</b>					
1	Central LA	0.016	0.01	58	5.8
2	Northwest Coastal LA County	--	--	--	--
3	Southwest Coastal LA County	0.006	0.01	58	6.2
4	South Coastal LA County 1	--	--	--	--
4	South Coastal LA County 2	0.008	0.01	59	6.3
4	South Coastal LA County 3	--	--	57	7.4
4	I-710 Near Road <sup>##</sup>	--	--	--	--
6	West San Fernando Valley	--	--	--	--
8	West San Gabriel Valley	--	--	--	--
9	East San Gabriel Valley 1	--	--	58	9.5 <sup>#</sup>
9	East San Gabriel Valley 2	--	--	--	--
10	Pomona/Walnut Valley	--	--	--	--
11	South San Gabriel Valley	0.011	0.01	--	--
12	South Central LA County	0.016	0.01	--	--
13	Santa Clarita Valley	--	--	59	4.1
<b>ORANGE COUNTY</b>					
16	North Orange County	--	--	--	--
17	Central Orange County	--	--	59	5.3 <sup>#</sup>
17	I-5 Near Road <sup>##</sup>	--	--	--	--
18	North Coastal Orange County	--	--	--	--
19	Saddleback Valley	--	--	58	3.7
<b>RIVERSIDE COUNTY</b>					
22	Corona/Norco Area	--	--	50	8.2 <sup>#</sup>
23	Metropolitan Riverside County 1	0.007	0.01	114	15.2 <sup>#</sup>
23	Metropolitan Riverside County 3	--	--	118	13.6 <sup>#</sup>
24	Perris Valley	--	--	55	6.0 <sup>#</sup>
25	Elsinore Valley	--	--	--	--
26	Temecula Valley	--	--	--	--
29	San Gorgonio Pass	--	--	56	4.0 <sup>#</sup>
30	Coachella Valley 1 <sup>**</sup>	--	--	51	3.9
30	Coachella Valley 2 <sup>**</sup>	--	--	113	4.1
30	Coachella Valley 3 <sup>**</sup>	--	--	--	--
<b>SAN BERNARDINO COUNTY</b>					
32	Northwest San Bernardino Valley	0.007	0.01	--	--
33	I-10 Near Road <sup>##</sup>	--	--	--	--
33	CA-60 Near Road <sup>##</sup>	--	--	--	--
34	Central San Bernardino Valley 1	--	--	59	17.1 <sup>#</sup>
34	Central San Bernardino Valley 2	0.01	0.01	55	16.0 <sup>#</sup>
35	East San Bernardino Valley	--	--	56	12.1 <sup>#</sup>
37	Central San Bernardino Mountains	--	--	59	3.9 <sup>#</sup>
38	East San Bernardino Mountains	--	--	--	--
<b>DISTRICT MAXIMUM</b>		<b>0.016<sup>++</sup></b>	<b>0.01<sup>++</sup></b>		<b>17.1<sup>#</sup></b>
<b>SOUTH COAST AIR BASIN</b>		<b>0.016<sup>++</sup></b>	<b>0.01<sup>++</sup></b>		<b>17.1<sup>#</sup></b>
$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter of air -- = Pollutant not monitored **Salton Sea Air Basin *Incomplete Data <sup>##</sup> = Four near-road sites measuring one or more of the pollutants PM2.5, CO, and/or NO2 are operating near the following freeways: I-1, I-10, CA-60, and I-710.		+ = High PM10 ( $\geq 155 \mu\text{g}/\text{m}^3$ ) data recorded in Coachella Valley (due to high winds) and the Basin (due to Independence Day fireworks) are excluded in accordance with the U.S. EPA Exceptional Event Rule. ++ = Higher lead concentrations were recorded at near-source monitoring sites immediately downwind of stationary lead sources. Maximum monthly and 3-month rolling averages recorded were $0.88 \mu\text{g}/\text{m}^3$ and $0.06 \mu\text{g}/\text{m}^3$ .			

<sup>h</sup> Federal lead standard is 3-months rolling average  $> 0.15 \mu\text{g}/\text{m}^3$ ; state standard is monthly average  $\geq 1.5 \mu\text{g}/\text{m}^3$ . Lead standards were not exceeded.

<sup>i</sup> Sulfate data is not available at this time. State sulfate standard is 24-hour  $\geq 25 \mu\text{g}/\text{m}^3$ . There is no federal standard for sulfate.

### **Carbon Monoxide**

CO is a primary pollutant, meaning that it is directly emitted into the air, not formed in the atmosphere by chemical reaction of precursors, as is the case with ozone and other secondary pollutants. Ambient concentrations of CO in the Basin exhibit large spatial and temporal variations due to variations in the rate at which CO is emitted and in the meteorological conditions that govern transport and dilution. Unlike ozone, CO tends to reach high concentrations in the fall and winter months. The highest concentrations frequently occur on weekdays at times consistent with rush hour traffic and late night during the coolest, most stable portion of the day.

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise and electrocardiograph changes indicative of worsening oxygen supply to the heart.

Inhaled CO has no direct toxic effect on the lungs but exerts its effect on tissues by interfering with oxygen transport by competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes.

Reductions in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include preterm births and heart abnormalities.

CO concentrations were measured at 25 locations in the Basin and neighboring Salton Sea Air Basin areas in 2016. CO concentrations did not exceed the standards in 2016. The highest 1-hour average CO concentration recorded (4.4 ppm in the South Central Los Angeles County area) was 13 percent of the federal 1-hour CO standard of 35 ppm and 22 percent of the state 1-hour standard of 20 ppm. The highest 8-hour average CO concentration recorded (3.9 ppm in the South Central Los Angeles County area) was 43 percent of the federal and state 8-hour CO standard of 9.0 ppm.

In 2004, SCAQMD formally requested the U.S. EPA to re-designate the Basin from nonattainment to attainment with the CO NAAQS. On March 24, 2007, U.S. EPA published in the Federal Register its proposed decision to re-designate the Basin from nonattainment to attainment for CO. The comment period on the re-designation proposal closed on March 16, 2007 with no comments received by the U.S. EPA. On May 11, 2007, U.S. EPA published in the Federal Register its final decision to approve SCAQMD's request for re-designation from non-attainment to attainment for CO, effective June 11, 2007.

On August 12, 2011 U.S. EPA issued a decision to retain the existing NAAQS for CO, determining that those standards provided the required level of public health protection. However, U.S. EPA added a monitoring requirement for near-road CO monitors in urban areas with population of one million or more, utilizing stations that would be implemented to meet the 2010 NO<sub>2</sub> near-road monitoring requirements. The two new CO monitors are at the I-5 near-road site, located in Orange County near Anaheim, and the I-10 near-road site, located near Etiwanda Avenue in San Bernardino County near Ontario, Rancho Cucamonga, and Fontana.

### **Ozone**

Ozone (O<sub>3</sub>), a colorless gas with a sharp odor, is a highly reactive form of oxygen. High ozone concentrations exist naturally in the stratosphere. Some mixing of stratospheric ozone downward through the troposphere to the earth's surface does occur; however, the extent of ozone transport is limited. At the earth's surface in sites remote from urban areas ozone concentrations are normally very low (e.g., from 0.03 ppm to 0.05 ppm).

The propensity of ozone for reacting with organic materials causes it to be damaging to living cells and ambient ozone concentrations in the Basin are frequently sufficient to cause health effects. Ozone enters the human body primarily through the respiratory tract and causes respiratory irritation and discomfort, makes breathing more difficult during exercise, and reduces the respiratory system's ability to remove inhaled particles and fight infection.

Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term exposures (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in high ozone communities. Elevated ozone levels are also associated with increased school absences.

Ozone exposure under exercising conditions is known to increase the severity of the above mentioned observed responses. Animal studies suggest that exposures to a combination of pollutants which include ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

In 2016, SCAQMD regularly monitored ozone concentrations at 29 locations in the Basin and the Coachella Valley portion of the Salton Sea Air Basin. Maximum ozone concentrations (fourth highest concentration ppm 8-hour) for all areas monitored were below the stage 1 episode level (0.20 ppm) and below the health advisory level (0.15 ppm) (see Table 3-3). All counties in the Basin, as well as the Coachella Valley, exceeded the level of the new 2015 (0.070 ppm), the former 2008 (0.075 ppm), and/or the 1997 (0.08 ppm) 8-hour ozone NAAQS in 2016. While not all stations had days exceeding the previous 8-hour standards, all monitoring stations except two (South Coastal LA County 3 and North Coastal Orange County) had at least one day over the 2015 federal ozone standard (70 ppb).

In 2016, the maximum ozone concentrations in the Basin continued to exceed federal standards by wide margins. Maximum 1-hour and 8-hour average ozone concentrations were 0.163 ppm and 0.121 ppm, respectively (the maximum 1-hour and 8-hour average was recorded in the Central San Bernardino Mountain area). The maximum 8-hour concentration of 0.121 ppm was 173 percent of the new federal standard (0.070 ppm). The maximum 1-hour concentration was 181 percent of the 1-hour state ozone standard of 0.09 ppm. The 8-hour average concentration was 173 percent of the 8-hour state ozone standard of 0.070 ppm.

### **Nitrogen Dioxide**

NO<sub>2</sub> is a reddish-brown gas with a bleach-like odor. Nitric oxide (NO) is a colorless gas, formed from the nitrogen (N<sub>2</sub>) and oxygen (O<sub>2</sub>) in air under conditions of high temperature and pressure which are generally present during combustion of fuels; NO reacts rapidly with the oxygen in air to form NO<sub>2</sub>. NO<sub>2</sub> is responsible for the brownish tinge of polluted air. The two gases, NO and NO<sub>2</sub>, are referred to collectively as NO<sub>x</sub>. In the presence of sunlight, NO<sub>2</sub> reacts to form nitric oxide and an oxygen atom. The oxygen atom can react further to form ozone, via a complex series of chemical reactions involving hydrocarbons. Nitrogen dioxide may also react to form nitric acid (HNO<sub>3</sub>) which reacts further to form nitrates, components of PM<sub>2.5</sub> and PM<sub>10</sub>.

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO<sub>2</sub> at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO<sub>2</sub> in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma and/or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these subgroups. More recent studies have found associations between NO<sub>2</sub> exposures and cardiopulmonary mortality, decreased lung function, respiratory symptoms, and emergency room asthma visits.

In animals, exposure to levels of NO<sub>2</sub> considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO<sub>2</sub>.

In 2016, nitrogen dioxide concentrations were monitored at 27 locations. No area of the Basin or SSAB exceeded the federal or state standards for NO<sub>2</sub>. The Basin has not exceeded the federal standard for NO<sub>2</sub> (0.0534 ppm) since 1991, when the Los Angeles County portion of the Basin recorded the last exceedance of the standard in any county within the United States. The current 1-hour average NO<sub>2</sub> NAAQS (100 ppb) was last exceeded on two days in 2014 in the South Coastal Los Angeles County area at the Long Beach-Hudson air monitoring station. However, the 98th percentile form of the standard was not exceeded, and the 2013-2015 design value is not in violation of the NAAQS. The higher relative concentrations in the Los Angeles area are indicative of the concentrated emission sources, especially heavy-duty vehicles. NO<sub>x</sub> emission reductions continue to be necessary because it is a precursor to both ozone and PM (PM<sub>2.5</sub> and PM<sub>10</sub>) concentrations.

With the revised NO<sub>2</sub> federal standard in 2010, near-road NO<sub>2</sub> measurements were required to be phased in for larger cities. The four near-road monitoring stations are: (1) I-5 near-road, located in Orange County near Anaheim; (2) I-710 near-road, located at Long Beach Blvd. in Los Angeles County near Compton and Long Beach; (3) SR-60 near-road, located west of Vineyard Avenue near the San Bernardino/Riverside County border near Ontario, Mira Loma, and Upland; and (4) I-10 near-road, located near Etiwanda Avenue in San Bernardino County near Ontario, Rancho Cucamonga, and Fontana.

The longest operating near-road station in the Basin, adjacent to I-5 in Orange County, has not exceeded the level of the 1-hour NO<sub>2</sub> NAAQS (100 ppb) since the measurements began on January 1, 2014. The peak 1-hour NO<sub>2</sub> concentration at that site in 2014 was 78.8 ppb and the peak

concentration for 2015 was 70.2 ppb. This can be compared to the annual peak values measured at the nearest ambient monitoring station in Central Orange County (Anaheim station), where the 2014 and 2015 peaks were 75.8 and 59.1, respectively.

### **Sulfur Dioxide**

SO<sub>2</sub> is a colorless gas with a sharp odor. It reacts in the air to form sulfuric acid (H<sub>2</sub>SO<sub>4</sub>), which contributes to acid precipitation, and sulfates, which are components of PM<sub>10</sub> and PM<sub>2.5</sub>. Most of the SO<sub>2</sub> emitted into the atmosphere is produced by burning sulfur-containing fuels.

Exposure of a few minutes to low levels of SO<sub>2</sub> can result in airway constriction in some asthmatics. All asthmatics are sensitive to the effects of SO<sub>2</sub>. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, is observed after acute higher exposure to SO<sub>2</sub>. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO<sub>2</sub>.

Animal studies suggest that despite SO<sub>2</sub> being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO<sub>2</sub> levels. In these studies, efforts to separate the effects of SO<sub>2</sub> from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

No exceedances of federal or state standards for sulfur dioxide occurred in 2016 at any of the six locations monitored the Basin. The maximum 1-hour SO<sub>2</sub> concentration was 17.8 ppb, as recorded in the South Coastal Los Angeles County area. The 99<sup>th</sup> percentile of 1-hour SO<sub>2</sub> concentration was 12 ppb, as recorded in South Coastal Los Angeles County area. Though SO<sub>2</sub> concentrations remain well below the standards, SO<sub>2</sub> is a precursor to sulfate, which is a component of fine particulate matter, PM<sub>10</sub>, and PM<sub>2.5</sub>. Historical measurements showed concentrations to be well below standards and monitoring has been discontinued.

### **Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)**

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 (PM<sub>10</sub>)) 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<sub>10</sub> and PM<sub>2.5</sub>.

A consistent correlation between elevated ambient fine particulate matter (PM<sub>2.5</sub>) 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 PM<sub>2.5</sub> 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. In addition to children, the elderly and people with preexisting respiratory and/or cardiovascular disease appear to be more susceptible to the effects of PM<sub>10</sub> and PM<sub>2.5</sub>.

SCAQMD monitored PM<sub>10</sub> concentrations at 23 locations in 2016. The federal 24-hour PM<sub>10</sub> standard (150 µg/m<sup>3</sup>) was not exceeded in 2016. The Basin has remained in attainment of the PM<sub>10</sub> NAAQS since 2006. The maximum three-year average 24-hour PM<sub>10</sub> concentration of 150 µg/m<sup>3</sup> was recorded in the Coachella Valley area and was 100 percent of the federal standard and 300 percent of the much more stringent state 24-hour PM<sub>10</sub> standard (50 µg/m<sup>3</sup>). The state 24-hour PM<sub>10</sub> standard was exceeded at several of the monitoring stations. The maximum annual average PM<sub>10</sub> concentration of 49 µg/m<sup>3</sup> was recorded in Metropolitan Riverside County. The federal annual PM<sub>10</sub> standard has been revoked. The much more stringent state annual PM<sub>10</sub> standard (20 µg/m<sup>3</sup>) was exceeded in most stations in each county in the Basin and in the Coachella Valley.

In 2016, PM<sub>2.5</sub> concentrations were monitored at 19 locations throughout the Basin. U.S. EPA revised the federal 24-hour PM<sub>2.5</sub> standard from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>, effective December 17, 2006. In 2016, the maximum PM<sub>2.5</sub> concentrations in the Basin exceeded the new federal 24-hour PM<sub>2.5</sub> standard in seven out of 19 locations. The maximum 24-hour PM<sub>2.5</sub> concentration of 46.6 µg/m<sup>3</sup> was recorded in the South San Gabriel Valley area. The 98th percentile 24-hour PM<sub>2.5</sub> concentration of 35.1 µg/m<sup>3</sup> was recorded in the Metropolitan Riverside County, which barely exceeds the federal standard of 35 µg/m<sup>3</sup>. The maximum annual average concentration of 14.73 µg/m<sup>3</sup> was recorded in San Bernardino County, which represents 98 percent of the 2006 federal standard of 15 µg/m<sup>3</sup>.

On December 14, 2012, U.S. EPA strengthened the annual NAAQS for PM<sub>2.5</sub> to 12 µg/m<sup>3</sup> and, as part of the revisions, a requirement was added to monitor near the most heavily trafficked roadways in large urban areas. Particle pollution is expected to be higher along these roadways as a result of direct emissions from cars and heavy-duty diesel trucks and buses. SCAQMD has installed the two required PM<sub>2.5</sub> monitors by January 1, 2015, at locations selected based upon the existing near-roadway NO<sub>2</sub> sites that were ranked higher for heavy-duty diesel traffic. The locations are: (1) I-710, located at Long Beach Blvd. in Los Angeles County near Compton and Long Beach; and (2) SR-60, located west of Vineyard Avenue near the San Bernardino/Riverside County border near Ontario, Mira Loma, and Upland. These near-road sites measure PM<sub>2.5</sub> daily with FRM filter-based measurements.

### **Lead**

Lead in the atmosphere is present as a mixture of a number of lead compounds. Leaded gasoline and lead smelters have been the main sources of lead emitted into the air. Due to the phasing out of leaded gasoline, there was a dramatic reduction in atmospheric lead in the Basin over the past three decades.

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central

nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Lead poisoning can cause anemia, lethargy, seizures, and death. It appears that there are no direct effects of lead on the respiratory system. Lead can be stored in the bone from early-age environmental exposure, and elevated blood lead levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland), and osteoporosis (breakdown of bone tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of previous environmental lead exposure of their mothers.

The state standards for lead were not exceeded in any area of the SCAQMD in 2016. There have been no violations of these standards at SCAQMD's regular air monitoring stations since 1982, as a result of removal of lead from gasoline. However, monitoring at two stations immediately adjacent to stationary sources of lead recorded exceedances of the standard in Los Angeles County over the 2007-2009-time period. These data were used for designations under the revised standard that also included new requirements for near-source monitoring. As a result, a nonattainment designation was finalized for much of the Los Angeles County portion of the Basin when the current standard was implemented.

The current lead concentrations in Los Angeles County are now below the NAAQS. The maximum quarterly average lead concentration (0.01  $\mu\text{g}/\text{m}^3$  at several monitoring) was seven percent of the federal quarterly average lead standard (0.15  $\mu\text{g}/\text{m}^3$ ). The maximum monthly average lead concentration (0.016  $\mu\text{g}/\text{m}^3$  in South Central Los Angeles County) was one percent of the state monthly average lead standard. As a result of the 2012-2014 design value below the NAAQS, SCAQMD will be requesting that U.S. EPA re-designate the nonattainment area as attaining the federal lead standard. Stringent SCAQMD rules governing lead-producing sources will help to ensure that there are no future violations of the federal standard. Furthermore, one business that had been responsible for the highest measured lead concentrations in Los Angeles County has closed and is in the process of demolition and site clean-up.

### **Sulfates**

Sulfates are chemical compounds which contain the sulfate ion and are part of the mixture of solid materials which make up PM<sub>10</sub>. Most of the sulfates in the atmosphere are produced by oxidation of SO<sub>2</sub>. Oxidation of sulfur dioxide yields sulfur trioxide (SO<sub>3</sub>), which reacts with water to form sulfuric acid, which then contributes to acid deposition. The reaction of sulfuric acid with basic substances such as ammonia yields sulfates, a component of PM<sub>10</sub> and PM<sub>2.5</sub>.

Most of the health effects associated with fine particles and SO<sub>2</sub> at ambient levels are also associated with sulfates. Thus, both mortality and morbidity effects have been observed with an increase in ambient sulfate concentrations. However, efforts to separate the effects of sulfates from the effects of other pollutants have generally not been successful.

Clinical studies of asthmatics exposed to sulfuric acid suggest that adolescent asthmatics are possibly a subgroup susceptible to acid aerosol exposure. Animal studies suggest that acidic particles such as sulfuric acid aerosol and ammonium bisulfate are more toxic than nonacidic particles like ammonium sulfate. Whether the effects are attributable to acidity or to particles remains unresolved.

The most current preliminary data available for sulfates is for 2016. In 2016, the state 24-hour sulfate standard (25 µg/m<sup>3</sup>) was not exceeded in any of the 19 monitoring locations in the Basin. The maximum 24-hour sulfate concentration was 17.1 ppb, as recorded in the Central San Bernardino Valley. There are no federal sulfate standards.

### **Vinyl Chloride**

Vinyl chloride is a colorless, flammable gas at ambient temperature and pressure. It is also highly toxic and is classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as A1 (confirmed carcinogen in humans) and by the International Agency for Research on Cancer (IARC) as 1 (known to be a human carcinogen). (Air Gas, 2010.) At room temperature, vinyl chloride is a gas with a sickly-sweet odor that is easily condensed. However, it is stored as a liquid. Due to the hazardous nature of vinyl chloride to human health there are no end products that use vinyl chloride in its monomer form. Vinyl chloride is a chemical intermediate, not a final product. It is an important industrial chemical chiefly used to produce polymer polyvinyl chloride (PVC). The process involves vinyl chloride liquid fed to polymerization reactors where it is converted from a monomer to a polymer PVC. The final product of the polymerization process is PVC in either a flake or pellet form. Billions of pounds of PVC are sold on the global market each year. From its flake or pellet form, PVC is sold to companies that heat and mold the PVC into end products such as PVC pipe and bottles.

In the past, vinyl chloride emissions have been associated primarily with sources such as landfills. Risks from exposure to vinyl chloride are considered to be localized impacts rather than regional impacts. Because landfills in the SCAQMD are subject to Rule 1150.1 – Control of Gaseous Emissions from Municipal Solid Waste Landfills, which contain stringent requirements for landfill gas collection and control, potential vinyl chloride emissions are expected to be below the level of detection. Therefore, SCAQMD does not monitor for vinyl chloride at its monitoring stations.

### **Volatile Organic Compounds**

It should be noted that there are no state or NAAQS for VOCs because they are not classified as criteria pollutants. VOCs are regulated, however, because limiting VOC emissions reduces the rate of photochemical reactions that contribute to the formation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM<sub>10</sub> and lower visibility levels.

Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOCs because of interference with oxygen uptake. In general, ambient VOC concentrations in the atmosphere are suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis, even at low concentrations. Some hydrocarbon components classified as VOC emissions are thought or known to be hazardous. Benzene, for example, one hydrocarbon component of VOC emissions, is known to be a human carcinogen.

### **Non-Criteria Pollutants**

Although SCAQMD's primary mandate is attaining the state and NAAQS for criteria pollutants within the Basin, SCAQMD also has a general responsibility pursuant to Health and Safety Code Section 41700 to control emissions of air contaminants and prevent endangerment to public health. Additionally, state law requires SCAQMD to implement airborne toxic control measures (ATCM)

adopted by CARB and to implement the Air Toxics “Hot Spots” Act. As a result, SCAQMD has regulated pollutants other than criteria pollutants such as TACs, GHGs, and stratospheric ozone depleting compounds. SCAQMD has developed a number of rules to control non-criteria pollutants from both new and existing sources. These rules originated through state directives, Clean Air Act (CAA) requirements, or the SCAQMD rulemaking process.

In addition to promulgating non-criteria pollutant rules, SCAQMD has been evaluating AQMP control measures as well as existing rules to determine whether or not they would affect, either positively or negatively, emissions of non-criteria pollutants. For example, rules in which VOC components of coating materials are replaced by a non-photochemically reactive chlorinated substance would reduce the impacts resulting from ozone formation, but could increase emissions of toxic compounds or other substances that may have adverse impacts on human health.

The following subsections summarize the existing setting for the two major categories of non-criteria pollutants: compounds that contribute to TACs, global climate change, and stratospheric ozone depletion.

### **Air Quality – Toxic Air Contaminants (TACs)**

#### ***Federal***

Under Section 112 of the CAA, U.S. EPA is required to regulate sources that emit one or more of the 187 federally listed hazardous air pollutants (HAPs). HAPs are toxic air pollutants identified in the CAA, which are known or suspected of causing cancer or other serious health effects. The federal HAPs are listed on the U.S. EPA website at <http://www.epa.gov/ttn/atw/orig189.html>. In order to implement the CAA, approximately 100 National Emission Standards for Hazardous Air Pollutants (NESHAPs) have been promulgated by U.S. EPA for major sources (sources emitting greater than 10 ton per year (tpy) of a single HAP or greater than 25 tpy of multiple HAPs). SCAQMD can either directly implement NESHAPs or adopt rules that contain requirements at least as stringent as the NESHAP requirements. However, since NESHAPs often apply to sources in the Basin that are controlled, many of the sources that would have been subject to federal requirements already comply or are exempt.

In addition to the major source NESHAPs, U.S. EPA has also controlled HAPs from urban areas by developing Area Source NESHAPs under their Urban Air Toxics Strategy. U.S. EPA defines an area source as a source that emits less than 10 tons annually of any single hazardous air pollutant or less than 25 tons annually of a combination of hazardous air pollutants. The CAA requires the U.S. EPA to identify a list of at least 30 air toxics that pose the greatest potential health threat in urban areas. U.S. EPA is further required to identify and establish a list of area source categories that represent 90 percent of the emissions of the 30 urban air toxics associated with area sources, for which Area Source NESHAPs are to be developed under the CAA. U.S. EPA has identified a total of 70 area source categories with regulations promulgated for more than 30 categories so far.

The federal toxics program recognizes diesel engine exhaust (diesel particulate matter or DPM) as a health hazard; however, DPM itself is not one of their listed TACs. Rather, each toxic compound in the speciated list of compounds in exhaust is considered separately. Although there are no specific NESHAP regulations for DPM, DPM reductions are realized through federal regulations including diesel fuel standards and emission standards for stationary, marine, and locomotive engines; and idling controls for locomotives.

### **State**

The California air toxics program was based on the CAA and the original federal list of hazardous air pollutants. The state program was established in 1983 under the Toxic Air Contaminant Identification and Control Act, Assembly Bill (AB) 1807, Tanner. Under the state program, TACs are identified through a two-step process of risk identification and risk management. This two-step process was designed to protect residents from the health effects of toxic substances in the air.

**Control of TACs under the TAC Identification and Control Program:** California's TAC identification and control program, adopted in 1983 as AB 1807, is a two-step program in which substances are identified as TACs and ATCMs are adopted to control emissions from specific sources. CARB has adopted a regulation designating all 188 federal hazardous air pollutants (HAPs) as TACs.

ATCMs are developed by CARB and implemented by SCAQMD and other air districts through the adoption of regulations of equal or greater stringency. Generally, the ATCMs reduce emissions to achieve exposure levels below a determined health threshold. If no such threshold levels are determined, emissions are reduced to the lowest level achievable through the best available control technology unless it is determined that an alternative level of emission reduction is adequate to protect public health.

Under California law, a federal NESHAP automatically becomes a state ATCM, unless CARB has already adopted an ATCM for the source category. Once a NESHAP becomes an ATCM, CARB and each air pollution control or air quality management district have certain responsibilities related to adoption or implementation and enforcement of the NESHAP/ATCM.

**Control of TACs under the Air Toxics "Hot Spots" Act:** The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588) establishes a statewide program to inventory and assess the risks from facilities that emit TACs and to notify the public about significant health risks associated with the emissions. Facilities are phased into the AB 2588 program based on their emissions of criteria pollutants or their occurrence on lists of toxic emitters compiled by SCAQMD. Phase I consists of facilities that emit over 25 tpy of any criteria pollutant and facilities present on SCAQMD's toxics list. Phase I facilities entered the program by reporting their TAC emissions for calendar year 1989. Phase II consists of facilities that emit between 10 and 25 tpy of any criteria pollutant and submitted air toxic inventory reports for calendar year 1990 emissions. Phase III consists of certain designated types of facilities which emit less than 10 tpy of any criteria pollutant and submitted inventory reports for calendar year 1991 emissions. Inventory reports are required to be updated every four years under the state law.

**Air Toxics Control Measures:** As part of its risk management efforts, CARB has passed state ATCMs to address air toxics from mobile and stationary sources. Some key ATCMs for stationary sources include reductions of benzene emissions from service stations, hexavalent chromium emissions from chrome plating, perchloroethylene emissions from dry cleaning, ethylene oxide emissions from sterilizers, and multiple air toxics from the automotive painting and repair industries.

Many of CARB's recent ATCMs are part of the CARB Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Diesel Risk Reduction Plan), which

was adopted in September 2000 (<http://www.arb.ca.gov/diesel/documents/rrpapp.htm>) with the goal of reducing DPM emissions from compression ignition engines and associated health risk by 75 percent by 2010 and 85 percent by 2020. The Diesel Risk Reduction Plan includes strategies to reduce emissions from new and existing engines through the use of ultra-low sulfur diesel fuel, add-on controls, and engine replacement. In addition to stationary source engines, the plan addresses DPM emissions from mobile sources such as trucks, buses, construction equipment, locomotives, and ships.

**OEHHA Health Risk Assessment Guidelines:** In 2003, OEHHA developed and approved its Health Risk Assessment Guidance document (2003 OEHHA Guidelines) and prepared a series of Technical Support Documents, reviewed and approved by the Scientific Review Panel (SRP), that provided new scientific information showing that early-life exposures to air toxics contribute to an increased estimated lifetime risk of developing cancer and other adverse health effects, compared to exposures that occur in adulthood. As a result, OEHHA developed the Revised OEHHA Guidelines in March 2015, which incorporated this new scientific information. The new method utilizes higher estimates of cancer potency during early life exposures. There are also differences in the assumptions on breathing rates and length of residential exposures.

### **SCAQMD**

SCAQMD has regulated criteria air pollutants using either a technology-based or an emissions limit approach. The technology-based approach defines specific control technologies that may be installed to reduce pollutant emissions. The emissions limit approach establishes an emission limit, and allows industry to use any emission control equipment, as long as the emission requirements are met. The regulation of TACs often uses a health risk-based approach, but may also require a regulatory approach similar to criteria pollutants, as explained in the following subsections.

**Rules and Regulations:** Under SCAQMD's toxic regulatory program there are 26 source-specific rules that target toxic emission reductions that regulate over 10,000 sources such as metal finishing, spraying operations, dry cleaners, film cleaning, gasoline dispensing, and diesel-fueled stationary engines to name a few. In addition, other source-specific rules targeting criteria pollutant reductions also reduce toxic emissions, such as Rule 461 – Gasoline Transfer and Dispensing, which reduces benzene emissions from gasoline dispensing, and Rule 1124 – Aerospace Assembly and Component Manufacturing Operations, which reduces perchloroethylene, trichloroethylene, and methylene chloride emissions from aerospace operations.

New and modified sources of TACs in the SCAQMD are subject to Rule 1401 - New Source Review (NSR) of Toxic Air Contaminants and Rule 212 - Standards for Approving Permits. Rule 212 requires notification of SCAQMD's intent to grant a permit to construct a significant project, defined as a new or modified permit unit located within 1000 feet of a school (a state law requirement under AB 3205), a new or modified permit unit posing a maximum individual cancer risk of one in one million ( $1 \times 10^6$ ) or greater, or a new or modified facility with criteria pollutant emissions exceeding specified daily maximums. Distribution of notice is required to all addresses within a quarter mile radius, or other area deemed appropriate by SCAQMD. Rule 1401 currently controls emissions of carcinogenic and non-carcinogenic (health effects other than cancer) air contaminants from new, modified and relocated sources by specifying limits on cancer risk and hazard index (explained further in the following discussion), respectively. The rule lists nearly

300 TACs that are evaluated during SCAQMD's permitting process for new, modified, or relocated sources. During the past decade, more than ten compounds have been added or had risk values amended. The addition of DPM from diesel-fueled internal combustion engines as a TAC in March 2008 was the most significant of recent amendments to the rule. Rule 1401.1 – Requirements for New and Relocated Facilities Near Schools sets risk thresholds for new and relocated facilities near schools. The requirements are more stringent than those for other air toxics rules in order to provide additional protection to school children.

**Air Toxics Control Plan:** On March 17, 2000, the SCAQMD Governing Board approved the Air Toxics Control Plan (2000 ATCP), which was the first comprehensive plan in the nation to guide future toxic rulemaking and programs. The ATCP was developed to lay out SCAQMD's air toxics control program which built upon existing federal, state, and local toxic control programs as well as co-benefits from implementation of SIP measures. The concept for the plan was an outgrowth of the Environmental Justice principles and the Environmental Justice Initiatives adopted by SCAQMD Governing Board on October 10, 1997. Monitoring studies and air toxics regulations that were created from these initiatives emphasized the need for a more systematic approach to reducing TACs. The intent of the plan was to reduce exposure to air toxics in an equitable and cost-effective manner that promotes clean, healthful air in the SCAQMD. The plan proposed control strategies to reduce TACs in the SCAQMD implemented between years 2000 and 2010 through cooperative efforts of SCAQMD, local governments, CARB, and U.S. EPA.

**Cumulative Impact Reduction Strategies (CIRS):** The CIRS was presented to the SCAQMD Governing Board on September 5, 2003, as part of the White Paper on Regulatory Options for Addressing Cumulative Impacts from Air Pollution Emissions. The resulting 25 cumulative impacts strategies were a key element of the Addendum to March 2000 Final Draft Air Toxics Control Plan for Next Ten Years (2004 Addendum). The strategies included rules, policies, funding, education, and cooperation with other agencies. Some of the key SCAQMD accomplishments related to the cumulative impacts reduction strategies were:

- Rule 1401.1, which set more stringent health risk requirements for new and relocated facilities near schools
- Rule 1470 – Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines, which established DPM emission limits and other requirements for diesel-fueled engines
- Rule 1469.1 – Spraying Operations Using Coatings Containing Chromium, which regulated chrome spraying operations
- Rule 410 – Odor from Transfer Stations and Material Recovery Facilities which addresses odors from transfer stations and material recovery facilities
- Intergovernmental Review comment letters for CEQA documents
- SCAQMD's land use guidance document
- Additional protection in toxics rules for sensitive receptors, such as more stringent requirements for chrome plating operations and diesel engines located near schools

**2004 Addendum:** The 2004 Addendum was adopted by the SCAQMD Governing Board on April 2, 2004, and served as a status report regarding implementation of the various mobile and stationary source strategies in the 2000 ATCP and introduced new measures to further address air toxics. The main elements of the 2004 Addendum were to address the progress made in the implementation of the 2000 ATCP control strategies; provide a historical perspective of air toxic

emissions and current air toxic levels; incorporate the CIRS approved in 2003 and additional measures identified in the 2003 AQMP; project future air toxic levels to the extent feasible; and summarize future efforts to develop the next ATCP. Significant progress had been made in implementing most of SCAQMD strategies from the 2000 ATCP and the 2004 Addendum. CARB has also made notable progress in mobile source measures via its Diesel Risk Reduction Plan, especially for goods movement related sources, while the U.S. EPA continued to implement their air toxic programs applicable to stationary sources.

**Clean Communities Plan:** On November 5, 2010, the SCAQMD Governing Board approved the 2010 Clean Communities Plan (CCP). The CCP was an update to the 2000 ATCP and the 2004 Addendum. The objective of the 2010 CCP was to reduce exposure to air toxics and air-related nuisances throughout the SCAQMD, with emphasis on cumulative impacts. The elements of the 2010 CCP are community exposure reduction, community participation, communication and outreach, agency coordination, monitoring and compliance, source-specific programs, and nuisance. The centerpiece of the 2010 CCP is a pilot study through which SCAQMD staff works with community stakeholders to identify and develop solutions community-specific to air quality issues in two communities: (1) the City of San Bernardino; and (2) Boyle Heights and surrounding areas.

**Control of TACs under the Air Toxics "Hot Spots" Act:** On October 2, 1992, the SCAQMD Governing Board adopted public notification procedures for Phase I and II facilities. These procedures specify that AB 2588 facilities must provide public notice when exceeding the following risk levels:

- Maximum Individual Cancer Risk: greater than 10 in one million ( $10 \times 10^6$ )
- Total Hazard Index: greater than 1.0 for TACs except lead, or greater than 0.5 for lead

Public notice is to be provided by letters mailed to all addresses and all parents of children attending school in the impacted area. In addition, facilities must hold a public meeting and provide copies of the facility risk assessment in all school libraries and a public library in the impacted area.

The AB 2588 Toxics “Hot Spots” Program is implemented through Rule 1402 - Control of Toxic Air Contaminants from Existing Sources. SCAQMD continues to review health risk assessments submitted. Notification is required from facilities with a significant risk under the AB 2588 program based on their initial approved health risk assessments and will continue on an ongoing basis as additional and subsequent health risk assessments are reviewed and approved.

There are currently about 361 facilities in SCAQMD’s AB 2588 program. Since 1992 when the state Health and Safety Code incorporated a risk reduction requirement in the program, SCAQMD has reviewed and approved over 335 HRAs; 50 facilities were required to do a public notice and 24 facilities were subject to risk reduction. Currently, over 96 percent of the facilities in the program have cancer risks below ten in a million and over 97 percent have acute and chronic hazard indices of less than one. (SCAQMD, 2015a.)

**CEQA Intergovernmental Review Program:** SCAQMD staff, through its Intergovernmental Review (IGR), provides comments to lead agencies on air quality analyses and mitigation measures in CEQA documents. The following are some key programs and tools that have been

developed more recently to strengthen air quality analyses, specifically as they relate to exposure of mobile source air toxics:

- SCAQMD’s Mobile Source Committee approved the “Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions” (August 2002). This document provides guidance for analyzing cancer risks from DPM from truck idling and movement (e.g., truck stops, warehouse and distribution centers, or transit centers), ship hoteling at ports, and train idling.
- CalEPA and CARB’s “Air Quality and Land Use Handbook: A Community Health Perspective” (April 2005), provides recommended siting distances for incompatible land uses.
- Western Riverside Council of Governments’ Regional Air Quality Task Force developed a policy document titled “Good Neighbor Guidelines for Siting New and/or Modified Warehouse/Distribution Facilities” (September 2005). This document provides guidance to local government on preventive measures to reduce neighborhood exposure to TACs from warehousing facilities.

**Environmental Justice (EJ):** Environmental justice has long been a focus of SCAQMD. In 1990, SCAQMD formed an Ethnic Community Advisory Group that was restructured as the Environmental Justice Advisory Group (EJAG) in 2008. EJAG’s mission is to advise and assist SCAQMD in protecting and improving public health in SCAQMD’s most impacted communities through the reduction and prevention of air pollution.

In 1997, the SCAQMD Governing Board adopted four guiding principles and ten initiatives (<http://www.aqmd.gov/ej/history.htm>) to ensure environmental equity. Also in 1997, the SCAQMD Governing Board expanded the initiatives to include the “Children’s Air Quality Agenda” focusing on the disproportionate impacts of poor air quality on children. Some key initiatives that have been implemented were the Multiple Air Toxics Exposure Studies (MATES, MATES II, MATES III, and MATES IV); the Clean Fleet Rules; CIRS; funding for lower emitting technologies under the Carl Moyer Program; the Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning; a guidance document on Air Quality Issues in School Site Selection; and the 2000 ATCP and its 2004 Addendum. Key initiatives focusing on communities and residents include the Clean Air Congress; the Clean School Bus Program; Asthma and Air Quality Consortium; Brain and Lung Tumor and Air Pollution Foundation; air quality presentations to schools and community and civic groups; and Town Hall meetings. Technological and scientific projects and programs have been a large part of SCAQMD’s EJ program since its inception. Over time, the EJ program’s focus on public education, outreach, and opportunities for public participation have greatly increased. Public education materials and other resources for the public are available on SCAQMD’s website ([www.aqmd.gov](http://www.aqmd.gov)).

**AB 2766 Subvention Funds:** AB 2766 subvention funds, money collected by the state as part of vehicle registration and passed through to SCAQMD, is used to fund projects in local cities that reduce motor vehicle air pollutants. The Clean Fuels Program, funded by a surcharge on motor vehicle registrations in SCAQMD, reduces TAC emissions through co-funding projects that develop and demonstrate low-emission clean fuels and advanced technologies, and to promote commercialization and deployment of promising or proven technologies in Southern California.

**Carl Moyer Program:** Another program that targets diesel emission reductions is the Carl Moyer Program, which provides grants for projects that achieve early or extra emission reductions beyond

what is required by regulations. Examples of eligible projects include cleaner on-road, off-road, marine, locomotive, and stationary agricultural pump engines. Other endeavors of SCAQMD's Technology Advancement Office help to reduce DPM emissions through co-funding research and demonstration projects of clean technologies, such as low-emitting locomotives.

**Control of TACs with Risk Reduction Audits and Plans:** Senate Bill (SB) 1731, enacted in 1992 and codified in Health and Safety Code Section 44390 et seq., amended AB 2588 to include a requirement for facilities with significant risks to prepare and implement a risk reduction plan that will reduce the risk below a defined significant risk level within specified time limits. SCAQMD Rule 1402 was adopted on April 8, 1994, to implement the requirements of SB 1731. In addition to the TAC rules adopted by SCAQMD under authority of AB 1807 and SB 1731, SCAQMD has adopted source-specific TAC rules, based on the specific level of TAC emitted and the needs of the area. These rules are similar to the state's ATCMs because they are source-specific and only address emissions and risk from specific compounds and operations.

### ***Multiple Air Toxics Exposure Studies***

Multiple Air Toxics Exposure Study (MATES): In 1986, SCAQMD conducted the first MATES report to determine the Basin-wide risks associated with major airborne carcinogens. At the time, the state of technology was such that only 20 known air toxic compounds could be analyzed and diesel exhaust particulate did not have an agency accepted carcinogenic health risk value. TACs are determined by U.S. EPA, and by CalEPA, including OEHHA and CARB. For purposes of MATES, the California carcinogenic health risk factors were used. The maximum combined individual health risk for simultaneous exposure to pollutants under the study was estimated to be 600 to 5,000 in one million.

Multiple Air Toxics Exposure Study II (MATES II): At its October 10, 1997 meeting, the SCAQMD Governing Board directed staff to conduct a follow up to the MATES report to quantify the magnitude of population exposure risk from existing sources of selected air toxic contaminants at that time. MATES II included a monitoring program of 40 known air toxic compounds, an updated emissions inventory of TACs (including microinventories around each of the 14 microscale sites), and a modeling effort to characterize health risks from hazardous air pollutants. The estimated Basin-wide carcinogenic health risk from ambient measurements was 1,400 per million people. About 70 percent of the Basin-wide health risk was attributed to DPM emissions; about 20 percent to other toxics associated with mobile sources (including benzene, butadiene, and formaldehyde); about 10 percent of Basin-wide health risk was attributed to stationary sources (which include industrial sources and other certain specifically identified commercial businesses such as dry cleaners and print shops.)

Multiple Air Toxics Exposure Study III (MATES III): MATES III was part of the SCAQMD Governing Board's 2003-04 Environmental Justice Workplan approved on September 5, 2003. The MATES III report consisted of several elements including a monitoring program, an updated emissions inventory of TACs, and a modeling effort to characterize carcinogenic health risk across the Basin. Besides toxics, additional measurements included organic carbon, elemental carbon, and total carbon, as well as, Particulate Matter (PM), including PM2.5. It did not estimate mortality or other health effects from particulate exposures. MATES III revealed a general downward trend in air toxic pollutant concentrations with an estimated Basin-wide lifetime carcinogenic health risk of 1,200 in one million. Mobile sources accounted for 94 percent of the basin-wide lifetime carcinogenic health risk with diesel exhaust particulate contributing to 84

percent of the mobile source Basin-wide lifetime carcinogenic health risk. Non-diesel carcinogenic health risk declined by 50 percent from the MATES II values.

Multiple Air Toxics Exposure Study IV (MATES IV): MATES IV, the current version, includes a monitoring program, an updated emissions inventory of TACs, and a modeling effort to characterize risk across the Basin. The study focuses on the carcinogenic risk from exposure to air toxics but does not estimate mortality or other health effects from particulate exposures. An additional focus of MATES IV is the inclusion of measurements of ultrafine particle concentrations. MATES IV incorporates the updated health risk assessment methodology from OEHHA. Compared to previous studies of air toxics in the Basin, this study found decreasing air toxics exposure, with the estimated Basin-wide population-weighted risk down by about 57 percent from the analysis done for the MATES III time period. The ambient air toxics data from the ten fixed monitoring locations also demonstrated a similar reduction in air toxic levels and risks. On average, diesel particulate contributes about 68 percent of the total air toxics risk. This is a lower portion of the overall risk compared to the MATES III estimates of about 84 percent.

### **Health Effects**

**Carcinogenic Health Risks from TACs:** One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. The carcinogenic potential of TACs is a particular public health concern because it is currently believed by many scientists that there is no "safe" level of exposure to carcinogens. Any exposure to a carcinogen poses some risk of causing cancer. It is currently estimated that about one in four deaths in the United States is attributable to cancer. The proportion of cancer deaths attributable to air pollution has not been estimated using epidemiological methods.

**Non-Cancer Health Risks from TACs:** Unlike carcinogens, for most non-carcinogens it is believed that there is a threshold level of exposure to the compound below which it will not pose a health risk. CalEPA's OEHHA develops Reference Exposure Levels (RELs) for TACs which are health-conservative estimates of the levels of exposure at or below which health effects are not expected. The non-cancer health risk due to exposure to a TAC is assessed by comparing the estimated level of exposure to the REL. The comparison is expressed as the ratio of the estimated exposure level to the REL, called the hazard index (HI).

## HAZARDS AND HAZARDOUS MATERIALS

PARs 1146 series and PR 1100 is intended to improve overall air quality; however, it may have direct or indirect hazards associated with the implementation. The reduction of NO<sub>x</sub> emissions from PARs 1146 series may affect the use, storage, and transport of hazards and hazardous materials, specifically when SCR ~~systems technology is~~ are being used. New (or modifications to existing) air pollution control equipment and related components are expected to be installed at some of the affected facilities such that their operations may increase the quantity of hazardous materials generated by the control equipment and may increase the quantity of ammonia used. It is anticipated some facilities will need to install SCR ~~technology system(s)~~ system(s) to meet NO<sub>x</sub> emission limits and in doing so, may result in the overall increase in the amount of ammonia injected, increase the amount of ammonia stored, create ammonia slip emissions, and increase the amount of spent catalyst.

Hazard concerns are related to the potential for fires, explosions or the release of hazardous materials/substances in the event of an accident or upset conditions. The potential for hazards exist in the production, use, storage, and transportation of hazardous materials. Hazardous materials may be found at industrial production and processing facilities. Some facilities produce hazardous materials as their end product, while others use such materials as an input to their production process. Examples of hazardous materials used as consumer products include gasoline, solvents, and coatings/paints. Hazardous materials are stored at facilities that produce such materials and at facilities where hazardous materials are a part of the production process. Specifically, storage refers to the bulk handling of hazardous materials before and after they are transported to the general geographical area of use. Currently, hazardous materials are transported throughout the Basin in large quantities via all modes of transportation including rail, highway, water, air, and pipeline.

### **Hazardous Materials Regulations**

Incidents of harm to human health and the environment associated with hazardous materials have created a public awareness of the potential for adverse effects from careless handling and/or use of these substances. As a result, a number of federal, state, and local laws have been enacted to regulate the use, storage, transportation, and management of hazardous materials and wastes. The most relevant hazardous materials laws and regulations are summarized in the following subsection of this section.

A number of properties may cause a substance to be hazardous, including toxicity, ignitability, corrosivity, and reactivity. The term "hazardous material" is defined in different ways for different regulatory programs. For the purposes of this SEA, the term "hazardous materials" refers to both hazardous materials and hazardous wastes. A hazardous material is defined as hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local regulatory agency or if it has characteristics defined as hazardous by such an agency. The (H&S) Section 25501(k) defines hazardous material as follows:

"Hazardous material" means any material that because of its quantity, concentrations, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include but are not limited to hazardous substances, hazardous waste, and any material which a handler or the administering agency has a

reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Examples of the types of materials and wastes considered hazardous are hazardous chemicals (e.g., toxic, ignitable, corrosive, and reactive materials), radioactive materials, and medical (infectious) waste. The characteristics of toxicity, ignitability, corrosivity, and reactivity are defined in Title 22, California Code of Regulations (CCR), Section 66261.20-66261.24 and are summarized below:

**Toxic Substances:** Toxic substances may cause short-term or long-lasting health effects, ranging from temporary effects to permanent disability, or even death. For example, such substances can cause disorientation, acute allergic reactions, asphyxiation, skin irritation, or other adverse health effects if human exposure exceeds certain levels. (The level depends on the substances involved and are chemical-specific.) Carcinogens (substances that can cause cancer) are a special class of toxic substances. Examples of toxic substances include benzene (a component of gasoline and a suspected carcinogen) and methylene chloride (a common laboratory solvent and a suspected carcinogen).

**Ignitable Substances:** Ignitable substances are hazardous because of their ability to burn. Gasoline, hexane, and natural gas are examples of ignitable substances.

**Corrosive Materials:** Corrosive materials can cause severe burns. Corrosives include strong acids and bases such as sodium hydroxide (lye) or sulfuric acid (battery acid).

**Reactive Materials:** Reactive materials may cause explosions or generate toxic gases. Explosives, pure sodium or potassium metals (which react violently with water), and cyanides are examples of reactive materials.

### **Federal Regulations**

The U.S. EPA is the primary federal agency charged with protecting human health and with safeguarding the natural environment from pollution into air, water, and land. The U.S. EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. The U.S. EPA is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and Indian tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Since 1970, Congress has enacted numerous environmental laws that pertain to hazardous materials, for the U.S. EPA to implement as well as to other agencies at the federal, state and local level, as described in the following subsections.

**Toxic Substances Control Act:** The Toxic Substances Control Act (TSCA) was enacted by Congress in 1976 (see 15 U.S.C. §2601 et seq.) and gave the U.S. EPA the authority to protect the public from unreasonable risk of injury to health or the environment by regulating the manufacture, sale, and use of chemicals currently produced or imported into the United States. The TSCA, however, does not address wastes produced as byproducts of manufacturing. The types of chemicals regulated by the act fall into two categories: existing and new. New chemicals are defined as “any chemical substance which is not included in the chemical substance list compiled and published under [TSCA] section 8(b).” This list included all of chemical substances

manufactured or imported into the United States prior to December 1979. Existing chemicals include any chemical currently listed under section 8 (b). The distinction between existing and new chemicals is necessary as the act regulates each category of chemicals in different ways. The U.S. EPA repeatedly screens both new and existing chemicals and can require reporting or testing of those that may pose an environmental or human-health hazard. The U.S. EPA can ban the manufacture and import of those chemicals that pose an unreasonable risk.

**Emergency Planning and Community Right-to-Know Act:** The Emergency Planning and Community Right-to-Know Act (EPCRA) is a federal law adopted by Congress in 1986 that is designed to help communities plan for emergencies involving hazardous substances. EPCRA establishes requirements for federal, state and local governments, Indian tribes, and industry regarding emergency planning and "Community Right-to-Know" reporting on hazardous and toxic chemicals. The Community Right-to-Know provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. States and communities, working with facilities, can use the information to improve chemical safety and protect public health and the environment. There are four major provisions of EPCRA:

1. Emergency Planning (§§301 – 303) requires local governments to prepare chemical emergency response plans, and to review plans at least annually. These sections also require state governments to oversee and coordinate local planning efforts. Facilities that maintain Extremely Hazardous Substances (EHS) on-site (see 40 Code of Federal Regulations (CFR) Part 355 for the list of EHS chemicals) in quantities greater than corresponding "Threshold Planning Quantities" must cooperate in the preparation of the emergency plan.
2. Emergency Release Notification (§304) requires facilities to immediately report accidental releases of EHS chemicals and hazardous substances in quantities greater than corresponding Reportable Quantities (RQs) as defined under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to state and local officials. Information about accidental chemical releases must be made available to the public.
3. Hazardous Chemical Storage Reporting (§§311 – 312) requires facilities that manufacture, process, or store designated hazardous chemicals to make Safety Data Sheets (SDSs, formerly referred to as material safety data sheets or MSDSs) describing the properties and health effects of these chemicals available to state and local officials and local fire departments. These sections also require facilities to report to state and local officials and local fire departments, inventories of all on-site chemicals for which SDSs exist. Lastly, information about chemical inventories at facilities and SDSs must be available to the public.
4. Toxic Chemical Release Inventory (§313) requires facilities to annually complete and submit a Toxic Chemical Release Inventory Form for each Toxic Release Inventory (TRI) chemical that are manufactured or otherwise used above the applicable threshold quantities.

Implementation of EPCRA has been delegated to the State of California. The California Emergency Management Agency requires facilities to develop a Hazardous Materials Business Plan if they handle hazardous materials in quantities equal to or greater than 55 gallons, 500 pounds, or 200 cubic feet of gas or extremely hazardous substances above the threshold planning quantity. The Hazardous Materials Business Plan is provided to state and local emergency response agencies and includes inventories of hazardous materials, an emergency plan, and implements a training program for employees.

**Hazardous Materials Transportation Act:** The Hazardous Material Transportation Act (HMTA), adopted in 1975 (see 49 U.S.C. §§5101 – 5127), gave the Secretary of Transportation the regulatory and enforcement authority to provide adequate protection against the risks to life and property inherent in the transportation of hazardous material in commerce. The United States Department of Transportation (U.S. DOT) (see 49 CFR Parts 171-180) oversees the movement of hazardous materials at the federal level. The HMTA requires that carriers report accidental releases of hazardous materials to U.S. DOT at the earliest practical moment. Other incidents that must be reported include deaths, injuries requiring hospitalization, and property damage exceeding \$50,000. The hazardous material regulations also contain emergency response provisions which include incident reporting requirements. Reports of major incidents go to the National Response Center, which in turn is linked with CHEMTREC, a public service hotline established by the chemical manufacturing industry for emergency responders to obtain information and assistance for emergency incidents involving chemicals and hazardous materials.

Hazardous materials regulations are implemented by the Research and Special Programs Administration (RSPA) branch of the U.S. DOT. The regulations cover the definition and classification of hazardous materials, communication of hazards to workers and the public, packaging and labeling requirements, operational rules for shippers, and training. These regulations apply to interstate, intrastate, and foreign commerce by air, rail, ships, and motor vehicles, and also cover hazardous waste shipments. The Federal Aviation Administration Office of Hazardous Materials Safety is responsible for overseeing the safe handling of hazardous materials aboard aircraft. The Federal Railroad Administration oversees the transportation of hazardous materials by rail. The U.S. Coast Guard regulates the bulk transport of hazardous materials by sea. The Federal Highway Administration (FHWA) is responsible for highway routing of hazardous materials and issuing highway safety permits.

### ***Hazardous Materials and Waste Regulations***

**Resource Conservation and Recovery Act:** The Resource Conservation and Recovery Act (RCRA) of 1976 authorizes the U.S. EPA to control the generation, transportation, treatment, storage, and disposal of hazardous waste. Under RCRA regulations, hazardous wastes must be tracked from the time of generation to the point of disposal. In 1984, RCRA was amended with addition of the Hazardous and Solid Waste Amendments, which authorized increased enforcement by the U.S. EPA, stricter hazardous waste standards, and a comprehensive underground storage tank program. Likewise, the Hazardous and Solid Waste Amendments focused on waste reduction and corrective action for hazardous releases. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by the Hazardous and Solid Waste Amendments. Individual states may implement their own hazardous waste programs under RCRA, with approval by the U.S. EPA. California has been delegated authority to operate its own hazardous waste management program.

**CERCLA:** CERCLA, which is often commonly referred to as Superfund, is a federal statute that was enacted in 1980 to address abandoned sites containing hazardous waste and/or contamination. CERCLA was amended in 1986 by the Superfund Amendments and Reauthorization Act, and by the Small Business Liability Relief and Brownfields Revitalization Act of 2002.

CERCLA contains prohibitions and requirements concerning closed and abandoned hazardous waste sites; establishes liability of persons responsible for releases of hazardous waste at these sites; and establishes a trust fund to provide for cleanup when no responsible party can be identified. The trust fund is funded largely by a tax on the chemical and petroleum industries. CERCLA also provides federal jurisdiction to respond directly to releases or impending releases of hazardous substances that may endanger public health or the environment.

CERCLA also enabled the revision of the National Contingency Plan (NCP) which provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the National Priorities List, which identifies hazardous waste sites eligible for long-term remedial action financed under the federal Superfund program.

**Prevention of Accidental Releases and Risk Management Programs:** Requirements pertaining to the prevention of accidental releases are promulgated in §112 (r) of the CAA Amendments of 1990 [42 U.S.C. §7401 et. seq.]. The objective of these requirements was to prevent the accidental release and to minimize the consequences of any such release of a hazardous substance. Under these provisions, facilities that produce, process, handle or store hazardous substance have a duty to: 1) identify hazards which may result from releases using hazard assessment techniques; 2) design and maintain a safe facility and take steps necessary to prevent releases; and 3) minimize the consequence of accidental releases that occur.

In accordance with the requirements in Section 112 (r), U.S. EPA adopted implementing guidelines in 40 CFR Part 68. Under this part, stationary sources with more than a threshold quantity of a regulated substance shall be evaluated to determine the potential for and impacts of accidental releases from any processes subject to the federal risk management requirements. Under certain conditions, the owner or operator of a stationary source may be required to develop and submit a Risk Management Plan (RMP). RMPs consist of three main elements: a hazard assessment that includes off-site consequences analyses and a five-year accident history, a prevention program, and an emergency response program. At the local level, RMPs are implemented by the local fire departments.

### ***Hazardous Material Worker and Public Safety Requirements***

**Occupational Safety and Health Administration Regulations:** The federal Occupational Safety and Health Administration (OSHA) is an agency of the United States Department of Labor that was created by Congress under the Occupational Safety and Health Act in 1970. OSHA is the agency responsible for assuring worker safety in the handling and use of chemicals in the workplace. Under the authority of the Occupational Safety and Health Act of 1970, OSHA has adopted numerous regulations pertaining to worker safety (see 29 CFR Part 1910). These regulations set standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries. Some OSHA regulations contain standards relating to

hazardous materials handling to protect workers who handle toxic, flammable, reactive, or explosive materials, including workplace conditions, employee protection requirements, first aid, and fire protection, as well as material handling and storage. For example, facilities which use, store, manufacture, handle, process, or move hazardous materials are required to conduct employee safety training, have available and know how to use safety equipment, prepare illness prevention programs, provide hazardous substance exposure warnings, prepare emergency response plans, and prepare a fire prevention plan.

Procedures and standards for safe handling, storage, operation, remediation, and emergency response activities involving hazardous materials and waste are promulgated in 29 CFR Part 1910, Subpart H. Some key subsections in 29 CFR Part 1910, Subpart H are §1910.106 -Flammable Liquids and §1910.120 - Hazardous Waste Operations and Emergency Response. In particular, the Hazardous Waste Operations and Emergency Response regulations contain requirements for worker training programs, medical surveillance for workers engaging in the handling of hazardous materials or wastes, and waste site emergency and remediation planning, for those who are engaged in specific clean-up, corrective action, hazardous material handling, and emergency response activities (see 29 CFR Part 1910 Subpart H, §1910.120 (a)(1)(i-v) and §1926.65 (a)(1)(i-v)).

**Process Safety Management:** As part of the numerous regulations pertaining to worker safety adopted by OSHA, specific requirements that pertain to Process Safety Management (PSM) of Highly Hazardous Chemicals were adopted in 29 CFR Part 1910 Subpart H, §1910.119 and 8 CCR §5189 to protect workers at facilities that have toxic, flammable, reactive or explosive materials. PSM program elements are aimed at preventing or minimizing the consequences of catastrophic releases of chemicals and include process hazard analyses, formal training programs for employees and contractors, investigation of equipment mechanical integrity, and an emergency response plan. Specifically, the PSM program requires facilities that use, store, manufacture, handle, process, or move hazardous materials to conduct employee safety training; have an inventory of safety equipment relevant to potential hazards; have knowledge on use of the safety equipment; prepare an illness prevention program; provide hazardous substance exposure warnings; prepare an emergency response plan; and prepare a fire prevention plan.

**Emergency Action Plan:** An Emergency Action Plan (EAP) is a written document required by OSHA standards promulgated in 29 CFR Part 1910, Subpart E, §1910.38 (a) to facilitate and organize a safe employer and employee response during workplace emergencies. An EAP is required by all that are required to have fire extinguishers. At a minimum, an EAP must include the following: 1) a means of reporting fires and other emergencies; 2) evacuation procedures and emergency escape route assignments; 3) procedures to be followed by employees who remain to operate critical plant operations before they evacuate; 4) procedures to account for all employees after an emergency evacuation has been completed; 5) rescue and medical duties for those employees who are to perform them; and 6) names or job titles of persons who can be contacted for further information or explanation of duties under the plan.

**National Fire Regulations:** The National Fire Codes (NFC), Title 45, published by the National Fire Protection Association (NFPA) contains standards for laboratories using chemicals, which are not requirements, but are generally employed by organizations in order to protect workers. These standards provide basic protection of life and property in laboratory work areas through prevention and control of fires and explosions, and also serve to protect personnel from exposure to non-fire

health hazards.

In addition to the NFC, the NFPA adopted a hazard rating system which is promulgated in NFPA 704 - Standard System for the Identification of the Hazards of Materials for Emergency Response. NFPA 704 is a “standard (that) provides a readily recognized, easily understood system for identifying specific hazards and their severity using spatial, visual, and numerical methods to describe in simple terms the relative hazards of a material. It addresses the health, flammability, instability, and related hazards that may be presented as short-term, acute exposures that are most likely to occur as a result of fire, spill, or similar emergency.” In addition, the hazard ratings per NFPA 704 are used by emergency personnel to quickly and easily identify the risks posed by nearby hazardous materials in order to help determine what, if any, specialty equipment should be used, procedures followed, or precautions taken during the first moments of an emergency response. The scale is divided into four color-coded categories, with blue indicating level of health hazard, red indicating the flammability hazard, yellow indicating the chemical reactivity, and white containing special codes for unique hazards such as corrosivity and radioactivity. Each hazard category is rated on a scale from 0 (no hazard; normal substance) to 4 (extreme risk). Table 3-4 summarizes what the codes mean for each hazards category.

In addition to the information in Table 3-4, a number of other physical or chemical properties may cause a substance to be a fire hazard. With respect to determining whether any substance is classified as a fire hazard, SDS lists the NFPA 704 flammability hazard ratings (e.g., NFPA 704). NFPA 704 is a standard that provides a readily recognized, easily understood system for identifying flammability hazards and their severity using spatial, visual, and numerical methods to describe in simple terms the relative flammability hazards of a material.

**Table 3-4  
NFPA 704 Hazards Rating Code**

<b>Hazard Rating Code</b>	<b>Health (Blue)</b>	<b>Flammability (Red)</b>	<b>Reactivity (Yellow)</b>	<b>Special (White)</b>
<b>4 = Extreme</b>	Very short exposure could cause death or major residual injury (extreme hazard).	Will rapidly or completely vaporize at normal atmospheric pressure and temperature, or is readily dispersed in air and will burn readily. Flash point below 73°F.	Readily capable of detonation or explosive decomposition at normal temperatures and pressures.	W = Reacts with water in an unusual or dangerous manner.
<b>3 = High</b>	Short exposure could cause serious temporary or moderate residual injury.	Liquids and solids that can be ignited under almost all ambient temperature conditions. Flash point between 73°F and 100°F.	Capable of detonation or explosive decomposition but requires a strong initiating source, must be heated under confinement before initiation, reacts explosively with water, or will detonate if severely shocked.	<b>OXY</b> = Oxidizer
<b>2 = Moderate</b>	Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury.	Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur. Flash point between 100°F and 200°F.	Undergoes violent chemical change at elevated temperatures and pressures, reacts violently with water, or may form explosive mixtures with water.	<b>SA</b> = Simple asphyxiant gas (includes nitrogen, helium, neon, argon, krypton, and xenon).
<b>1 = Slight</b>	Exposure would cause irritation with only minor residual injury.	Must be heated before ignition can occur. Flash point over 200°F.	Normally stable, but can become unstable at elevated temperatures and pressures.	Not applicable
<b>0 = Insignificant</b>	Poses no health hazard, no precautions necessary.	Will not burn.	Normally stable, even under fire exposure conditions, and is not reactive with water.	Not applicable

Although substances can have the same NFPA 704 Flammability Ratings Code, other factors can make each substance's fire hazard very different from each other. For this reason, additional chemical characteristics, such as auto-ignition temperature, boiling point, evaporation rate, flash point, lower explosive limit (LEL), upper explosive limit (UEL), and vapor pressure, are also considered when determining whether a substance is fire hazard. The following is a brief description of each of these chemical characteristics.

**Auto-ignition Temperature:** The auto-ignition temperature of a substance is the lowest temperature at which it will spontaneously ignite in a normal atmosphere without an external source of ignition, such as a flame or spark.

**Boiling Point:** The boiling point of a substance is the temperature at which the vapor pressure of the liquid equals the environmental pressure surrounding the liquid. Boiling is a process in which molecules anywhere in the liquid escape, resulting in the formation of

vapor bubbles within the liquid.

**Evaporation Rate:** Evaporation rate is the rate at which a material will vaporize (evaporate, change from liquid to a vapor) compared to the rate of vaporization of a specific known material. This quantity is represented as a unit less ratio. For example, a substance with a high evaporation rate will readily form a vapor which can be inhaled or explode, and thus have a higher hazard risk. Evaporation rates generally have an inverse relationship to boiling points (i.e., the higher the boiling point, the lower the rate of evaporation).

**Flash Point:** Flash point is the lowest temperature at which a volatile liquid can vaporize to form an ignitable mixture in air. Measuring a liquid's flash point requires an ignition source. At the flash point, the vapor may cease to burn when the source of ignition is removed. There are different methods that can be used to determine the flashpoint of a solvent but the most frequently used method is the Tagliabue Closed Cup standard (ASTM D56), also known as the TCC. The flashpoint is determined by a TCC laboratory device which is used to determine the flash point of mobile petroleum liquids with flash point temperatures below 175 degrees Fahrenheit (79.4 degrees Centigrade).

Flash point is a particularly important measure of the fire hazard of a substance. For example, the Consumer Products Safety Commission (CPSC) promulgated Labeling and Banning Requirements for Chemicals and Other Hazardous Substances in 15 U.S.C. §1261 and 16 CFR Part 1500. Per the CPSC, the flammability of a product is defined in 16 CFR Part 1500.3 (c)(6) and is based on flash point. For example, a liquid needs to be labeled as: 1) “Extremely Flammable” if the flash point is below 20 degrees Fahrenheit; 2) “Flammable” if the flash point is above 20 degrees Fahrenheit but less than 100 degrees Fahrenheit; or 3) “Combustible” if the flash point is above 100 degrees Fahrenheit up to and including 150 degrees Fahrenheit.

**Lower Explosive Limit (LEL):** The lower explosive limit of a gas or a vapor is the limiting concentration (in air) that is needed for the gas to ignite and explode or the lowest concentration (percentage) of a gas or a vapor in air capable of producing a flash of fire in presence of an ignition source (e.g., arc, flame, or heat). If the concentration of a substance in air is below the LEL, there is not enough fuel to continue an explosion. In other words, concentrations lower than the LEL are "too lean" to burn. For example, methane gas has a LEL of 4.4 percent (at 138 degrees Centigrade) by volume, meaning 4.4 percent of the total volume of the air consists of methane. At 20 degrees Centigrade, the LEL for methane is 5.1 percent by volume. If the atmosphere has less than 5.1 percent methane, an explosion cannot occur even if a source of ignition is present. When the concentration of methane reaches 5.1 percent, an explosion can occur if there is an ignition source.

**Upper Explosive Limit (UEL):** The upper explosive limit of a gas or a vapor is the highest concentration (percentage) of a gas or a vapor in air capable of producing a flash of fire in presence of an ignition source (e.g., arc, flame, or heat). Concentrations of a substance in air above the UEL are "too rich" to burn.

**Vapor Pressure:** Vapor pressure is an indicator of a chemical's tendency to evaporate into gaseous form.

**Health Hazards Guidance:** In addition to fire impacts, health hazards can also be generated due to exposure of chemicals present in both conventional as well as reformulated products. Using available toxicological information to evaluate potential human health impacts associated with conventional solvents and potential replacement solvents, the toxicity of the conventional solvents can be compared to solvents expected to be used in reformulated products. As a measure of a chemical's potential health hazards, the following values need to be considered: the Threshold Limit Values established by the American Conference of Governmental Industrial Hygiene, OSHA's Permissible Exposure Limits, the Immediately Dangerous to Life and Health levels recommended by the National Institute for Occupational Safety and Health (NIOSH), and health hazards developed by the National Safety Council. The following is a brief description of each of these values.

**Threshold Limit Values (TLVs):** The TLV of a chemical substance is a level to which it is believed a worker can be exposed day after day for a working lifetime without adverse health effects. The TLV is an estimate based on the known toxicity in humans or animals of a given chemical substance, and the reliability and accuracy of the latest sampling and analytical methods. The TLV for chemical substances is defined as a concentration in air, typically for inhalation or skin exposure. Its units are in parts per million (ppm) for gases and in milligrams per cubic meter (mg/m<sup>3</sup>) for particulates. The TLV is a recommended guideline by ACGIH.

**Permissible Exposure Limits (PEL):** The PEL is a legal limit, usually expressed in ppm, established by OSHA to protect workers against the health effects of exposure to hazardous substances. PELs are regulatory limits on the amount or concentration of a substance in the air. A PEL is usually given as a time-weighted average (TWA), although some are short-term exposure limits (STEL) or ceiling limits. A TWA is the average exposure over a specified period of time, usually eight hours. This means that, for limited periods, a worker may be exposed to concentrations higher than the PEL, so long as the average concentration over eight hours remains lower. A short-term exposure limit is one that addresses the average exposure over a 15 to 30-minute period of maximum exposure during a single work shift. A ceiling limit is one that may not be exceeded for any period of time, and is applied to irritants and other materials that have immediate effects. The OSHA PELs are published in 29 CFR 1910.1000, Table Z1.

**Immediately Dangerous to Life and Health (IDLH):** IDLH is an acronym defined by NIOSH as exposure to airborne contaminants that is "likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment." IDLH values are often used to guide the selection of breathing apparatus that are made available to workers or firefighters in specific situations.

## **State Regulations**

### ***Hazardous Materials and Waste Regulations***

**California Hazardous Waste Control Law:** The California Hazardous Waste Control Law is administered by CalEPA to regulate hazardous wastes within the State of California. While the California Hazardous Waste Control Law is generally more stringent than RCRA, both the state and federal laws apply in California. The California Department of Toxic Substances Control

(DTSC) is the primary agency in charge of enforcing both the federal and state hazardous materials laws in California. The DTSC regulates hazardous waste, oversees the cleanup of existing contamination, and pursues avenues to reduce hazardous waste produced in California. The DTSC regulates hazardous waste in California under the authority of RCRA, the California Hazardous Waste Control Law, and the H&S. Under the direction of the CalEPA, the DTSC maintains the Cortese List and Envirostor databases of hazardous materials and waste sites as specified under Government Code §65962.5. The Cortese List consists of the following:

**1. Subsection 65962.5. (a)**

List provided by DTSC that includes:

- a. All hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.
- b. All land designated as hazardous waste property or border zone property pursuant to Article 11 (commencing with Section 25220) of Chapter 6.5 of Division 20 of the Health and Safety Code.
- c. All information received by the Department of Toxic Substances Control pursuant to Section 25242 of the Health and Safety Code on hazardous waste disposals on public land.
- d. All sites listed pursuant to Section 25356 of the Health and Safety Code.
- e. All sites included in the Abandoned Site Assessment Program.

**2. Subsection 65962.5. (b)**

The State Department of Health lists of all public drinking water wells that contain detectable levels of organic contaminants and that are subject to water analysis pursuant to Section 116395 of the Health and Safety Code.

**3. Subsection 65962.5. (c)**

The State Water Resources Control Board shall list of all of the following:

- a. All underground storage tanks for which an unauthorized release report is filed pursuant to Section 25295 of the Health and Safety Code.
- b. All solid waste disposal facilities from which there is a migration of hazardous waste and for which a California regional water quality control board has notified the Department of Toxic Substances Control pursuant to subdivision (e) of Section 13273 of the Water Code.
- c. All cease and desist orders issued after January 1, 1986, pursuant to Section 13301 of the Water Code, and all cleanup or abatement orders issued after January 1, 1986, pursuant to Section 13304 of the Water Code, that concern the discharge of wastes that are hazardous materials.

**4. Subsection 65962.5. (d)**

The appropriate local enforcement agency will list of all solid waste disposal facilities from which there is a known migration of hazardous waste.

The Hazardous Waste Control Law (22 CCR Chapter 11, Appendix X) also lists 791 chemicals and approximately 300 common materials which may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

**California Occupational Safety and Health Administration:** The California Occupational Safety and Health Administration (CalOSHA) is the primary agency responsible for worker safety

in the handling and use of chemicals in the workplace. The CalOSHA requires the employer to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR Sections 337-340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. CalOSHA standards are generally more stringent than federal regulations.

**Hazardous Materials Release Notification:** Many state statutes require emergency notification of a hazardous chemical release, including:

- H&S §25270.7, §25270.8, and §25507;
- California Vehicle Code §23112.5;
- California Public Utilities Code §7673 (General Orders #22-B, 161);
- California Government Code §51018 and §8670.25.5(a);
- California Water Code §13271 and §13272; and
- California Labor Code §6409.1(b)10.

**California Accident Release Prevention (CalARP) Program:** The California Accident Release Prevention Program (19 CCR Division 2, Chapter 4.5) requires the preparation of RMPs. CalARP requires stationary sources with more than a threshold quantity of a regulated substance to be evaluated to determine the potential for and impacts of accidental releases from any processes on-site (not transport) subject to state risk management requirements. RMPs are documents prepared by the owner or operator of a stationary source containing detailed information including: (1) regulated substances held onsite at the stationary source; (2) offsite consequences of an accidental release of a regulated substance; (3) the accident history at the stationary source; (4) the emergency response program for the stationary source; (5) coordination with local emergency responders; (6) hazard review or process hazard analysis; (7) operating procedures at the stationary source; (8) training of the stationary source's personnel; (9) maintenance and mechanical integrity of the stationary source's physical plant; and (10) incident investigation. The CalARP Program is implemented at the local government level by Certified Unified Program Agencies (CUPAs) also known as Administering Agencies (AAs). Typically, local fire departments are the administering agencies of the CalARP Program because they frequently are the first responders in the event of a release. California is proposing modifications to the CalARP Program along with the state's PSM program in response to an accident at the Chevron Richmond Refinery. The proposed regulations were released for public comment on July 15, 2016 and the public comment period closed on September 15, 2016.

**Hazardous Materials Disclosure Program:** The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) as promulgated by CalEPA in CCR, Title 27, Chapter 6.11 requires the administrative consolidation of six hazardous materials and waste programs (program elements) under one agency, a CUPA. The Unified Program administered by the State of California consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities for the state's environmental and emergency management programs, which include Hazardous Waste Generator

and On-Site Hazardous Waste Treatment Programs (“Tiered Permitting”); Above ground SPCC Program; Hazardous Materials Release Response Plans and Inventories (business plans); the CalARP Program; the UST Program; and the Uniform Fire Code Plans and Inventory Requirements. The Unified Program is implemented at the local government level by CUPAs.

**Hazardous Materials Management Act:** The State of California (H&S Division 20, Chapter 6.95) requires any business that handles more than a specified amount of hazardous or extremely hazardous materials, termed a "reportable quantity," to submit a Hazardous Materials Business Plan to its CUPA. Business plans must include an inventory of the types, quantities, and locations of hazardous materials at the facility. Businesses are required to update their business plans at least once every three years and the chemical portion of their plans every year. Also, business plans must include emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. These plans need to identify the procedures to follow for immediate notification to all appropriate agencies and personnel of a release, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for all company emergency coordinators, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel. The requirements for hazardous materials business plans are specified in the H&S and 19 CCR.

**Hazardous Materials Transportation in California:** California regulates the transportation of hazardous waste originating or passing through the State in Title 13, CCR. The California Highway Patrol (CHP) and Caltrans have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies. The CHP enforces materials and hazardous waste labeling and packing regulations that prevent leakage and spills of material in transit and provide detailed information to cleanup crews in the event of an incident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP. Caltrans has emergency chemical spill identification teams at locations throughout the state.

**California Fire Code:** While NFC Standard 45 and NFPA 704 are regarded as nationally recognized standards, the California Fire Code (24 CCR) also contains state standards for the use and storage of hazardous materials and special standards for buildings where hazardous materials are found. Some of these regulations consist of amendments to NFC Standard 45. State Fire Code regulations require emergency pre-fire plans to include training programs in first aid, the use of fire equipment, and methods of evacuation.

### **Local Regulations**

**Los Angeles County:** The Office of Emergency Management is responsible for organizing and directing the preparedness efforts of the Emergency Management Organization of Los Angeles County. Los Angeles County’s policies towards hazardous materials management include enforcing stringent site investigations for factors related to hazards; limiting the development in high hazard areas, such as floodplains, high fire hazard areas, and seismic hazard zones; facilitating safe transportation, use, and storage of hazardous materials; supporting lead paint abatement; remediating Brownfield sites; encouraging the purchase of homes on the FEMA Repeat Hazard list and designating the land as open space; enforcing restrictions on access to important energy sites; limiting development downslope from aqueducts; promoting safe alternatives to chemical-

based products in households; and prohibiting development in floodways. The county has defined effective emergency response management capabilities to include supporting county emergency providers with reaching their response time goals; promoting the participation and coordination of emergency response management between cities and other counties at all levels of government; coordinating with other county and public agency emergency planning and response activities; and encouraging the development of an early warning system for tsunamis, floods and wildfires.

**Orange County:** Orange County’s Hazardous Materials Program Office is responsible for facilitating the coordination of various parts of the County’s hazardous materials program; assisting in coordinating county hazardous materials activities with outside agencies and organizations; providing comprehensive, coordinated analysis of hazardous materials issues; and directing the preparation, implementation, and modification of the county’s Hazardous Waste Management Plan (HWMP). Orange County is responsible for its own emergency plans concerning a nuclear power plant accident, and the Incident Response Plan is updated regularly.

The regulatory agency responsible for enforcement, as well as inspection of pipelines transporting hazardous materials, is the California State Fire Marshal’s Office, Hazardous Liquid Pipeline Division. The Orange County Health Care Agency (OCHCA) has been designated by the Board of Supervisors as the agency to enforce the underground storage tank (UST) program. The OCHCA UST Program regulates approximately 7,000 of the 9,500 underground tanks in Orange County. The program includes conducting regular inspections of underground tanks; oversight of new tank installations; issuance of permits; regulation of repair and closure of tanks; ensuring the mitigation of leaking USTs; pursuing enforcement action; and educating and assisting the industries and general public as to the laws and regulations governing USTs. Under mandate from the California HSC, the Orange County Fire Authority is the designated agency to inventory the distribution of hazardous materials in commercial or industrial occupancies, develop and implement emergency plans, and require businesses that handle hazardous materials to develop emergency plans to deal with these materials.

**San Bernardino County:** San Bernardino County’s HWMP serves as the primary planning document for the management of hazardous waste in San Bernardino County. The HWMP identifies the types and amounts of wastes generated; establishes programs for managing these wastes; identifies an application review process for the siting of specified hazardous waste facilities; identifies mechanisms for reducing the amount of waste generated; and identifies goals, policies, and actions for achieving effective hazardous waste management. One of the county’s stated goals is to minimize the generation of hazardous waste and reduce the risk posed by storage, handling, transportation, and disposal of hazardous wastes. In addition, the county will protect its residents and visitors from injury and loss of life and protect property from fires by deploying firefighters and requiring new land developments to prepare site-specific fire protection plans.

**Riverside County:** Through its membership in the Southern California Hazardous Waste Management Authority (SCHWMA), the County of Riverside has agreed to work on a regional level to solve problems involving hazardous waste. SCHWMA was formed through a joint powers agreement between Santa Barbara, Ventura, San Bernardino, Orange, San Diego, Imperial, and Riverside Counties and the Cities of Los Angeles and San Diego. Working within the concept of “fair share,” each SCHWMA county has agreed to take responsibility for the treatment and disposal of hazardous waste in an amount that is at least equal to the amount generated within that county. This responsibility can be met by siting hazardous waste management facilities (transfer,

treatment, and/or repository) capable of processing an amount of waste equal to or larger than the amount generated within the county, or by creating intergovernmental agreements between counties to provide compensation to a county for taking another county's waste, or through a combination of both facility siting and intergovernmental agreements. When and where a facility is to be sited is primarily a function of the private market. However, once an application to site a facility has been received, the county will review the requested facility and its location against a set of established siting criteria to ensure that the location is appropriate and may deny the application based on the findings of this review. The County of Riverside does not presently have any of these facilities within its jurisdiction and, therefore, must rely on intergovernmental agreements to fulfill its fair share responsibility to SCHWMA.

### **Emergency Response to Hazardous Materials and Waste Incidents**

**California Emergency Management Agency:** The California Emergency Management Agency (Cal EMA) exists to enhance safety and preparedness in California through strong leadership, collaboration, and meaningful partnerships. The goal of Cal EMA is to protect lives and property by effectively preparing for, preventing, responding to, and recovering from all threats, crimes, hazards, and emergencies. Cal EMA under the Fire and Rescue Division coordinates statewide implementation of hazardous materials accident prevention and emergency response programs for all types of hazardous materials incidents and threats. In response to any hazardous materials emergency, Cal EMA is called upon to provide state and local emergency managers with emergency coordination and technical assistance.

Pursuant to the Emergency Services Act, California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government agencies and private persons. Response to hazardous materials incidents is one part of this Emergency Response Plan. The Emergency Response Plan is administered by Cal EMA which coordinates the responses of other agencies. Six mutual aid and Local Emergency Planning Committee (LEPC) regions have been identified for California that are divided into three areas of the state designated as the Coastal (Region II, which includes 16 counties with 151 incorporated cities and a population of about eight million people.), Inland (Region III, Region IV and Region V, which includes 31 counties with 123 incorporated cities and a population of about seven million people), and Southern (Region I and Region VI, which includes 11 counties with 226 incorporated cities and a population of about 22 million people). The SCAQMD jurisdiction covers portions of Region I and Region VI.

In addition, pursuant to the Hazardous Materials Release Response Plans and Inventory Law of 1985, local agencies are required to develop "area plans" for response to releases of hazardous materials and wastes. These emergency response plans depend to a large extent on the business plans submitted by persons who handle hazardous materials. An area plan must include pre-emergency planning of procedures for emergency response, notification, coordination of affected government agencies and responsible parties, training, and follow-up.

### **Hazardous Materials Incidents**

Hazardous materials move through the region by a variety of modes: Truck, rail, air, ship, and pipeline. The movement of hazardous materials implies a degree of risk, depending on the materials being moved, the mode of transport, and numerous other factors (e.g., weather and road conditions). According to the Office of Hazardous Materials Safety (OHMS) in the U.S. DOT,

hazardous materials shipments can be regarded as equivalent to deliveries, but any given shipment may involve one or more movements or trip segments, which may occur by different routes (e.g., rail transport with final delivery by truck). According to the Commodity Flow Survey data<sup>9</sup> there were approximately 2.6 billion tons of hazardous materials shipments in the United States in 2012 (the last year for which data are available). Table 3-5 indicates that trucks move more than 50 percent and pipeline accounts for approximately 24 percent of all hazardous materials shipped from a location in the United States. By contrast, rail accounts for only 4.3 percent of shipments<sup>10</sup>.

**Table 3-5  
Hazardous Material Shipments in the United States in 2012**

<b>Mode</b>	<b>Total Commercial Freight (thousand tons)</b>	<b>Hazardous Materials Shipped (thousand tons)</b>	<b>Percent of Total Hazardous Materials Shipped by Mode of Transportation</b>	<b>Percent of Total Commercial Freight Shipped that is Hazardous</b>
Truck	8,060,166	1,531,405	59.4%	19.0%
Rail	1,628,537	110,988	4.3%	6.8%
Water	575,996	283,561	11.0%	49.2%
Pipeline	635,975	626,652	24.3%	98.5%
Other	398,735	27,547	1.1%	6.9%
<b>Total</b>	<b>11,299,409</b>	<b>2,580,153</b>	<b>100.0%</b>	<b>22.8%</b>

Source: U.S. DOT<sup>11,12</sup>

The movement of hazardous materials through the U.S. transportation system represents about 22.8 percent of total tonnage for all freight shipments as measured by the Commodity Flow Survey. Comparatively, the total commercial freight moved in 2012 in California by all transportation modes was 718,345 thousand tons<sup>13</sup>.

**California Hazardous Materials Incident Reporting System:** The California Hazardous Materials Incident Reporting System (CHMIRS) is a post incident reporting system to collect data on incidents involving the accidental release of hazardous materials in California. Information on accidental releases of hazardous materials are reported to and maintained by Cal EMA. While information on accidental releases are reported to Cal EMA, Cal EMA no longer conducts statistical evaluations of the releases, e.g., total number of releases per year for the entire State, or data by county. The U.S. DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) provides access to retrieve data from the Incident Reports Database, which also includes non-pipeline incidents, e.g., truck and rail events. Incident data and summary statistics, e.g., release

<sup>9</sup> USDOT, 2015. United States: 2012; 2012 Economic Census and 2012 Commodity Flow Survey. Issued March 2015. Available at <http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/ec12tcf-us.pdf>

<sup>10</sup> USDOT, 2015. United States: 2012; 2012 Economic Census and 2012 Commodity Flow Survey. Issued March 2015. Available at <http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/ec12tcf-us.pdf>

<sup>11</sup> USDOT, 2016. Table 1a. Hazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2012. Accessed July 25, 2016.

[http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/commodity\\_flow\\_survey/2012/hazardous\\_materials/table1a](http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/commodity_flow_survey/2012/hazardous_materials/table1a)

<sup>12</sup> USDOT, 2016a. Table 1a. Shipment Characteristics by Mode of Transportation for the United States: 2012. Accessed July 25, 2016. [http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/commodity\\_flow\\_survey/2012/united\\_states/table1](http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/commodity_flow_survey/2012/united_states/table1)

<sup>13</sup> USDOT, 2016b. Table 3: Weight of Outbound Commodity Flows by State of Origin: 2012. Accessed July 25, 2016. [http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/commodity\\_flow\\_survey/2012/state\\_summaries/tables/table3](http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/commodity_flow_survey/2012/state_summaries/tables/table3)

date, geographical location (state and county) and type of material released, are available online from the Hazmat Incident Database.

Table 3-6 provides a summary of the reported hazardous material incidents for Los Angeles, Orange, Riverside, and San Bernardino counties for 2012 through 2014 from the Hazmat Incident Database<sup>14</sup>. Data presented is for the entire county and not limited to the portion of the county located within the jurisdiction of the SCAQMD.

**Table 3-6  
Reported Hazardous Materials Incidents for 2012 - 2014**

<b>County</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Los Angeles	286	337	287
Orange	270	63	88
Riverside	55	43	50
San Bernardino	261	348	351
<b>Total</b>	<b>872</b>	<b>791</b>	<b>776</b>

In 2012, there were a total of 872 incidents reported for Los Angeles, Orange, Riverside and San Bernardino counties. In 2013, there were a total of 791 incidents reported for Los Angeles, Orange, Riverside and San Bernardino counties, and in 2014 a total of 776 incidents for these four counties. Over the three-year period, San Bernardino and Los Angeles counties accounted for the largest number of incidents, followed by Orange and Riverside counties. As noted in Table 3-6, the number of incidents has reduced over the years.

### **Hazards Associated with Air Pollution Control**

The SCAQMD has evaluated the hazards associated with previous AQMPs, proposed SCAQMD rules, and non-SCAQMD projects where the SCAQMD is the Lead Agency pursuant to CEQA. Add-on pollution control technologies, such as SCR, have been previously analyzed for hazards. The use of add-on pollution control equipment may concentrate or utilize hazardous materials. A malfunction or accident when using add-on pollution control equipment could potentially expose people to hazardous materials, explosions, or fires. The SCAQMD has determined that the transport, use, and storage of ammonia, both aqueous and anhydrous, (used in SCR systems) may have significant hazard impacts in the event of an accidental release. Further analyses have indicated that the use of aqueous ammonia (instead of anhydrous ammonia) can usually reduce the hazards associated with ammonia use in SCR systems to less than significant.

### **Ammonia**

Ammonia is the primary hazardous chemical identified with the use of SCR systems technology. Ammonia, though not a carcinogen, can have chronic and acute health impacts. Therefore, a potential increase in the use of ammonia may increase the current existing risk setting associated with deliveries (e.g., truck and road accidents) and onsite or offsite spills for each facility that currently uses or will begin to use ammonia. Exposure to a toxic gas cloud is the potential hazard associated with this type of control equipment. A toxic gas cloud is the release of a volatile chemical such as anhydrous ammonia that could form a cloud that migrates off-site, thus exposing

<sup>14</sup> Pipeline and Hazardous Materials Safety Administration (PHMSA), 2015. Incident Reports Database Search. Accessed, November 17, 2015 at <https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/Welcome.aspx>

individuals. Anhydrous ammonia is heavier than air such that when released into the atmosphere, it would form a cloud at ground level rather than be dispersed. “Worst-case” conditions tend to arise when very low wind speeds coincide with the accidental release, which can allow the chemicals to accumulate rather than disperse. Though there are facilities that may be affected by the 2016 AQMP control measures that are currently permitted to use anhydrous ammonia, for any new construction, however, current SCAQMD policy no longer allows the use of anhydrous ammonia. Instead, to minimize the hazards associated with ammonia used in the SCR or SNCR process, aqueous ammonia, 19 percent by volume, is typically required as a permit condition associated with the installation of SCR or SNCR equipment for the following reasons: 1) 19 percent aqueous ammonia does not travel as a dense gas like anhydrous ammonia; and 2) 19 percent aqueous ammonia is not on any acutely hazardous materials lists unlike anhydrous ammonia or aqueous ammonia at higher percentages. Also, if released, aqueous ammonia is likely to pool in liquid form and would be captured in a surrounding berm. As such, the release impacts of an aqueous ammonia release are not as great as anhydrous ammonia release.

## **CHAPTER 4**

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### **ENVIRONMENTAL IMPACTS**

#### **Introduction**

#### **Potential Significant Environmental Impacts and Mitigation Measures**

#### **Air Quality Impacts**

#### **Hazards and Hazardous Materials Impacts**

#### **Cumulative Environmental Impacts**

#### **Potential Environmental Impacts Found Not to be Significant**

#### **Significant Environmental Effects Which Cannot Be Avoided**

#### **Significant Irreversible Environmental Changes**

#### **Potential Growth-Inducing Impacts**

#### **Relationship Between Short-Term and Long-Term Environmental Goals**

## INTRODUCTION

The CEQA Guidelines require environmental documents to identify significant environmental effects that may result from a proposed project. [CEQA Guidelines Section 15126.2(a)]. Direct and indirect significant effects of a project on the environment should be identified and described, with consideration given to both short- and long-term impacts. The discussion of environmental impacts may include, but is not limited to, the resources involved; physical changes; alterations of ecological systems; health and safety problems caused by physical changes; and other aspects of the resource base, including water, scenic quality, and public services. If significant adverse environmental impacts are identified, the CEQA Guidelines require a discussion of measures that could either avoid or substantially reduce any adverse environmental impacts to the greatest extent feasible. [CEQA Guidelines Section 15126.4].

The categories of environmental impacts to be studied in a CEQA document are established by CEQA (Public Resources Code Section 21000 *et seq.*), and the CEQA Guidelines, as codified in Title 14 California Code of Regulations Section 15000 *et seq.* Under the CEQA Guidelines, there are approximately 17 environmental categories in which potential adverse impacts from a project are evaluated.

The CEQA Guidelines also indicate that the degree of specificity required in a CEQA document depends on the type of project being proposed. [CEQA Guidelines Section 15146]. The detail of the environmental analysis for certain types of projects cannot be as great as for others. As explained in Chapter 1, the analysis of PARs 1146 series and PR 1100 indicated that the type of CEQA document appropriate for the proposed project is a SEA.

## POTENTIAL SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This document is a SEA to the: 1) September 2008 Final EA for Rule 1146; 2) September 2008 Final EA for Rule 1146.1; 3) May 2006 Final EA for Rule 1146.2; and 4) March 2017 Final Program EIR for the 2016 AQMP. The previous environmental analyses in the September 2008 Final EA for Rule 1146.1 and the May 2006 Final EA for Rule 1146.2 contained an environmental checklist and concluded that none of the 17 environmental topic areas would have potentially significant adverse impacts at the time the September 2008 and May 2006 amendments to Rules 1146.1 and 1146.2, respectively, were adopted. However, the previous environmental analysis in the September 2008 Final EA for Rule 1146 concluded that the September 2008 amendments to Rule 1146 would have potentially significant adverse impacts for the environmental topic of air quality and hazards and hazardous materials.

The March 2017 Final Program EIR for the 2016 AQMP determined that the overall implementation of CMB-05 has the potential to generate adverse environmental impacts to seven topic areas – air quality, energy, hazards and hazardous materials, hydrology and water quality, noise, solid and hazardous waste, and transportation. More specifically, the March 2017 Final Program EIR evaluated the impacts from installation and operation of additional control equipment and SCR or SNCR equipment potentially resulting in construction emissions, increased electricity demand, hazards from additional ammonia transport and use, increase in water use and wastewater discharge, changes in noise volume, generation of solid waste from construction and disposal of old equipment and catalysts replacements, as well as changes in traffic patterns and volume.

For the entire 2016 AQMP, the analysis concluded that significant and unavoidable adverse environmental impacts from the project are expected to occur after implementing mitigation measures for the following environmental topic areas: 1) aesthetics from increased glare and from the construction and operation of catenary lines and use of bonnet technology for ships; 2) construction air quality and GHGs; 3) energy (due to increased electricity demand); 4) hazards and hazardous materials due to: (a) increased flammability of solvents; (b) storage, accidental release and transportation of ammonia; (c) storage and transportation of liquefied natural gas (LNG); and (d) proximity to schools; 5) hydrology (water demand); 6) construction noise and vibration; 7) solid construction waste and operational waste from vehicle and equipment scrapping; and, 8) transportation and traffic during construction and during operation on roadways with catenary lines and at the harbors. Since significant adverse environmental impacts were identified, mitigation measures were identified and applied. However, the March 2017 Final Program EIR concluded that the 2016 AQMP would have significant and unavoidable adverse environmental impacts even after mitigation measures were identified and applied. As such, mitigation measures were made a condition of project approval and a Mitigation Monitoring and Reporting Plan was adopted. Findings were made and a Statement of Overriding Considerations was prepared and adopted for this project.

PARs 1146 series and PR 1100 propose to ~~respectively~~ establish BARCT limits ~~and an implementation schedule~~ for reducing NOx emissions at RECLAIM facilities with units subject to Rules 1146, 1146.1, and 1146.2. This will be one of the first set of rules that will help transition RECLAIM facilities to a command-and-control regulatory structure. PR 1100 ~~has been;~~ specifically crafted to; contains the implementation schedule for Rule 1146 and 1146.1 units to meet the NOx emissions limits. Units at RECLAIM facilities subject to Rule 1146 and 1146.1 will be required to meet the applicable NOx concentration limit for a minimum of 75 percent of the cumulative total heat input by January 1, 2021 and 100 percent by January 1, 2022. For PARs 1146 and 1146.1, similar to the September 2008 amendments to Rules 1146 and 1146.1, compliance is expected to be achieved through the installation of SCR systems technology or ultra-low NOx burners. ~~Additionally,~~ Permit applications would need to be submitted for units at RECLAIM facilities not currently meeting the applicable NOx concentration limit for units subject to Rules 1146 and 1146.1 before 12 months after the date of rule adoption. ~~Certain units at non-RECLAIM facilities~~ subject to Rules 1146 and 1146.1 would be allowed to defer having to comply with the NOx emission limits during until burner replacement or 15 years after the date of rule adoption, whichever is earlier. Thermal fluid heaters currently permitted at 20 ppm must meet the NOx emission limit of 12 ppm by January 1, 2022. Additionally, air pollution control equipment on units subject to Rule 1146 that result in ammonia emissions will be subject to a five ppm ammonia limit and will be required to undergo a source test within 12 months of unit operation after the date of rule adoption and annually thereafter. PARs 1146 series and PR 1100 are expected to result in NOx emission reductions of 0.20 ton per day by January 1, 2021 and 0.23-0.27 ton per day by 2023. The proposed project emission reductions are expected to improve overall air quality in the District and further the progress towards attaining and maintaining state and NAAQS for ozone, PM10, and PM2.5. However, the implementation of the proposed project could create both direct and indirect air quality and hazards and hazardous materials impacts from those sources that install SCR ~~technology~~ system(s) or ultra-low NOx burners. ~~In the Revised Draft SEA, t~~ he construction of air pollution control equipment in order to reduce NOx emissions, was is expected to exceed the SCAQMD's significance threshold for air quality. Based on the analysis, using EPA RMP\*Comp the location of the ammonia storage tanks at some facilities and their vicinity to sensitive receptors could potentially have a significant impact from hazards and hazardous

materials. However, after the construction of SCR systems is completed, the operation of the systems would reduce NO<sub>x</sub> emissions; thus, reducing the significant impact to air quality during overlap of construction and operation phases to less than significant levels. Nonetheless, the implementation of PARs 1146 series and PR 1100 would be expected to have significant adverse hazards and hazardous materials impacts from the storage and use of ammonia to operate SCR systems. The proposed changes contained in PARs 1146 series are considered to contain new information of substantial importance, which was not known and could not have been known at the time the previous CEQA documents for Rules 1146 and 1146.1 (e.g., the September 2008 Final EAs), Rule 1146.2 (e.g., the May 2006 Final EA), and the 2016 AQMP (e.g., the March 2017 Final Program EIR) were certified. Specifically, the units subject to Rules 1146 and 1146.1 at RECLAIM facilities were not discussed in these previously certified CEQA documents. In the Revised Draft SEA, PARs 1146 series and PR 1100 were expected to ~~will~~ create new significant effects to air quality during construction and hazards and hazardous materials that need to be further evaluated in this SEA per CEQA Guidelines Section 15162(a)(3)(A). Thus, only the topics of air quality and hazards and hazardous materials have been analyzed in this SEA. However, after the analysis was completed, within the proximity of sensitive receptors only the topic of hazards and hazardous materials for the storage and use of aqueous ammonia was concluded in the Final SEA to have potentially significant adverse impacts.

The environmental impact analysis for this environmental topic area incorporates a “worst-case” approach. This approach entails the premise that whenever the analysis requires that assumptions be made, those assumptions that result in the greatest adverse impacts are typically chosen. This method ensures that all potential effects of the proposed project are documented for the decision-makers and the public. Accordingly, the following analyses use a conservative “worst-case” approach for analyzing the potentially significant adverse air quality and hazards and hazardous materials impacts associated with the implementation of the PARs 1146 series and PR 1100.

## AIR QUALITY IMPACTS

### Significance Criteria

The environmental analysis assumes that installation of NO<sub>x</sub> control technologies (e.g., ultra-low NO<sub>x</sub> burners and SCR systems) for the affected sources will reduce NO<sub>x</sub> emissions overall, but construction activities associated with both the installation of new control devices and the modification of existing control devices will create secondary air quality impacts (e.g., emissions), which can adversely affect local and regional air quality. A project may generate emissions both during the period of its construction and through ongoing daily operations. During installation of or modification existing NO<sub>x</sub> control devices, emissions may be generated by onsite construction equipment and by offsite vehicles used for worker commuting. After construction activities are completed, additional emissions may be generated from the increased electricity use of the SCR systems (as GHGs) and offsite vehicles (as criteria pollutants and GHGs) used for delivering fresh materials (e.g., chemicals, fresh catalyst, etc.) needed for operations and hauling away solid waste for disposal or recycling (e.g., spent catalyst). To determine whether air quality impacts from adopting and implementing PARs 1146 series and PR 1100 are significant, impacts will be evaluated and compared to the following criteria. If impacts exceed any of the significance thresholds in Table 4-1, they will be considered significant. All feasible mitigation measures will be identified and implemented to reduce significant impacts to the maximum extent feasible. PARs 1146 series and PR 1100 will be considered to have significant adverse air quality impacts

if any one of the thresholds in Table 4-1 are equaled or exceeded. In general, the SCAQMD makes significance determinations for construction and operational impacts based on the maximum or peak daily emissions during the construction or operation period, which provides a “worst-case” analysis of the construction and operational emissions. The type of emission reduction projects that may be or expected to be undertaken to comply with PARs 1146 series and 1100 are primarily the installation of SCR ~~systems technology~~ and ultra-low NOx burners on existing boilers, steam generators, and process heaters; thus, this will be analyzed in this SEA.

The physical changes involved with the type of emission control strategies that could be implemented focus on the installation of ultra-low NOx burners and SCR ~~systems technology~~ at existing stationary combustion sources to reduce NOx emissions. To optimize their equipment overall, facility owners or operators may also employ other burner and flue gas configurations that would be considered to improve the efficiency of the combustion process. However, these optimization activities would not require construction activities, per se, that would involve construction equipment and related emissions. In addition, of the differing control equipment likely to be installed or modified, past projects involving SCR ~~systems technology~~ installation have been shown to typically generate the greatest amount of construction emissions for an individual project (i.e., potentially significant) and thus, are considered a conservative “worst-case” assumption for the analysis in this SEA. This is especially true when the installation of SCR ~~systems technology~~ is compared to other control technologies such as ultra-low NOx burners, which have much less environmental impacts when installed and operated. Further, when considering the installation of SCR equipment, SCR systems utilize ammonia which may also require the installation of one or more ammonia storage tanks, depending on each affected facility’s storage availability. Since ammonia is a chronic and acutely hazardous TAC, the installation of ammonia storage tanks must also be considered when evaluating the overall construction and operational activities.

**Table 4-1**  
**SCAQMD 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>
<b>NO<sub>x</sub></b>	100 lbs/day	55 lbs/day
<b>VOC</b>	75 lbs/day	55 lbs/day
<b>PM<sub>10</sub></b>	150 lbs/day	150 lbs/day
<b>PM<sub>2.5</sub></b>	55 lbs/day	55 lbs/day
<b>SO<sub>x</sub></b>	150 lbs/day	150 lbs/day
<b>CO</b>	550 lbs/day	550 lbs/day
<b>Lead</b>	3 lbs/day	3 lbs/day
<b>Toxic Air Contaminants (TACs), Odor, and GHG Thresholds</b>		
<b>TACs</b> (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk $\geq$ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas $\geq$ 1 in 1 million) Chronic & Acute Hazard Index $\geq$ 1.0 (project increment)	
<b>Odor</b>	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
<b>GHG</b>	10,000 MT/yr CO <sub>2</sub> eq for industrial facilities	
<b>Ambient Air Quality Standards for Criteria Pollutants <sup>d</sup></b>		
<b>NO<sub>2</sub></b>  1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
<b>PM<sub>10</sub></b>  24-hour average annual average	10.4 $\mu\text{g}/\text{m}^3$ (construction) <sup>e</sup> & 2.5 $\mu\text{g}/\text{m}^3$ (operation) 1.0 $\mu\text{g}/\text{m}^3$	
<b>PM<sub>2.5</sub></b>  24-hour average	10.4 $\mu\text{g}/\text{m}^3$ (construction) <sup>e</sup> & 2.5 $\mu\text{g}/\text{m}^3$ (operation)	
<b>SO<sub>2</sub></b>  1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99 <sup>th</sup> percentile) 0.04 ppm (state)	
<b>Sulfate</b>  24-hour average	25 $\mu\text{g}/\text{m}^3$ (state)	
<b>CO</b>  1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
<b>Lead</b>  30-day Average Rolling 3-month average	1.5 $\mu\text{g}/\text{m}^3$ (state) 0.15 $\mu\text{g}/\text{m}^3$ (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  
MT/yr CO<sub>2</sub>eq = metric tons per year of CO<sub>2</sub> equivalents    > = greater than

Revision: March 2015

## Project-Specific Air Quality Impacts During Construction

Construction-related emissions can be distinguished as either onsite or offsite. Onsite emissions generated during construction principally consist of exhaust emissions (NO<sub>x</sub>, SO<sub>x</sub>, CO, VOC, PM<sub>2.5</sub> and PM<sub>10</sub>) from heavy-duty construction equipment operation, fugitive dust (primarily as PM<sub>10</sub>) from disturbed soil, and VOC emissions from asphaltic paving and painting. Offsite emissions during the construction phase normally consist of exhaust emissions and entrained paved road dust (primarily as PM<sub>10</sub>) from worker commute trips, material delivery trips, and haul truck material trips to and from the construction site. In general, limited construction emissions from site preparation activities, which may include earthmoving/grading, are anticipated because the sites, typically, have already been graded and paved. Further, operators at each affected facility who construct NO<sub>x</sub> control equipment that utilize chemicals as part of the NO<sub>x</sub> control equipment operations, such as a new ammonia or storage tank, may also need to build a containment berm large enough to hold 110 percent of the tank capacity in the event of an accidental release, pursuant to U.S. EPA's spill prevention control and countermeasure regulations.

To estimate the “worst-case” construction- and operational-related emissions associated with installing ultra-low NO<sub>x</sub> burners or SCR systems in order to comply with the NO<sub>x</sub> emission limits and transition timing in PARs 1146 series and PR 1100, assumptions were made to estimate combustion emissions from construction emissions onsite, off-site on-road emissions from worker trips and deliveries, on-site fugitive dust emissions, and operational emissions.

The original Draft SEA analyzed the impacts from five facilities operating eight boilers each rated at greater than 75 MMBtu per hour (Group I), and these units are not expected to be able to comply with the NO<sub>x</sub> emission limits because they are not currently equipped with NO<sub>x</sub> emission control technology. However, after the release of the original Draft SEA for public review and comment, changes were made to the project description after the comment period ended which altered the universe of facilities and the units that may be affected by the proposed project. As an example, in the previous analysis, one facility (previously known as Facility A) had three boilers which have since been decommissioned and have permits that have been inactivated. A subsequent environmental analysis has been conducted based on new information and changes to the project description since the release of the Draft SEA to determine the environmental impacts and ~~is~~ was included in ~~this~~ the Revised Draft SEA. The analysis in the Revised Draft SEA was based on 32 RECLAIM facilities operating 56 boilers that would be retrofitted with SCR systems. However, after the release of the Revised Draft SEA for public review and comment, the number of boilers dropped to 55, but the number of affected RECLAIM facilities remained the same (32 facilities). By analyzing 56 units instead of 55, the analysis conducted in the Revised Draft SEA presents more impacts than what may actually occur. Thus, the reduced number of affected equipment in this Final SEA do not constitute an increase in the severity of an environmental impact.

Of the RECLAIM facilities that will be affected by PARs 1146 series and PR 1100, there are ~~32~~<sup>five</sup> facilities operating ~~55~~<sup>56</sup> ~~eight~~ boilers that are each rated greater than ~~20~~<sup>75</sup> MMBtu per hour (Group I and Group II) and these boilers currently cannot meet the NO<sub>x</sub> emission limits of 5 ppm or 7 ppm, respectively, because they are either not equipped with NO<sub>x</sub> emission control technology or have older SCR systems ~~technology~~ that are not capable of meeting the NO<sub>x</sub> emission limits. While facilities that do not have NO<sub>x</sub> emission control technology may first consider employing ultra-low NO<sub>x</sub> burners to achieve the NO<sub>x</sub> emission limits for their boilers, steam generators, and process heaters due to the relative ease of installation, operation, control efficiency, and overall

cost when compared to SCR ~~systems technology~~, retrofitting these larger units with ultra-low NOx burners alone may not meet the requirement to achieve the final 100 percent compliance with the NOx emission limits by January 1, 2022. For this reason, the environmental analysis in this SEA assumes that SCR ~~systems technology~~ or new improved SCR ~~systems technology~~ for boilers with existing SCR ~~systems technology~~, will be installed on the larger units, which is expected to result in the “worst-case” emissions. Thus, for the ~~32~~five facilities operating ~~55~~ ~~56~~eight boilers, ~~eight~~ ~~55~~ ~~56~~ SCR systems are assumed to be installed (e.g., one SCR for each boiler).

Ammonia or urea is necessary to operate SCR ~~systems technology~~, and tanks to store these chemicals would also need to be installed. Since SCR systems utilize ammonia in the NOx reduction process, as many as one aqueous ammonia storage tank per SCR installation (~~i.e., eight ammonia storage tanks~~) could potentially be installed to support the new SCR systems. ~~Two of the 55~~ ~~56~~ affected units at RECLAIM facilities currently have SCR ~~systems technology~~ installed with the associated ammonia storage tanks. This analysis assumes that each facility will install one new SCR and one new aqueous ammonia storage tank (e.g., ~~55~~ ~~56~~ new SCR units plus ~~55~~ ~~56~~ new ammonia tanks would be installed). However, ~~f~~For any operator installing more than one SCR system at one facility, this analysis assumes that only one large aqueous ammonia storage tank would be installed in lieu of multiple, smaller storage tanks, because it is likely and expected the facilities would want to simplify their delivery schedule. For example, ~~several of the RECLAIM facilities have two or three~~ ~~eight~~ boilers that are expected to utilize new SCR ~~systems technology~~, ~~three boilers are located at one facility~~ so it is possible that the facility operator of ~~these~~ ~~is~~ facilities would elect to install one larger aqueous ammonia storage tank, in lieu of ~~two or three~~ smaller tanks, to service the ~~two or three~~ SCR ~~systems~~ units to simplify the ammonia delivery schedule. Also by assuming that one larger storage tank would be installed in lieu of multiple smaller storage tanks the impacts of hazards associated with the use and storage of ammonia would represent the “worst-case”. The size of each ammonia tank needed to supply ammonia to each of the ~~55~~ ~~56~~ ~~eight~~ SCR systems has been estimated to range between 250 and 10,000 gallons in capacity.

Each facility is expected to have sufficient space to install new NOx control equipment or retrofit existing equipment. However, because installation of larger NOx air pollution control equipment may need to occupy the space of previous equipment, demolition activities were assumed to occur prior to the equipment installation to remove any existing equipment or structures (as applicable), remove the old piping and electrical connections, and break up the old foundation with a demolition hammer. For these reasons, digging, earthmoving, grading, slab pouring, or paving activities are anticipated and were analyzed.

The type of construction-related activities attributable to installing new NOx control equipment or retrofitting existing equipment would consist predominantly of deliveries of steel, piping, wiring, chemicals, catalysts, and other materials, and would also involve maneuvering the materials within the site via a variety of off-road equipment such as a crane, forklift et cetera or on-road equipment such as haul trucks, delivery trucks, and passenger vehicles for construction workers. If a new foundation is not needed, to establish footings or structure supports, some concrete cutting and digging may be necessary in order to re-pour new footings prior to building above the existing foundation. Because the affected equipment are operating at existing facilities, the analysis assumes that no more than one acre of area would need to be disturbed at a single facility at a given time. Construction was assumed to consist of four phases: 1) demolition; 2) site preparation; 3) paving; and, 4) installing the NOx control equipment along with supporting devices and structures.

Based on previous analyses of an SCR system installation, the typical equipment that may be needed to complete each construction phase at a single affected facility is presented in Table 4-2.

**Table 4-2**  
**Construction Equipment That May Be Needed to Install One SCR system at One Facility**

Construction Phase	Off-Road Equipment Type	Amount	Daily Usage Hours
Building Construction	Cranes	1	6
Building Construction	Forklifts	1	6
Building Construction	Generator Sets	1	8
Building Construction	Tractors/Loaders/Backhoes	1	6
Building Construction	Welders	2	8
Building Construction	Aerial Lifts	1	8
Demolition	Concrete/Industrial Saws	1	8
Demolition	Rubber Tired Dozers	1	8
Demolition	Tractors/Loaders/Backhoes	1	8
Demolition	Cranes	1	8
Paving	Cement and Mortar Mixers	1	6
Paving	Paving Equipment	1	8
Paving	Plate Compactors	1	6
Paving	Tractors/Loaders/Backhoes	1	8
Site Preparation	Rubber Tired Dozers	1	7
Site Preparation	Tractors/Loaders/Backhoes	1	8
Site Preparation	Trenchers	1	8

Construction emissions associated with installing one ~~the eight~~ SCR systems at one ~~the five~~ facilities were estimated using the California Emission Estimator Model (CalEEMod), version 2016.3.2. To estimate what the impacts would be for installing one SCR system and associated ammonia storage tank, the following general assumptions were made:

- To provide a “worst-case” analysis, each SCR system and associated ammonia storage tank installation will require its own construction crew and equipment. For any facility with multiple boilers, the installation of SCR systems and associated ammonia storage tanks are assumed to occur in sequential order with the same construction crew and equipment in order to avoid all boilers being offline at the same time.
- The four phases are assumed to occur sequentially during a traditional work week (e.g., five days) and each phase is assumed the following number of days: demolition – five days; site preparation – two days; installation of NOx control equipment – 250 days; and paving – five days.
- During the construction, it is expected for each SCR system for each day of each phase the following number of round-trip trips would occur from the off-road equipment: demolition - 15 trips; site preparation – eight trips; installation of NOx control equipment – 18 trips; and paving – 13 trips. In addition, seven vendor trips are estimated to be needed during the installation of the SCR system ~~NOx control equipment~~. It was assumed five hauling trips would occur during the Demolition phase.
- Since each facility will need to meet the applicable NOx concentration limit for a minimum of 75 percent of the cumulative total heat input for all Rules 1146 and 1146.1 units by

January 1, 2021, and 100 percent by January 1, 2022, and taking into account the lead time needed to procure contracts, order equipment and obtain SCAQMD permits, construction is expected to begin in 2019 at the earliest. Further, depending on the facility, construction could last from six months to over one year or more if multiple SCR systems will be installed at one facility. The most SCR systems expected to be installed at one facility is four~~three~~. In order for the facility with four units to meet the compliance deadline, at least three of the four SCR systems would need to be installed at this facility by January 1, 2021. The amount of NOx emission reductions that is expected to be achieved by installing 75 percent of the SCR systems (e.g., 42) by January 1, 2021 represents approximately 0.15 ton per day or 300 pounds per day.

Table 4-3 presents the peak daily emissions from construction activities to install one SCR at one facility. ~~The implementation of PARs 1146 series and PR 1100 would result in Of the 55 56 eight affected units at 32 facilities and each unit is assumed to need an SCR system installed. Eighteen facilities have more than one unit and thus require more than one multiple SCR systems are assumed to be installed at two facilities. For these 18 two facilities, however, the installations of SCR systems are assumed to will occur sequentially (e.g., one SCR system at a time) in order to avoid all boilers being offline simultaneously and to maintain operations at each facility. Because the proposal provides substantial lead time approximately three years (compliance date of January 1, 2022) in order for facilities to take the necessary actions to achieve compliance, construction of each SCR system at the 32 five affected facilities could is not likely to occur on the same day. The construction would likely be staggered amongst the 32 five affected facilities, because of the lead time needed to procure contracts, order equipment, and obtain SCAQMD permits prior to beginning construction. Thus, the analysis assumes that not all 32 facilities would begin construction on the exact same day and maintain the exact same schedule. However, but it is possible that some overlap of the construction phases would occur.~~ Table 4-3 presents the peak daily emissions for the construction of one SCR system at one facility. Appendix B contains the CalEEMod output files for the annual, summer, and winter construction emissions for the construction of one SCR system at one facility.

**Table 4-3**  
**Peak Daily Emissions from Construction Activities of One SCR System at One Facility**

Peak Daily Construction Emissions	VOC (lb/day)	CO (lb/day)	NO <sub>x</sub> (lb/day)	SO <sub>x</sub> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)
Installation of 1 SCR	2.30	17.49	23.04	0.03	6.48	3.95
Significance Threshold for Construction	75	550	100	150	150	55
Exceed Significance?	NO	NO	NO	NO	NO	NO

~~While unlikely, Although it is possible that there could be overlapping construction activities at more than one facility, but it is impossible to predict with any accuracy which construction phases would overlap at which facilities. The analysis assumes that five facilities will undergo construction and that these construction activities will overlap. For this reason, the analysis conservatively assumes that five SCR systems would be constructed or have overlapping construction phases occurring on a peak day. At the time of the original Draft SEA was released for public review and comment, five facilities were assumed to install eight SCR systems. Table~~

4-4 presents the peak daily emissions if construction occurs simultaneously at each of the five affected facilities.

**Table 4-4**  
**Peak Daily Emissions from Construction Activities of Five SCR Systems**

Peak Daily Construction Emissions	VOC (lb/day)	CO (lb/day)	NO <sub>x</sub> (lb/day)	SO <sub>x</sub> (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Installation of 5 SCR Systems (Unmitigated)	11.51	87.46	115.22	0.15	32.42	19.77
Significance Threshold for Construction	75	550	100	150	150	55
Exceed Significance?	NO	NO	YES*	NO	NO	NO

\* This conclusion of significance does not take into account the concurrent NO<sub>x</sub> emission reductions that are expected to occur after each SCR system is constructed and becomes operational.

As shown in Table 4-4, the peak daily construction emissions of five SCR systems being installed at five facilities would exceed the SCAQMD's significance threshold for NO<sub>x</sub> and thus, result in significant adverse air quality impacts. However, since the amount of NO<sub>x</sub> emission reductions that is expected to be achieved by installing 75 percent of the SCR systems by January 1, 2021 represents approximately 0.15 ton per day or 300 pounds per day, the peak daily construction emissions of five SCR systems being installed at five facilities would be offset by these concurrent emission reductions such that the SCAQMD's significance threshold for NO<sub>x</sub> would no longer be exceeded. Thus, the construction air quality impacts from installing five SCR systems on a peak day would be at less than significant levels.

However, in ~~this~~ the Revised Draft SEA, the universe of affected facilities increased and the number of new SCR systems to be installed increased from eight to 55 ~~56~~. To adjust for the increased number of affected facilities and corresponding installation of SCR systems, that could potentially have overlapping construction activities, the analysis was adjusted to ~~assume that~~ illustrate the construction of 16 SCR systems ~~could potentially~~ if they were to occur on the same day. As shown in Table 4-5, the peak daily construction emissions of 16 SCR systems being installed at 16 facilities would exceed the SCAQMD's significance threshold for NO<sub>x</sub> and PM2.5; thus, resulting in significant adverse air quality impacts. However, given the three-year compliance deadline, different phases of construction, length of time needed to construct a SCR system, and option to replace the boiler instead of constructing an SCR system, it is unlikely all 16 units would be constructed on the same peak day. Further is it unlikely that all 16 units would be constructed on the same day for those facilities requiring multiple SCR system installations since the construction of those systems would occur sequentially, not concurrently.

**Table 4-5**  
**Peak Daily Emissions from Construction Activities of 16 SCR Systems**

<b><u>Peak Daily Construction Emissions</u></b>	<b><u>VOC (lb/day)</u></b>	<b><u>CO (lb/day)</u></b>	<b><u>NO<sub>x</sub> (lb/day)</u></b>	<b><u>SO<sub>x</sub> (lb/day)</u></b>	<b><u>PM<sub>10</sub> (lb/day)</u></b>	<b><u>PM<sub>2.5</sub> (lb/day)</u></b>
<u>Installation of 16 SCR Systems (Unmitigated)</u>	<u>36.80</u>	<u>279.84</u>	<u>368.64</u>	<u>0.48</u>	<u>103.68</u>	<u>63.20</u>
<u>Significance Threshold</u>	<u>75</u>	<u>550</u>	<u>100</u>	<u>150</u>	<u>150</u>	<u>55</u>
<b><u>Exceed Significance?</u></b>	<b><u>NO</u></b>	<b><u>NO</u></b>	<b><u>YES*</u></b>	<b><u>NO</u></b>	<b><u>NO</u></b>	<b><u>YES</u></b>

\* This conclusion of significance does not take into account the concurrent NO<sub>x</sub> emission reductions that are expected to occur after each SCR system is constructed and becomes operational.

In addition to the installation at RECLAIM facilities of SCR systems for boilers, steam generators, or process heaters rated above 20 75 MMBtu per hour (Group I and Group II boilers), the proposed project is expected to result in other facilities installing 93 211 ultra-low NO<sub>x</sub> burners on 93 211 boilers, steam generators, or process heaters rated greater than two or less than or equal to 20 75 MMBtu per hour (Group III includes Rule 1146 and Rule 1146.1) and thermal fluid heaters in order to meet the applicable NO<sub>x</sub> emission limit and compliance deadlines. From a construction point of view, the installation of ultra-low NO<sub>x</sub> burners on these smaller boilers, steam generators and process heaters (i.e., Group II and Group III units), is a relatively straightforward process, especially when compared to the construction activities and equipment needed to retrofit boilers, steam generators, and process heaters rated above 20 75 MMBtu per hour with SCR systems. Specifically, operators of affected facilities who choose to replace existing burners with ultra-low NO<sub>x</sub> burners will first need to pre-order and purchase the appropriate size, style and number of burners, shut down the combustion unit to let it cool, and change out the burners. The burner change out may involve a contractor or vendor to remove the bolts, possibly cut and re-weld metal seals and re-fire the burners for equipment start-up. Burner replacements would most likely entail the use of hand tools. Thus, in general, heavy-duty construction activities or equipment are not anticipated for installing ultra-low NO<sub>x</sub> burners. Once the ultra-low NO<sub>x</sub> burners are in place, the combustion equipment can be fired up and can operate with lower NO<sub>x</sub> emissions. Thus, minimal secondary construction impacts are anticipated from the installation of the majority ultra-low NO<sub>x</sub> burners. To estimate what the impacts would be for installing ultra-low NO<sub>x</sub> burners, the following assumptions were made:

- 93 211 units will be retrofitted with ultra-low NO<sub>x</sub> burners, with 75 percent occurring by January 1, 2021 and 100 percent completed by the January 1, 2022.
- To meet the 75 percent compliance date (January 1, 2021), approximately 70 160 units would need to be retrofitted with ultra-low NO<sub>x</sub> burners and at least 35 80 would be installed during the first year for (e.g., 2019) and the remainder would be installed during the second year (e.g., 2020). The amount of NO<sub>x</sub> emission reductions that are expected to be achieved from installing ultra-low NO<sub>x</sub> burners by January 1, 2021 represents approximately 0.05 ton per day or 100 pounds per day.
- Since up to six months may be needed to assess the equipment, arrange for a vendor or contractor, and permits application; installation of the ultra-low NO<sub>x</sub> burners and operation will begin in year 2019.
- Per unit, installation of ultra-low NO<sub>x</sub> burners will take one day.

- For a “worst-case” analysis, 10 units will have ultra-low NOx burners installed within the same day based on similar analysis conducted from the September 2008 Final EA for Rule 1146.
- One contractor/vendor plus one welder per unit will be needed to retrofit the affected equipment with ultra-low NOx burners.

In addition, certain units at non-RECLAIM facilities may defer compliance with the new specified NOx emission limits until the replacement of the unit’s burners or 15 years from the date of rule adoption, whichever is earlier. Thermal fluid heaters currently permitted at greater than 20 ppm must meet the NOx emission limit of 12 ppm by January 1, 2022. It is difficult to predict when a unit at a non-RECLAIM facility would incur burner replacement (if sooner than 15 years) and thus, required to meet the new NOx emissions limits, because it is a facility-based decision (e.g., cost, long-term planning, etc.) that is dependent on the status of the unit (e.g., unit operation schedule, unit age, and maintenance of the unit, etc.). Units at non-RECLAIM facilities meet current NOx emission limits. To meet the new NOx emissions limits, units at non-RECLAIM facilities would do so by installing ultra-low NOx burners on units during burner replacement or 15 years from the date of rule adoption, whichever is earlier. Construction emissions for units at non-RECLAIM facilities would be identical to the construction emissions for the affected units at RECLAIM facilities. As stated earlier as a “worst-case” analysis, 10 units would have ultra-low NOx burners installed within the same day based on similar and past analyses. As a conservative estimate, the peak emissions would be in construction Year 2019, because it is the earliest year a unit at a non-RECLAIM facility could be replacing a unit’s burner. The lowest emissions from construction would occur if the non-RECLAIM facility installed an ultra-low NOx burner on a unit 15 years later.

Table 4-65 summarizes the peak daily construction emissions from retrofitting the affected equipment with ultra-low NOx burners. Appendix B contains the detailed construction estimates and calculations for installing ultra-low NOx burners on the affected equipment.

**Table 4-65**  
**Peak Daily Construction Emissions from Retrofitting Equipment**  
**with Ultra-Low NOx Burners**

<b>Peak Construction by Year</b>	<b>VOC (lbs/day)</b>	<b>CO (lbs/day)</b>	<b>NOx (lbs/day)</b>	<b>SOx (lbs/day)</b>	<b>PM10 (lbs/day)</b>	<b>PM2.5 (lbs/day)</b>
<b>2019</b>						
Total for 1 unit in one day	0.17	1.24	0.46	0.003	0.05	0.01
Peak Daily Total for 10 units installed in one day	1.70	12.42	4.56	0.03	0.55	0.13
<del>Peak Total for 80 units installed in one year</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>
Significance Threshold	75	550	100	150	150	55
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>
<b>2020</b>						
Total for 1 unit in one day	0.16	1.15	0.43	0.0003	0.05	0.01
Peak Daily TOTAL for 10 units installed in one day	1.56	11.52	4.25	0.03	0.52	0.13
<del>Peak Total for 80 units installed in one year</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>
Significance Threshold	75	550	100	150	150	55
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>
<b>2021</b>						
Total for 1 unit in one day	0.14	1.09	0.40	0.003	0.05	0.01
Peak Daily Total for 10 units installed in one day	1.44	10.85	3.96	0.03	0.49	0.13
<del>Peak Total for 51 units installed in one year</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>
Significance Threshold	75	550	100	150	150	55
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

As shown in Table 4-65, the peak daily construction emissions of retrofitting the equipment with ultra-low NOx burners would not exceed any of the SCAQMD's significance thresholds for one unit on a peak day as well as for 10 units on a peak day for construction years 2019, 2020, and 2021. Of the three construction years, the highest peak daily emissions occur in 2019.

~~Because of the compliance timing in the proposed project, it is unlikely that the eConstruction of SCR systems technology will overlap the retrofitting of unit equipment with ultra-low NOx burners. Table 4-76 presents a summary of the peak daily construction emissions from the overlapping installations of five SCR systems and ten ultra-low NOx burners.~~

**Table 4-76**  
**Peak Daily Construction Emissions from Overlapping Installations**  
**of SCR Systems and Ultra-low NOx Burners**

<b>Total Peak Daily Construction Emissions<sup>^</sup></b>	<b>VOC (lb/day)</b>	<b>CO (lb/day)</b>	<b>NOx (lb/day)</b>	<b>SOx (lb/day)</b>	<b>PM10 (lb/day)</b>	<b>PM2.5 (lb/day)</b>
Peak Daily Total for Installation of 5 SCR systems (from Table 4-4)	11.51	87.46	115.22	0.15	32.42	19.77
Peak Daily Total for Installation of 10 Ultra-low NOx burners (from Table 4-65)	1.70	12.42	4.56	0.03	0.55	0.13
Total for SCR systems and Ultra-Low NOx Burners	13	100	120	0	33	20
Significance Threshold	75	550	100	150	150	55
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>YES*</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

<sup>^</sup>Year 2019 was chosen because it represents the highest emissions of the three construction years.

\* This conclusion of significance does not take into account the concurrent NOx emission reductions that are expected to occur after each SCR system and ultra-low NOx burners are constructed and become operational.

As shown in Table 4-76, the peak daily construction emissions of concurrently installing five SCR systems being installed at five facilities while also retrofitting 10 units with ultra-low NOx burners would also exceed the SCAQMD's significance threshold for NOx and thus, result in significant adverse air quality impacts during construction.

As presented in Tables 4-3, 4-4, 4-6 and 4-7, the construction air quality impacts can range from less than significant for all criteria air pollutants to significant levels for NOx, depending on the number of equipment under construction on a peak day, and whether the construction activities for multiple equipment overlap on a peak day. For example, while the initial construction of one SCR system would result in a temporary increase in construction emissions, the quantity of emissions would not exceed any of the air quality significance thresholds on a peak day and the same is true for the initial construction of one to 10 ultra-low NOx burners on a peak day. However, under the circumstance where the construction of five SCR systems overlap construction of 10 ultra-low NOx burners, the NOx emissions from these overlapping construction activities are shown to exceed the SCAQMD's significance threshold for NOx. However, these significant impacts will be reduced to less than significant levels by implementation of the proposed project, by design, because a concurrent operational air quality benefit would result due to the overall NOx emissions reductions of 0.20 ton per day (405 pounds per day) that are expected to occur by January 1, 2021, or 0.27 ton per day (540 pounds per day) that are expected to occur by January 1, 2023 as the installation of SCR systems and ultra-low NOx burners occur over time. In particular, the amount of NOx emission reductions that is expected to be achieved by installing 75 percent of the SCR systems (e.g., 42) by January 1, 2021 represents approximately 0.15 ton per day or 300 pounds per day. Similarly, the amount of NOx emission reductions that are expected to be achieved from installing 75 percent of the ultra-low NOx burners (e.g., 70) by January 1, 2021 represents approximately 0.05 ton per day or 100 pounds per day.

Thus, as construction is completed for each SCR system or ultra-low NOx burner, there will be immediate, corresponding NOx emission reductions from the operation of each new SCR system or ultra-low NOx burner, and these NOx emission reductions will continue to accumulate and are expected to substantially offset any significant increase of NOx emissions to less than significant levels in the event that there are overlapping construction activities of five SCR systems and 10 ultra-low NOx burners on a peak day. For these reasons, the construction air quality impacts from implementing the proposed project would be reduced to less than significant levels from concurrent NOx emission reductions.

### **Rule 1146.2 units**

Twenty-~~nine~~<sup>eight</sup> out of 32 Rule 1146.2 units currently permitted in the RECLAIM program meet the Rule 1146.2 NOx emission limits. ~~Three~~<sup>Four</sup> of the ~~units~~ 32 units do not meet the NOx emission limits and would require retrofit equipment such as an ultra-low NOx burner or replacement by December 31, 2023 under the proposed rule amendment. The current Rule 1146.2 units at RECLAIM facilities are largely underrepresented. However, RECLAIM facilities with Rule 1146.2 units have until December 31, 2023 to retrofit or replace their equipment. Because the process of retrofitting a boiler with a burner replacement kit on smaller, Rule 1146.2, units is identical to the process of installing ultra-low NOx burners on medium to large units, the construction emissions presented in Table 4-65 can also be attributed to the process of retrofitting a boiler with a burner replacement kit. As shown in Table 4-65, the peak daily construction emissions from retrofitting equipment with ultra-low NOx burners would not exceed any of the SCAQMD's significance thresholds for one unit on a peak day as well as for 10 units on a peak day for construction years 2019, 2020, and 2021. Of the three construction years, the highest peak daily emissions occur in year 2019 and the emissions decrease each subsequent year. Thus, for any burner replacement kits that are installed on Rule 1146.2 units, less than significant air quality impacts would also be expected.

### **Complete Replacement of Existing Boilers, Heaters, or Steam Generators**

While PARs 1146 series does not require equipment replacement, in lieu of installing SCR systems or retrofitting existing equipment with ultra-low NOx burners, facility operators may consider completely replacing their existing boilers, heaters, or steam generators for reasons including, but not limited to age, high maintenance and operating costs, fuel efficiency issues, and/or the lack of replacement parts. The proposed project contains a provision that will allow any facility operator that commits to replacing Rules 1146 and 1146.1 equipment with new equipment that can achieve the applicable NOx emission limit(s) to continue to operate the existing equipment and defer compliance until January 1, 2023 to achieve the applicable NOx emission limit(s). Because of the deferred compliance option, any replacement would not be expected to overlap the construction activities associated with installing SCR systems and ultra-low NOx burners for equipment subject to Rules 1146 and 1146.1.

~~In addition, certain units at non-RECLAIM facilities may defer compliance with the specified NOx emission limits until the replacement of the unit's burners or 15 years from the date of rule adoption, whichever is earlier. Thermal fluid heaters currently permitted at greater than 20 ppm must meet the NOx emission limit of 12 ppm by January 1, 2022. It is impossible to predict when this would occur for the affected units, because it is a facility based decision (e.g., cost, long term planning, etc.) that is dependent on the status of the unit (e.g., unit operation schedule, unit age, and maintenance of the unit, etc.).~~

Should a complete replacement occur, this analysis assumes that a worse-case would be if a large boiler (rated at greater than 75 MMBtu per hour) is replaced because of its large overall footprint. The following assumptions were made for the replacement of a large boiler:

- Before dismantling can occur, the existing boiler would need to be shut down and allowed to cool. The dismantling and demolition process is estimated to take 20 days and then it would take approximately 3,000 hours or 75 days to install a new boiler, which includes five days of site preparation, 65 days of building construction, and five days of paving.
- Eight workers would be needed to install the new boiler.
- The following equipment would be needed to replace the boiler: one cement/mortar mixer; one concrete/industrial saw; one crane; one rubber tired dozer; one tractor/loader/backhoe; and one welder. They would be used eight hours a day, except for the crane which is expected to be used two hours per day for removing the existing boiler and moving the replacement boiler into place.
- The footprint of the existing boiler is assumed to be 1,000 square feet and the facility operator is assumed to replace the unit with equipment of the same size and footprint.
- Once the new replacement unit becomes operational, the NO<sub>x</sub> emissions are expected to be fewer than the existing unit and the fuel usage of the new unit will use eight to 10 percent less fuel than the existing unit from improved efficiency.
- No additional employees are expected to be needed to operate and maintain the new unit. The operation and maintenance are expected to be similar for the new unit.

Construction emissions associated with removing one large boiler and replacing it with a new unit of comparable size were estimated using CalEEMod version 2016.3.2. Appendix B contains the detailed construction estimates for a large boiler replacement. Table 4-87 summarizes the peak daily construction emissions from replacing a large boiler with a new unit.

**Table 4-87**  
**Peak Daily Construction Emissions from Replacing a Large Boiler**

<b>Construction Emissions</b>	<b>VOC (lb/day)</b>	<b>CO (lb/day)</b>	<b>NO<sub>x</sub> (lb/day)</b>	<b>SO<sub>x</sub> (lb/day)</b>	<b>PM10 (lb/day)</b>	<b>PM2.5 (lb/day)</b>
Replacement of One Large Boiler	6.33	44.67	58.31	0.07	8.42	5.77
Significance Threshold	75	550	100	150	150	55
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

As shown in Table 4-87, the construction emissions from the replacement of a large boiler (greater than 75 MMBtu per hour) is less than SCAQMD's significance threshold. Any Rule 1146.2 unit operating at a RECLAIM facility would be required to either meet a NO<sub>x</sub> emission limit of 30 ppm if retrofitted with a burner replacement kit or 20 ppm if the unit is replaced. It is difficult to determine which facilities would choose to replace or retrofit a particular unit since there are a variety of factors to be considered. One factor is the useful life of the equipment since an average boiler is estimated to have a useful life of 25 years; however, some units have been known to run effectively for more than 30 years and many have been in operation for over 40 years. Another

factor is that a larger unit substantial maintenance for the refractory; thus, a facility operator may opt to replace a unit with a smaller unit that is less maintenance-intensive. Some facility operators may also elect to downsize if replacing an old unit with a new unit because the operations have changed over the years or they are seeking to improve operational efficiency. Further, some facility operators may also determine that it is more cost-effective to retrofit a unit rather than replace it. Overall, the decision as whether to replace a unit with a new unit is dependent upon costs, the ability to retrofit the old unit with ultra-low NO<sub>x</sub> burners, equipment age and size, and the facility's operational needs.

Should a facility operator elect to replace a small boiler (e.g., Rule 1146.2 unit at two MMBtu per hour), in lieu of installing a burner retrofit kit, the construction activities would also be expected to result in fewer emissions than the boiler replacement emissions presented in Table 4-87 because the replacement of a smaller unit would require less workers, fewer hours to install, and fewer and smaller heavy-duty equipment. Thus, the construction emissions from replacing a small Rule 1146.2 boiler would also be less than the SCAQMD's significance thresholds.

**Construction Mitigation:** ~~Except for~~ The analysis shows that the peak daily NO<sub>x</sub> emissions would, no other criteria pollutant emissions exceed the significant thresholds during construction if there is or more facilities have overlapping construction occurring on a peak day. However, these significant impacts will be reduced to less than significant levels by implementation of the proposed project, by design, because a concurrent operational air quality benefit would result due to the overall NO<sub>x</sub> emissions reductions. In particular, the incremental amount of NO<sub>x</sub> emission reductions that is expected to be achieved by installing 75 percent of the SCR systems (e.g., 42) by January 1, 2021 represents approximately 0.15 ton per day or 300 pounds per day. Similarly, the amount of NO<sub>x</sub> emission reductions that are expected to be achieved from installing 75 percent of the ultra-low NO<sub>x</sub> burners (e.g., 70) by January 1, 2021 represents approximately 0.05 ton per day or 100 pounds per day. However, Upon full implementation, the proposed project would ~~however~~ result in the overall NO<sub>x</sub> emissions reductions of 0.20 ~~173~~ ton per day (405 ~~345~~ pounds per day) by January 1, 2021, or 0.23 ~~0.27~~ ton per day (540 ~~460~~ pounds per day) by January 1, 2023. Thus, the analysis indicates that there will be an overall reduction in NO<sub>x</sub> emissions during construction, because the construction and operational phases will likely overlap. As construction is completed for each SCR system, there will be overall NO<sub>x</sub> emission reductions from the operation of each SCR system and the same is true for when ultra-low NO<sub>x</sub> burners are installed. The initial construction of one SCR system would result in an increase in emissions; however, the emissions would not be exceed the significance threshold as seen in Table 4-3. The completion of construction and operation of the first SCR system would result in immediate NO<sub>x</sub> emission reductions and in effect reduce the peak daily NO<sub>x</sub> emissions below the significance threshold. Because the net result of concurrent operational NO<sub>x</sub> emission reductions are offsetting the construction NO<sub>x</sub> emissions, no significant impacts remain. As such, no construction mitigation is required. Thus, no significant adverse air quality impacts during construction are expected to remain during the construction phase of the SCR systems.

**Remaining Construction Impacts After Mitigation:** The air quality analysis concluded that significant adverse air quality impacts could be created by the proposed project because the construction activities will produce emissions that would exceed the SCAQMD's significant threshold for NO<sub>x</sub> per day during construction. However, the analysis further indicates that there will be an overall reduction in NO<sub>x</sub> emission during both construction and operational phases of

the proposed project. Therefore, no significant adverse air quality impacts are expected to remain during the construction of the SCR systems.

### Project-Specific Air Quality Impacts During Operation

The incremental amount of NOx emission reductions that is expected to be achieved by installing 75 percent of the SCR systems (e.g., 42) by January 1, 2021 represents approximately 0.15 ton per day or 300 pounds per day. Similarly, the amount of NOx emission reductions that are expected to be achieved from installing 75 percent of the ultra-low NOx burners (e.g., 70) by January 1, 2021 represents approximately 0.05 ton per day or 100 pounds per day. Upon full implementation, the proposed project is expected to result in direct air quality benefits from the reduction of 0.20 ton per day by January 1, 2021 and 0.23-0.27 ton per day of NOx emissions by January 1, 2023. Implementation is expected to be achieved by installing ultra-low NOx burners and SCR systems on boilers, steam generators, and process heaters. However, secondary criteria pollutant emissions may be generated as part of operation activities associated with operating and maintaining the air pollution control equipment after it is installed. In particular, the following activities may be sources of secondary criteria pollutant emissions during operation: 1) vehicle trips via heavy-duty for periodic ammonia/urea deliveries for each SCR system installed; 2) vehicle trips via heavy-duty trucks for periodic deliveries of catalyst as well as spent catalyst hauling after the SCR system is installed; and 3) vehicle trips via light-duty trucks for quarterly source testing after each SCR system is installed.

The following assumptions were made about the operation of SCR systems:

- The construction of one ammonia storage tank is assumed to require two one-way truck deliveries of 19 percent aqueous ammonia. Ammonia delivery trucks can deliver approximately 7,000 gallons at any one time.
- Each facility with only one SCR system will have only one ammonia delivery once per month, but the quantity delivered will vary by the size of the storage tank needed. For the facilities that have more than one SCR system that will be installed, it is assumed that the facility will also install one large ammonia storage tank in lieu of multiple smaller storage tanks to save money and space at the facility. (Facility A) that Even with a total of 18 facilities with multiple SCR systems, only one facility would require greater than a 7,000 gallons delivery. At this facility (Facility 6), a 10,000 gallon tank would be required to service all three SCR systems; thus, two ammonia truck deliveries will be needed each month.
- Since the ammonia tanks will be pressurized, no ammonia emissions are expected from filling the storage tanks.
- As a conservative estimate, it is assumed the peak daily trips associated with ammonia/urea deliveries will be one truck per facility per month for all facilities except Facility 6A which will have two ammonia delivery trucks per month. The delivery distance of one ammonia truck is assumed to be 100 miles round-trip.
- The initial construction of one SCR unit is assumed to require two one-way truck deliveries of catalyst modules. All initial catalyst deliveries are assumed to occur on the same peak day for all the affected facilities. Catalyst modules are expected to be replaced every two to three years. When spent catalyst removal and replacement becomes necessary, two one-

way trucks will be needed to remove the catalyst and two one-way trucks will be needed to deliver the fresh catalyst modules.

- Peak daily trips assume truck trip distances to deliver catalyst would be similar to ammonia and are assumed to be 100 miles round-trip. It is assumed the catalyst delivery vehicles would be similar to the ammonia delivery trucks (heavy-duty).
- No additional employees are anticipated to be needed to operate the new SCR systems because the existing work force per affected facility is expected to be sufficient. As such, no additional emissions from new workers are anticipated from the operation of the new SCR systems.
- Two 60 RECLAIM facilities installing either SCR systems or ultra-low NOx burners are located within ¼-mile of sensitive receptors (e.g., schools, residences, etc.).
- Facilities with units installing SCR systems would be required to conduct quarterly source testing. It is assumed that each source test would require one gasoline-fueled light duty truck driving approximately 40 miles per day, round trip. As a conservative analysis, each facility has been assumed to conduct one source test on a peak day. Thus, the 32 affected facilities would conduct a source test on the same day.

A summary of the heavy-duty truck trips from ammonia and catalyst deliveries are presented in Table 4-98.

**Table 4-98**  
**Heavy-Duty Truck Trips from Ammonia and Catalyst Deliveries**

Heavy-Duty Truck Trips	NH3/Urea Delivery Trips	Catalyst Delivery Trips	Total Trips
Annual	396 72	56 8	452 80
Peak Daily	33 6	32 5	65 44

When taking into account the arrangements that need to be made in order to coordinate with a contractor to conduct the required source tests, and the availability of source test contractors in the District, it is unlikely that all 32 affected facilities will conduct the source tests on the same day. However, to illustrate what the emission effects would be if all 32 facilities conducted the required source testing on the same day; Table 4-10 presents the emissions from 32 light duty trucks employed on a peak day. Although there will be 55 SCR systems that are expected to be installed from the proposed project; it is assumed that a facility would only conduct one source test at a time and in one day. Thus, if all the facilities completed their quarterly source testing for the ammonia emissions limit, a maximum of 224 source tests (and corresponding vehicle round-trips) would occur each year.

Secondary operational emissions from the 32 five facilities were estimated using EMFAC20174 emission factors and are presented in Table 4-109. Appendix B contains the detailed emissions calculations from the operational activities from the installation of all of the SCR systems.

**Table 4-109**  
**Peak Daily Operational Emissions from all the Facilities-Five Facilities**

<b>Operational Activity</b>	<b>CO (lb/day)</b>	<b>NOx (lb/day)</b>	<b>PM10 (lb/day)</b>	<b>PM2.5 (lb/day)</b>	<b>VOC (lb/day)</b>	<b>SOX (lb/day)</b>
Increased Delivery Trucks (Ammonia and Catalysts)	1.55 <u>19.25</u>	13.82 <u>30.43</u>	78.40 <u>2.18</u>	8.18 <u>1.22</u>	0.50 <u>4.54</u>	0.03 <u>0.12</u>
Source Testing Trucks	<u>5.12</u>	<u>0.43</u>	<u>0.13</u>	<u>0.06</u>	<u>0.54</u>	<u>0.002</u>
<b>TOTAL</b>	<b><u>24.37</u></b> <del>1.55</del> <del>19.25</del>	<b><u>30.86</u></b> <del>13.82</del> <del>30.43</del>	<b><u>2.31</u></b> <del>78.40</del> <del>2.18</del>	<b><u>1.28</u></b> <del>8.18</del> <del>1.22</del>	<b><u>5.08</u></b> <del>0.50</del> <del>4.54</del>	<b><u>0.12</u></b> <del>0.03</del> <del>0.12</del>
Significance Threshold for Operation	550	55	150	55	55	150
<b>Exceed Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

As a conservative estimate, Facility 6 A was used as the facility that would have the peak daily number of heavy-duty truck trips that would occur at one year at one facility. If the facility receives two ammonia delivery trucks each month and three catalyst deliveries (assuming each SCR system construction was staggered through the year and would require a catalyst delivery each time a SCR system was completed), the peak daily number of heavy-duty truck trips that may occur in one year at one facility (Facility 6 A) is 27. Heavy-duty trucks are prohibited from idling for more than five minutes at any one location as regulated by the Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling<sup>15</sup>, but they can move to multiple locations and idle at each location for up to five minutes. Thus, as a conservative analysis, this analysis assumes that the trucks may idle for up to a total of 15 minutes per trip. Therefore, a peak of approximately 6.75 hours of idling may occur at one facility in one year. The CARB emission factor for an idling heavy-duty diesel truck is 1.67 grams per hour of diesel particulate matter (DPM). Therefore, a conservative estimate of 0.025 pound of diesel particulate exhaust per year would be generated at a facility. Based on the Tier III methodology described in the SCAQMD Risk Assessment Procedures for Rules 1401, 1401.1 and 212, Version 8.0 (March 2016), 0.025 pound of DPM per year would generate a health risk of 0.05 in one million, which is less than the significance threshold of an increased probability of 10 cancer cases in one million. Appendix C contains the Tier III risk assessment calculations.

SCR systems reduce NOx emissions by using ammonia, which is considered a TAC. Unreacted ammonia emissions generated from these units are referred to as ammonia slip. Ammonia slip is limited to five ppm through permit conditions for new SCR installations. Based on the November 2015 Final Program Environmental Analysis for Proposed Amended Regulation XX - RECLAIM<sup>16</sup> the concentration at a receptor located 25 meters from a stack would be much less

<sup>15</sup> CARB, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, September 2016. [https://www.arb.ca.gov/msprog/truck-idling/13ccr2485\\_09022016.pdf](https://www.arb.ca.gov/msprog/truck-idling/13ccr2485_09022016.pdf)

<sup>16</sup> SCAQMD, Final Program Environmental Assessment for Proposed Amended Regulation XX -RECLAIM, November 2015. <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2015/regxxfinalpeaplusappendices.pdf>

than one percent of the concentration at the release from the exit of the stack. Thus, the peak concentration of ammonia at a receptor located 25 meters from a stack is calculated by assuming a dispersion of one percent. While ammonia does not have an OEHHA approved cancer potency value, it does have non-carcinogenic chronic (200 microgram ( $\mu\text{g}$ ) per cubic meter) and acute (3,200  $\mu\text{g}$  per cubic meter) reference exposure levels (RELs). Table 4-1140 summarizes the calculated non-carcinogenic chronic and acute hazard indices for ammonia and compared these values to the respective significance thresholds; both were shown to be less than significant.

**Table 4-1140**  
**Health Risk from the Facilities Using Ammonia**

Ammonia Slip Concentration at the Exit of the Stack (ppm)	Peak Concentration at a Receptor 25 m from the Stack ( $\mu\text{g}/\text{m}^3$ )	Acute REL ( $\mu\text{g}/\text{m}^3$ )	Chronic REL ( $\mu\text{g}/\text{m}^3$ )	Acute Hazard Index	Chronic Hazard Index
5	35	3,200	200	<b>0.01</b>	<b>0.17</b>
<b>Significance Threshold</b>				<b>1.0</b>	<b>1.0</b>
<b>Exceed Significance?</b>				<b>NO</b>	<b>NO</b>

Even if multiple SCR systems are installed at one facility, the locations of all the stacks would generally not be situated in the same place within the affected facility's property. For a facility with space limitations and multiple SCR installations, the exhaust would likely be routed to one stack which would still be limited to five ppm ammonia slip. As such, even with multiple SCR system installations, the acute and chronic hazard indices would not be expected to exceed the significance threshold.

### PM Impacts from Ammonia Usage

In a SCR system the ammonia is injected into the flue gas stream and reacts with NO<sub>x</sub> to form elemental nitrogen (N<sub>2</sub>) and water in the cleaned exhaust gas. A small amount of unreacted ammonia (ammonia slip) may pass through. The SCAQMD through permit conditions limits ammonia slip to five ppm. In the November 2015 Final Program EA for NO<sub>x</sub> RECLAIM<sup>17</sup>, SCAQMD staff conducted a series of regional simulations to determine the impacts of reducing NO<sub>x</sub> while increasing the potential for creating ammonia slip due to increased use of ammonia needed for the operation of SCR controls. In the analysis, 14 tons per day of NO<sub>x</sub> emission reductions at RECLAIM facilities were estimated while ammonia slip emissions from the same facilities would increase by 1.63 tons per day. The simulations were run for the 2021 draft baseline emissions inventory to estimate what the impacts would be at full implementation of the 14 tons per day decrease in NO<sub>x</sub> emissions. The effect of decreasing 14 tons per day of NO<sub>x</sub> would result in a decrease of annual PM<sub>2.5</sub> of approximately 0.7  $\mu\text{g}$  per cubic meter. However, since the usage of ammonia is necessary to achieve the NO<sub>x</sub> emission reductions (via SCR systems technology), the ammonia usage would cause a concurrent increase in annual PM<sub>2.5</sub> of approximately 0.6  $\mu\text{g}$

<sup>17</sup> SCAQMD, Final Program Environmental Assessment for Proposed Amended Regulation XX -RECLAIM, November 2015. <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2015/regxxfinalpeaplusappendices.pdf>

per cubic meter. Thus, increasing the amount of ammonia slip would result in a net average 0.1 µg per cubic meter decrease in annual PM<sub>2.5</sub>. Further, the simulations showed that there would be no change in ozone levels compared to what would occur if there was no increase in ammonia slip. The overall decrease in annual PM<sub>2.5</sub> would occur provided that all 14 tons per day of NO<sub>x</sub> emissions would be reduced, which in turn would reduce PM<sub>2.5</sub> emissions overall, even if some PM<sub>2.5</sub> emissions are generated from ammonia slip. In summary, the impacts to regional PM<sub>2.5</sub> and ozone due to increased ammonia slip in these simulations was concluded to not create a significant adverse impact. Because this proposed project would have substantially less ammonia slip emissions than what was analyzed in the regional simulations. Thus, the impacts to regional PM<sub>2.5</sub> and ozone due to increased ammonia slip from the proposed project would not create a significant impact.

### **Odor Impacts**

For the installation of new SCR systems, under normal operating and permitted conditions, ammonia slip emissions will be limited to five ppm in accordance with BACT. Because exhaust gases are hot, any ammonia slip emissions from operating a SCR would be quite buoyant and would rapidly rise to higher altitudes without any possibility of lingering at ground level. The odor threshold of ammonia is one to five ppm, but because of the buoyancy of ammonia emissions combined with an average prevailing wind velocity of six miles per hour in the Basin, it is unlikely that ammonia slip emissions would exceed the odor threshold. In addition, during construction, there will be odors associated with the operation of diesel-fueled construction equipment used to install the SCR systems. All diesel-fueled vehicles that may be utilized during operation activities at the facilities will be required to have a low sulfur content (e.g. 15 ppm by weight or less in accordance with SCAQMD Rule 431.2 - Sulfur Content of Liquid Fuels. The use of diesel-fueled trucks as part of operation activities will not be allowed to idle longer than fifteen minutes onsite, so odors would not be expected. Further, because of the relatively small number of pieces of diesel-fueled equipment operating at any one affected site and because construction will only be short-term, odor impacts are not expected to be significant.

### **Greenhouse Gas Impacts**

Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of GHG emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities, appears to be closely associated with global warming. State law defines GHG to include the following: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>) (Health and Safety Code Section 38505(g)). The most common GHG that results from human activity is CO<sub>2</sub>, followed by CH<sub>4</sub> and N<sub>2</sub>O.

Traditionally, GHGs and other global warming pollutants are perceived as solely global in their impacts and that increasing emissions anywhere in the world contributes to climate change anywhere in the world. A study conducted on the health impacts of CO<sub>2</sub> “domes” that form over

urban areas cause increases in local temperatures and local criteria pollutants, which have adverse health effects<sup>18</sup>.

The analysis of GHGs is a different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, the significance thresholds are based on daily emissions because attainment or non-attainment is primarily 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 standards). Since the half-life of CO<sub>2</sub> is approximately 100 years, for example, the effects of GHGs occur over a longer term which means they affect the global climate over a relatively long-time frame. As a result, the SCAQMD's current position is to evaluate the effects of GHGs over a longer timeframe than a single day (i.e., annual emissions). GHG emissions are typically considered to be cumulative impacts because they contribute to global climate effects. GHG emission impacts from implementing the proposed project were calculated at the project-specific level during construction and operation. For example, installation of NO<sub>x</sub> control equipment has the potential to increase the use of electricity, fuel, and water and the generation of wastewater which will in turn increase CO<sub>2</sub> emissions.

The SCAQMD 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 metric tons of CO<sub>2</sub> equivalent emissions (MTCO<sub>2</sub>eq) 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. Tier 3 proposes a limit of 10,000 MTCO<sub>2</sub>eq per year as the incremental increase representing a significance threshold for projects where SCAQMD is the lead agency (SCAQMD, 2008, pg. 3-11). Tier 4 (performance standards) is yet to be developed. Tier 5 allows offsets 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.

As indicated in Chapter 3, combustion processes generate GHG emissions in addition to criteria pollutants. The following analysis mainly focuses on directly emitted CO<sub>2</sub> because this is the primary GHG pollutant emitted during the combustion process and is the GHG pollutant for which emission factors are most readily available. CO<sub>2</sub> emissions were estimated from CalEEMod for the SCR systems and EMFAC2014 for the ultra-low NO<sub>x</sub> burners.

Installation of NO<sub>x</sub> control equipment as part of implementing the proposed project is expected to generate construction-related CO<sub>2</sub> emissions. In addition, based on the type and size of equipment affected by the proposed project, CO<sub>2</sub> emissions from the operation of the NO<sub>x</sub> control equipment are likely to increase from current levels due to using electricity, fuel and water and generating more wastewater. The proposed project will also result in an increase of GHG operational

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<sup>18</sup> Jacobsen, Mark Z. “Enhancement of Local Air Pollution by Urban CO<sub>2</sub> Domes,” Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at: <http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html>

emissions produced from additional truck hauling and deliveries necessary to accommodate the additional solid waste generation and increased use of chemicals and supplies.

For the purposes of addressing the potential GHG impacts of the proposed project, the overall impacts of CO<sub>2</sub>e emissions from the project were estimated and evaluated from the earliest possible initial implementation of the proposed project with construction beginning in 2019. Once the proposed project is fully implemented, the potential NO<sub>x</sub> emission reductions would continue through the end of the useful life of the equipment. The analysis estimated CO<sub>2</sub>e emissions from all sources subject to the proposed project (construction and operation) from the beginning of the proposed project (2019) to the end of the project (January 1, 2022). The beginning of the proposed project was assumed to be no sooner than 2019, since installing NO<sub>x</sub> control equipment takes considerable advance planning and engineering. The incremental amount of NO<sub>x</sub> emission reductions that is expected to be achieved by installing 75 percent of the SCR systems (e.g., 42) by January 1, 2021 represents approximately 0.15 ton per day or 300 pounds per day. Similarly, the amount of NO<sub>x</sub> emission reductions that are expected to be achieved from installing 75 percent of the ultra-low NO<sub>x</sub> burners (e.g., 70) by January 1, 2021 represents approximately 0.05 ton per day or 100 pounds per day. Upon full implementation, the proposed project is expected to achieve 0.20 ton per day by January 1, 2021 and 0.23–0.27 ton per day of the NO<sub>x</sub> emission reduction, such that any installed or modified NO<sub>x</sub> controls could be constructed and operational by December 31, 2023. Thus, once construction is complete and the equipment is operational, CO<sub>2</sub>e emissions will remain constant.

Table 4-~~124~~ summarizes the GHG emissions during the construction of the ultra-low NO<sub>x</sub> burners. The peak total for ~~35~~ 80 units installing ultra-low NO<sub>x</sub> burners in one year is approximately five~~42~~ amortized metric tons per year (MT/year). The significance threshold is not exceeded for the construction of ultra-low NO<sub>x</sub> burners.

**Table 4-~~124~~**  
**GHG Emissions During Construction of Ultra-Low NO<sub>x</sub> Burners**

<b>Peak Construction by Year</b>	<b>CO<sub>2</sub></b> (lbs/day)	<b>CO<sub>2</sub></b> (lbs/yr)	<b>CO<sub>2</sub></b> (MT/yr)
<b>2019</b>			
Total for 1 unit in one day	329.54	n/a	n/a
Peak Daily Total for 10 units installed in one day	3295.39	n/a	n/a
Peak Total for <del>35</del> 80 units installed in one year	n/a	<u>11,533.85</u> <del>26363.08</del>	<u>5.23</u> <del>41.96</del>
Significance Threshold	n/a	n/a	10,000
<b>Exceed Significance?</b>	<b>n/a</b>	<b>n/a</b>	<b>NO</b>

As summarized in Table 4-~~1342~~, GHG emissions from the installation of SCR systems and ultra-low NO<sub>x</sub> burners were quantified by applying the same assumptions used to quantify the criteria pollutant emissions. The only exception is that the construction GHG emissions were amortized over a 30-year project life in accordance with the guidance provided in the Interim CEQA GHG

Significance Threshold for Stationary Sources, Rules and Plans<sup>19</sup> that was adopted by the SCAQMD Governing Board in December 2008.

Approximately ~~522~~ 75 amortized<sup>20</sup> MT/year of GHGs (as carbon dioxide equivalent emissions or CO<sub>2</sub>e) from the ~~55~~ 56 ~~eight~~ SCR systems and ~~five~~ 42 amortized MT/year from the ultra-low NO<sub>x</sub> burners would be generated from construction that may occur at the affected facilities in response to implementing the proposed project. Similarly, approximately ~~4340~~ nine MT/year of GHG emissions would be generated from operation-related activities (e.g., truck trips) that may occur at the facilities in response to implementing the proposed project. In total, ~~570~~ 567 96 MT/year of GHG emissions would be generated by construction and operation activities from the proposed project. The total amount of GHG emissions that may be generated from operation activities at all affected non-refinery facilities is less than the GHG significance threshold of 10,000 MT/year. Table 4-~~1312~~ summarizes the GHG emissions from PARs 1146 series and PR 1100.

**Table 4-~~1312~~**  
**GHG Emissions from the Proposed Project**

Activity	CO <sub>2</sub> e (MT/year <sup>a</sup> )
Construction <sup>b</sup>	<del>522</del> <u>75</u>
Operation	<del>4340</del> <u>9</u>
Total Project Emissions	<del>570</del> <u>567</u> <u>96</u>
Significance Threshold	10,000
<b>Exceed Significance?</b>	<b>No</b>

Note:

- 1 metric ton = 2,205 pounds
- GHGs from short-term construction activities are amortized over 30 years
- After the release of the Revised Draft SEA, the number of SCR systems to be installed has reduced from 56 to 55.

It is important to note that none of the affected facilities individually exceed the industrial GHG significance threshold of 10,000 MT/day. As shown in Tables 4-~~1211~~ and 4-~~1312~~, the proposed project is expected to generate construction-related CO<sub>2</sub> emissions, and ~~specifically as shown~~ in Table 4-~~1312~~, the operational phase of the proposed project is also expected to generate additional GHG emissions. When added together, however, the GHGs do not exceed the significance threshold; thus, no adverse significant GHG cumulative impacts are expected from the implementing the proposed project.

<sup>19</sup> Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgattachmente.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf?sfvrsn=2)

<sup>20</sup> To amortize GHGs from temporary construction activities over a 30-year period (*est. life of the project/ equipment*), the amount of CO<sub>2</sub>e emissions during construction are calculated and then divided by 30.

## HAZARDS AND HAZARDOUS MATERIALS IMPACTS

### Significance Criteria

The impacts associated with hazards and hazardous materials 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.

### PROJECT-SPECIFIC IMPACTS - HAZARD ANALYSIS:

The hazards and hazardous materials analysis for the proposed project focuses on the transport, storage, and handling of aqueous ammonia used in the SCR system process. To minimize the hazards associated with using aqueous ammonia, it is the policy of the SCAQMD to require the use of 19 percent by volume aqueous ammonia in air pollution control equipment for the following reasons: 1) 19 percent aqueous ammonia does not travel as a dense gas like anhydrous ammonia; and 2) 19 percent aqueous ammonia is not on any acutely hazardous materials lists unlike anhydrous ammonia or aqueous ammonia at higher percentages. As such, SCAQMD staff does not issue permits for the use of anhydrous ammonia or aqueous ammonia in concentrations higher than 19 percent by volume for use in SCR systems. As a result, this analysis focuses on the use of 19 percent by volume aqueous ammonia. The only exception to this assumption is the scenario analyzed under the “Ammonia Gas Release” subsection.

~~Some~~ Two of the affected facilities are located within 1,000 feet or one-quarter mile of a sensitive receptor, including individuals at hospitals, nursing facilities, daycare centers, schools, and elderly intensive care facilities, as well as residential and off-site occupational areas. Therefore, the potential for adversely significant impacts from hazardous emissions onsite or the handling of acutely hazardous materials, substances and wastes on sensitive receptors is expected from the proposed project as further explained in the following discussion.

The facilities affected by the proposed project are expected to be located within urbanized industrial or commercial/mixed use areas. Some are located within two miles of an airport as noted in Appendix D. Some sites affected by the proposed project may also be identified on lists compiled by the California DTSC per Government Code Section 65962.5. They are also identified in Appendix D. The proposed project is not expected to interfere with existing hazardous waste management programs since facilities handling hazardous waste would be expected to continue to manage any and all hazardous materials and hazardous waste, in accordance with applicable federal, state, and local rules and regulations.

The analysis of hazard impacts can rely on information from past similar projects (i.e., installing new, or retrofitting existing equipment with an SCR system to comply with SCAQMD rules and regulations and installation of associated ammonia storage tanks) where the SCAQMD was the

lead agency responsible for preparing an environmental analysis pursuant to CEQA. To the extent that future projects to install SCR and associated ammonia storage equipment conform to the ammonia hazard analysis in this SEA, no further hazard analysis may be necessary. If site-specific characteristics are involved with future SCR projects that are outside the scope of this analysis, further ammonia hazards analysis may be warranted.

The onsite storage and handling of the ammonia creates the possibility of an accidental spill and release of aqueous ammonia, which could evaporate and present a potential offsite public and sensitive receptor exposure. Since ammonia is not typically considered to be a flammable compound, other types of heat-related hazard impacts such as fires, explosions, boiling liquid – expanding vapor explosion (BLEVE) are not expected to occur and, therefore, will not be evaluated as part of this hazards analysis. To further evaluate the potential for significant adverse environmental impacts due to an accidental release of aqueous ammonia, various scenarios were evaluated that could occur during the onsite storage, transportation, and transfer of ammonia. These scenarios and their consequences are discussed in detail below.

### **Hazard Safety Regulations**

In spite of implementing modifications to comply with the proposed project, operators of each affected facility must comply or continue to comply with various regulations, including OSHA regulations (29 CFR Part 1910) that require the preparation of a fire prevention plan, and 20 CFR Part 1910 and CCR Title 8 that require prevention programs to protect workers who handle toxic, flammable, reactive, or explosive materials. In addition, Section 112 (r) of the Federal Clean Air Act Amendments of 1990 [42 USC 7401 et. Seq.] and Article 2, Chapter 6.95 of the California Health and Safety Code require facilities that handle listed regulated substances to develop RMPs to prevent accidental releases of these substances. If any of the affected facilities has already prepared an RMP, it may need to be revised to incorporate the changes associated with the proposed project. The Hazardous Materials Transportation Act is the federal legislation that regulates transportation of hazardous materials.

Because operators of affected facilities are required to comply with all applicable design codes and regulations, conform to National Fire Protection Association standards, and conform to policies and procedures concerning leak detection containment and fire protection, no significant adverse compliance impacts are expected.

### **Impacts on Water Quality**

A spill of any hazardous material such as aqueous ammonia that is used and stored at any of the affected facilities could occur under upset conditions such as an earthquake, tank rupture, or tank overflow. Spills could also occur from corrosion of containers, piping and process equipment; and leaks from seals or gaskets at pumps and flanges. A major earthquake would be a potential cause of a large spill. Other causes could include human or mechanical error. Construction of the vessels and foundations in accordance with the Uniform Building Code Zone 4 requirements helps structures to resist major earthquakes without collapse, but may result in some structural and non-structural damage following a major earthquake. Any facility with storage tanks on-site are currently required to have emergency spill containment equipment and would implement spill control measures in the event of an earthquake. Storage tanks typically have secondary containment such as a berm which would be capable of containing 110 percent of the contents of the storage tanks. Therefore, should a rupture occur, the contents of the tank would be collected within the containment system and pumped to an appropriate storage tank.

Spills at the affected facilities would generally be collected within containment areas. Large spills outside of containment areas at the affected facilities are expected to be captured by the process water system where they could be collected and controlled. Spilled material would be collected and pumped to an appropriate tank or sent off-site if the materials cannot be used on-site. Because of the containment system design, spills are not expected to migrate from the spill site and as such, potential adverse water quality hazard impacts are considered to be less than significant.

### **Transportation Release**

It is expected that the affected facilities utilizing SCR ~~systems technology~~ will receive ammonia from a local ammonia supplier located in the greater Los Angeles area. Deliveries of aqueous ammonia would be made by tanker truck via public roads. The maximum capacity of an ammonia tanker truck is approximately 7,000 gallons. The projections for future ammonia use and storage as calculated relative to the quantity of NOx emission reductions needed to meet the NOx emission limits for PARs 1146 series and PR 1100 are shown in Appendix E. The “worst-case” assumption for delivery frequency from a supplier would be to deliver two ammonia tanker trucks on the same day to fill one 10,000-gallon tank of ammonia at a facility (Facility 6A). The “worst-case” for PARs 1146 series and PR 1100 involve a lower number of deliveries of ammonia on any given day (Scenario 1) or a lesser amount of ammonia (Scenario 2) than what is analyzed in the following Transportation Release Scenarios. For both scenarios, the potential impacts from transportation release are expected to be less than significant. Regulations for the transport of hazardous materials by public highway are described in 49 CFR §§ 173 and 177.

### **Transportation Release Scenario 1:**

To evaluate the hazard impacts from an accidental release of ammonia during ammonia transport, this analysis uses as a surrogate the project at the ConocoPhillips Carson Refinery in which SCR system was installed on boiler #10 and an associated 10,000 gallon ammonia storage tank was constructed (Final Negative Declaration for: ConocoPhillips Los Angeles Refinery Carson Plant SCR Unit Project, SCH. No. 2004011066, SCAQMD 2004). This project required approximately six additional ammonia truck transport trips per month. Although truck transport of aqueous ammonia and other hazardous materials is regulated for safety by the U.S. Department of Transportation, there is a possibility that a tanker truck could be involved in an accident that would cause its contents to spill. The factors that enter into accident statistics include distance traveled and type of vehicle or transportation system. Factors affecting automobiles and truck transportation accidents include the type of roadway, presence of road hazards, vehicle type, maintenance and physical condition, driver training, and weather. A common reference frequently used in measuring risk of an accident is the number of accidents per million miles traveled. Complicating the assessment of risk is the fact that some accidents can cause significant damage without injury or fatality.

Every time hazardous materials are moved from the site of generation, opportunities are provided for an accidental (unintentional) release. A study conducted by the EPA indicates that the expected number of hazardous materials spills per mile shipped ranges from one in 100 million to one in one million, depending on the type of road and transport vehicle used. The U.S. EPA analyzed accident and traffic volume data from New Jersey, California, and Texas, using the Resource Conservation and Recovery Act Risk/Cost Analysis Model and calculated the accident involvement rates presented in Table 4-1413. This information was summarized from the Los Angeles County Hazardous Waste Management Plan (Los Angeles County, 1988).

In the study completed by the U.S. EPA, cylinders, cans, glass, plastic, fiber boxes, tanks, metal drum/parts, and open metal containers were identified as usual container types. For each container type, the expected fractional release en route was calculated. The study concluded that the release rate for tank trucks is much lower than for any other container type (Los Angeles County, 1988).

**Table 4-143**  
**Truck Accident Rates for Cargo on Highways**

Highway Type	Accidents Per 1,000,000 miles
Interstate	0.13
U.S. and State Highways	0.45
Urban Roadways	0.73
Composite*	0.28

Source: Environmental Protection Agency, 1984.

\*Note: Average number for transport on interstates, highways, and urban roadways.

The accident rates developed based on transportation in California were used to predict the accident rate associated with trucks transporting aqueous ammonia to the facility. Assuming an average truck accident rate of 0.28 accidents per million miles traveled (Los Angeles County, 1988), the estimated accident rate associated with transporting aqueous ammonia for the ConocoPhillips project is 0.00101, or about one accident every 992 years.

The actual occurrence of an accidental release of a hazardous material cannot be predicted. The location of an accident or whether sensitive populations would be present in the immediate vicinity also cannot be identified. In general, the shortest and most direct route that takes the least amount of time would have the least risk of an accident. Hazardous material transporters do not routinely avoid populated areas along their routes, although they generally use approved truck routes that take population densities and sensitive populations into account.

The hazards associated with the transport of regulated hazardous materials (CCR Title 19, Division 2, Chapter 4.5 or the California Accidental Release Prevention Program requirements), including aqueous ammonia, would include the potential exposure of numerous individuals in the event of an accident that would lead to a spill. Factors such as amount transported, wind speed, ambient temperatures, route traveled, distance to sensitive receptors are considered when determining the consequence of a hazardous material spill.

In the unlikely event that the tanker truck would rupture and release the entire 7,000 gallons of aqueous ammonia, the ammonia solution would have to pool and spread out over a flat surface in order to create sufficient evaporation to produce a significant vapor cloud. For a road accident, the roads are usually graded and channeled to prevent water accumulation and a spill would be channeled to a low spot or drainage system, which would limit the surface area of the spill and the subsequent evaporative emissions. Additionally, the roadside surfaces may not be paved and may absorb some of the spill. In a typical release scenario, because of the characteristics of most roadways, the pooling effect on an impervious surface would not typically occur. As a result, the spilled ammonia would not be expected to evaporate into a toxic cloud at concentrations that could significantly adversely affect residences or other sensitive receptors in the area of the spill.

Based on the low probability of an ammonia tanker truck accident with a major release and the potential for exposure to low concentrations, if any, the conclusion of this analysis is that potential impacts due to accidental release of ammonia during this transportation scenario are less than significant.

### **Transportation Release Scenario 2:**

This transportation release scenario uses as a surrogate analysis a project at the BP Carson refinery in which SCR system was retrofitted onto an existing fluid catalytic cracking unit (FCCU) and an associated 12,660 gallon ammonia storage tank was constructed (Final Negative Declaration for: BP Carson Refinery Fluid Catalytic Cracking Unit NO<sub>x</sub> Reduction Project: SCH No. 2002021068; SCAQMD, 2002). The following summarizes the ammonia transport analysis for the BP Carson Refinery FCCU project.

The temperature of the ammonia released was estimated as follows. For a delivery truck traveling from a non-desert area and taking into consideration the convective heat transfer from the tanker as it travels at highway speeds, the bulk temperature should be typical of the originating location (July average temperatures for Los Angeles, with no convective heat losses, would typically be 69 degrees Fahrenheit (°F)). To be conservative for purpose of this analysis, the tanker bulk temperature was assumed to be 77 °F.

The proposed project was estimated to require approximately 35 tanker truck deliveries of aqueous ammonia during the first year of operation (two deliveries after construction to fill the tank plus one delivery every 11 days to replenish the tank during operations). Truck accident rates are approximately one in 8.7-million miles (ENSR, 1994). Based upon the projected 35 ammonia deliveries the first year, and a distance of 30 miles from the supplier to the facility, the number of truck-miles associated with the transport of aqueous ammonia is 1,050 truck-miles per year. The expected number of truck accidents associated with the proposed BP Carson project is therefore approximately once every 8,300 years. The likelihood of any release in a transportation accident is 1 in 10, and that of a large release in a transportation accident is 1 in 40 (ENSR, 1994). The likelihood of a major transportation release after the project is constructed is therefore approximately once per 330,000 years (8,300 times 40). The probability of a transportation accident that would pose a significant risk to the public is therefore insignificant.

In the unlikely event that a major release occurred during a tanker truck accident, the ammonia solution would have to pool and spread out over a flat surface in order to create sufficient evaporation to produce a significant vapor cloud. Roads are usually graded and channeled to prevent water accumulation, and a spill would be channeled to a low spot or drainage system, which would limit the surface area of the spill and the subsequent toxic emissions. Additionally, the roadside surfaces may not be paved and may absorb some of the spill. Without this pooling effect on an impervious surface, the spilled ammonia would not evaporate into a toxic cloud and impact residences or other sensitive receptors in the area of the spill. Therefore, potential impacts due to accidental release of ammonia during this transportation scenario are less than significant.

### **Ammonia Tank Rupture**

To analyze the effects of aqueous ammonia as a result of an accidental release due to tank rupture, a Consequence Analysis using the EPA RMP\*Comp (Version 1.07) is typically performed. SCAQMD staff estimated that the largest aqueous ammonia tank that would be installed as a result

of implementing PARs 1146 series would be 10,000 gallons at one facility. The affected facilities were estimated to need anywhere from 250 to ~~10,000~~2,000-gallon tanks. ~~Two~~Twenty-eight facilities ~~would install a SCR system and thus need an ammonia storage tank (Facility A and E)~~ are located within a ¼-mile of sensitive receptors. Of the 32 RECLAIM facilities that would install a SCR system, one facility Facility A would require the installation of ~~four~~three SCR systems, four facilities would require the installation of three SCR systems, 13 facilities would require the installation of two SCR systems per facility, and the rest would only install one SCR system per facility. and Facility E would require two SCR systems. It was assumed that these facilities would each store one large aqueous ammonia storage tank to service all of their SCR systems.

**Table 4-15**  
**Number of SCR Systems and Affected Facilities**

	<u>Number of SCR Systems to be Installed at Each Facility</u>	<u>Number of Affected Facilities</u>
	<u>4</u>	<u>1</u>
	<u>3</u>	<u>4</u>
	<u>2</u>	<u>13</u>
	<u>1</u>	<u>14</u>
<b><u>Total</u></b>	<b><u>56*</u></b>	<b><u>32</u></b>

\* After the release of the Revised Draft SEA, the number of SCR systems to be installed has reduced from 56 to 55.

Although it is SCAQMD policy to reduce potential hazards associated with ammonia by requiring a permit condition that limits the aqueous ammonia concentration to 19 percent, the CalARP model only has the capability of evaluating the hazard potential of 20 percent aqueous ammonia. Therefore, the potential adverse impacts from aqueous ammonia were evaluated based on the 20 percent aqueous ammonia. Further, since it is assumed that an aqueous ammonia tank servicing one or more SCR systems would need to be relatively near to the existing equipment, the toxic endpoint for aqueous ammonia from a catastrophic failure of a storage tank would significantly adversely affect the sensitive receptors within 0.1 mile of the existing equipment.

A hazard analysis is dependent on knowing the exact location of the hazard within the site (e.g., location of the ammonia storage tank(s)), meteorological conditions, location of the receptor, et cetera, a site-specific hazard analysis is difficult to conduct without this information. Since SCAQMD staff does not currently know the exact location of the ammonia storage tanks that would be installed in the future, to estimate a worst-case analysis, the following assumptions were made for Facility A and E:

- Location of tanks: Within same building as existing boilers; building located at edge of property line, near (i.e., less than ¼-mile) existing residences or sensitive receptors
- ~~Quantity Released of Aqueous Ammonia: 10,000 gallons at Facility A; and 2,000 gallons at Facility E~~
- Liquid Temperature: 77 °F
- Mitigation Measures: None

Appendix E shows the estimated distance to the toxic endpoint for each facility using the estimated tank size needed for enough aqueous ammonia to reduce the facility's emissions to the NOx limits. 1) Facility A is 0.6 miles or 3,168 feet; and 2) Facility E is 0.2 miles or 1,056 feet. Since the Thirteen RECLAIM facilities have sensitive receptors that are located directly across or adjacent to the facilities within the toxic endpoint distance; thus, the hazards and hazardous materials impacts due to tank rupture will be potentially significant. In addition, if mitigation measures (e.g., such as a secondary containment (dikes and/or berms), installation of grating-covered trench around the perimeter, and tertiary containment) an enclosure were to occur, the toxic endpoint distance for both Facilities A and E some facilities would be less than 0.1 miles or 528 feet and the hazards and hazardous materials impacts would continue to be potentially significant due to the vicinity of the sensitive receptors relative to the location of the affected equipment. Therefore, the proposed project has the potential to generate significant adverse hazard impacts as a result of the potential for accidental releases of aqueous ammonia.

If significant adverse environmental impacts are identified in a CEQA document, the CEQA document shall describe feasible measures that could minimize the impacts of the proposed project.

**PROJECT-SPECIFIC IMPACTS – CONCLUSION:** Based on the preceding description of hazards and hazardous materials impacts, the proposed project is not expected to generate significant adverse impacts related to the transport of ammonia. However, because some of the affected facilities (~~Facilities A and E~~) are located within ¼-mile of a sensitive receptor, implementation of the proposed project is expected to generate significant adverse impacts related to the potential for a rupture of an aqueous ammonia storage tank. The overall conclusion is that hazards and hazardous materials impacts for the proposed project are significant.

**PROJECT-SPECIFIC MITIGATION MEASURES:**

Facilities retrofitting units with SCR systems and the accompanying ammonia storage tank will need to submit permit applications to modify their equipment. Thus, SCAQMD staff will conduct a CEQA evaluation of the facility-specific project to determine if the project is covered by the analysis in this ~~Final Revised Draft~~ SEA. If significant adverse environmental impacts are identified in a CEQA document, the CEQA document shall describe feasible measures that could minimize the significant adverse impacts (CEQA Guidelines Section 15126.4). Therefore, feasible mitigation measures to reduce the risk of an offsite consequence to nearby sensitive receptors are necessary.

The following mitigation measures are required for any facility whose operators choose to install a new aqueous ammonia storage tank and the offsite consequence analysis indicates that sensitive receptors will be located within the toxic endpoint distance. In addition, these mitigation measures will be included in a mitigation monitoring and reporting plan as part of issuing SCAQMD permits to construct for the facility-specific project. These mitigation measures will be enforceable by SCAQMD personnel.

HZ-1 Require the use of aqueous ammonia at concentrations less than ~~20~~ or equal to 19 percent by volume for all facilities regulated by Rules 1146, 1146.1, or 1146.2.

- HZ-2 Install safety devices, including but not limited to: continuous tank level monitors (e.g., high and low level), temperature and pressure monitors, leak monitoring and detection system, alarms, check valves, and emergency block valves.
- HZ-3 Install secondary containment such as dikes and/or berms to capture 110 percent or more of the storage tank volume in the event of a spill.
- HZ-4 Install a grating-covered trench around the perimeter of the delivery bay to passively contain potential spills from the tanker truck during the transfer of aqueous ammonia from the delivery truck to the storage tank.
- HZ-5 Equip the truck loading/unloading area with an underground gravity drain that flows to a large on-site retention basin to provide sufficient ammonia dilution to the extent that no hazards impact is possible in the event of an accidental release during transfer of aqueous ammonia.
- HZ-6 Install tertiary containment that is capable of evacuating 110 percent or more of the storage tank volume from the secondary containment area.

Implementing Mitigation Measures HZ-1 through HZ-6 would be expected to prevent a catastrophic release of ammonia from leaving the facility property and exposing offsite sensitive receptors; however, as an abundance of caution, due to the anticipated number of affected facilities and without detailed information specific to each facility's layout and plan of action for compliance, the overall conclusion is that hazards and hazardous materials impacts for the proposed project are significant.

~~The following mitigation measures are recommended.~~

~~It is SCAQMD policy to require the use of 19 percent aqueous ammonia instead of a higher aqueous ammonia concentration or anhydrous ammonia to reduce adverse impacts from SCR units.~~

~~Install secondary containment (e.g., berms), valves that fail shut, emergency release valves and barriers around the aqueous ammonia storage tanks. These design measures can be used to prevent physical damage to storage tanks or limit the release of aqueous ammonia storage tanks. These techniques are also typically required by local fire departments.~~

~~Conduct integrity testing of aqueous ammonia storage tanks to assist in preventing failure from structural problems.~~

~~Build a containment system to be used during off-loading operations.~~

**REMAINING IMPACTS:** Although the aforementioned mitigation measures, if employed, would reduce the hazards and hazardous materials impacts from aqueous ammonia, they are not expected to reduce impacts to less than significant. Therefore, the remaining hazardous and hazardous materials impacts from exposure to the ERPG 2 level of 0.14 mg/l of aqueous ammonia due to tank rupture are considered to be significant after mitigation.

**CUMULATIVE IMPACTS:** As noted in previous discussions, the accidental release of aqueous ammonia during transport is not expected to result in exposures to ammonia exceeding the ERPG 2 level. However, because the sensitive receptors are closer than 0.1 mile ~~to Facilities A and E~~ for several facilities, an accidental release of ammonia onsite, either during unloading from a truck or

an accidental release in the event of storage tank failure is considered significant. Mitigation measures were identified, but it was concluded that they could not reduce hazard impacts from project-specific releases of ammonia to less than significant.

Adverse impacts from an accidental release of aqueous ammonia are localized impacts (i.e., the impacts are isolated to the area around the affected facility). ~~There are two~~ ~~None~~ of the affected facilities that ~~have been identified as potentially~~ ~~are~~ installing SCR systems and ammonia storage tanks in accordance with the proposed project are located within one mile of each other. The worst-case aqueous ammonia toxic endpoint is less than or equal to 0.1 mile, ~~for Facilities A and E.~~ Since ~~two~~ ~~none~~ of the facilities that would install SCR system(s) are within one mile of each other, ~~some~~ ~~no~~ receptors ~~would~~ be affected by accidents at multiple facilities depending on the location of the accident. However, to the extent that affected facilities are located near other facilities that have hazardous materials risks, the cumulative adverse hazard impacts from this project could contribute to existing nearby hazard risks from other projects. Therefore, cumulative hazard risks from implementing the proposed project are considered to be significant.

**CUMULATIVE IMPACT MITIGATION:** Because the project-specific hazards and hazardous materials impacts are considered to be cumulatively considerable for ammonia storage, cumulative mitigation measures for hazards and hazardous materials impacts for ammonia storage are required. However, since no mitigation measures have been identified over and above the extensive safety regulations that currently apply to the storage of ammonia, no feasible cumulative mitigation measures for ammonia storage have been identified that would reduce cumulative impacts from hazards and hazardous materials to less than significant. Therefore, cumulative hazards and hazardous materials impacts remain significant; however, because no additional mitigation measures were identified no cumulative mitigation measures for hazards and hazardous materials impacts for ammonia use and storage are required.

## CUMULATIVE ENVIRONMENTAL IMPACTS

CEQA Guidelines Section 15130(a) requires a discussion of cumulative impacts if a project may have an effect that is potentially cumulatively considerable, as defined in CEQA Guidelines Section 15065(a)(3). The preceding analysis concluded the cumulative secondary impacts associated with the NO<sub>x</sub> emissions limits and compliance dates as contained in PARs 1146 series and PR 1100 will have the potential for creating significant adverse air quality impacts during construction for NO<sub>x</sub>, because the SCAQMD's significance threshold for NO<sub>x</sub> will be exceeded (see Tables 4-4 and 4-7~~6~~). It should be noted, however, that even though the NO<sub>x</sub> emissions during construction have been shown to exceed the significance threshold, because the proposed project reduces NO<sub>x</sub> emissions at greater levels than the increases during construction, the net effect of the proposed project will result in overall emission reductions of NO<sub>x</sub>. In addition, the construction impacts will be temporary (for approximately one year and the overall NO<sub>x</sub> emissions will be reduced during the construction and operation overlap. To achieve NO<sub>x</sub> emission reductions in the proposed project, SCR systems would need to be constructed and ultra-low NO<sub>x</sub> burners would need to be installed. Further, because of the proposed project's overall NO<sub>x</sub> emission reductions, the temporary emission increases in NO<sub>x</sub> during construction will not interfere with the air quality progress and attainment demonstration projected in the 2016 AQMP. Based on regional modeling analyses performed for the 2016 AQMP, implementing control measures contained in the 2016 AQMP, in addition to the air quality benefits of the existing rules, is anticipated to bring the District into attainment with all national and most state ambient air quality standards. In particular, the federal annual PM<sub>2.5</sub> standards are predicted to be achieved

in 2023 with implementation of the proposed ozone strategy and the California annual PM<sub>2.5</sub> standard will be achieved in 2025. The 2016 AQMP is also expected to achieve the ozone 8-hour standard by 2023.

Per CEQA Guidelines Section 15130(e), previously approved land use documents, including, but not limited to, general plans, specific plans, regional transportation plans, plans for the reduction of greenhouse gas emissions, and local coastal plans may be used in a cumulative impact analysis. A pertinent discussion of cumulative impacts contained in one or more previously certified EIRs may be incorporated by reference pursuant to the provisions for tiering and program EIRs. No further cumulative impacts analysis is required when a project is consistent with a general, specific, master, or comparable programmatic plan where the lead agency determines that the regional or areawide cumulative impacts of the proposed project have already been adequately addressed, as defined in CEQA Guidelines Section 15152(f), in a certified EIR for that plan. Further, if a cumulative impact was adequately addressed in a prior EIR for a community plan, zoning action, or general plan, and the project is consistent with that plan or action, then an EIR for such a project should not further analyze that cumulative impact, as provided in CEQA Guidelines Section 15183(j).

As a result, even if the proposed project would have significant increases in NO<sub>x</sub> emissions during construction, full implementation of the proposed project would achieve NO<sub>x</sub> emission reductions capable of offsetting the construction NO<sub>x</sub> emissions. Also, implementation of other control measures in the 2016 AQMP will provide human health benefits by reducing population exposures to existing NO<sub>x</sub> emissions. Therefore, cumulative air quality impacts from the proposed project, previous amendments, and all other AQMP control measures considered together, are not expected to be significant because implementation of all 2016 AQMP control measures is expected to result in net emission reductions and overall air quality improvement. This determination is consistent with the conclusion in the 2016 AQMP Final Program EIR that cumulative air quality impacts from all AQMP control measures are not expected to be significant<sup>21</sup>. Therefore, there will be no significant cumulative adverse operational air quality impacts from implementing the proposed project.

In addition, there is a potential for creating significant adverse hazards and hazardous materials impacts from the catastrophic failure of an ammonia storage tank, which has been based on the toxic endpoint (using EPA RMP\*Comp) and the proximity of some facilities A and E to nearby sensitive receptors. Because the project-specific hazards and hazardous materials impacts for ammonia deliveries would potentially create significant impacts, they are considered to be cumulatively considerable pursuant to CEQA Guidelines Section 15064 (h)(1) and therefore, generate significant adverse cumulative hazards and hazardous materials impacts. However, for ammonia use and storage, the project-specific hazards and hazardous materials impacts do not exceed any applicable significance thresholds; thus, they are not considered to be cumulatively considerable pursuant to CEQA Guidelines Section 15064 (h)(1) and therefore, do not generate significant adverse cumulative hazards and hazardous materials impacts.

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<sup>21</sup> SCAQMD, Final Program Environmental Impact Report for the 2016 Air Quality Management Plan, March 2017; see Attachment D, Chapter 5, pp. 5-7 to 5-9. <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2017/2017-mar3-035.pdf>.

## **POTENTIAL ENVIRONMENTAL IMPACTS FOUND NOT TO BE SIGNIFICANT**

Because this SEA is a subsequent CEQA document to the September 2008 Final EAs for Rules 1146 and 1146.1, the May 2006 Final EA for Rule 1146.2, and the March 2017 Final Program EIR for the 2016 AQMP, this SEA relies on the conclusions reached in these documents as evidence for environmental areas where impacts were found not to be significant. All of these previous CEQA documents reviewed approximately 17 environmental topic areas and analyzed whether the respective projects would create potentially significant adverse impacts. While the analyses in the September 2008 Final EA for 1146.1 and May 2006 Final EA for Rule 1146.2 identified no significant adverse environmental impacts for any environmental topic area, the analysis in the September 2008 Final EA for Rule 1146 identified two environmental topic areas as having significant adverse environmental impacts: 1) air quality; and 2) hazards and hazardous materials.

Also, the analysis in the March 2017 Final Program EIR for the 2016 AQMP concluded that significant and unavoidable adverse environmental impacts from the project are expected to occur after implementing mitigation measures for the following environmental topic areas: 1) aesthetics from increased glare and from the construction and operation of catenary lines and use of bonnet technology for ships; 2) construction air quality and GHGs; 3) energy (due to increased electricity demand); 4) hazards and hazardous materials due to: (a) increased flammability of solvents; (b) storage, accidental release and transportation of ammonia; (c) storage and transportation of liquefied natural gas (LNG); and (d) proximity to schools; 5) hydrology (water demand); 6) construction noise and vibration; 7) solid construction waste and operational waste from vehicle and equipment scrapping; and, 8) transportation and traffic during construction and during operation on roadways with catenary lines and at the harbors. It is important to note, however, that for these environmental topic areas, not all of the conclusions of significance are applicable to this currently proposed project, PARs 1146 series and PR 1100. Table 4-1614 summarizes the eight significant and unavoidable adverse environmental impacts identified in the March 2017 Final Program EIR and identifies which apply to the proposed project, PARs 1146 series and PR 1100.

**Table 4-1614****Applicability of Significant Impacts in March 2017 Final Program EIR to Proposed Project**

<b>Conclusion of Significant Impacts in March 2017 Final Program EIR</b>	<b>Applicable to/Significant for the Proposed Project?</b>	<b>Explanation</b>
Aesthetics from increased glare and from the construction and operation of catenary lines and use of bonnet technology for ships	No	Neither catenary lines nor the use of bonnet technology for ships are applicable to boilers, process heaters, steam generators and water heaters and the corresponding NOx emission controls (e.g., ultra-low NOx burners and SCR <del>systems technology</del> ). Therefore, this conclusion is not applicable to the proposed project.
Construction air quality and GHGs	Yes	This conclusion is applicable to the proposed project. The impacts for these environmental topics areas are analyzed in this SEA (see pp. 4-6 to 4-17 for construction air quality and pp. 4-22 to 4-25 for GHGs).
Energy due to increased electricity demand	No	While the use of SCR <del>systems technology</del> for <del>55 eight</del> boilers will require some electricity to operate, the conclusions in the September 2008 Final EAs for Rules 1146 and 1146.1 have demonstrated that the amount of electricity that would be needed to operate SCR <del>systems technology</del> would be less than significant. Similarly, the conclusions in the September 2008 Final EAs for Rules 1146 and 1146.1, and the March 2006 Final EA for Rule 1146.2 have also demonstrated that the amount of electricity that would be needed to replace burners with ultra-low NOx burners would also be less than significant.
Hazards and hazardous materials due the increased flammability of solvents	No	Boilers, process heaters, steam generators and water heaters, and the corresponding NOx emission controls (e.g., ultra-low NOx burners and SCR <del>systems technology</del> ) do not utilize solvents for their operation. Therefore, this conclusion is not applicable to the proposed project.
Hazards and hazardous materials due to the storage, accidental release and transportation of ammonia	Yes	This conclusion is applicable to the proposed project because SCR <del>systems technology</del> utilize ammonia. The impacts for this environmental topic area are analyzed in this SEA (see pp. 4-26 to 4-34). <u>The conclusion of significance in this SEA was made for the storage and use of aqueous ammonia, but not for the transportation of aqueous ammonia.</u>
Hazards and hazardous materials due to the storage and transportation of LNG	No	Boilers, process heaters, steam generators and water heaters, and the corresponding NOx emission controls (e.g., ultra-low NOx burners and SCR <del>systems</del> ) do not utilize LNG for their operation. Therefore, this conclusion is not applicable to the proposed project.

**Table 4-1614 (concluded)**  
**Applicability of Significant Impacts in March 2017 Final Program EIR to Proposed Project**

Conclusion of Significant Impacts in March 2017 Final Program EIR	Applicable to/Significant for the Proposed Project?	Explanation
Hazards and hazardous materials due to proximity to schools	Yes	This conclusion is applicable to the proposed project because some of the affected facilities that will install SCR <u>systems technology</u> or ultra-low NOx burners are near schools. The impacts for this environmental topic area are analyzed in this SEA (see pp. 4-26 to 4-34)
Hydrology (water demand)	No	Boilers, process heaters, steam generators and water heaters, and the corresponding NOx emission controls (e.g., ultra-low NOx burners and SCR <u>systems technology</u> ) do not utilize water for their operation. Therefore, this conclusion is not applicable to the proposed project.
Construction noise and vibration	No	While the construction activities associated with installing SCR <u>systems technology</u> for <del>55-eight</del> boilers may create some noise and vibration, the conclusions in the September 2008 Final EAs for Rules 1146 and 1146.1 have demonstrated that the amount of electricity that would be needed to operate SCR <u>systems</u> would be less than significant. Similarly, the conclusions in the September 2008 Final EAs for Rules 1146 and 1146.1, and the March 2006 Final EA for Rule 1146.2 have also demonstrated that the construction noise and vibration that may occur while replacing burners with ultra-low NOx burners would also be less than significant.
Solid construction waste and operational waste from vehicle and equipment scrapping	No	Vehicle scrapping is not applicable to boilers, process heaters, steam generators and water heaters and the corresponding NOx emission controls (e.g., ultra-low NOx burners and SCR <u>systems technology</u> ). Therefore, this conclusion is not applicable to the proposed project.
Transportation and traffic during construction and during operation on roadways with catenary lines and at the harbors	No	Catenary lines and the associated transportation and traffic impacts on roadways and at the harbors are applicable to boilers, process heaters, steam generators and water heaters and the corresponding NOx emission controls (e.g., ultra-low NOx burners and SCR <u>systems technology</u> ). Therefore, this conclusion is not applicable to the proposed project.

PAR 1146 is expected to have: 1) significant effects that were not discussed in the previous September 2008 Final EA for Rule 1146 and March 2017 Final Program EIR for the 2016 AQMP (CEQA Guidelines Section 15162(a)(3)(A)); and 2) significant effects that were previously examined that will be substantially more severe than what was discussed in the September 2008 Final EA for Rule 1146 and the March 2017 Final Program EIR for the 2016 AQMP (CEQA Guidelines Section 15162(a)(3)(B)). Similarly, PAR 1146.1 is also expected to have significant effects that were not discussed in the previous September 2008 Final EA for Rule 1146.1 and March 2017 Final Program EIR for the 2016 AQMP (CEQA Guidelines Section 15162(a)(3)(A)). However, PAR 1146.2 is not expected to create new significant effects that were not discussed in the previous May 2006 Final EA for Rule 1146.2 and the March 2017 Final Program EIR for the 2016 AQMP.

By preparing a SEA for the proposed project, since the topics of air quality and hazards and hazardous materials are the only environmental topic areas that would be affected by PARs 1146 series and PR 1100, no other environmental topic areas have been evaluated in this SEA. Thus, the conclusions reached in this ~~Final Revised Draft~~ SEA are consistent with the conclusions reached in the previously certified CEQA documents (e.g., the September 2008 Final EAs for Rules 1146 and 1146.1, the May 2006 Final EA for Rule 1146.2, and the March 2017 Final Program EIR for the 2016 AQMP) that aside from the topics ~~air quality during construction and of hazards and hazardous materials for the storage and use of aqueous ammonia~~, there would be no other significant adverse effects from the implementation of the proposed project. Thus, the proposed project would have no significant or less than significant direct or indirect adverse effects on the following environmental topic areas:

- aesthetics
- air quality and greenhouse gases during operation
- agriculture and forestry resources
- biological resources
- cultural resources
- energy
- geology and soils
- hydrology and water quality
- land use and planning
- mineral resources
- noise
- population and housing
- public services
- recreation
- solid and hazardous waste
- transportation and traffic

The September 2008 Final EAs for Rules 1146 and 1146.1, the May 2006 Final EA for Rule 1146.2, and the March 2017 Final Program EIR for the 2016 AQMP can be found using the links referenced in Chapter 2.

## **SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED**

CEQA Guidelines Section 15126(b) requires an environmental analysis to consider "any significant environmental effects which cannot be avoided if the proposed project is implemented." This SEA identified the topics of ~~air quality during construction and~~ hazards and hazardous materials for the storage and use of aqueous ammonia as the environmental topic areas ~~that may~~ have potentially significant adverse environmental affects if the proposed project is implemented.

## **SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES**

CEQA Guidelines Section 15126(c) requires an environmental analysis to consider "any significant irreversible environmental changes which would be involved if the proposed action should be implemented." This SEA identified the topic of ~~air quality during construction and~~ hazards and hazardous materials for the storage and use of aqueous ammonia as the environmental areas with potentially significant adverse impacts if the proposed project is implemented. The initial conclusion in the Revised Draft SEA of significant adverse air quality impacts during construction was concluded in this Final SEA to be fully ~~will be mostly~~ offset by the overall operational NOx emission reductions. As a result, even though the proposed project would have significant air quality impacts during construction, the proposed project overall will achieve substantial NOx emission reductions to offset the construction emissions and will provide human health benefits as a result. Implementation of other control measures in the 2016 AQMP will also provide human health benefits by reducing population exposures to existing NOx emissions. For these aforementioned reasons, the proposed project would not result in irreversible environmental changes or irretrievable commitment of resources for the topic of air quality.

Significant adverse impacts to hazards and hazardous materials from the storage and use of ammonia cannot be mitigated to less than significant levels; thus, they may be considered irreversible because facility operators that install new SCR systems for reducing NOx emissions are likely to operate these systems for the lifetime of the equipment.

## **POTENTIAL GROWTH-INDUCING IMPACTS**

CEQA Guidelines Section 15126(d) requires an environmental analysis to consider the "growth-inducing impact of the proposed action." Implementing the proposed project will not, by itself, have any direct or indirect growth-inducing impacts on businesses in the SCAQMD's jurisdiction because it is not expected to foster economic or population growth or the construction of additional housing and primarily affects existing facilities.

## **RELATIONSHIP BETWEEN SHORT-TERM AND LONG-TERM ENVIRONMENTAL GOALS**

CEQA documents are required to explain and make findings about the relationship between short-term uses and long-term productivity. [CEQA Guidelines Section 15065(a)(2)]. An important

consideration when analyzing the effects of a proposed project is whether it will result in short-term environmental benefits to the detriment of achieving long-term goals or maximizing productivity of these resources. Implementing the proposed project is not expected to achieve short-term goals at the expense of long-term environmental productivity or goal achievement. PARs 1146 series and PR 1100 will begin transitioning units at RECLAIM facilities subject to Rules 1146, 1146.1, and 1146.2 to a command-and-control regulatory structure. The primary objective of this project is to ensure all Rules 1146 and 1146.1 units meet NO<sub>x</sub> emission limits and BARCT level equivalency. PR 1100 will provide the implementation schedule for PAR 1146 and 1146.1 and eventually include other future rules for equipment exiting RECLAIM. PARs 1146 series and PR 1100 implement control measure CMB-05 from the 2016 AQMP. NO<sub>x</sub> is a precursor to the formation of ozone and PM<sub>2.5</sub>, so even if the proposed project is implemented and there will be some NO<sub>x</sub> emissions during construction and operation, there will also be ~~an~~ overall NO<sub>x</sub> emissions reductions ~~occurring in 2022 and these~~ which will continue to help attain federal and state air quality standards which are expected to enhance short- and long-term environmental productivity in the region. Implementing the proposed project does not narrow the range of beneficial uses of the environment. Of the potential environmental impacts discussed in Chapter 4, only those related ~~to air quality during construction and~~ to hazards and hazardous materials for ammonia storage are concluded to have potentially significant adverse effects.

## **CHAPTER 5**

### **ALTERNATIVES**

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**Introduction**

**Methodology for Developing Project Alternatives**

**Description of Alternatives**

**Comparison of Alternatives**

**Alternatives Rejected as Infeasible**

**Lowest Toxic Alternative**

**Environmentally Superior Alternative**

**Conclusion**

## INTRODUCTION

This ~~Final Revised Draft~~ SEA provides a discussion of alternatives to the proposed project as required by CEQA. Alternatives include measures for attaining objectives of the proposed project and provide a means for evaluating the comparative merits of each alternative. A ‘no project’ alternative must also be evaluated. The range of alternatives must be sufficient to permit a reasoned choice, but need not include every conceivable project alternative. CEQA Guidelines Section 15126.6(c) specifically notes that the range of alternatives required in a CEQA document is governed by a ‘rule of reason’ and only necessitates that the CEQA document set forth those alternatives necessary to permit a reasoned choice. The key issue is whether the selection and discussion of alternatives fosters informed decision making and meaningful public participation. A CEQA document need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative. SCAQMD Rule 110 (the rule which implements the SCAQMD’s certified regulatory program) does not impose any greater requirements for a discussion of project alternatives in a SEA than is required for an EIR under CEQA.

## METHODOLOGY FOR DEVELOPING PROJECT ALTERNATIVES

The alternatives typically included in CEQA documents for proposed SCAQMD rules, regulations, or plans are developed by breaking down the project into distinct components (e.g., emission limits, compliance dates, applicability, exemptions, pollutant control strategies, etc.) and varying the specifics of one or more of the components. Different compliance approaches that generally achieve the objectives of the project may also be considered as project alternatives.

Alternatives to the proposed project were crafted by varying how the NO<sub>x</sub> emission limits and the timing of compliance. Of the amendments proposed to Rules 1146, 1146.1, and 1146.2, only the components that pertain to complying with the NO<sub>x</sub> emission factors could entail physical modifications to the affected equipment and that these physical modifications could create potential adverse significant impacts. As such, in addition to the no project alternative, four alternatives were developed by identifying and modifying major components of the proposed project. Specifically, the primary components of the proposed alternatives that have been modified are the source categories that may be affected, and the manner and timing in which compliance with the NO<sub>x</sub> emission factors may be achieved.

Typically for projects with potentially significant adverse environmental impacts, the existing setting is established at the time the Notice of Preparation/Initial Study (NOP/IS) is circulated for public review. However, this SEA is a subsequent to multiple CEQA documents that were certified at different times and not all of the previous CEQA documents were concluded to have potentially significant adverse impacts. As previously explained, the proposed project is a revision to the previously approved projects that were analyzed in the September 2008 Final EAs for Rules 1146 and 1146.1, May 2006 Final EA for Rule 1146.2, and the March 2017 Final Program EIR for the 2016 AQMP.

The September 2008 Final EA for Rule 1146 concluded that significant adverse air quality and hazards and hazardous materials impacts would occur. However, all other environmental topic areas analyzed in the September 2008 Final EA for Rule 1146 were shown to have less than significant or no significant impacts. Both the September 2008 Final EA for Rule 1146.1 and the May 2006 Final EA for Rule 1146.2 concluded that no significant adverse environmental impacts would occur not from the respective projects. The March 2017 Final Program EIR for the 2016

AQMP determined that the overall implementation of CMB-05 has the potential to generate adverse environmental impacts to seven topic areas – air quality, energy, hazards and hazardous materials, hydrology and water quality, noise, solid and hazardous waste and transportation.

CEQA Guidelines Section 15125(a) recognizes that a baseline may be established at times other than when the NOP/IS circulated to the public by stating (emphasis added), “This environmental setting *will normally* constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.” Chapter 3 summarizes the existing setting/baseline for control measure CMB-05 from the 2016 AQMP as well as the current version of Rules 1146, 1146.1, and 1146.2.

## DESCRIPTION OF ALTERNATIVES

The analysis of the proposed project determined that, of the amendments proposed, only the components that pertain to the implementation of SCR systems to meet certain NOx emission limits could have potential significant adverse air quality impacts during construction. The analysis also identified potential significant adverse hazards and hazardous materials impacts for ammonia storage and use. In particular, two of the affected facilities were shown to reach the toxic endpoint distance for aqueous ammonia from a catastrophic failure of a storage tank that would significantly adversely affect the sensitive receptors within 0.1 mile of the existing equipment. As such, alternatives were developed by identifying and modifying major components of the proposed project. The rationale for selecting and modifying specific components of the proposed project to generate feasible alternatives for the analysis is based on CEQA's requirement to present "realistic" alternatives; that is, alternatives that can actually be implemented.

Five alternatives to the proposed project have been developed and summarized in Table 5-1, as follows: Alternative A - No Project, Alternative B - Compliance Deadline Extension, Alternative C - 100% of Units by January 1, 2021, Alternative D - All Ultra-Low NOx Burners, and Alternative E – NOx RECLAIM Facilities Transitioning to Command-and-Control Regulatory Structure at Current Limits Lowering Limit for  $\geq 40$  and  $< 75$  MMBtu/hr. The primary components of the proposed alternatives that have been modified are the source categories that may be affected, and the manner and timing in which compliance with the NOx emission limits may be achieved. Unless otherwise specifically noted, all other components of the project alternatives are identical to the components of the proposed project.

The Governing Board may choose to adopt any portion or all of any alternative presented in the Final SEA with appropriate findings as required by CEQA. The Governing Board is able to adopt any portion or all of any of the alternatives presented because the impacts of each alternative will be fully disclosed to the public and the public will have the opportunity to comment on the alternatives and impacts generated by each alternative. ~~No written suggestions on potential project alternatives were received during the comment period for the Revised Draft SEA will be considered when preparing the Final SEA and will be included as an appendix of the Final SEA.~~

The following subsections provide a brief description of the alternatives.

### **Proposed Project (NOx Emission Limits and Compliance Deadlines):**

PARs 1146 series and PR 1100 will begin transitioning units at RECLAIM facilities subject to Rules 1146, 1146.1, and 1146.2 to a command-and-control regulatory structure. The primary objective of the proposed project is to ensure all RECLAIM facilities with Rules

1146 and 1146.1 units meet NO<sub>x</sub> emission limits and BARCT level equivalency. PARs 1146 series would: 1) expand the applicability to include units at NO<sub>x</sub> RECLAIM facilities; 2) require RECLAIM facilities to submit a permit application for each unit that does not currently meet the NO<sub>x</sub> concentration limits in Rules 1146 and 1146.1; 3) extend the compliance date for RECLAIM facilities replacing Rule 1146 or 1146.1 units and require a permit application submittal for unit(s) being replaced; 4) require RECLAIM facilities with Rule 1146.2 units to meet applicable NO<sub>x</sub> emission limits by December 31, 2023, unless a more stringent BARCT limit is subsequently adopted; 5) limit ammonia emissions on new or modified units with applicable air pollution control equipment and require quarterly ~~annual~~ ammonia source testing (if four consecutive quarterly source tests demonstrate compliance, an annual source test may be conducted); ~~and~~ 6) require certain units at non-RECLAIM facilities to meet new NO<sub>x</sub> emission limits according to the compliance schedules specified in Rules 1146 and 1146.1; and 7) allow units at municipal sanitation service facilities to maintain existing NO<sub>x</sub> emission limits until a Regulation XI Rule is adopted or amended. PR 1100 is an administrative rule which establishes the compliance schedule for RECLAIM facilities with Rule 1146 and/or 1146.1 units. .~~1) expand the applicability to include units that were not previously required to comply with Rules 1146/1146.1 because they were in the NO<sub>x</sub> RECLAIM program; 2) require RECLAIM facilities to submit a permit application for each unit that does not currently meet the NO<sub>x</sub> concentration limits in Rules 1146/1146.1; 3) require the affected equipment to meet the applicable NO<sub>x</sub> concentration limit for all Rule 1146/1146.1 units for a minimum of 75 percent of the total heat input by January 1, 2021 and 100 percent of the total heat input by January 1, 2022; 4) require RECLAIM facilities replacing Rule 1146/1146.1 units to notify the Executive Officer which unit(s) will be replaced; and 5) require RECLAIM facilities with Rule 1146.2 units to meet the rule's NO<sub>x</sub> emission limits by December 31, 2023 if a more stringent BARCT limit is not applicable. PR 1100 will provide the implementation schedule for PARs 1146 series and eventually include other future rules for equipment exiting RECLAIM. PARs 1146 series and PR 1100 implement control measure CMB-05 from the 2016 Final AQMP.~~

### **Alternative A: No Project (Current Rule)**

Alternative A, the no project alternative, means that the current version of Rules 1146, 1146.1, and 1146.2 that were amended in November 2013, and April 2006, respectively, would remain in effect and there would be no transitioning out of the NO<sub>x</sub> RECLAIM program. Under the current version of Rules 1146 and 1146.1, units at RECLAIM facilities would not have to comply with the NO<sub>x</sub> emission limits in Tables 1146-1 and 1146.1-1, respectively. Under this alternative, no NO<sub>x</sub> emission reductions will be achieved and the units subject to Rules 1146 and 1146.1 at RECLAIM facilities would not meet BARCT level equivalency. However, the December 2015 amendments to the NO<sub>x</sub> RECLAIM program evaluated BARCT level equivalency for combustion units that would have otherwise that would have been subject to Rules 1146, 1146.1, and 1146.2 had they not been in the RECLAIM program. Furthermore, the environmental impacts for the December 2015 amendments were evaluated in the Final Program EA that was certified in December 2015<sup>22</sup>. Under this alternative, units subject to Rules 1146, 1146.1, and 1146.2 at RECLAIM facilities would not begin the transition to a command-and-control regulatory

<sup>22</sup> SCAQMD, Final Program Environmental Assessment for Proposed Amended Regulation XX -RECLAIM, November 2015. <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2015/regxxfinalpeaplusappendices.pdf>

structure. In addition, under this alternative the implementation schedule in PR 1100 would also not take effect.

### **Alternative B: Compliance Deadline Extension**

Under Alternative B, the requirements would be equivalent to the proposed project, but the compliance deadline for meeting the NO<sub>x</sub> emissions limits would be extended ~~shortened~~ by one year for all 25 percent of units. At a facility, 75 percent of the units subject to Rules 1146 and 1146.1 would need to meet the applicable NO<sub>x</sub> emission limit by January 1, 2022 and 100 percent would need to achieve compliance by January 1, 2023. In addition, the facilities would have one additional year to submit permit applications. The extension of the compliance deadline for units subject to Rules 1146 and 1146.1 is less stringent than the proposed project.

### **Alternative C: 100% of Units by January 1, 2021**

Under Alternative C, the NO<sub>x</sub> emission limits would remain the same as the proposed project, but facilities would need to meet 100 percent compliance one year earlier than the proposed project, by January 1, 2021. The earlier compliance date would apply to 25 percent of the units subject to Rules 1146 and 1146.1. The earlier compliance date under Alternative C is more stringent than the proposed project.

### **Alternative D: All Ultra-Low NO<sub>x</sub> Burners**

Under Alternative D, the NO<sub>x</sub> emission limit would be less stringent for Group I (Rule 1146) units than the proposed project, but it would have the same compliance deadline as the proposed project. Under Alternative D, the Group I units would need to meet a NO<sub>x</sub> emission limit of nine ppm (or 0.011 pound per MMBtu) instead of five ppm (or 0.0062 pound per MMBtu). The Group II and III units (Rule 1146) and fire-tube boilers rated between two and five MMBtu (Rule 1146.1) units would need to meet nine ppm (or 0.011 pound per MMBtu) instead of the proposed five ppm or seven ppm (or 0.00085 pound per MMBtu). The NO<sub>x</sub> emission limit for thermal fluid heaters would also remain at 30 ppm (or 0.037 pound per MMBtu) instead of 12 ppm (0.015 pound per MMBtu). Thus, the thermal fluid heaters would not meet BARCT NO<sub>x</sub> emissions equivalency. All other requirements in the proposed project would remain the same for Alternative D. Overall, Alternative D would be less stringent than the proposed project.

### **Alternative E: NO<sub>x</sub> RECLAIM Facilities Transitioning to Command-and-Control Regulatory Structure at Current Limits** ~~Lowering Limit for $\geq 40$ and $< 75$ MMBtu per hour~~

Under Alternative E, only NO<sub>x</sub> RECLAIM facilities would be affected. The NO<sub>x</sub> emission limit would be less ~~more~~ stringent than the proposed project for the following units with: a rated heat input of greater than or equal to 420 ~~and less than 75~~ MMBtu per hour (Group II); a rated heat input of greater than or equal to two but less than 20 MMBtu per hour (Rules 1146 and 1146.1) for fire-tube boilers; and thermal fluid heaters. Alternative E would require ~~include a subset of Group II units and Group III units-~~ to meet nine ppm (or 0.011 pounds per MMBtu) instead of five ppm (or 0.0062 pound per MMBtu) for Group II units with an existing NO<sub>x</sub> limit greater than 12 ppm and seven ppm (or 0.0085

pound per MMBtu) for Group II units with an existing NOx limit less than 12 ppm and Group III fire-tube boilers that would be subject to the five ppm NOx emission limits as Group I units.

In addition, under Alternative E, any units with a rated heat input greater than two but less than five MMBtu per hour would need to meet nine ppm. In the proposed project, units with a rated heat input greater than two but less than five MMBtu per hour are required to meet seven ppm for fire-tube boilers and water-tube boilers would need to meet nine ppm. In addition, under Alternative E, thermal fluid heaters would remain at the current NOx emission limit of 30 ppm (or 0.037 pound per MMBtu). All other requirements in the proposed project would remain the same for Alternative E. Overall, Alternative E would be less more stringent than the proposed project.

**Table 5-1  
Summary of the Proposed Project and Alternatives**

<u>Rule No.</u>	<u>Group No.</u>	<u>Heat Input or Equipment Type</u>	<u>Fuel Type</u>	<u>Proposed Project</u>	<u>Alternative A: No Project</u>	<u>Alternative B: Compliance Deadline Extension</u>	<u>Alternative C: 100% of units by January 1, 2021</u>	
1146	-	≥ 5 MMBtu/hr	Gaseous Fuel (excluding Landfill or Digester Gas)	30 ppm or 0.036 lb/MMBtu	<p>75% of the cumulative total heat input capacity of all Rules 1146 and 1146.1 units at the facility by January 1, 2021 and 100% by January 1, 2022, unless unit replacement by January 1, 2023</p> <p><i>*(If the unit is located at a non-RECLAIM facility compliance can be deferred until burner replacement or within 15 years of the date of rule adoption, whichever is earlier, unless the unit is a thermal fluid heater currently permitted at ≥20 ppm (these units must meet 12 ppm by January 1, 2022).)</i></p>	<p>See Rule 2002 Emission Factor, Table 1 and 3**</p> <p><i>(Only emission factors relevant to Rules 1146 and 1146.1 have been extracted from Rule 2002 Emission Factors Tables 1 and 3 and are shown in Table 1-3)</i></p>	<p>75% of the cumulative total heat input capacity of all Rules 1146 and 1146.1 units at the facility by January 1, 2022 and 100% by January 1, 2023</p>	<p>100% of units by January 1, 2021</p>
1146	-	≥ 5 MMBtu/hr	Non-Gaseous Fuels	40 ppm				
1146	-	≥ 5 MMBtu/hr	Landfill Gas	25 ppm				
1146	-	≥ 5 MMBtu/hr	Digester Gas	15 ppm				
1146	I	≥ 75 MMBtu/hr	Natural Gas	5 ppm or 0.0062 lb/MMBtu				
1146	II	> 20 and < 75 MMBtu/hr (All others) <del>with an existing NOx limit &gt; 12 ppm</del>	Gaseous Fuel (excluding Landfill or Digester Gas)	5 ppm or 0.0062 lb/MMBtu				
1146	II	> 20 and < 75 MMBtu/hr (Fire-tube boilers with an existing NOx limit <del>&lt; 9.42 ppm and &gt; 5 ppm</del> )	Gaseous Fuel (excluding Landfill or Digester Gas)	7 ppm or 0.0085 lb/MMBtu				
1146	II	> 20 and < 75 MMBtu/hr (All others with a previous NOx limit < 12 ppm and > 5 ppm)	Gaseous Fuel (excluding Landfill or Digester Gas)	9 ppm or 0.011 lb/MMBtu				
1146	III	≥ 5 and < 20 MMBtu/hr (Fire-tube boilers, <del>only</del> excluding units with a previous NOx limit > 9 and ≤ 12 ppm )	Gaseous Fuel (excluding Landfill or Digester Gas)	7 ppm or 0.0085 lb/MMBtu				
1146	III	≥ 5 and < 20 MMBtu/hr (excluding Fire-tube boilers)	Gaseous Fuel (excluding Landfill or Digester Gas)	9 ppm or 0.011 lb/MMBtu				
1146	III	Atmospheric Unit (≤ 10 MMBtu/hr)	Natural Gas	12 ppm or 0.015 lb/MMBtu				
1146	-	Low Fuel Usage (≤ 90,000 therms/year)	Any Fuel	12 ppm, 15 years after the date of rule adoption or when 50 percent or more of the unit's burners are replaced, whichever is earlier				
1146	-	≥ 5 MMBtu/hr Thermal Fluid Heaters	Natural Gas	12 ppm or 0.015 lb/MMBtu				
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Gaseous Fuel (excluding Landfill or Digester Gas)	30 ppm or 0.037 lb/MMBtu				
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Landfill Gas	25 ppm				
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Digester Gas	15 ppm				
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr (Atmospheric Units)	Natural Gas	12 ppm or 0.015 lb/MMBtu				

**Table 5-1: Summary of the Proposed Project and Alternatives (continued ~~Concluded~~)**

<u>Rule No.</u>	<u>Group No.</u>	<u>Heat Input or Equipment Type</u>	<u>Fuel Type</u>	<u>Proposed Project</u>		<u>Alternative A: No Project</u>	<u>Alternative B: Compliance Deadline Extension</u>	<u>Alternative C: 100% of units by January 1, 2021</u>
1146.1	=	> 2 MMBtu/hr and < 5 MMBtu/hr (excluding Fire-tube boilers, Atmospheric Units and Thermal Fluid Heaters)	Natural Gas	9 ppm or 0.011 lb/MMBtu	75% of the cumulative total heat input capacity of all Rules 1146 and 1146.1 units at the facility by January 1, 2021 and 100% by January 1, 2022, unless unit replacement by January 1, 2023	See Rule 2002 Emission Factor, Table 1 and 3**  (Only emission factors relevant to Rules 1146 and 1146.1 have been extracted from Rule 2002 Emission Factors Tables 1 and 3 and are shown in Table I-3)	75% of the cumulative total heat input capacity of all Rules 1146 and 1146.1 units at the facility by January 1, 2022 and 100% by January 1, 2023	100% of units by January 1, 2021
1146.1	=	> 2 MMBtu/hr and < 5 MMBtu/hr (Any Fire-Tube Boilers excluding units with a previous NOx limit >9 and < 12 ppm)	Natural Gas	7 ppm or 0.0085 lb/MMBtu				
1146.1	=	> 2 MMBtu/hr and < 5 MMBtu/hr (Thermal Fluid Heaters)	Natural Gas	12 ppm or 0.015 lb/MMBtu				
1146.1	=	Low Fuel Usage (< 18,000 therms/year)	Any Fuel	12 ppm, 15 years after the date of rule adoption or when 50 percent or more of the unit's burners are replaced, whichever is earlier	*(If the unit is located at a non-RECLAIM facility compliance can be deferred until burner replacement or within 15 years of the date of rule adoption, whichever is earlier, unless the unit is a thermal fluid heater currently permitted at >20 ppm (these units must meet 12 ppm by January 1, 2022))			
1146.2	=	< 2 MMBtu/hr	Natural Gas	30 ppm, unless a more stringent limit is applicable, by December 31, 2023		=	No Change	No Change
1100	=	Rule 1146 and 1146.1 Units only	=	Permit application submittal by 12 months within date of rule adoption and compliance with implementation schedule		=	Compliance deadline would be extended by one year	Compliance deadline would be shortened by one year for 25% of units

**Table 5-1: Summary of the Proposed Project and Alternatives (continued)**

<u>Rule No.</u>	<u>Group No.</u>	<u>Heat Input or Equipment Type</u>	<u>Fuel Type</u>	<u>Proposed Project</u>	<u>Alternative D: All Ultra-Low NOx Burners</u>	<u>Alternative E: NOx RECLAIM Facilities Transitioning to Command- and-Control Regulatory Structure at Current Limits</u>	
1146	-	≥ 5 MMBtu/hr	<u>Gaseous Fuel</u> (excluding Landfill or <u>Digester Gas</u> )	30 ppm or 0.036 lb/MMBtu	<p>75% of the cumulative total heat input capacity of all Rules 1146 and 1146.1 units at the facility by January 1, 2021 and 100% by January 1, 2022, unless unit replacement by January 1, 2023</p> <p><i>*(If the unit is located at a non-RECLAIM facility compliance can be deferred until burner replacement or within 15 years of the date of rule adoption, whichever is earlier, unless the unit is a thermal fluid heater currently permitted at &gt;20 ppm (these units must meet 12 ppm by January 1, 2022))</i></p>	No Change	
1146	-	≥ 5 MMBtu/hr	<u>Non-Gaseous Fuels</u>	40 ppm		No Change	
1146	-	≥ 5 MMBtu/hr	<u>Landfill Gas</u>	25 ppm		No Change	
1146	-	≥ 5 MMBtu/hr	<u>Digester Gas</u>	15 ppm		No Change	
1146	I	≥ 75 MMBtu/hr	<u>Natural Gas</u>	5 ppm or 0.0062 lb/MMBtu		9 ppm or 0.011 lb/MMBtu	No Change
1146	II	≥ 20 and < 75 MMBtu/hr (All others) <del>with an existing NOx limit &gt;12 ppm</del>	<u>Gaseous Fuel</u> (excluding Landfill or <u>Digester Gas</u> )	5 ppm or 0.0062 lb/MMBtu		9 ppm or 0.011 lb/MMBtu	9 ppm or 0.011 lb/MMBtu
1146	II	≥ 20 and < 75 MMBtu/hr with an existing NOx limit ≤12 ppm and >5 ppm)	<u>Gaseous Fuel</u> (excluding Landfill or <u>Digester Gas</u> )	7 ppm or 0.0085 lb/MMBtu			
1146	II	≥ 20 and < 75 MMBtu/hr (All others with a previous NOx limit <12 ppm and >5 ppm)	<u>Gaseous Fuel</u> (excluding Landfill or <u>Digester Gas</u> )	9 ppm or 0.011 lb/MMBtu			
1146	III	≥ 5 and < 20 MMBtu/hr (Fire-tube boilers only excluding units with a previous NOx limit >9 and ≤ 12 ppm))	<u>Gaseous Fuel</u> (excluding Landfill or <u>Digester Gas</u> )	7 ppm or 0.0085 lb/MMBtu			
1146	III	<u>Atmospheric Unit</u> (≤ 10 MMBtu/hr)	<u>Natural Gas</u>	12 ppm or 0.015 lb/MMBtu			
1146	-	<u>Low Fuel Usage</u> (≤ 90,000 therms/year)	<u>Any Fuel</u>	12 ppm, 15 years after the date of rule adoption or when 50 percent or more of the unit's burners are replaced, whichever is earlier	No Change	No Change	
1146	-	≥ 5 MMBtu/hr <u>Thermal Fluid Heaters</u>	<u>Natural Gas</u>	12 ppm or 0.015 lb/MMBtu	30 ppm or 0.037 lb/MMBtu	30 ppm or 0.037 lb/MMBtu	
1146.1	-	≥ 2 MMBtu/hr and < 5 MMBtu/hr	<u>Gaseous Fuel</u> (excluding Landfill or <u>Digester Gas</u> )	30 ppm or 0.037 lb/MMBtu	No Change	No Change	
1146.1	-	≥ 2 MMBtu/hr and < 5 MMBtu/hr	<u>Landfill Gas</u>	25 ppm	No Change	No Change	
1146.1	-	≥ 2 MMBtu/hr and < 5 MMBtu/hr	<u>Digester Gas</u>	15 ppm	No Change	No Change	

**Table 5-1: Summary of the Proposed Project and Alternatives (concluded)**

<u>Rule No.</u>	<u>Group No.</u>	<u>Heat Input or Equipment Type</u>	<u>Fuel Type</u>	<u>Proposed Project</u>		<u>Alternative D: All Ultra-Low NOx Burners</u>	<u>Alternative E: NOx RECLAIM Facilities Transitioning to Command- and-Control Regulatory Structure at Current Limits</u>
1146.1	=	≥ 2 MMBtu/hr and < 5 MMBtu/hr (Atmospheric Units)	Natural Gas	12 ppm or 0.015 lb/MMBtu	75% of the cumulative total heat input capacity of all Rules 1146 and 1146.1 units at the facility by January 1, 2021 and 100% by January 1, 2022, unless unit replacement by January 1, 2023  <i>*If the unit is located at a non-RECLAIM facility compliance can be deferred until burner replacement or within 15 years of the date of rule adoption, whichever is earlier, unless the unit is a thermal fluid heater currently permitted at &gt;20 ppm (these units must meet 12 ppm by January 1, 2022)</i>	No Change	No Change
1146.1	=	> 2 MMBtu/hr and < 5 MMBtu/hr (excluding Fire-tube boilers, Atmospheric Units and Thermal Fluid Heaters, but including at Schools/Universities)	Natural Gas	9 ppm or 0.011 lb/MMBtu		No Change	9 ppm or 0.011 lb/MMBtu No Change
1146.1	=	> 2 MMBtu/hr and < 5 MMBtu/hr (Any Fire-Tube Boilers, excluding units with a previous NOx limit >9 and ≤ 12 ppm)	Natural Gas	7 ppm or 0.0085 lb/MMBtu		9 ppm or 0.011 lb/MMBtu	
1146.1	=	> 2 MMBtu/hr and < 5 MMBtu/hr (Thermal Fluid Heaters)	Natural Gas	12 ppm or 0.015 lb/MMBtu		30 ppm or 0.037 lb/MMBtu	30 ppm or 0.037 lb/MMBtu
1146.1	=	Low Fuel Usage (≤ 18,000 therms/year)	Any Fuel	12 ppm, 15 years after the date of rule adoption or when 50 percent or more of the unit's burners are replaced, whichever is earlier 30 ppm by January 1, 2022 or burner replacement, whichever occurs later		No Change	No Change
1146.2	=	≤ 2 MMBtu/hr	Natural Gas	30 ppm, unless a more stringent limit is applicable, by December 31, 2023	No Change	No Change	
1100	=	Rule 1146 and 1146.1 Units only	=	Permit application submittal by 12 months within date of rule adoption and compliance with implementation schedule	No Change	No Change	

Rule No.	Group No.	Heat Input or Equipment Type	Fuel Type	Proposed Project (for NOx RECLAIM facilities transitioning to command and control regulatory structure)	Alternative A: No Project	Alternative B: Compliance Deadline Extension	Alternative C: 100% of units by January 1, 2021
1146	-	≥ 5 MMBtu/hr	-Gaseous Fuel (excluding Landfill or Digester Gas)	30 ppm or 0.036 lb/MMBtu	See Rule 2002 Emission Factor, Table 1 and 3*	75% of units by January 1, 2022 and 100% by January 1, 2023	100% of units by January 1, 2021
1146	-	≥ 5 MMBtu/hr	Non Gaseous Fuels	40 ppm			
1146	-	≥ 5 MMBtu/hr	Landfill Gas	25 ppm			
1146	-	≥ 5 MMBtu/hr	Digester Gas	15 ppm			
1146	I	≥ 75 MMBtu/hr (excluding Thermal Fluid Heaters)	-Natural Gas	5 ppm or 0.0062 lb/MMBtu			
1146	II	≥ 20 and < 75 MMBtu/hr (excluding Thermal Fluid Heaters)	-Gaseous Fuel (excluding Landfill or Digester Gas)	9 ppm or 0.011 lb/MMBtu			
1146	III	≥ 5 and < 20 MMBtu/hr (excluding Thermal Fluid Heaters, but including Units at Schools and Universities rated ≥ 5 MMBtu/hr)	Gaseous Fuel (excluding Landfill or Digester Gas)				
1146	III	Atmospheric Unit (≤ 10 MMBtu/hr)	-Natural Gas				
1146	-	Low Fuel Usage (≤ 90,000 therms/year)	Any Fuel	30 ppm by January 1, 2022 or burner replacement, whichever occurs later			
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Gaseous Fuel (excluding Landfill or Digester Gas)	30 ppm or 0.037 lb/MMBtu			
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Landfill Gas	25 ppm			
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Digester Gas	15 ppm			
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr (Atmospheric Units)	Natural Gas	12 ppm or 0.015 lb/MMBtu			
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr (excluding Atmospheric Units and Thermal Fluid Heaters, but including at Schools/Universities)	-Natural Gas	9 ppm or 0.011 lb/MMBtu			
1146.1	-	Low Fuel Usage (≤ 18,000 therms/year)	Any Fuel	30 ppm by January 1, 2022 or burner replacement, whichever occurs later			
1146.2	-	≤ 2 MMBtu/hr	-Natural Gas	30 ppm, unless a more stringent limit is applicable, by December 31, 2023	-	No Change	No Change
1100	-	Rule 1146 and 1146.1 Units only	-	Permit application submittal by 12 months within date of rule adoption and compliance with implementation schedule	-	Compliance deadline would be extended by one year	Compliance deadline would be shortened by one year for 25% of units

\*Note: Only emission factors relevant to Rules 1146 and 1146.1 have been extracted from Rule 2002 Emission Factor Tables 1 and 3 and are shown in Table 1-3.

Rule No.	Group No.	Heat Input or Equipment Type	Fuel Type	Proposed Project (for NO <sub>x</sub> RECLAIM facilities transitioning to command and control regulatory structure)	Alternative D: All Ultra-Low NO <sub>x</sub> Burners	Alternative E: Lowering Limit for ≥ 40 and < 75 MMBtu/hr	
1146	-	≥ 5 MMBtu/hr	-Gaseous Fuel (excluding Landfill or Digester Gas)	30 ppm or 0.036 lb/MMBtu	75% of units by January 1, 2021 and 100% by January 1, 2022, unless unit replacement by January 1, 2023	No Change	
1146	-	≥ 5 MMBtu/hr	Non-Gaseous Fuels	40 ppm		No Change	
1146	-	≥ 5 MMBtu/hr	Landfill Gas	25 ppm		No Change	
1146	-	≥ 5 MMBtu/hr	Digester Gas	15 ppm		No Change	
1146	I	≥ 75 MMBtu/hr (excluding Thermal Fluid Heaters)	-Natural Gas	5 ppm or 0.0062 lb/MMBtu		9 ppm or 0.011 lb/MMBtu; 75% of units by January 1, 2021 and 100% by January 1, 2022	No Change
1146	II	≥ 20 and < 75 MMBtu/hr (excluding Thermal Fluid Heaters)	-Gaseous Fuel (excluding Landfill or Digester Gas)	9 ppm or 0.011 lb/MMBtu		No Change	5 ppm for units > 40 MMBtu/hr
1146	III	≥ 5 and < 20 MMBtu/hr (excluding Thermal Fluid Heaters, but including Units at Schools and Universities rated ≥ 5 MMBtu/hr)	Gaseous Fuel (excluding Landfill or Digester Gas)			No Change	No Change
1146	III	Atmospheric Unit (≤ 10 MMBtu/hr)	-Natural Gas	12 ppm or 0.015 lb/MMBtu		No Change	No Change
1146	-	Low Fuel Usage (≤ 90,000 therms/year)	Any Fuel	30 ppm by January 1, 2022 or burner replacement, whichever occurs later		No Change	No Change
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Gaseous Fuel (excluding Landfill or Digester Gas)	30 ppm or 0.037 lb/MMBtu		No Change	No Change
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Landfill Gas	25 ppm		No Change	No Change
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr	Digester Gas	15 ppm		No Change	No Change
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr (Atmospheric Units)	Natural Gas	12 ppm or 0.015 lb/MMBtu		No Change	No Change
1146.1	-	> 2 MMBtu/hr and < 5 MMBtu/hr (excluding Atmospheric Units and Thermal Fluid Heaters, but including at Schools/Universities)	-Natural Gas	9 ppm or 0.011 lb/MMBtu		No Change	No Change
1146.1	-	Low Fuel Usage (≤ 18,000 therms/year)	Any Fuel	30 ppm by January 1, 2022 or burner replacement, whichever occurs later	No Change	No Change	
1146.2	-	≤ 2 MMBtu/hr	-Natural Gas	30 ppm, unless a more stringent limit is applicable, by December 31, 2023	No Change	No Change	

1100	-	Rule 1146 and 1146.1 Units only	-	Permit application submittal by 12 months within date of rule adoption and compliance with implementation schedule	No Change	No Change
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~~\*\*\*Note: Only emission factors relevant to Rules 1146 and 1146.1 have been extracted from Rule 2002 Emission Factor Tables 1 and 3 and are shown in Table 1-3.~~

## **COMPARISON OF ALTERNATIVES**

The following sections describe the potentially significant adverse air quality and hazards and hazardous materials impacts that may occur for each project alternative. Potentially significant adverse operational air quality impacts are quantified where sufficient data are available. A comparison of the environmental impacts for each project alternative is provided in Table 5-2. No other environmental topics other than air quality during construction and hazards and hazardous materials were determined to be significantly adversely affected by implementing any project alternative.

Pursuant to the requirements in CEQA Guidelines Section 15126.6(b) to mitigate or avoid the significant effects that a project may have on the environment, a comparison of the potential impacts to air quality and hazards and hazardous materials from each of the project alternatives for the individual rule components that comprise the proposed project is provided in Table 5-2. Secondary impacts from the proposed project were identified as having significant adverse impacts for air quality from the construction of the SCR systems and for hazards and hazardous materials from storage of ammonia (accidental rupture). The proposed project is considered to provide the best balance between emission reductions and the adverse environmental impacts due to construction activities and the storage of ammonia (accidental rupture) while meeting the objectives of the project. Therefore, the proposed project is preferred over the project alternatives.

Pursuant to CEQA Guidelines Section 15126.6(d), a CEQA document “shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.” Accordingly, Table 5-2 provides a matrix displaying the major characteristics and significant environmental effects of the proposed project and each alternative.

**Table 5-2  
Comparison of Adverse Environmental Impacts of the Proposed Project and Alternatives**

<b>Category</b>	<b>Proposed Project</b>	<b>Alternative A: No Project</b>	<b>Alternative B: Compliance Deadline Extension</b>	<b>Alternative C: 100% of Units by January 1, 2021</b>	<b>Alternative D: All Ultra-Low NOx Burners</b>	<b>Alternative E: NOx RECLAIM Facilities Transitioning to Command-and- Control Regulatory Structure at Current Limits</b>
<b>Air Quality</b>	<u>Expected to result in NOx emission reductions of 0.20 ton per day by January 1, 2021 and 0.27 ton per day by January 1, 2023. Affected RECLAIM facilities will transition to a command-and-control regulatory structure. Certain non-RECLAIM facilities will meet NOx emission limits during replacement or within 15 years of the date of rule adoption, whichever is earlier. Thermal fluid heaters currently permitted at &gt;20 ppm must meet 12 ppm by January 1, 2022. All units will meet BARCT NOx emissions equivalency from the implementation of command and control regulatory structure.</u>	<u>No new NOx emission reductions will be achieved. RECLAIM facilities would not transition to a command-and control regulatory structure and all (including some non-RECLAIM) units would not meet BARCT level equivalency.</u>	<u>Expected to result in equivalent NOx emissions reductions as the proposed project except the reductions would be delayed by one year. Affected RECLAIM facilities will transition to a command-and-control regulatory structure and all (including some non-RECLAIM) units will meet BARCT level equivalency.</u>	<u>Expected to result in equivalent NOx emissions reductions as the proposed project, but emissions would be achieved sooner (by January 1, 2021). Affected RECLAIM facilities will transition to a command-and-control regulatory structure and all units (including some non-RECLAIM) will meet BARCT level equivalency.</u>	<u>Expected to result in lesser NOx emission reductions than the proposed project. Affected RECLAIM facilities would transition to a command-and-control regulatory structure. Some facilities would not meet BARCT level equivalency.</u>	<u>Expected to result in less NOx emissions reductions than the proposed project. Affected RECLAIM facilities would transition to a command-and control regulatory structure, but units would not reach BARCT level equivalency.</u>
<b>Signifi- cance of Air Quality Impacts</b>	<u>Less than Significant: Exceeds the SCAQMD's regional air quality significance threshold for NOx during construction due to overlapping construction of SCR systems and ultra-low NOx burners, but these significant impacts will be reduced to less than significant levels because a concurrent operational air quality benefit would result due to the project's overall NOx emission reductions.</u>	Not Significant: This would not result in an exceedance of SCAQMD's regional air quality CEQA significance threshold for NOx. The SCAQMD will not achieve any emissions reductions; thus, attainment for the SCAQMD for ozone is unlikely to occur.	<u>Significant: Exceeds the SCAQMD's regional air quality significance threshold for NOx during construction due to overlapping construction of SCR systems and ultra-low NOx burners. While a concurrent operational air quality benefit would result due to the project's overall NOx emission reductions, and these significant impacts are equivalent to the amount in the proposed project but with a the delay in the operational benefit is may not fully reduce the overlapping construction emissions to less than significant levels.</u>	<u>Significant: Exceeds the SCAQMD's regional air quality significance threshold for NOx during construction due to the overlapping construction of SCR systems and ultra-low NOx burners, but these significant impacts will be reduced to less than significant levels because a concurrent operational air quality benefit would result due to the project's overall NOx emission reductions. This alternative is equivalent in benefit to the amount in the proposed project but achieves the operational benefits sooner which may cause peak daily construction emissions to be greater than the proposed project.</u>	<u>Less than Not Significant: This would result in an amount that is less significant than the proposed project and would not exceed SCAQMD's regional air quality CEQA significance threshold for NOx.</u>	<u>Less than Significant: Exceeds the SCAQMD's regional air quality significance threshold for NOx during construction. Due to the overlapping construction of additional SCR systems and ultra-low NOx burners, but these significant impacts will be reduced to less than significant levels because a concurrent operational air quality benefit would result. However, to meet the current NOx emission limits, the impacts are at an amount that is less more significant than the proposed project and NOx emissions reductions would be less than the proposed project but with more operational benefits.</u>

**Table 5-2  
Comparison of Adverse Environmental Impacts of the Proposed Project and Alternatives (Concluded)**

<b>Category</b>	<b>Proposed Project</b>	<b>Alternative A: No Project</b>	<b>Alternative B: Compliance Deadline Extension</b>	<b>Alternative C: 100% of Units by January 1, 2021</b>	<b>Alternative D: All Ultra-Low NOx Burners</b>	<b>Alternative E: NOx RECLAIM Facilities Transitioning to Command-and- Control Regulatory Structure at Current Limits</b>
<b>Signifi- cance of Hazards and Hazard- ous Materials Impacts</b>	<u>Significant: To operate, SCR systems require ammonia. Ammonia is considered a hazardous material. At 32 facilities, the estimated distance of the toxic endpoint from the catastrophic failure of an aqueous ammonia storage tank to sensitive receptors would result in significant impacts.</u>	<u>Not Significant: The construction of SCR systems would not be necessary; thus, the storage of aqueous ammonia would be eliminated. No hazards or hazardous materials impacts would occur.</u>	<u>Significant: The operation of an SCR system requires the use of ammonia; thus, facilities would need to store ammonia on-site. Depending on the vicinity of the ammonia storage tank(s) to sensitive receptors, during catastrophic failure sensitive receptors could be within the toxic endpoint distance. The number of affected facilities would be the same as the proposed project. The level of significance in this alternative is equivalent to the amount in the proposed project.</u>	<u>Significant: The operation of an SCR system requires the use of ammonia; thus, facilities would need to store ammonia on-site. Depending on the vicinity of the ammonia storage tank(s) to sensitive receptors, during catastrophic failure sensitive receptors could be within the toxic endpoint distance. The number of affected facilities would be the same as the proposed project. The level of significance in this alternative is equivalent to the amount in the proposed project.</u>	<u>Less than <del>Not</del> Significant: The construction of SCR systems would not be necessary; thus, the storage of aqueous ammonia would be eliminated. All facilities with affected units would need to retrofit with ultra-low NOx burners; thus, no hazards or hazardous materials impacts would occur.</u>	<u>Significant: The operation of an SCR system requires the use of ammonia; thus, facilities would need to store ammonia on-site. Less stringent NOx emission limits would result in fewer affected facilities constructing SCR systems; thus, a fewer number of ammonia storage tanks would be needed. However, depending on the vicinity of the ammonia storage tank(s) to sensitive receptors, during catastrophic failure sensitive receptors could be within the toxic endpoint distance and thus still result in significant impacts, but at an equivalent amount of the proposed project. It is estimated four facilities would be affected from this alternative.</u>

Category	Proposed Project	Alternative A: No Project	Alternative B: Compliance Deadline Extension	Alternative C: 100% of Units by January 1, 2021	Alternative D: All Ultra-Low NOx Burners	Alternative E: Lowering Limit for ≥ 40 and < 75 MMBtu/hr
Air Quality	Expected to result in NOx emission reductions of 0.23 ton per day by January 1, 2023. Affected RECLAIM facilities will transition to a command-and-control regulatory structure and all units will meet BARCT level equivalency.	No new NOx emission reductions will be achieved. RECLAIM facilities would not transition to a command-and-control regulatory structure and all units would not meet BARCT level equivalency.	Expected to result in equivalent NOx emissions reductions as the proposed project except the reductions would be delayed by one year. Affected RECLAIM facilities will transition to a command-and-control regulatory structure and all units will meet BARCT level equivalency.	Expected to result in equivalent NOx emissions reductions as the proposed project, but emissions would be achieved sooner (by January 1, 2021). Affected RECLAIM facilities will transition to a command-and-control regulatory structure and all units will meet BARCT level equivalency.	Expected to result in lesser NOx emission reductions than the proposed project. Affected RECLAIM facilities would transition to a command-and-control regulatory structure. Some facilities would not meet BARCT level equivalency.	Expected to result in more NOx emissions reductions than the proposed project. Affected RECLAIM facilities would transition to a command-and-control regulatory structure and units will be equal to or more stringent than BARCT.
Significance of Air Quality Impacts	Significant: Exceeds the SCAQMD's regional air quality significance threshold for NOx due to the construction of SCR systems.	Not Significant: This would not result in an exceedance of SCAQMD's regional air quality CEQA significance threshold for NOx. The SCAQMD will not achieve any emissions reductions; thus, attainment for the SCAQMD for ozone is unlikely to occur.	Significant: Exceeds the SCAQMD's regional air quality significance threshold for NOx due to the construction of SCR systems and the significance is equivalent to the amount in the proposed project but with a delay in the operational benefit.	Significant: Exceeds the SCAQMD's regional air quality significance threshold for NOx due to the construction of SCR systems and the significance is equivalent to the amount in the proposed project but achieves the operational benefits sooner.	Not Significant: This would result in an amount that is less significant than the proposed project and would not exceed SCAQMD's regional air quality CEQA significance threshold for NOx.	Significant: Exceeds the SCAQMD's regional air quality significance threshold for NOx. Due to the construction of additional SCR systems to meet the NOx emission limits, the impacts are at an amount that is more significant than the proposed project but with more operational benefits.
Significance of Hazards and Hazardous Materials Impacts	Significant: To operate, SCR systems require ammonia. Ammonia is considered a hazardous material. At two facilities, the estimated distance of the toxic endpoint from the catastrophic failure of an aqueous ammonia storage tank to sensitive receptors would result in significant impacts.	Not Significant: The construction of SCR systems would not be necessary; thus, the storage of aqueous ammonia would be eliminated. No hazards or hazardous materials impacts would occur.	Significant: The operation of an SCR system requires the use of ammonia; thus, facilities would need to store ammonia on site. Depending on the vicinity of the ammonia storage tank(s) to sensitive receptors, during catastrophic failure sensitive receptors could be within the toxic endpoint. The significance in this alternative is equivalent to the amount in the proposed project.	Significant: The operation of an SCR system requires the use of ammonia; thus, facilities would need to store ammonia on site. Depending on the vicinity of the ammonia storage tank(s) to sensitive receptors, during catastrophic failure sensitive receptors could be within the toxic endpoint. The significance in this alternative is equivalent to the amount in the proposed project.	Not Significant: The construction of SCR systems would not be necessary; thus, the storage of aqueous ammonia would be eliminated. No hazards or hazardous materials impacts would occur.	Significant: The operation of an SCR system requires the use of ammonia; thus, facilities would need to store ammonia on site. Depending on the vicinity of the ammonia storage tank(s) to sensitive receptors, during catastrophic failure sensitive receptors could be within the toxic endpoint. Additional facilities would be subject to the lower NOx emission limit. As a result, the construction of more SCR systems and ammonia storage tanks would occur. The significance is greater than the amount in the proposed project.

## ALTERNATIVES REJECTED AS INFEASIBLE

In accordance with CEQA Guidelines Section 15126.6 (c), a CEQA document should identify any alternatives that were considered by the lead agency, but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. CEQA Guidelines Section 15126.6 (c) also states that among the factors that may be used to eliminate alternatives from detailed consideration in a CEQA document are: 1) failure to meet most of the basic project objectives; 2) infeasibility; or, 3) inability to avoid significant environmental impacts.

As noted in the Introduction, the range of feasible alternatives to the proposed project is limited by the nature of the proposed project and associated legal requirements. Similarly, the range of alternatives considered, but rejected as infeasible is also relatively limited.

The following discussion identifies Alternative A, the No Project Alternative, as being rejected due its failure to meet most of the basic project objectives.

CEQA documents typically assume that the adoption of a No Project alternative would result in no further action on the part of the project proponent or lead agency. For example, in the case of a proposed land use project such as a housing development, adopting the No Project alternative terminates further consideration of that housing development or any housing development alternative identified in the associated CEQA document. In that case, the existing setting would typically remain unchanged.

The concept of taking no further action (and thereby leaving the existing setting intact) by adopting a No Project alternative does not readily apply to implementation of a control measure that has been adopted and legally mandated in the 2016 AQMP. The federal and state Clean Air Acts require the SCAQMD to implement the AQMP in order to attain all state and national ambient air quality standards. More importantly, a No Project alternative in the case of the proposed project is not a legally viable alternative because it violates a state law requirement in Health and Safety Code Section 40440 that regulations mandate the use of BARCT for existing sources and for the subset of RECLAIM facilities subject to the requirements of ABs 617 and 398.

“The ‘no project’ analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, *as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services...*” It should be noted that, except for air quality, there would be no further incremental impacts on the existing environment if no further action is taken. Although there are other existing rules that may have future compliance dates for NO<sub>x</sub> emission reductions, potential adverse impacts from these rules have already been evaluated in the Final Program EIR for the 2016 AQMP and their subsequent rule-specific CEQA documents. While air quality would continue to improve to a certain extent, it is unlikely that all state or federal ozone standards would be achieved as required by the federal and California CAAs. It is possible that the federal 24-hour PM<sub>2.5</sub> standard may be achieved; however, it is unlikely that further progress would be made towards achieving the state PM<sub>2.5</sub> standard as required by the California CAA.

## LOWEST TOXIC ALTERNATIVE

In accordance with SCAQMD’s policy document Environmental Justice Program Enhancements for FY 2002-03, Enhancement II-1 recommends for all SCAQMD CEQA documents which are required to include an alternatives analysis, the alternative analysis shall also include and identify a feasible project alternative with the lowest air toxics emissions. In other words, for any major equipment or process type under the scope of the proposed project that creates a significant environmental impact, at least one alternative, where feasible, shall be considered from a “least harmful” perspective with regard to hazardous or toxic air pollutants.

As explained in the hazards and hazardous materials discussion in Chapter 4, implementation of the proposed project may alter the hazards and hazardous materials associated with the existing facilities affected by the proposed project. Air pollution control equipment (e.g., SCR systems) are expected to be installed at affected facilities such that their operations may increase the quantity of ammonia (a hazardous material) used in the control equipment. The main NOx reduction technologies considered for the proposed project are based on employing SCR systems and ultra-low NOx burners. The analysis shows that of the possible NOx controls, only the use of SCR systems may increase the use of toxic materials (e.g., aqueous ammonia).

To identify a lowest toxic alternative with respect to the proposed project, a lowest toxic alternative would be if NOx control technologies are employed that use the least amount of hazardous or toxic materials. For the proposed project, ultra-low NOx burners are the least toxic technology when compared to SCR systems. Of the five alternatives, only Alternative A – the No Project alternative and Alternative D – All Ultra-Low NOx Burners, do not assume that SCR systems and ammonia will be utilized. Thus, hazardous materials would not be needed if either of these alternatives are implemented.

Under Alternative A, the No Project alternative, no NOx emission limits would be imposed on Rules 1146/1146.1/1146.2 units and no NOx control equipment (e.g., SCR systems or ultra-low NOx burners) would be installed. Further, no significant adverse impacts from construction and operating NOx control equipment would be expected to occur. Since no construction or operation activities associated with new or modified control equipment would occur under Alternative A, no new impacts to the environment, including the topic of hazards and hazardous materials would be expected. Thus, no increased use in the amount of hazardous or toxic materials would occur if Alternative A is implemented. While Alternative A results in no toxic emissions when compared to the proposed project, it is not the environmentally superior alternative because it results in no NOx benefits and does not meet the project objectives.

Under Alternative D, no SCR systems would be installed and only ultra-low NOx burners would be installed. Further, no significant adverse impacts from construction and operating NOx control equipment would be expected to occur. Since no SCR systems would be installed under Alternative D, no hazards and hazardous materials impacts would be expected. Thus, from a hazard and air toxics perspective, when compared to the proposed project and the other alternatives under consideration, if implemented, Alternative D is considered to be the lowest toxic alternative.

## ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Pursuant to CEQA Guidelines Section 15126.6(e)(2), if the environmentally superior alternative is the “no project” alternative, the CEQA document shall also identify an alternate environmentally superior alternative from among the other alternatives.

If Alternative A is implemented, PARs 1146 series and PR 1100 would not be adopted; thus, the proposed project’s objectives would not be achieved and no NO<sub>x</sub> emissions reductions would occur such that the corresponding health benefits that result from NO<sub>x</sub> emission reductions would also not occur. If Alternative A is implemented, the baseline of NO<sub>x</sub> emissions currently generated by the affected units will remain unchanged. Currently, the Basin is in non-attainment for ozone and cannot achieve attainment unless NO<sub>x</sub> emissions reductions occur. In addition, implementing Alternative A means that RECLAIM facilities with units subject to Rules 1146, 1146.1, and 1146.2 would not transition to a command-and-control regulatory structure or some units would not achieve BARCT level equivalency. Units at non-RECLAIM facilities would also not meet BARCT level equivalency. Alternative A would result in no significant air quality or hazards and hazardous materials impacts; however, this alternative would not achieve the project objectives.

If Alternative B is implemented, the compliance deadline would be extended by one year. The same NO<sub>x</sub> emissions reductions would be achieved as the proposed project; however, the NO<sub>x</sub> emission reductions would be achieved one year later (e.g., a delay in the operational benefits). If Alternative B is implemented the air quality impacts during construction would occur up to one year later depending when facility operators decide to install SCR systems on their affected equipment. Once the SCR systems are installed and operational, the hazards and hazardous materials impacts would be the same. Like the proposed project, Alternative B is implemented, the project objectives would be achieved and equivalent significant adverse environmental impacts for the topics of air quality during construction and hazards and hazardous materials due to ammonia storage and use during operation would occur.

If Alternative C is implemented, the desired NO<sub>x</sub> emissions reductions would be achieved sooner (100 percent by January 1, 2021) than the proposed project. The earlier compliance date would apply to 25 percent of the units subject to Rules 1146 and 1146.1. For this reason, Alternative C provides equivalent NO<sub>x</sub> emission reductions on an expedited schedule when compared to the proposed project which will in turn allow for the corresponding benefits to air quality and public health to occur earlier. Of the significant adverse impacts from air quality during construction and hazards and hazardous materials that would be generated under Alternative C, the impacts would be greater than the proposed project, because of the compressed schedule; however, the project objectives would be achieved.

If Alternative D is implemented, all units subject to Rules 1146 and 1146.1 would be required to install ultra-low NO<sub>x</sub> burners to meet NO<sub>x</sub> emission limits of nine ppm (or 0.011 pound per MMBtu) by the same compliance date as the proposed project (75 percent of units by January 1, 2021 and 100 percent of units by January 1, 2022). Alternative D would result in fewer NO<sub>x</sub> emissions reductions than the proposed project without achieving BARCT NO<sub>x</sub> emissions equivalency. Thus, Alternative D would result in reduced benefits to public health and air quality and would not achieve all of the project objectives. If Alternative D is implemented, no SCR systems would be installed and no ammonia would be needed such that there would be less than significant air quality impacts during construction and the significant adverse hazards and hazardous materials impacts due to ammonia use would also be eliminated. For these reasons,

Alternative D is considered to be the environmentally superior alternative. However, the project's objectives would not be achieved.

If Alternative E is implemented, units with a rated heat input of greater than or equal to 7540 MMBtu per hour would be required to meet a five ppm NO<sub>x</sub> emission limit. Alternative E would require Group II and Group III units to meet nine ppm (or 0.011 pounds per MMBtu) instead of five ppm (or 0.0062 pound per MMBtu) for Group II units with an existing NO<sub>x</sub> limit greater than 12 ppm and seven ppm (or 0.0085 pound per MMBtu) for Group II units with an existing NO<sub>x</sub> limit less than 12 ppm and Group III fire-tube boilers. Under Alternative E, any units with a rated heat input greater than two but less than five MMBtu per hour would need to meet nine ppm. In the proposed project, units with a rated heat input greater than two but less than five MMBtu per hour are required to meet seven ppm for fire-tube boilers and water-tube boilers would need to meet nine ppm. In addition, under Alternative E, thermal fluid heaters would remain at the current NO<sub>x</sub> emission limit of 30 ppm (or 0.037 pound per MMBtu). Under Alternative E, the affected units will have the same compliance deadline as the proposed project (e.g., 75 percent of units by January 1, 2021 and 100 percent compliance by January 1, 2022). ~~To achieve a five ppm NO<sub>x</sub> emission limit, the subset of Group II units (with a rated heat input of greater than or equal to 40 MMBtu, but less than 75 MMBtu) would need to have SCR systems. Because less SCR systems would be need to be installed to meet NO<sub>x</sub> emissions limits, Alternative E is less stringent than the proposed project. However, t~~The installation of additional SCR systems would result in less than significant impacts to air quality during construction and significant adverse impacts to air quality during construction and hazards and hazardous materials for ammonia. If Alternative E is implemented, the air quality impacts are expected to be less greater on a peak day than the proposed project, because ~~of the installation of fewer additional SCR systems will be installed.~~ The impacts from the hazards and hazardous materials for ammonia may be equivalent or less greater than the proposed project depending on the location and size of the ammonia storage tanks required by the construction of the additional SCR system and the proximity to sensitive receptors. Because ~~less more~~ units would have SCR systems installed and in turn would result in fewer less allow for greater NO<sub>x</sub> emission reductions than would otherwise occur if the same units only had the burners replaced with ultra low NO<sub>x</sub> burners under the proposed project, Alternative E would be less more stringent than the proposed project. Alternative E would ~~not also~~ achieve all of the project objectives and still while creating significant adverse impacts to air quality during construction ~~than the proposed project~~ and possibly for hazards and hazardous materials for ammonia storage and use.

In summary, of the five alternatives, Alternative D would be considered the environmentally superior alternative.

## CONCLUSION

Of the five alternatives analyzed, Alternative A would generate the least severe and fewest number of environmental impacts compared to the proposed project. However, of the project alternatives, Alternative A would achieve the fewest of the project objectives and would have the fewest NO<sub>x</sub> emission reduction benefits.

Thus, from a hazard and air toxics perspective, when compared to the other alternatives under consideration, if implemented, Alternative D is considered to be the lowest toxic alternative and the environmentally superior alternative. However, Alternative D does not achieve the same amount of NO<sub>x</sub> emission reductions that would result if the proposed project is implemented.

Thus, when comparing the environmental effects of the project alternatives with the proposed project and evaluating the effectiveness of achieving the project objectives of the proposed project versus the project alternatives, the proposed project provides the best balance in achieving the project objectives while minimizing the significant adverse environmental impacts to air quality during construction and hazards and hazardous materials.

## **APPENDICES**

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**Appendix A: PARs 1146 series and PR 1100**

**Appendix B: Assumptions and Calculations**

**B-1: CalEEMod Files and Assumptions – Construction Emissions (SCR System)**

**Construction of a SCR System (Annual)**

**Construction of a SCR System (Summer)**

**Construction of a SCR System (Winter)**

**B-2: Construction Emissions of Ultra-Low NOx Burners**

**B-3: CalEEMod Files and Assumptions – Construction Emission (Boiler Replacement)**

**Construction for a Boiler Replacement (Annual)**

**Construction for a Boiler Replacement (Summer)**

**Construction for a Boiler Replacement (Winter)**

**B-4: Operational Emissions**

**Appendix C: Tier III Risk Assessment Calculations of Diesel PM**

**Appendix D: List of Affected Facilities**

**Appendix E: Ammonia Storage Calculations**

**Appendix F: CEQA Scoping Comments and Responses to Comments**

**Appendix G: Comment Letters Received on the Original Draft SEA (comment period from April 3, 2018 to May 18, 2018) and Responses to Comments**

## **APPENDIX A**

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### **PARs 1146 SERIES AND PR 1100**

In order to save space and avoid repetition, please refer to the latest versions of PARs 1146 series and PR 1100 located elsewhere in the Governing Board Package (meeting date December 7, 2018). The versions of PARs 1146 series and PR 1100 that were circulated with the Revised Draft SEA which was released on September 27, 2018 for a 45-day public review and comment period ending on November 13, 2018 was identified in Appendix A as follows:

PAR 1146 was identified as version “PAR September 18, 2018”

PAR 1146.1 was identified as version “PAR September 18, 2018”

PAR 1146.2 was identified as version “PAR September 18, 2018”

PR 1100 was identified as version “PR September 18, 2018”

Original hard copies of the Revised Draft EA, which include the draft version of the proposed amended rule listed above, can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by contacting Fabian Wesson, Public Advisor at the SCAQMD’s Public Information Center by phone at (909) 396-2039 or by email at [PICrequests@aqmd.gov](mailto:PICrequests@aqmd.gov).

## **APPENDIX B**

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### **ASSUMPTIONS AND CALCULATIONS**

## **APPENDIX B-1**

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### **CalEEMod Files and Assumptions – Construction Emissions (SCR system)**

**CalEEMod Files and Assumptions – Construction Emissions**  
**Construction of a SCR System (Annual)**

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PAR 1146 series SCR - South Coast AQMD Air District, Annual

**PAR 1146 series SCR**  
**South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	9			<b>Operational Year</b>	2019
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	702.44	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

PAR 1146 series SCR - South Coast AQMD Air District, Annual

Project Characteristics -

Land Use - User Defined Industrial

Construction Phase - SCR: Demolition: 10 days; Site Preparation: 2 days; Building Construction: 250 days; Paving: 5 days

Off-road Equipment - No Arch. Coating

Off-road Equipment - Cranes (1): 6 hours per day; Forklifts (1): 6 hours per day; Generator Sets (1): 8 hours per day; Tractors/Loaders/Backhoes (1): 6 hours per day; Welders (2): 8 hours per day; Aerial Lifts (1): 8 hours per day

Off-road Equipment - Concrete/Industrial Saws (1): 8 hours per day; Rubber Tired Dozers (1): 8 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day; Cranes (1): 8 hours per day

Off-road Equipment - Cement and Mortar Mixers (1): 6 hours per day; Paving Equipment (1): 8 hours per day; Plate Compactors (1): 6 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day

Off-road Equipment - Rubber Tired Dozers (1): 7 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day; Trenchers (1): 8 hours per day

Demolition - 1 acre = 43,560 square feet

Trips and VMT - Demolition: 15 Worker Trips, 0 Vendor Trips, 5 Hauling Trips

Site Preparation: 8 Work Trips, 0 Vendor Trips, 0 Hauling Trips

Building Construction: 18 Worker Trips, 7 Vendor Trips, 0 Hauling Trips

Paving: 13 Worker Trips, 0 Vendor Trips, 0 Hauling Trips

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	250.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	PhaseEndDate	2/21/2018	1/3/2020
tblConstructionPhase	PhaseEndDate	2/21/2018	1/14/2019
tblConstructionPhase	PhaseEndDate	2/21/2018	1/10/2020
tblConstructionPhase	PhaseEndDate	2/21/2018	1/16/2019
tblConstructionPhase	PhaseStartDate	2/22/2018	1/20/2019
tblConstructionPhase	PhaseStartDate	2/22/2018	1/1/2019
tblConstructionPhase	PhaseStartDate	2/22/2018	1/4/2020

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tblConstructionPhase	PhaseStartDate	2/22/2018	1/15/2019
tblGrading	AcresOfGrading	1.00	0.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	132.00	131.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	78.00	81.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	UsageHours	1.00	8.00

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tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	198.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	7.00
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	15.00	13.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00

**2.0 Emissions Summary**

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**2.1 Overall Construction**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2650	2.0945	1.7949	3.2300e-003	0.0575	0.1102	0.1677	0.0145	0.1057	0.1202	0.0000	278.3107	278.3107	0.0508	0.0000	279.5795
2020	5.1400e-003	0.0445	0.0448	8.0000e-005	7.2000e-004	2.3300e-003	3.0500e-003	1.9000e-004	2.1900e-003	2.3800e-003	0.0000	6.6282	6.6282	1.5500e-003	0.0000	6.6669
<b>Maximum</b>	<b>0.2650</b>	<b>2.0945</b>	<b>1.7949</b>	<b>3.2300e-003</b>	<b>0.0575</b>	<b>0.1102</b>	<b>0.1677</b>	<b>0.0145</b>	<b>0.1057</b>	<b>0.1202</b>	<b>0.0000</b>	<b>278.3107</b>	<b>278.3107</b>	<b>0.0508</b>	<b>0.0000</b>	<b>279.5795</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2650	2.0945	1.7949	3.2300e-003	0.0575	0.1102	0.1677	0.0145	0.1057	0.1202	0.0000	278.3104	278.3104	0.0508	0.0000	279.5792
2020	5.1400e-003	0.0445	0.0448	8.0000e-005	7.2000e-004	2.3300e-003	3.0500e-003	1.9000e-004	2.1900e-003	2.3800e-003	0.0000	6.6282	6.6282	1.5500e-003	0.0000	6.6669
<b>Maximum</b>	<b>0.2650</b>	<b>2.0945</b>	<b>1.7949</b>	<b>3.2300e-003</b>	<b>0.0575</b>	<b>0.1102</b>	<b>0.1677</b>	<b>0.0145</b>	<b>0.1057</b>	<b>0.1202</b>	<b>0.0000</b>	<b>278.3104</b>	<b>278.3104</b>	<b>0.0508</b>	<b>0.0000</b>	<b>279.5792</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
4	11-22-2018	2-21-2019	0.3551	0.3551
5	2-22-2019	5-21-2019	0.5678	0.5678
6	5-22-2019	8-21-2019	0.5867	0.5867
7	8-22-2019	11-21-2019	0.5870	0.5870
8	11-22-2019	2-21-2020	0.2979	0.2979
		Highest	0.5870	0.5870

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.0000e-005</b>

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**2.2 Overall Operational**

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.0000e-005</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**3.0 Construction Detail**

**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	1/14/2019	5	10	
2	Site Preparation	Site Preparation	1/15/2019	1/16/2019	5	2	
3	Building Construction	Building Construction	1/20/2019	1/3/2020	5	250	
4	Paving	Paving	1/4/2020	1/10/2020	5	5	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	98	0.37
Paving	Paving Equipment	1	8.00	131	0.36
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	98	0.37
Paving	Plate Compactors	1	6.00	8	0.43
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Welders	2	8.00	46	0.45
Building Construction	Aerial Lifts	1	8.00	63	0.31
Demolition	Cranes	1	8.00	226	0.29
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Trenchers	1	8.00	81	0.50
Building Construction	Tractors/Loaders/Backhoes	1	6.00	98	0.37
Site Preparation	Graders	1	8.00	187	0.41
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	98	0.37

**Trips and VMT**

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	7	18.00	7.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	15.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0214	0.0000	0.0214	3.2500e-003	0.0000	3.2500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.1142	0.0840	1.2000e-004		5.7200e-003	5.7200e-003		5.3500e-003	5.3500e-003	0.0000	10.6175	10.6175	2.7000e-003	0.0000	10.6849
<b>Total</b>	<b>0.0111</b>	<b>0.1142</b>	<b>0.0840</b>	<b>1.2000e-004</b>	<b>0.0214</b>	<b>5.7200e-003</b>	<b>0.0272</b>	<b>3.2500e-003</b>	<b>5.3500e-003</b>	<b>8.6000e-003</b>	<b>0.0000</b>	<b>10.6175</b>	<b>10.6175</b>	<b>2.7000e-003</b>	<b>0.0000</b>	<b>10.6849</b>

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**3.2 Demolition - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.5000e-004	1.4000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1906	0.1906	1.0000e-005	0.0000	0.1909
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.9000e-004	3.1300e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7645	0.7645	2.0000e-005	0.0000	0.7651
<b>Total</b>	<b>3.8000e-004</b>	<b>1.0400e-003</b>	<b>3.2700e-003</b>	<b>1.0000e-005</b>	<b>8.6000e-004</b>	<b>1.0000e-005</b>	<b>8.8000e-004</b>	<b>2.3000e-004</b>	<b>1.0000e-005</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>0.9551</b>	<b>0.9551</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.9560</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0214	0.0000	0.0214	3.2500e-003	0.0000	3.2500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.1142	0.0840	1.2000e-004		5.7200e-003	5.7200e-003		5.3500e-003	5.3500e-003	0.0000	10.6174	10.6174	2.7000e-003	0.0000	10.6849
<b>Total</b>	<b>0.0111</b>	<b>0.1142</b>	<b>0.0840</b>	<b>1.2000e-004</b>	<b>0.0214</b>	<b>5.7200e-003</b>	<b>0.0272</b>	<b>3.2500e-003</b>	<b>5.3500e-003</b>	<b>8.6000e-003</b>	<b>0.0000</b>	<b>10.6174</b>	<b>10.6174</b>	<b>2.7000e-003</b>	<b>0.0000</b>	<b>10.6849</b>

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**3.2 Demolition - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.5000e-004	1.4000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1906	0.1906	1.0000e-005	0.0000	0.1909
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.9000e-004	3.1300e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7645	0.7645	2.0000e-005	0.0000	0.7651
<b>Total</b>	<b>3.8000e-004</b>	<b>1.0400e-003</b>	<b>3.2700e-003</b>	<b>1.0000e-005</b>	<b>8.6000e-004</b>	<b>1.0000e-005</b>	<b>8.8000e-004</b>	<b>2.3000e-004</b>	<b>1.0000e-005</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>0.9551</b>	<b>0.9551</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.9560</b>

**3.3 Site Preparation - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.2700e-003	0.0000	5.2700e-003	2.9000e-003	0.0000	2.9000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0800e-003	0.0227	0.0144	2.0000e-005		1.1200e-003	1.1200e-003		1.0300e-003	1.0300e-003	0.0000	1.8948	1.8948	6.0000e-004	0.0000	1.9098
<b>Total</b>	<b>2.0800e-003</b>	<b>0.0227</b>	<b>0.0144</b>	<b>2.0000e-005</b>	<b>5.2700e-003</b>	<b>1.1200e-003</b>	<b>6.3900e-003</b>	<b>2.9000e-003</b>	<b>1.0300e-003</b>	<b>3.9300e-003</b>	<b>0.0000</b>	<b>1.8948</b>	<b>1.8948</b>	<b>6.0000e-004</b>	<b>0.0000</b>	<b>1.9098</b>

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**3.3 Site Preparation - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.3000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0815	0.0815	0.0000	0.0000	0.0816
<b>Total</b>	<b>4.0000e-005</b>	<b>3.0000e-005</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0815</b>	<b>0.0815</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0816</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.2700e-003	0.0000	5.2700e-003	2.9000e-003	0.0000	2.9000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0800e-003	0.0227	0.0144	2.0000e-005		1.1200e-003	1.1200e-003		1.0300e-003	1.0300e-003	0.0000	1.8948	1.8948	6.0000e-004	0.0000	1.9098
<b>Total</b>	<b>2.0800e-003</b>	<b>0.0227</b>	<b>0.0144</b>	<b>2.0000e-005</b>	<b>5.2700e-003</b>	<b>1.1200e-003</b>	<b>6.3900e-003</b>	<b>2.9000e-003</b>	<b>1.0300e-003</b>	<b>3.9300e-003</b>	<b>0.0000</b>	<b>1.8948</b>	<b>1.8948</b>	<b>6.0000e-004</b>	<b>0.0000</b>	<b>1.9098</b>

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**3.3 Site Preparation - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.3000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0815	0.0815	0.0000	0.0000	0.0816
<b>Total</b>	<b>4.0000e-005</b>	<b>3.0000e-005</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0815</b>	<b>0.0815</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0816</b>

**3.4 Building Construction - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2373	1.8472	1.5750	2.6100e-003		0.1025	0.1025		0.0985	0.0985	0.0000	220.7004	220.7004	0.0452	0.0000	221.8311
<b>Total</b>	<b>0.2373</b>	<b>1.8472</b>	<b>1.5750</b>	<b>2.6100e-003</b>		<b>0.1025</b>	<b>0.1025</b>		<b>0.0985</b>	<b>0.0985</b>	<b>0.0000</b>	<b>220.7004</b>	<b>220.7004</b>	<b>0.0452</b>	<b>0.0000</b>	<b>221.8311</b>

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**3.4 Building Construction - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4000e-003	0.1008	0.0253	2.2000e-004	5.4500e-003	6.6000e-004	6.1100e-003	1.5700e-003	6.3000e-004	2.2000e-003	0.0000	21.4025	21.4025	1.4800e-003	0.0000	21.4395
Worker	0.0107	8.5300e-003	0.0927	2.5000e-004	0.0244	1.9000e-004	0.0246	6.4800e-003	1.8000e-004	6.6600e-003	0.0000	22.6589	22.6589	7.1000e-004	0.0000	22.6766
<b>Total</b>	<b>0.0141</b>	<b>0.1093</b>	<b>0.1180</b>	<b>4.7000e-004</b>	<b>0.0298</b>	<b>8.5000e-004</b>	<b>0.0307</b>	<b>8.0500e-003</b>	<b>8.1000e-004</b>	<b>8.8600e-003</b>	<b>0.0000</b>	<b>44.0614</b>	<b>44.0614</b>	<b>2.1900e-003</b>	<b>0.0000</b>	<b>44.1161</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2373	1.8472	1.5750	2.6100e-003		0.1025	0.1025		0.0985	0.0985	0.0000	220.7002	220.7002	0.0452	0.0000	221.8308
<b>Total</b>	<b>0.2373</b>	<b>1.8472</b>	<b>1.5750</b>	<b>2.6100e-003</b>		<b>0.1025</b>	<b>0.1025</b>		<b>0.0985</b>	<b>0.0985</b>	<b>0.0000</b>	<b>220.7002</b>	<b>220.7002</b>	<b>0.0452</b>	<b>0.0000</b>	<b>221.8308</b>

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**3.4 Building Construction - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4000e-003	0.1008	0.0253	2.2000e-004	5.4500e-003	6.6000e-004	6.1100e-003	1.5700e-003	6.3000e-004	2.2000e-003	0.0000	21.4025	21.4025	1.4800e-003	0.0000	21.4395
Worker	0.0107	8.5300e-003	0.0927	2.5000e-004	0.0244	1.9000e-004	0.0246	6.4800e-003	1.8000e-004	6.6600e-003	0.0000	22.6589	22.6589	7.1000e-004	0.0000	22.6766
<b>Total</b>	<b>0.0141</b>	<b>0.1093</b>	<b>0.1180</b>	<b>4.7000e-004</b>	<b>0.0298</b>	<b>8.5000e-004</b>	<b>0.0307</b>	<b>8.0500e-003</b>	<b>8.1000e-004</b>	<b>8.8600e-003</b>	<b>0.0000</b>	<b>44.0614</b>	<b>44.0614</b>	<b>2.1900e-003</b>	<b>0.0000</b>	<b>44.1161</b>

**3.4 Building Construction - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5800e-003	0.0207	0.0188	3.0000e-005		1.0800e-003	1.0800e-003		1.0400e-003	1.0400e-003	0.0000	2.6529	2.6529	5.3000e-004	0.0000	2.6662
<b>Total</b>	<b>2.5800e-003</b>	<b>0.0207</b>	<b>0.0188</b>	<b>3.0000e-005</b>		<b>1.0800e-003</b>	<b>1.0800e-003</b>		<b>1.0400e-003</b>	<b>1.0400e-003</b>	<b>0.0000</b>	<b>2.6529</b>	<b>2.6529</b>	<b>5.3000e-004</b>	<b>0.0000</b>	<b>2.6662</b>

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**3.4 Building Construction - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.1200e-003	2.8000e-004	0.0000	7.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2583	0.2583	2.0000e-005	0.0000	0.2587
Worker	1.2000e-004	9.0000e-005	1.0200e-003	0.0000	3.0000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2667	0.2667	1.0000e-005	0.0000	0.2669
<b>Total</b>	<b>1.6000e-004</b>	<b>1.2100e-003</b>	<b>1.3000e-003</b>	<b>0.0000</b>	<b>3.7000e-004</b>	<b>1.0000e-005</b>	<b>3.7000e-004</b>	<b>1.0000e-004</b>	<b>1.0000e-005</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.5249</b>	<b>0.5249</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.5255</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5800e-003	0.0207	0.0188	3.0000e-005		1.0800e-003	1.0800e-003		1.0400e-003	1.0400e-003	0.0000	2.6529	2.6529	5.3000e-004	0.0000	2.6662
<b>Total</b>	<b>2.5800e-003</b>	<b>0.0207</b>	<b>0.0188</b>	<b>3.0000e-005</b>		<b>1.0800e-003</b>	<b>1.0800e-003</b>		<b>1.0400e-003</b>	<b>1.0400e-003</b>	<b>0.0000</b>	<b>2.6529</b>	<b>2.6529</b>	<b>5.3000e-004</b>	<b>0.0000</b>	<b>2.6662</b>

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**3.4 Building Construction - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.1200e-003	2.8000e-004	0.0000	7.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2583	0.2583	2.0000e-005	0.0000	0.2587
Worker	1.2000e-004	9.0000e-005	1.0200e-003	0.0000	3.0000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2667	0.2667	1.0000e-005	0.0000	0.2669
<b>Total</b>	<b>1.6000e-004</b>	<b>1.2100e-003</b>	<b>1.3000e-003</b>	<b>0.0000</b>	<b>3.7000e-004</b>	<b>1.0000e-005</b>	<b>3.7000e-004</b>	<b>1.0000e-004</b>	<b>1.0000e-005</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.5249</b>	<b>0.5249</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.5255</b>

**3.5 Paving - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.2600e-003	0.0225	0.0235	4.0000e-005		1.2400e-003	1.2400e-003		1.1400e-003	1.1400e-003	0.0000	3.1294	3.1294	9.8000e-004	0.0000	3.1539
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.2600e-003</b>	<b>0.0225</b>	<b>0.0235</b>	<b>4.0000e-005</b>		<b>1.2400e-003</b>	<b>1.2400e-003</b>		<b>1.1400e-003</b>	<b>1.1400e-003</b>	<b>0.0000</b>	<b>3.1294</b>	<b>3.1294</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>3.1539</b>

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**3.5 Paving - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.2300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3210	0.3210	1.0000e-005	0.0000	0.3212
<b>Total</b>	<b>1.5000e-004</b>	<b>1.1000e-004</b>	<b>1.2300e-003</b>	<b>0.0000</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>3.6000e-004</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.3210</b>	<b>0.3210</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3212</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.2600e-003	0.0225	0.0235	4.0000e-005		1.2400e-003	1.2400e-003		1.1400e-003	1.1400e-003	0.0000	3.1294	3.1294	9.8000e-004	0.0000	3.1539
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.2600e-003</b>	<b>0.0225</b>	<b>0.0235</b>	<b>4.0000e-005</b>		<b>1.2400e-003</b>	<b>1.2400e-003</b>		<b>1.1400e-003</b>	<b>1.1400e-003</b>	<b>0.0000</b>	<b>3.1294</b>	<b>3.1294</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>3.1539</b>

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**3.5 Paving - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.2300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3210	0.3210	1.0000e-005	0.0000	0.3212
<b>Total</b>	<b>1.5000e-004</b>	<b>1.1000e-004</b>	<b>1.2300e-003</b>	<b>0.0000</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>3.6000e-004</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.3210</b>	<b>0.3210</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3212</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991

5.0 Energy Detail

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**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**5.2 Energy by Land Use - NaturalGas**

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>							

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**5.2 Energy by Land Use - Natural Gas**

**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>							

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

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**5.3 Energy by Land Use - Electricity**

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.0000e-005</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.0000e-005</b>

**7.0 Water Detail**

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### 7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

### 7.2 Water by Land Use

#### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

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**7.2 Water by Land Use**

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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PAR 1146 series SCR - South Coast AQMD Air District, Annual

### 10.0 Stationary Equipment

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#### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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#### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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#### User Defined Equipment

Equipment Type	Number
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### 11.0 Vegetation

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**CalEEMod Files and Assumptions – Construction Emissions**

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**Construction of a SCR System (Summer)**

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**PAR 1146 series SCR**  
**South Coast AQMD Air District, Summer**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	9			<b>Operational Year</b>	2019
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	702.44	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

PAR 1146 series SCR - South Coast AQMD Air District, Summer

Project Characteristics -

Land Use - User Defined Industrial

Construction Phase - SCR: Demolition: 10 days; Site Preparation: 2 days; Building Construction: 250 days; Paving: 5 days

Off-road Equipment - No Arch. Coating

Off-road Equipment - Cranes (1): 6 hours per day; Forklifts (1): 6 hours per day; Generator Sets (1): 8 hours per day; Tractors/Loaders/Backhoes (1): 6 hours per day; Welders (2): 8 hours per day; Aerial Lifts (1): 8 hours per day

Off-road Equipment - Concrete/Industrial Saws (1): 8 hours per day; Rubber Tired Dozers (1): 8 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day; Cranes (1): 8 hours per day

Off-road Equipment - Cement and Mortar Mixers (1): 6 hours per day; Paving Equipment (1): 8 hours per day; Plate Compactors (1): 6 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day

Off-road Equipment - Rubber Tired Dozers (1): 7 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day; Trenchers (1): 8 hours per day

Demolition - 1 acre = 43,560 square feet

Trips and VMT - Demolition: 15 Worker Trips, 0 Vendor Trips, 5 Hauling Trips

Site Preparation: 8 Work Trips, 0 Vendor Trips, 0 Hauling Trips

Building Construction: 18 Worker Trips, 7 Vendor Trips, 0 Hauling Trips

Paving: 13 Worker Trips, 0 Vendor Trips, 0 Hauling Trips

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	250.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	PhaseEndDate	2/21/2018	1/3/2020
tblConstructionPhase	PhaseEndDate	2/21/2018	1/14/2019
tblConstructionPhase	PhaseEndDate	2/21/2018	1/10/2020
tblConstructionPhase	PhaseEndDate	2/21/2018	1/16/2019
tblConstructionPhase	PhaseStartDate	2/22/2018	1/20/2019
tblConstructionPhase	PhaseStartDate	2/22/2018	1/1/2019
tblConstructionPhase	PhaseStartDate	2/22/2018	1/4/2020

PAR 1146 series SCR - South Coast AQMD Air District, Summer

tblConstructionPhase	PhaseStartDate	2/22/2018	1/15/2019
tblGrading	AcresOfGrading	1.00	0.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	132.00	131.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	78.00	81.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	UsageHours	1.00	8.00

PAR 1146 series SCR - South Coast AQMD Air District, Summer

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	198.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	7.00
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	15.00	13.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00

**2.0 Emissions Summary**

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PAR 1146 series SCR - South Coast AQMD Air District, Summer

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.2939	23.0369	17.4919	0.0261	5.3588	1.1452	6.4825	2.9202	1.0719	3.9540	0.0000	2,560.2379	2,560.2379	0.6638	0.0000	2,575.3184
2020	1.8267	14.5786	13.4094	0.0250	0.2460	0.7260	0.9720	0.0663	0.6976	0.7639	0.0000	2,347.6649	2,347.6649	0.4365	0.0000	2,357.8954
<b>Maximum</b>	<b>2.2939</b>	<b>23.0369</b>	<b>17.4919</b>	<b>0.0261</b>	<b>5.3588</b>	<b>1.1452</b>	<b>6.4825</b>	<b>2.9202</b>	<b>1.0719</b>	<b>3.9540</b>	<b>0.0000</b>	<b>2,560.2379</b>	<b>2,560.2379</b>	<b>0.6638</b>	<b>0.0000</b>	<b>2,575.3184</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.2939	23.0369	17.4919	0.0261	5.3588	1.1452	6.4825	2.9202	1.0719	3.9540	0.0000	2,560.2379	2,560.2379	0.6638	0.0000	2,575.3184
2020	1.8267	14.5786	13.4094	0.0250	0.2460	0.7260	0.9720	0.0663	0.6976	0.7639	0.0000	2,347.6649	2,347.6649	0.4365	0.0000	2,357.8954
<b>Maximum</b>	<b>2.2939</b>	<b>23.0369</b>	<b>17.4919</b>	<b>0.0261</b>	<b>5.3588</b>	<b>1.1452</b>	<b>6.4825</b>	<b>2.9202</b>	<b>1.0719</b>	<b>3.9540</b>	<b>0.0000</b>	<b>2,560.2379</b>	<b>2,560.2379</b>	<b>0.6638</b>	<b>0.0000</b>	<b>2,575.3184</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.3000e-004</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.3000e-004</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	1/14/2019	5	10	
2	Site Preparation	Site Preparation	1/15/2019	1/16/2019	5	2	
3	Building Construction	Building Construction	1/20/2019	1/3/2020	5	250	
4	Paving	Paving	1/4/2020	1/10/2020	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

PAR 1146 series SCR - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	98	0.37
Paving	Paving Equipment	1	8.00	131	0.36
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	98	0.37
Paving	Plate Compactors	1	6.00	8	0.43
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Welders	2	8.00	46	0.45
Building Construction	Aerial Lifts	1	8.00	63	0.31
Demolition	Cranes	1	8.00	226	0.29
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Trenchers	1	8.00	81	0.50
Building Construction	Tractors/Loaders/Backhoes	1	6.00	98	0.37
Site Preparation	Graders	1	8.00	187	0.41
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	98	0.37

**Trips and VMT**

PAR 1146 series SCR - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	7	18.00	7.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	15.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Demolition - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.2879	0.0000	4.2879	0.6492	0.0000	0.6492			0.0000			0.0000
Off-Road	2.2163	22.8402	16.7900	0.0239		1.1433	1.1433		1.0702	1.0702		2,340.748 7	2,340.748 7	0.5948		2,355.618 4
<b>Total</b>	<b>2.2163</b>	<b>22.8402</b>	<b>16.7900</b>	<b>0.0239</b>	<b>4.2879</b>	<b>1.1433</b>	<b>5.4312</b>	<b>0.6492</b>	<b>1.0702</b>	<b>1.7194</b>		<b>2,340.748 7</b>	<b>2,340.748 7</b>	<b>0.5948</b>		<b>2,355.618 4</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**3.2 Demolition - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.1100e-003	0.1456	0.0279	3.9000e-004	8.7400e-003	5.4000e-004	9.2800e-003	2.3900e-003	5.2000e-004	2.9100e-003		42.3409	42.3409	2.8900e-003		42.4131
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0735	0.0511	0.6740	1.7800e-003	0.1677	1.3000e-003	0.1690	0.0445	1.2000e-003	0.0457		177.1484	177.1484	5.5400e-003		177.2869
<b>Total</b>	<b>0.0776</b>	<b>0.1967</b>	<b>0.7019</b>	<b>2.1700e-003</b>	<b>0.1764</b>	<b>1.8400e-003</b>	<b>0.1783</b>	<b>0.0469</b>	<b>1.7200e-003</b>	<b>0.0486</b>		<b>219.4892</b>	<b>219.4892</b>	<b>8.4300e-003</b>		<b>219.6999</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.2879	0.0000	4.2879	0.6492	0.0000	0.6492			0.0000			0.0000
Off-Road	2.2163	22.8402	16.7900	0.0239		1.1433	1.1433		1.0702	1.0702	0.0000	2,340.7487	2,340.7487	0.5948		2,355.6184
<b>Total</b>	<b>2.2163</b>	<b>22.8402</b>	<b>16.7900</b>	<b>0.0239</b>	<b>4.2879</b>	<b>1.1433</b>	<b>5.4312</b>	<b>0.6492</b>	<b>1.0702</b>	<b>1.7194</b>	<b>0.0000</b>	<b>2,340.7487</b>	<b>2,340.7487</b>	<b>0.5948</b>		<b>2,355.6184</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**3.2 Demolition - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.1100e-003	0.1456	0.0279	3.9000e-004	8.7400e-003	5.4000e-004	9.2800e-003	2.3900e-003	5.2000e-004	2.9100e-003		42.3409	42.3409	2.8900e-003		42.4131
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0735	0.0511	0.6740	1.7800e-003	0.1677	1.3000e-003	0.1690	0.0445	1.2000e-003	0.0457		177.1484	177.1484	5.5400e-003		177.2869
<b>Total</b>	<b>0.0776</b>	<b>0.1967</b>	<b>0.7019</b>	<b>2.1700e-003</b>	<b>0.1764</b>	<b>1.8400e-003</b>	<b>0.1783</b>	<b>0.0469</b>	<b>1.7200e-003</b>	<b>0.0486</b>		<b>219.4892</b>	<b>219.4892</b>	<b>8.4300e-003</b>		<b>219.6999</b>

**3.3 Site Preparation - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.2693	0.0000	5.2693	2.8965	0.0000	2.8965			0.0000			0.0000
Off-Road	2.0758	22.6996	14.3849	0.0211		1.1231	1.1231		1.0332	1.0332		2,088.679 2	2,088.679 2	0.6608		2,105.200 1
<b>Total</b>	<b>2.0758</b>	<b>22.6996</b>	<b>14.3849</b>	<b>0.0211</b>	<b>5.2693</b>	<b>1.1231</b>	<b>6.3924</b>	<b>2.8965</b>	<b>1.0332</b>	<b>3.9297</b>		<b>2,088.679 2</b>	<b>2,088.679 2</b>	<b>0.6608</b>		<b>2,105.200 1</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**3.3 Site Preparation - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0392	0.0273	0.3595	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4791	94.4791	2.9500e-003		94.5530
<b>Total</b>	<b>0.0392</b>	<b>0.0273</b>	<b>0.3595</b>	<b>9.5000e-004</b>	<b>0.0894</b>	<b>7.0000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.4000e-004</b>	<b>0.0244</b>		<b>94.4791</b>	<b>94.4791</b>	<b>2.9500e-003</b>		<b>94.5530</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.2693	0.0000	5.2693	2.8965	0.0000	2.8965			0.0000			0.0000
Off-Road	2.0758	22.6996	14.3849	0.0211		1.1231	1.1231		1.0332	1.0332	0.0000	2,088.679 2	2,088.679 2	0.6608		2,105,200 1
<b>Total</b>	<b>2.0758</b>	<b>22.6996</b>	<b>14.3849</b>	<b>0.0211</b>	<b>5.2693</b>	<b>1.1231</b>	<b>6.3924</b>	<b>2.8965</b>	<b>1.0332</b>	<b>3.9297</b>	<b>0.0000</b>	<b>2,088.679 2</b>	<b>2,088.679 2</b>	<b>0.6608</b>		<b>2,105,200 1</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**3.3 Site Preparation - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0392	0.0273	0.3595	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4791	94.4791	2.9500e-003		94.5530
<b>Total</b>	<b>0.0392</b>	<b>0.0273</b>	<b>0.3595</b>	<b>9.5000e-004</b>	<b>0.0894</b>	<b>7.0000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.4000e-004</b>	<b>0.0244</b>		<b>94.4791</b>	<b>94.4791</b>	<b>2.9500e-003</b>		<b>94.5530</b>

**3.4 Building Construction - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9213	14.9573	12.7532	0.0211		0.8300	0.8300		0.7976	0.7976		1,969.8833	1,969.8833	0.4037		1,979.9752
<b>Total</b>	<b>1.9213</b>	<b>14.9573</b>	<b>12.7532</b>	<b>0.0211</b>		<b>0.8300</b>	<b>0.8300</b>		<b>0.7976</b>	<b>0.7976</b>		<b>1,969.8833</b>	<b>1,969.8833</b>	<b>0.4037</b>		<b>1,979.9752</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**3.4 Building Construction - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0270	0.8010	0.1936	1.8100e-003	0.0448	5.3100e-003	0.0501	0.0129	5.0800e-003	0.0180		193.3538	193.3538	0.0128		193.6736
Worker	0.0882	0.0613	0.8088	2.1400e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4400e-003	0.0548		212.5780	212.5780	6.6500e-003		212.7442
<b>Total</b>	<b>0.1151</b>	<b>0.8623</b>	<b>1.0024</b>	<b>3.9500e-003</b>	<b>0.2460</b>	<b>6.8800e-003</b>	<b>0.2529</b>	<b>0.0663</b>	<b>6.5200e-003</b>	<b>0.0728</b>		<b>405.9318</b>	<b>405.9318</b>	<b>0.0194</b>		<b>406.4179</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9213	14.9573	12.7532	0.0211		0.8300	0.8300		0.7976	0.7976	0.0000	1,969.8833	1,969.8833	0.4037		1,979.9752
<b>Total</b>	<b>1.9213</b>	<b>14.9573</b>	<b>12.7532</b>	<b>0.0211</b>		<b>0.8300</b>	<b>0.8300</b>		<b>0.7976</b>	<b>0.7976</b>	<b>0.0000</b>	<b>1,969.8833</b>	<b>1,969.8833</b>	<b>0.4037</b>		<b>1,979.9752</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**3.4 Building Construction - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0270	0.8010	0.1936	1.8100e-003	0.0448	5.3100e-003	0.0501	0.0129	5.0800e-003	0.0180		193.3538	193.3538	0.0128		193.6736
Worker	0.0882	0.0613	0.8088	2.1400e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4400e-003	0.0548		212.5780	212.5780	6.6500e-003		212.7442
<b>Total</b>	<b>0.1151</b>	<b>0.8623</b>	<b>1.0024</b>	<b>3.9500e-003</b>	<b>0.2460</b>	<b>6.8800e-003</b>	<b>0.2529</b>	<b>0.0663</b>	<b>6.5200e-003</b>	<b>0.0728</b>		<b>405.9318</b>	<b>405.9318</b>	<b>0.0194</b>		<b>406.4179</b>

**3.4 Building Construction - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7223	13.7893	12.4986	0.0211		0.7208	0.7208		0.6927	0.6927		1,949.5559	1,949.5559	0.3912		1,959.3368
<b>Total</b>	<b>1.7223</b>	<b>13.7893</b>	<b>12.4986</b>	<b>0.0211</b>		<b>0.7208</b>	<b>0.7208</b>		<b>0.6927</b>	<b>0.6927</b>		<b>1,949.5559</b>	<b>1,949.5559</b>	<b>0.3912</b>		<b>1,959.3368</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**3.4 Building Construction - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0230	0.7346	0.1749	1.8000e-003	0.0448	3.6400e-003	0.0484	0.0129	3.4800e-003	0.0164		192.1139	192.1139	0.0121		192.4155
Worker	0.0814	0.0547	0.7359	2.0700e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		205.9951	205.9951	5.9200e-003		206.1432
<b>Total</b>	<b>0.1044</b>	<b>0.7893</b>	<b>0.9108</b>	<b>3.8700e-003</b>	<b>0.2460</b>	<b>5.1700e-003</b>	<b>0.2512</b>	<b>0.0663</b>	<b>4.8900e-003</b>	<b>0.0711</b>		<b>398.1091</b>	<b>398.1091</b>	<b>0.0180</b>		<b>398.5587</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7223	13.7893	12.4986	0.0211		0.7208	0.7208		0.6927	0.6927	0.0000	1,949.5559	1,949.5559	0.3912		1,959.3368
<b>Total</b>	<b>1.7223</b>	<b>13.7893</b>	<b>12.4986</b>	<b>0.0211</b>		<b>0.7208</b>	<b>0.7208</b>		<b>0.6927</b>	<b>0.6927</b>	<b>0.0000</b>	<b>1,949.5559</b>	<b>1,949.5559</b>	<b>0.3912</b>		<b>1,959.3368</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**3.4 Building Construction - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0230	0.7346	0.1749	1.8000e-003	0.0448	3.6400e-003	0.0484	0.0129	3.4800e-003	0.0164		192.1139	192.1139	0.0121		192.4155
Worker	0.0814	0.0547	0.7359	2.0700e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		205.9951	205.9951	5.9200e-003		206.1432
<b>Total</b>	<b>0.1044</b>	<b>0.7893</b>	<b>0.9108</b>	<b>3.8700e-003</b>	<b>0.2460</b>	<b>5.1700e-003</b>	<b>0.2512</b>	<b>0.0663</b>	<b>4.8900e-003</b>	<b>0.0711</b>		<b>398.1091</b>	<b>398.1091</b>	<b>0.0180</b>		<b>398.5587</b>

**3.5 Paving - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9037	8.9966	9.4003	0.0145		0.4945	0.4945		0.4564	0.4564		1,379.8266	1,379.8266	0.4323		1,390.6332
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9037</b>	<b>8.9966</b>	<b>9.4003</b>	<b>0.0145</b>		<b>0.4945</b>	<b>0.4945</b>		<b>0.4564</b>	<b>0.4564</b>		<b>1,379.8266</b>	<b>1,379.8266</b>	<b>0.4323</b>		<b>1,390.6332</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**3.5 Paving - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0588	0.0395	0.5315	1.4900e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		148.7743	148.7743	4.2800e-003		148.8812
<b>Total</b>	<b>0.0588</b>	<b>0.0395</b>	<b>0.5315</b>	<b>1.4900e-003</b>	<b>0.1453</b>	<b>1.1000e-003</b>	<b>0.1464</b>	<b>0.0385</b>	<b>1.0200e-003</b>	<b>0.0396</b>		<b>148.7743</b>	<b>148.7743</b>	<b>4.2800e-003</b>		<b>148.8812</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9037	8.9966	9.4003	0.0145		0.4945	0.4945		0.4564	0.4564	0.0000	1,379.8266	1,379.8266	0.4323		1,390.6332
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9037</b>	<b>8.9966</b>	<b>9.4003</b>	<b>0.0145</b>		<b>0.4945</b>	<b>0.4945</b>		<b>0.4564</b>	<b>0.4564</b>	<b>0.0000</b>	<b>1,379.8266</b>	<b>1,379.8266</b>	<b>0.4323</b>		<b>1,390.6332</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**3.5 Paving - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0588	0.0395	0.5315	1.4900e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		148.7743	148.7743	4.2800e-003		148.8812
<b>Total</b>	<b>0.0588</b>	<b>0.0395</b>	<b>0.5315</b>	<b>1.4900e-003</b>	<b>0.1453</b>	<b>1.1000e-003</b>	<b>0.1464</b>	<b>0.0385</b>	<b>1.0200e-003</b>	<b>0.0396</b>		<b>148.7743</b>	<b>148.7743</b>	<b>4.2800e-003</b>		<b>148.8812</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

PAR 1146 series SCR - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991

5.0 Energy Detail

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**5.2 Energy by Land Use - Natural Gas**

**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

PAR 1146 series SCR - South Coast AQMD Air District, Summer

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>2.3000e-004</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>2.3000e-004</b>

**7.0 Water Detail**

PAR 1146 series SCR - South Coast AQMD Air District, Summer

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### 7.1 Mitigation Measures Water

### 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

### 9.0 Operational Offroad

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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### 10.0 Stationary Equipment

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#### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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#### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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#### User Defined Equipment

Equipment Type	Number
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### 11.0 Vegetation

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**CalEEMod Files and Assumptions – Construction Emissions**

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**Construction of a SCR System (Winter)**

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**PAR 1146 series SCR**  
**South Coast AQMD Air District, Winter**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	9			<b>Operational Year</b>	2019
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	702.44	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

PAR 1146 series SCR - South Coast AQMD Air District, Winter

Project Characteristics -

Land Use - User Defined Industrial

Construction Phase - SCR: Demolition: 10 days; Site Preparation: 2 days; Building Construction: 250 days; Paving: 5 days

Off-road Equipment - No Arch. Coating

Off-road Equipment - Cranes (1): 6 hours per day; Forklifts (1): 6 hours per day; Generator Sets (1): 8 hours per day; Tractors/Loaders/Backhoes (1): 6 hours per day; Welders (2): 8 hours per day; Aerial Lifts (1): 8 hours per day

Off-road Equipment - Concrete/Industrial Saws (1): 8 hours per day; Rubber Tired Dozers (1): 8 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day; Cranes (1): 8 hours per day

Off-road Equipment - Cement and Mortar Mixers (1): 6 hours per day; Paving Equipment (1): 8 hours per day; Plate Compactors (1): 6 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day

Off-road Equipment - Rubber Tired Dozers (1): 7 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day; Trenchers (1): 8 hours per day

Demolition - 1 acre = 43,560 square feet

Trips and VMT - Demolition: 15 Worker Trips, 0 Vendor Trips, 5 Hauling Trips

Site Preparation: 8 Work Trips, 0 Vendor Trips, 0 Hauling Trips

Building Construction: 18 Worker Trips, 7 Vendor Trips, 0 Hauling Trips

Paving: 13 Worker Trips, 0 Vendor Trips, 0 Hauling Trips

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	250.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	PhaseEndDate	2/21/2018	1/3/2020
tblConstructionPhase	PhaseEndDate	2/21/2018	1/14/2019
tblConstructionPhase	PhaseEndDate	2/21/2018	1/10/2020
tblConstructionPhase	PhaseEndDate	2/21/2018	1/16/2019
tblConstructionPhase	PhaseStartDate	2/22/2018	1/20/2019
tblConstructionPhase	PhaseStartDate	2/22/2018	1/1/2019
tblConstructionPhase	PhaseStartDate	2/22/2018	1/4/2020

PAR 1146 series SCR - South Coast AQMD Air District, Winter

tblConstructionPhase	PhaseStartDate	2/22/2018	1/15/2019
tblGrading	AcresOfGrading	1.00	0.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	132.00	131.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	78.00	81.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	UsageHours	1.00	8.00

PAR 1146 series SCR - South Coast AQMD Air District, Winter

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	198.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	7.00
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	15.00	13.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00

**2.0 Emissions Summary**

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PAR 1146 series SCR - South Coast AQMD Air District, Winter

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.3005	23.0437	17.4282	0.0260	5.3588	1.1452	6.4825	2.9202	1.0720	3.9540	0.0000	2,548.0195	2,548.0195	0.6636	0.0000	2,563.0942
2020	1.8352	14.5830	13.3562	0.0248	0.2460	0.7260	0.9720	0.0663	0.6977	0.7639	0.0000	2,328.7805	2,328.7805	0.4363	0.0000	2,339.0234
<b>Maximum</b>	<b>2.3005</b>	<b>23.0437</b>	<b>17.4282</b>	<b>0.0260</b>	<b>5.3588</b>	<b>1.1452</b>	<b>6.4825</b>	<b>2.9202</b>	<b>1.0720</b>	<b>3.9540</b>	<b>0.0000</b>	<b>2,548.0195</b>	<b>2,548.0195</b>	<b>0.6636</b>	<b>0.0000</b>	<b>2,563.0942</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.3005	23.0437	17.4282	0.0260	5.3588	1.1452	6.4825	2.9202	1.0720	3.9540	0.0000	2,548.0195	2,548.0195	0.6636	0.0000	2,563.0942
2020	1.8352	14.5830	13.3562	0.0248	0.2460	0.7260	0.9720	0.0663	0.6977	0.7639	0.0000	2,328.7805	2,328.7805	0.4363	0.0000	2,339.0234
<b>Maximum</b>	<b>2.3005</b>	<b>23.0437</b>	<b>17.4282</b>	<b>0.0260</b>	<b>5.3588</b>	<b>1.1452</b>	<b>6.4825</b>	<b>2.9202</b>	<b>1.0720</b>	<b>3.9540</b>	<b>0.0000</b>	<b>2,548.0195</b>	<b>2,548.0195</b>	<b>0.6636</b>	<b>0.0000</b>	<b>2,563.0942</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.3000e-004</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.3000e-004</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	1/14/2019	5	10	
2	Site Preparation	Site Preparation	1/15/2019	1/16/2019	5	2	
3	Building Construction	Building Construction	1/20/2019	1/3/2020	5	250	
4	Paving	Paving	1/4/2020	1/10/2020	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

PAR 1146 series SCR - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	98	0.37
Paving	Paving Equipment	1	8.00	131	0.36
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	98	0.37
Paving	Plate Compactors	1	6.00	8	0.43
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Welders	2	8.00	46	0.45
Building Construction	Aerial Lifts	1	8.00	63	0.31
Demolition	Cranes	1	8.00	226	0.29
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Trenchers	1	8.00	81	0.50
Building Construction	Tractors/Loaders/Backhoes	1	6.00	98	0.37
Site Preparation	Graders	1	8.00	187	0.41
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	98	0.37

**Trips and VMT**

PAR 1146 series SCR - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	7	18.00	7.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	15.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Demolition - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.2879	0.0000	4.2879	0.6492	0.0000	0.6492			0.0000			0.0000
Off-Road	2.2163	22.8402	16.7900	0.0239		1.1433	1.1433		1.0702	1.0702		2,340.748 7	2,340.748 7	0.5948		2,355.618 4
<b>Total</b>	<b>2.2163</b>	<b>22.8402</b>	<b>16.7900</b>	<b>0.0239</b>	<b>4.2879</b>	<b>1.1433</b>	<b>5.4312</b>	<b>0.6492</b>	<b>1.0702</b>	<b>1.7194</b>		<b>2,340.748 7</b>	<b>2,340.748 7</b>	<b>0.5948</b>		<b>2,355.618 4</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**3.2 Demolition - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.2300e-003	0.1475	0.0301	3.9000e-004	8.7400e-003	5.5000e-004	9.2900e-003	2.3900e-003	5.3000e-004	2.9200e-003		41.5725	41.5725	3.0200e-003		41.6480
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0800	0.0560	0.6081	1.6600e-003	0.1677	1.3000e-003	0.1690	0.0445	1.2000e-003	0.0457		165.6984	165.6984	5.1800e-003		165.8278
<b>Total</b>	<b>0.0842</b>	<b>0.2035</b>	<b>0.6382</b>	<b>2.0500e-003</b>	<b>0.1764</b>	<b>1.8500e-003</b>	<b>0.1783</b>	<b>0.0469</b>	<b>1.7300e-003</b>	<b>0.0486</b>		<b>207.2709</b>	<b>207.2709</b>	<b>8.2000e-003</b>		<b>207.4758</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.2879	0.0000	4.2879	0.6492	0.0000	0.6492			0.0000			0.0000
Off-Road	2.2163	22.8402	16.7900	0.0239		1.1433	1.1433		1.0702	1.0702	0.0000	2,340.7487	2,340.7487	0.5948		2,355.6184
<b>Total</b>	<b>2.2163</b>	<b>22.8402</b>	<b>16.7900</b>	<b>0.0239</b>	<b>4.2879</b>	<b>1.1433</b>	<b>5.4312</b>	<b>0.6492</b>	<b>1.0702</b>	<b>1.7194</b>	<b>0.0000</b>	<b>2,340.7487</b>	<b>2,340.7487</b>	<b>0.5948</b>		<b>2,355.6184</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**3.2 Demolition - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.2300e-003	0.1475	0.0301	3.9000e-004	8.7400e-003	5.5000e-004	9.2900e-003	2.3900e-003	5.3000e-004	2.9200e-003		41.5725	41.5725	3.0200e-003		41.6480
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0800	0.0560	0.6081	1.6600e-003	0.1677	1.3000e-003	0.1690	0.0445	1.2000e-003	0.0457		165.6984	165.6984	5.1800e-003		165.8278
<b>Total</b>	<b>0.0842</b>	<b>0.2035</b>	<b>0.6382</b>	<b>2.0500e-003</b>	<b>0.1764</b>	<b>1.8500e-003</b>	<b>0.1783</b>	<b>0.0469</b>	<b>1.7300e-003</b>	<b>0.0486</b>		<b>207.2709</b>	<b>207.2709</b>	<b>8.2000e-003</b>		<b>207.4758</b>

**3.3 Site Preparation - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.2693	0.0000	5.2693	2.8965	0.0000	2.8965			0.0000			0.0000
Off-Road	2.0758	22.6996	14.3849	0.0211		1.1231	1.1231		1.0332	1.0332		2,088.679 2	2,088.679 2	0.6608		2,105.200 1
<b>Total</b>	<b>2.0758</b>	<b>22.6996</b>	<b>14.3849</b>	<b>0.0211</b>	<b>5.2693</b>	<b>1.1231</b>	<b>6.3924</b>	<b>2.8965</b>	<b>1.0332</b>	<b>3.9297</b>		<b>2,088.679 2</b>	<b>2,088.679 2</b>	<b>0.6608</b>		<b>2,105.200 1</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**3.3 Site Preparation - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0427	0.0299	0.3243	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.3725	88.3725	2.7600e-003		88.4415
<b>Total</b>	<b>0.0427</b>	<b>0.0299</b>	<b>0.3243</b>	<b>8.9000e-004</b>	<b>0.0894</b>	<b>7.0000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.4000e-004</b>	<b>0.0244</b>		<b>88.3725</b>	<b>88.3725</b>	<b>2.7600e-003</b>		<b>88.4415</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.2693	0.0000	5.2693	2.8965	0.0000	2.8965			0.0000			0.0000
Off-Road	2.0758	22.6996	14.3849	0.0211		1.1231	1.1231		1.0332	1.0332	0.0000	2,088.679 2	2,088.679 2	0.6608		2,105,200 1
<b>Total</b>	<b>2.0758</b>	<b>22.6996</b>	<b>14.3849</b>	<b>0.0211</b>	<b>5.2693</b>	<b>1.1231</b>	<b>6.3924</b>	<b>2.8965</b>	<b>1.0332</b>	<b>3.9297</b>	<b>0.0000</b>	<b>2,088.679 2</b>	<b>2,088.679 2</b>	<b>0.6608</b>		<b>2,105,200 1</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**3.3 Site Preparation - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0427	0.0299	0.3243	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.3725	88.3725	2.7600e-003		88.4415
<b>Total</b>	<b>0.0427</b>	<b>0.0299</b>	<b>0.3243</b>	<b>8.9000e-004</b>	<b>0.0894</b>	<b>7.0000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.4000e-004</b>	<b>0.0244</b>		<b>88.3725</b>	<b>88.3725</b>	<b>2.7600e-003</b>		<b>88.4415</b>

**3.4 Building Construction - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9213	14.9573	12.7532	0.0211		0.8300	0.8300		0.7976	0.7976		1,969.8833	1,969.8833	0.4037		1,979.9752
<b>Total</b>	<b>1.9213</b>	<b>14.9573</b>	<b>12.7532</b>	<b>0.0211</b>		<b>0.8300</b>	<b>0.8300</b>		<b>0.7976</b>	<b>0.7976</b>		<b>1,969.8833</b>	<b>1,969.8833</b>	<b>0.4037</b>		<b>1,979.9752</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**3.4 Building Construction - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0282	0.8015	0.2156	1.7600e-003	0.0448	5.3900e-003	0.0502	0.0129	5.1600e-003	0.0181		187.8214	187.8214	0.0138		188.1651
Worker	0.0960	0.0672	0.7297	2.0000e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4400e-003	0.0548		198.8380	198.8380	6.2100e-003		198.9933
<b>Total</b>	<b>0.1242</b>	<b>0.8687</b>	<b>0.9453</b>	<b>3.7600e-003</b>	<b>0.2460</b>	<b>6.9600e-003</b>	<b>0.2530</b>	<b>0.0663</b>	<b>6.6000e-003</b>	<b>0.0729</b>		<b>386.6594</b>	<b>386.6594</b>	<b>0.0200</b>		<b>387.1584</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9213	14.9573	12.7532	0.0211		0.8300	0.8300		0.7976	0.7976	0.0000	1,969.8833	1,969.8833	0.4037		1,979.9752
<b>Total</b>	<b>1.9213</b>	<b>14.9573</b>	<b>12.7532</b>	<b>0.0211</b>		<b>0.8300</b>	<b>0.8300</b>		<b>0.7976</b>	<b>0.7976</b>	<b>0.0000</b>	<b>1,969.8833</b>	<b>1,969.8833</b>	<b>0.4037</b>		<b>1,979.9752</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**3.4 Building Construction - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0282	0.8015	0.2156	1.7600e-003	0.0448	5.3900e-003	0.0502	0.0129	5.1600e-003	0.0181		187.8214	187.8214	0.0138		188.1651
Worker	0.0960	0.0672	0.7297	2.0000e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4400e-003	0.0548		198.8380	198.8380	6.2100e-003		198.9933
<b>Total</b>	<b>0.1242</b>	<b>0.8687</b>	<b>0.9453</b>	<b>3.7600e-003</b>	<b>0.2460</b>	<b>6.9600e-003</b>	<b>0.2530</b>	<b>0.0663</b>	<b>6.6000e-003</b>	<b>0.0729</b>		<b>386.6594</b>	<b>386.6594</b>	<b>0.0200</b>		<b>387.1584</b>

**3.4 Building Construction - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7223	13.7893	12.4986	0.0211		0.7208	0.7208		0.6927	0.6927		1,949.5559	1,949.5559	0.3912		1,959.3368
<b>Total</b>	<b>1.7223</b>	<b>13.7893</b>	<b>12.4986</b>	<b>0.0211</b>		<b>0.7208</b>	<b>0.7208</b>		<b>0.6927</b>	<b>0.6927</b>		<b>1,949.5559</b>	<b>1,949.5559</b>	<b>0.3912</b>		<b>1,959.3368</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**3.4 Building Construction - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0241	0.7338	0.1950	1.7500e-003	0.0448	3.6900e-003	0.0485	0.0129	3.5300e-003	0.0164		186.5590	186.5590	0.0130		186.8828
Worker	0.0888	0.0599	0.6626	1.9300e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		192.6657	192.6657	5.5300e-003		192.8038
<b>Total</b>	<b>0.1129</b>	<b>0.7937</b>	<b>0.8576</b>	<b>3.6800e-003</b>	<b>0.2460</b>	<b>5.2200e-003</b>	<b>0.2512</b>	<b>0.0663</b>	<b>4.9400e-003</b>	<b>0.0712</b>		<b>379.2247</b>	<b>379.2247</b>	<b>0.0185</b>		<b>379.6867</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7223	13.7893	12.4986	0.0211		0.7208	0.7208		0.6927	0.6927	0.0000	1,949.5559	1,949.5559	0.3912		1,959.3368
<b>Total</b>	<b>1.7223</b>	<b>13.7893</b>	<b>12.4986</b>	<b>0.0211</b>		<b>0.7208</b>	<b>0.7208</b>		<b>0.6927</b>	<b>0.6927</b>	<b>0.0000</b>	<b>1,949.5559</b>	<b>1,949.5559</b>	<b>0.3912</b>		<b>1,959.3368</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**3.4 Building Construction - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0241	0.7338	0.1950	1.7500e-003	0.0448	3.6900e-003	0.0485	0.0129	3.5300e-003	0.0164		186.5590	186.5590	0.0130		186.8828
Worker	0.0888	0.0599	0.6626	1.9300e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		192.6657	192.6657	5.5300e-003		192.8038
<b>Total</b>	<b>0.1129</b>	<b>0.7937</b>	<b>0.8576</b>	<b>3.6800e-003</b>	<b>0.2460</b>	<b>5.2200e-003</b>	<b>0.2512</b>	<b>0.0663</b>	<b>4.9400e-003</b>	<b>0.0712</b>		<b>379.2247</b>	<b>379.2247</b>	<b>0.0185</b>		<b>379.6867</b>

**3.5 Paving - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9037	8.9966	9.4003	0.0145		0.4945	0.4945		0.4564	0.4564		1,379.8266	1,379.8266	0.4323		1,390.6332
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9037</b>	<b>8.9966</b>	<b>9.4003</b>	<b>0.0145</b>		<b>0.4945</b>	<b>0.4945</b>		<b>0.4564</b>	<b>0.4564</b>		<b>1,379.8266</b>	<b>1,379.8266</b>	<b>0.4323</b>		<b>1,390.6332</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**3.5 Paving - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0642	0.0433	0.4785	1.4000e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		139.1474	139.1474	3.9900e-003		139.2472
<b>Total</b>	<b>0.0642</b>	<b>0.0433</b>	<b>0.4785</b>	<b>1.4000e-003</b>	<b>0.1453</b>	<b>1.1000e-003</b>	<b>0.1464</b>	<b>0.0385</b>	<b>1.0200e-003</b>	<b>0.0396</b>		<b>139.1474</b>	<b>139.1474</b>	<b>3.9900e-003</b>		<b>139.2472</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9037	8.9966	9.4003	0.0145		0.4945	0.4945		0.4564	0.4564	0.0000	1,379.8266	1,379.8266	0.4323		1,390.6332
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9037</b>	<b>8.9966</b>	<b>9.4003</b>	<b>0.0145</b>		<b>0.4945</b>	<b>0.4945</b>		<b>0.4564</b>	<b>0.4564</b>	<b>0.0000</b>	<b>1,379.8266</b>	<b>1,379.8266</b>	<b>0.4323</b>		<b>1,390.6332</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**3.5 Paving - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0642	0.0433	0.4785	1.4000e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		139.1474	139.1474	3.9900e-003		139.2472
<b>Total</b>	<b>0.0642</b>	<b>0.0433</b>	<b>0.4785</b>	<b>1.4000e-003</b>	<b>0.1453</b>	<b>1.1000e-003</b>	<b>0.1464</b>	<b>0.0385</b>	<b>1.0200e-003</b>	<b>0.0396</b>		<b>139.1474</b>	<b>139.1474</b>	<b>3.9900e-003</b>		<b>139.2472</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

PAR 1146 series SCR - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991

5.0 Energy Detail

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**5.2 Energy by Land Use - Natural Gas**

**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

PAR 1146 series SCR - South Coast AQMD Air District, Winter

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>2.3000e-004</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>2.3000e-004</b>

**7.0 Water Detail**

PAR 1146 series SCR - South Coast AQMD Air District, Winter

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## 7.1 Mitigation Measures Water

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## 10.0 Stationary Equipment

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### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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### User Defined Equipment

Equipment Type	Number
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## 11.0 Vegetation

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## **APPENDIX B-2**

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### **Construction Emissions of Ultra-Low NO<sub>x</sub> Burners**

**Retrofit with Ultra-Low Nox Burners in 2019**

PAR 1146 Series Affected Equipment	No. of Units	Construction Activity
Rule 1146 and 1146.1 units in RECLAIM	1	Install Ultra-Low NOx burners on 35 units during 2019

**Construction Schedule - 1 day per unit**

Activity	Equipment Type	No. of Equipment	Hrs/day	Crew Size
Off-Road Mobile Source Operations	Welding Machin	1	2	1

Construction Equipment Emission Factors	VOC	CO	NOx	SOx	PM10	CO2
Equipment Type*	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Welding Machine (composite)	0.0344	0.1843	0.1832	0.0003	0.0117	25.6

Source: Off-road Mobile Source Emission Factors - Scenario Year 2019

[http://www.aqmd.gov/docs/default-source/ceqa/handbook/emission-factors/off-road-mobile-source-emission-factors-\(scenario-years-2007-2025\).xls](http://www.aqmd.gov/docs/default-source/ceqa/handbook/emission-factors/off-road-mobile-source-emission-factors-(scenario-years-2007-2025).xls)

\*Equipment is assumed to be diesel fueled.

Construction Vehicle (Mobile Source)							
Emission Factors for Year 2019	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
Construction Related Activity	lb/mile						
Offsite (Construction Worker Vehicle)	0.00034	0.00291	0.00030	0.00001	0.00010	0.00004	0.92780
Offsite (Delivery Truck - pickup truck)	0.00034	0.00291	0.00030	0.00001	0.00010	0.00004	0.92780

Source: Highest (Most Conservative) EMFAC2014 (Version 1.07) Emission Factors for On-Passenger Vehicles & Delivery Trucks - Scenario Year 2019

<https://www.arb.ca.gov/emfac/2014/>

**Construction Worker Number of Trips and Trip Length**

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Offsite (Construction Worker)	2	25
Offsite (Delivery Truck - Medium Duty)	2	50

**Incremental Increase in Onsite Combustion Emissions from Construction Equipment**

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

	VOC	CO	NOx	SOx	PM10	CO2
<b>Equipment Type</b>	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Welding Machine	0.07	0.37	0.37	0.00	0.02	51.20
<b>TOTAL</b>	<b>0.07</b>	<b>0.37</b>	<b>0.37</b>	<b>0.00</b>	<b>0.02</b>	<b>51.20</b>

**Incremental Increase in Offsite Combustion Emissions from Construction Vehicles**

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

	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
<b>Vehicle</b>	lb/day						
Offsite (Construction Worker Vehicle)	0.03	0.29	0.03	0.00	0.01	0.00	92.78
Offsite (Delivery Truck - pickup truck)	0.07	0.58	0.06	0.00	0.02	0.01	185.56
<b>TOTAL</b>	<b>0.10</b>	<b>0.87</b>	<b>0.09</b>	<b>0.00</b>	<b>0.03</b>	<b>0.01</b>	<b>278.34</b>

Source: Highest (Most Conservative) EMFAC2014 (Version 1.07) Emission Factors for On-Passenger Vehicles & Delivery Trucks - Scenario Year 2019  
<https://www.arb.ca.gov/emfac/2014/>

**Total Incremental Combustion Emissions from Construction Activities**

	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
<b>Ultra-low Nox burner (1 unit)</b>	<b>0.2</b>	<b>1</b>	<b>0.5</b>	<b>0.003</b>	<b>0.1</b>	<b>0.01</b>	<b>330</b>
Significant Threshold	75	550	100	150	150	55	n/a
Exceed Significance?	NO	NO	NO	NO	NO	NO	n/a

**Incremental Increase in Fuel Usage From Construction Equipment and Workers' Vehicles**

Construction Activity	Total Project Hours of Operation*	Equipment Type	Diesel Fuel Usage (gal/hr)**	Diesel Fuel Usage	
				(gal/project)**	Gasoline Fuel Usage (gal/yr)***
Operation of Portable Equipment	2	Welding Machines	1.177	2.35	N/A
Workers' Vehicles - Commuting	N/A	Light-Duty Trucks	N/A	N/A	2.50
Workers' Vehicles - Offsite Delivery/Haul	N/A	Delivery Truck****	N/A	N/A	5.00
		<b>TOTAL</b>		<b>2.35</b>	<b>7.50</b>

Notes:  
 \*Assume construction will take approximately 1 day (8 hrs/day max), but welder will only be needed for ~2 hours per day.  
 \*\*Based on CARB's Off-Road Model (Version 2.0) for Equipment Year 2014.  
 \*\*\*Assume that construction workers' commute vehicle and pick-up truck use gasoline and get 20 mi/gal and round trip length is 50 miles.

**Retrofit with Ultra-Low Nox Burners in 2020**

PAR 1146 Series Affected Equipment	No. of Units	Construction Activity
Rule 1146 and 1146.1 units in RECLAIM	1	Install Ultra-Low NOx burners on 80 units during 2020

**Construction Schedule - 1 day per unit**

Activity	Equipment Type	No. of Equipment	Hrs/day	Crew Size
Off-Road Mobile Source Operations	Welding Machin	1	2	1

Construction Equipment Emission Factors	VOC	CO	NOx	SOx	PM10	CO2
Equipment Type*	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Welding Machine (composite)	0.0310	0.1816	0.1735	0.0003	0.0102	25.6

Source: Off-road Mobile Source Emission Factors - Scenario Year 2019

[http://www.aqmd.gov/docs/default-source/ceqa/handbook/emission-factors/off-road-mobile-source-emission-factors-\(scenario-years-2007-2025\).xls](http://www.aqmd.gov/docs/default-source/ceqa/handbook/emission-factors/off-road-mobile-source-emission-factors-(scenario-years-2007-2025).xls)

\*Equipment is assumed to be diesel fueled.

Construction Vehicle (Mobile Source)							
Emission Factors for Year 2011	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
Construction Related Activity	lb/mile						
Offsite (Construction Worker Vehicle)	0.00031	0.00263	0.00026	0.00001	0.00010	0.00004	0.90138
Offsite (Delivery Truck - pickup truck)	0.00031	0.00263	0.00026	0.00001	0.00010	0.00004	0.90138

Source: Highest (Most Conservative) EMFAC2014 (Version 1.07) Emission Factors for On-Passenger Vehicles & Delivery Trucks - Scenario Year 2020

<https://www.arb.ca.gov/emfac/2014/>

**Construction Worker Number of Trips and Trip Length**

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Offsite (Construction Worker)	2	25
Offsite (Delivery Truck - Medium Duty)	2	50

**Incremental Increase in Onsite Combustion Emissions from Construction Equipment**

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

	VOC	CO	NOx	SOx	PM10	CO2
<b>Equipment Type</b>	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Welding Machine	0.06	0.36	0.35	0.00	0.02	51.20
<b>TOTAL</b>	<b>0.06</b>	<b>0.36</b>	<b>0.35</b>	<b>0.00</b>	<b>0.02</b>	<b>51.20</b>

**Incremental Increase in Offsite Combustion Emissions from Construction Vehicles**

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

	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
<b>Vehicle</b>	lb/day						
Offsite (Construction Worker Vehicle)	0.03	0.26	0.03	0.00	0.01	0.00	90.14
Offsite (Delivery Truck - pickup truck)	0.06	0.53	0.05	0.00	0.02	0.01	180.28
<b>TOTAL</b>	<b>0.09</b>	<b>0.79</b>	<b>0.08</b>	<b>0.00</b>	<b>0.03</b>	<b>0.01</b>	<b>270.41</b>

Source: Highest (Most Conservative) EMFAC2014 (Version 1.07) Emission Factors for On-Passenger Vehicles & Delivery Trucks - Scenario Year 2020  
<https://www.arb.ca.gov/emfac/2014/>

**Total Incremental Combustion Emissions from Construction Activities**

	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
<b>Ultra-low Nox burner (1 unit)</b>	<b>0.2</b>	<b>1</b>	<b>0.4</b>	<b>0.003</b>	<b>0.1</b>	<b>0.01</b>	<b>322</b>
Significant Threshold	75	550	100	150	150	55	n/a
Exceed Significance?	NO	NO	NO	NO	NO	NO	n/a

**Incremental Increase in Fuel Usage From Construction Equipment and Workers' Vehicles**

<b>Construction Activity</b>	<b>Total Project Hours of Operation*</b>	<b>Equipment Type</b>	<b>Diesel Fuel Usage (gal/hr)**</b>	<b>Diesel Fuel Usage (gal/project) **</b>		<b>Gasoline Fuel Usage (gal/yr)***</b>
Operation of Portable Equipment	2	Welding Machines	1.177	2.35		N/A
Workers' Vehicles - Commuting	N/A	Light-Duty Trucks	N/A	N/A		2.50
Workers' Vehicles - Offsite Delivery/Haul	N/A	Delivery Truck****	N/A	N/A		5.00
		<b>TOTAL</b>		<b>2.35</b>		<b>7.50</b>

Notes:

\*Assume construction will take approximately 1 day (8 hrs/day max), but welder will only be needed for ~2 hours per day.

\*\*Based on CARB's Off-Road Model (Version 2.0) for Equipment Year 2014.

\*\*\*Assume that construction workers' commute vehicle and pick-up truck use gasoline and get 20 mi/gal and round trip length is 50 miles.

**Retrofit with Ultra-Low Nox Burners in 2021**

PAR 1146 Series Affected Equipment	No. of Units	Construction Activity
Rule 1146 and 1146.1 units in RECLAIM	1	Install Ultra-Low NOx burners on 51 units during 2021

**Construction Schedule - 1 day per unit**

Activity	Equipment Type	No. of Equipment	Hrs/day	Crew Size
Off-Road Mobile Source Operations	Welding Machin	1	2	1

Construction Equipment Emission Factors	VOC	CO	NOx	SOx	PM10	CO2
Equipment Type*	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Welding Machine (composite)	0.0280	0.1788	0.1635	0.0003	0.0088	25.6

Source: Off-road Mobile Source Emission Factors - Scenario Year 2019

[http://www.aqmd.gov/docs/default-source/ceqa/handbook/emission-factors/off-road-mobile-source-emission-factors-\(scenario-years-2007-2025\).xls](http://www.aqmd.gov/docs/default-source/ceqa/handbook/emission-factors/off-road-mobile-source-emission-factors-(scenario-years-2007-2025).xls)

\*Equipment is assumed to be diesel fueled.

Construction Vehicle (Mobile Source)							
Emission Factors for Year 2021	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
Construction Related Activity	lb/mile						
Offsite (Construction Worker Vehicle)	0.00029	0.00243	0.00023	0.00001	0.00010	0.00004	0.87361
Offsite (Delivery Truck - pickup truck)	0.00029	0.00243	0.00023	0.00001	0.00010	0.00004	0.87361

Source: Highest (Most Conservative) EMFAC2014 (Version 1.07) Emission Factors for On-Passenger Vehicles & Delivery Trucks - Scenario Year 2021

<https://www.arb.ca.gov/emfac/2014/>

**Construction Worker Number of Trips and Trip Length**

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Offsite (Construction Worker)	2	25
Offsite (Delivery Truck - Medium Duty)	2	50

**Incremental Increase in Onsite Combustion Emissions from Construction Equipment**

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

	VOC	CO	NOx	SOx	PM10	CO2
<b>Equipment Type</b>	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Welding Machine	0.06	0.36	0.33	0.00	0.02	51.20
<b>TOTAL</b>	<b>0.06</b>	<b>0.36</b>	<b>0.33</b>	<b>0.00</b>	<b>0.02</b>	<b>51.20</b>

**Incremental Increase in Offsite Combustion Emissions from Construction Vehicles**

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

	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
<b>Vehicle</b>	lb/day						
Offsite (Construction Worker Vehicle)	0.03	0.24	0.02	0.00	0.01	0.00	87.36
Offsite (Delivery Truck - pickup truck)	0.06	0.49	0.05	0.00	0.02	0.01	174.72
<b>TOTAL</b>	<b>0.09</b>	<b>0.73</b>	<b>0.07</b>	<b>0.00</b>	<b>0.03</b>	<b>0.01</b>	<b>262.08</b>

Source: Highest (Most Conservative) EMFAC2014 (Version 1.07) Emission Factors for On-Passenger Vehicles & Delivery Trucks - Scenario Year 2021  
<https://www.arb.ca.gov/emfac/2014/>

**Total Incremental Combustion Emissions from Construction Activities**

	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
<b>Ultra-low Nox burner (1 unit)</b>	<b>0.1</b>	<b>1</b>	<b>0.4</b>	<b>0.003</b>	<b>0.05</b>	<b>0.01</b>	<b>313</b>
Significant Threshold	75	550	100	150	150	55	n/a
Exceed Significance?	NO	NO	NO	NO	NO	NO	n/a

**Incremental Increase in Fuel Usage From Construction Equipment and Workers' Vehicles**

<b>Construction Activity</b>	<b>Total Project Hours of Operation*</b>	<b>Equipment Type</b>	<b>Diesel Fuel Usage (gal/hr)**</b>	<b>Diesel Fuel Usage (gal/project) **</b>		<b>Gasoline Fuel Usage (gal/yr)***</b>
Operation of Portable Equipment	2	Welding Machines	1.177	2.35	N/A	
Workers' Vehicles - Commuting	N/A	Light-Duty Trucks	N/A	N/A	2.50	
Workers' Vehicles - Offsite Delivery/Haul	N/A	Delivery Truck****	N/A	N/A	5.00	
		<b>TOTAL</b>		<b>2.35</b>	<b>7.50</b>	

Notes:

\*Assume construction will take approximately 1 day (8 hrs/day max), but welder will only be needed for ~2 hours per day.

\*\*Based on CARB's Off-Road Model (Version 2.0) for Equipment Year 2014.

\*\*\*Assume that construction workers' commute vehicle and pick-up truck use gasoline and get 20 mi/gal and round trip length is 50 miles.

**Emissions Summary Due to Retrofits of Ultra-Low NOx Burners in 2019, 2020, and 2021**

Peak Construction by Year	VOC (lbs/day)	CO (lbs/day)	NOx (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)	CO2 (lbs/day)	CO2 (lbs/day)
<b>2019</b>									
TOTAL for 1 unit in one day	0.17	1.24	0.46	0.003	0.05	0.01	329.54	329.54	0.15
Peak Daily TOTAL for 10 units installed in one day	1.70	12.42	4.56	0.03	0.55	0.13	3295.39	n/a	n/a
Peak TOTAL for 35 units installed in one year	n/a	n/a	n/a	n/a	n/a	n/a	n/a	11533.85	5.23
Significance Threshold	75	550	100	150	150	55	n/a	n/a	n/a
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
<b>2020</b>									
TOTAL for 1 unit in one day	0.16	1.15	0.43	0.003	0.05	0.01	321.61	321.61	0.15
Peak Daily TOTAL for 10 units installed in one day	1.56	11.52	4.25	0.03	0.52	0.13	3216.14	n/a	n/a
Peak TOTAL for 35 units installed in one year	n/a	n/a	n/a	n/a	n/a	n/a	n/a	11256.48	5.10
Significance Threshold	75	550	100	150	150	55	n/a	n/a	n/a
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
<b>2021</b>									
TOTAL for 1 unit in one day	0.14	1.09	0.40	0.003	0.05	0.01	313.28	313.28	0.14
Peak Daily TOTAL for 10 units installed in one day	1.44	10.85	3.96	0.03	0.49	0.13	3132.84	n/a	n/a
Peak TOTAL for 23 units installed in one year	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7205.52	3.27
Significance Threshold	75	550	100	150	150	55	n/a	n/a	n/a
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>

## **APPENDIX B-3**

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### **CalEEMod Files and Assumptions – Construction Emissions (Boiler Replacement)**

**CalEEMod Files and Assumptions – Construction Emissions**  
**Construction for a Boiler Replacement (Annual)**

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PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Annual

**PAR 1146 series Large Boiler Replacement**  
**South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	9			<b>Operational Year</b>	2019
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	702.44	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

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Project Characteristics -

Land Use - User Defined Industrial

Construction Phase - SCR: Demolition: 20 days; Site Preparation: 5 days; Building Construction: 60 days; Paving: 5 days

Off-road Equipment - No Arch. Coating

Off-road Equipment - Cranes (1): 6 hours per day; Forklifts (1): 6 hours per day; Generator Sets (1): 8 hours per day; Tractors/Loaders/Backhoes (1): 6 hours per day; Welders (2): 8 hours per day; Aerial Lifts (1): 8 hours per day

Off-road Equipment - Concrete/Industrial Saws (1): 8 hours per day; Rubber Tired Dozers (1): 8 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day; Cranes (1): 2 hours per day; Welders (1): 8 hours per day; Cement and Mortar Mixers (1): 8 hours per day

Off-road Equipment - Cement and Mortar Mixers (1): 6 hours per day; Paving Equipment (1): 8 hours per day; Plate Compactors (1): 6 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day

Off-road Equipment - Rubber Tired Dozers (1): 7 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day; Trenchers (1): 8 hours per day

Trips and VMT - Demolition: 2 Worker Trips, 0 Vendor Trips, 5 Hauling Trips

Site Preparation: 2 Work Trips, 0 Vendor Trips, 0 Hauling Trips

Building Construction: 2 Worker Trips, 1 Vendor Trips, 0 Hauling Trips

Paving: 2 Worker Trips, 0 Vendor Trips, 0 Hauling Trips

Demolition - Assume 1,000 square feet would be demo from existing pad

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	65.00
tblConstructionPhase	NumDays	0.00	20.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	5.00
tblGrading	AcresOfGrading	2.50	0.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	97.00	98.00

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tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	132.00	131.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	78.00	81.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	15.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	2.00
tblTripsAndVMT	WorkerTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	15.00	2.00

## 2.0 Emissions Summary

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**2.1 Overall Construction**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0911	0.7523	0.6276	9.9000e-004	0.0149	0.0405	0.0554	7.6500e-003	0.0387	0.0463	0.0000	84.5310	84.5310	0.0181	0.0000	84.9826
2020	2.2800e-003	0.0225	0.0237	4.0000e-005	5.0000e-005	1.2400e-003	1.2900e-003	1.0000e-005	1.1400e-003	1.1600e-003	0.0000	3.1788	3.1788	9.8000e-004	0.0000	3.2033
<b>Maximum</b>	<b>0.0911</b>	<b>0.7523</b>	<b>0.6276</b>	<b>9.9000e-004</b>	<b>0.0149</b>	<b>0.0405</b>	<b>0.0554</b>	<b>7.6500e-003</b>	<b>0.0387</b>	<b>0.0463</b>	<b>0.0000</b>	<b>84.5310</b>	<b>84.5310</b>	<b>0.0181</b>	<b>0.0000</b>	<b>84.9826</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0911	0.7523	0.6276	9.9000e-004	0.0149	0.0405	0.0554	7.6500e-003	0.0387	0.0463	0.0000	84.5309	84.5309	0.0181	0.0000	84.9825
2020	2.2800e-003	0.0225	0.0237	4.0000e-005	5.0000e-005	1.2400e-003	1.2900e-003	1.0000e-005	1.1400e-003	1.1600e-003	0.0000	3.1788	3.1788	9.8000e-004	0.0000	3.2033
<b>Maximum</b>	<b>0.0911</b>	<b>0.7523</b>	<b>0.6276</b>	<b>9.9000e-004</b>	<b>0.0149</b>	<b>0.0405</b>	<b>0.0554</b>	<b>7.6500e-003</b>	<b>0.0387</b>	<b>0.0463</b>	<b>0.0000</b>	<b>84.5309</b>	<b>84.5309</b>	<b>0.0181</b>	<b>0.0000</b>	<b>84.9825</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
4	11-22-2018	2-21-2019	0.4910	0.4910
5	2-22-2019	5-21-2019	0.3464	0.3464
8	11-22-2019	2-21-2020	0.0248	0.0248
		Highest	0.4910	0.4910

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.0000e-005</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Annual

**2.2 Overall Operational**

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.0000e-005</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**3.0 Construction Detail**

**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	1/28/2019	5	20	
2	Site Preparation	Site Preparation	1/15/2019	1/21/2019	5	5	
3	Building Construction	Building Construction	1/20/2019	4/19/2019	5	65	
4	Paving	Paving	1/4/2020	1/10/2020	5	5	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cement and Mortar Mixers	1	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Cranes	1	2.00	226	0.29
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	98	0.37
Demolition	Welders	1	8.00	46	0.45
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	98	0.37
Site Preparation	Trenchers	1	8.00	81	0.50
Building Construction	Aerial Lifts	1	8.00	63	0.31
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	98	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Paving Equipment	1	8.00	131	0.36
Paving	Plate Compactors	1	6.00	8	0.43
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	98	0.37

**Trips and VMT**

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	2.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	2.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	2.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	2.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0229	0.2046	0.1724	2.3000e-004		0.0107	0.0107		0.0101	0.0101	0.0000	19.8063	19.8063	4.5700e-003	0.0000	19.9204
<b>Total</b>	<b>0.0229</b>	<b>0.2046</b>	<b>0.1724</b>	<b>2.3000e-004</b>	<b>4.9000e-004</b>	<b>0.0107</b>	<b>0.0112</b>	<b>7.0000e-005</b>	<b>0.0101</b>	<b>0.0102</b>	<b>0.0000</b>	<b>19.8063</b>	<b>19.8063</b>	<b>4.5700e-003</b>	<b>0.0000</b>	<b>19.9204</b>

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**3.2 Demolition - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.5000e-004	1.4000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1906	0.1906	1.0000e-005	0.0000	0.1909
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	8.0000e-005	8.3000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2039	0.2039	1.0000e-005	0.0000	0.2040
<b>Total</b>	<b>1.2000e-004</b>	<b>8.3000e-004</b>	<b>9.7000e-004</b>	<b>0.0000</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.3945</b>	<b>0.3945</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.3950</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0229	0.2046	0.1724	2.3000e-004		0.0107	0.0107		0.0101	0.0101	0.0000	19.8063	19.8063	4.5700e-003	0.0000	19.9204
<b>Total</b>	<b>0.0229</b>	<b>0.2046</b>	<b>0.1724</b>	<b>2.3000e-004</b>	<b>4.9000e-004</b>	<b>0.0107</b>	<b>0.0112</b>	<b>7.0000e-005</b>	<b>0.0101</b>	<b>0.0102</b>	<b>0.0000</b>	<b>19.8063</b>	<b>19.8063</b>	<b>4.5700e-003</b>	<b>0.0000</b>	<b>19.9204</b>

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**3.2 Demolition - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.5000e-004	1.4000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1906	0.1906	1.0000e-005	0.0000	0.1909
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	8.0000e-005	8.3000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2039	0.2039	1.0000e-005	0.0000	0.2040
<b>Total</b>	<b>1.2000e-004</b>	<b>8.3000e-004</b>	<b>9.7000e-004</b>	<b>0.0000</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.3945</b>	<b>0.3945</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.3950</b>

**3.3 Site Preparation - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0132	0.0000	0.0132	7.2400e-003	0.0000	7.2400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1800e-003	0.0567	0.0359	5.0000e-005		2.8000e-003	2.8000e-003		2.5800e-003	2.5800e-003	0.0000	4.7331	4.7331	1.5000e-003	0.0000	4.7706
<b>Total</b>	<b>5.1800e-003</b>	<b>0.0567</b>	<b>0.0359</b>	<b>5.0000e-005</b>	<b>0.0132</b>	<b>2.8000e-003</b>	<b>0.0160</b>	<b>7.2400e-003</b>	<b>2.5800e-003</b>	<b>9.8200e-003</b>	<b>0.0000</b>	<b>4.7331</b>	<b>4.7331</b>	<b>1.5000e-003</b>	<b>0.0000</b>	<b>4.7706</b>

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**3.3 Site Preparation - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.1000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0510	0.0510	0.0000	0.0000	0.0510
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0510</b>	<b>0.0510</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0510</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0132	0.0000	0.0132	7.2400e-003	0.0000	7.2400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1800e-003	0.0567	0.0359	5.0000e-005		2.8000e-003	2.8000e-003		2.5800e-003	2.5800e-003	0.0000	4.7331	4.7331	1.5000e-003	0.0000	4.7706
<b>Total</b>	<b>5.1800e-003</b>	<b>0.0567</b>	<b>0.0359</b>	<b>5.0000e-005</b>	<b>0.0132</b>	<b>2.8000e-003</b>	<b>0.0160</b>	<b>7.2400e-003</b>	<b>2.5800e-003</b>	<b>9.8200e-003</b>	<b>0.0000</b>	<b>4.7331</b>	<b>4.7331</b>	<b>1.5000e-003</b>	<b>0.0000</b>	<b>4.7706</b>

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**3.3 Site Preparation - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.1000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0510	0.0510	0.0000	0.0000	0.0510
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0510</b>	<b>0.0510</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0510</b>

**3.4 Building Construction - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0624	0.4861	0.4145	6.9000e-004		0.0270	0.0270		0.0259	0.0259	0.0000	58.0791	58.0791	0.0119	0.0000	58.3766
<b>Total</b>	<b>0.0624</b>	<b>0.4861</b>	<b>0.4145</b>	<b>6.9000e-004</b>		<b>0.0270</b>	<b>0.0270</b>		<b>0.0259</b>	<b>0.0259</b>	<b>0.0000</b>	<b>58.0791</b>	<b>58.0791</b>	<b>0.0119</b>	<b>0.0000</b>	<b>58.3766</b>

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**3.4 Building Construction - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3000e-004	3.7900e-003	9.5000e-004	1.0000e-005	2.0000e-004	2.0000e-005	2.3000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	0.8046	0.8046	6.0000e-005	0.0000	0.8060
Worker	3.1000e-004	2.5000e-004	2.7100e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.6625	0.6625	2.0000e-005	0.0000	0.6631
<b>Total</b>	<b>4.4000e-004</b>	<b>4.0400e-003</b>	<b>3.6600e-003</b>	<b>2.0000e-005</b>	<b>9.1000e-004</b>	<b>3.0000e-005</b>	<b>9.5000e-004</b>	<b>2.5000e-004</b>	<b>3.0000e-005</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>1.4672</b>	<b>1.4672</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>1.4691</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0624	0.4861	0.4145	6.9000e-004		0.0270	0.0270		0.0259	0.0259	0.0000	58.0790	58.0790	0.0119	0.0000	58.3765
<b>Total</b>	<b>0.0624</b>	<b>0.4861</b>	<b>0.4145</b>	<b>6.9000e-004</b>		<b>0.0270</b>	<b>0.0270</b>		<b>0.0259</b>	<b>0.0259</b>	<b>0.0000</b>	<b>58.0790</b>	<b>58.0790</b>	<b>0.0119</b>	<b>0.0000</b>	<b>58.3765</b>

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**3.4 Building Construction - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3000e-004	3.7900e-003	9.5000e-004	1.0000e-005	2.0000e-004	2.0000e-005	2.3000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	0.8046	0.8046	6.0000e-005	0.0000	0.8060
Worker	3.1000e-004	2.5000e-004	2.7100e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.6625	0.6625	2.0000e-005	0.0000	0.6631
<b>Total</b>	<b>4.4000e-004</b>	<b>4.0400e-003</b>	<b>3.6600e-003</b>	<b>2.0000e-005</b>	<b>9.1000e-004</b>	<b>3.0000e-005</b>	<b>9.5000e-004</b>	<b>2.5000e-004</b>	<b>3.0000e-005</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>1.4672</b>	<b>1.4672</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>1.4691</b>

**3.5 Paving - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.2600e-003	0.0225	0.0235	4.0000e-005		1.2400e-003	1.2400e-003		1.1400e-003	1.1400e-003	0.0000	3.1294	3.1294	9.8000e-004	0.0000	3.1539
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.2600e-003</b>	<b>0.0225</b>	<b>0.0235</b>	<b>4.0000e-005</b>		<b>1.2400e-003</b>	<b>1.2400e-003</b>		<b>1.1400e-003</b>	<b>1.1400e-003</b>	<b>0.0000</b>	<b>3.1294</b>	<b>3.1294</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>3.1539</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Annual

**3.5 Paving - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0494	0.0494	0.0000	0.0000	0.0494
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0494</b>	<b>0.0494</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0494</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.2600e-003	0.0225	0.0235	4.0000e-005		1.2400e-003	1.2400e-003		1.1400e-003	1.1400e-003	0.0000	3.1294	3.1294	9.8000e-004	0.0000	3.1539
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.2600e-003</b>	<b>0.0225</b>	<b>0.0235</b>	<b>4.0000e-005</b>		<b>1.2400e-003</b>	<b>1.2400e-003</b>		<b>1.1400e-003</b>	<b>1.1400e-003</b>	<b>0.0000</b>	<b>3.1294</b>	<b>3.1294</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>3.1539</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Annual

**3.5 Paving - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0494	0.0494	0.0000	0.0000	0.0494
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0494</b>	<b>0.0494</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0494</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991

5.0 Energy Detail

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Annual

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>							

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**5.2 Energy by Land Use - NaturalGas**

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>							

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

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**5.3 Energy by Land Use - Electricity**

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.0000e-005</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.0000e-005</b>

**7.0 Water Detail**

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Annual

**7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

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**7.2 Water by Land Use**

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Annual

**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Annual

## 10.0 Stationary Equipment

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### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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### User Defined Equipment

Equipment Type	Number
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## 11.0 Vegetation

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**CalEEMod Files and Assumptions – Construction Emissions**

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**Construction for a Boiler Replacement (Summer)**

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**PAR 1146 series Large Boiler Replacement**  
**South Coast AQMD Air District, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	9			<b>Operational Year</b>	2019
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	702.44	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

Project Characteristics -

Land Use - User Defined Industrial

Construction Phase - SCR: Demolition: 20 days; Site Preparation: 5 days; Building Construction: 60 days; Paving: 5 days

Off-road Equipment - No Arch. Coating

Off-road Equipment - Cranes (1): 6 hours per day; Forklifts (1): 6 hours per day; Generator Sets (1): 8 hours per day; Tractors/Loaders/Backhoes (1): 6 hours per day; Welders (2): 8 hours per day; Aerial Lifts (1): 8 hours per day

Off-road Equipment - Concrete/Industrial Saws (1): 8 hours per day; Rubber Tired Dozers (1): 8 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day; Cranes (1): 2 hours per day; Welders (1): 8 hours per day; Cement and Mortar Mixers (1): 8 hours per day

Off-road Equipment - Cement and Mortar Mixers (1): 6 hours per day; Paving Equipment (1): 8 hours per day; Plate Compactors (1): 6 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day

Off-road Equipment - Rubber Tired Dozers (1): 7 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day; Trenchers (1): 8 hours per day

Trips and VMT - Demolition: 2 Worker Trips, 0 Vendor Trips, 5 Hauling Trips

Site Preparation: 2 Work Trips, 0 Vendor Trips, 0 Hauling Trips

Building Construction: 2 Worker Trips, 1 Vendor Trips, 0 Hauling Trips

Paving: 2 Worker Trips, 0 Vendor Trips, 0 Hauling Trips

Demolition - Assume 1,000 square feet would be demo from existing pad

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	65.00
tblConstructionPhase	NumDays	0.00	20.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	5.00
tblGrading	AcresOfGrading	2.50	0.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	97.00	98.00

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	132.00	131.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	78.00	81.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	15.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	2.00
tblTripsAndVMT	WorkerTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	15.00	2.00

## 2.0 Emissions Summary

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PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	6.3237	58.3077	44.6733	0.0663	5.3964	3.0252	8.4216	2.9247	2.8448	5.7695	0.0000	6,359.749 9	6,359.749 9	1.5727	0.0000	6,399.067 8
2020	0.9127	9.0027	9.4820	0.0147	0.0224	0.4946	0.5170	5.9300e-003	0.4565	0.4624	0.0000	1,402.714 9	1,402.714 9	0.4329	0.0000	1,413.538 0
<b>Maximum</b>	<b>6.3237</b>	<b>58.3077</b>	<b>44.6733</b>	<b>0.0663</b>	<b>5.3964</b>	<b>3.0252</b>	<b>8.4216</b>	<b>2.9247</b>	<b>2.8448</b>	<b>5.7695</b>	<b>0.0000</b>	<b>6,359.749 9</b>	<b>6,359.749 9</b>	<b>1.5727</b>	<b>0.0000</b>	<b>6,399.067 8</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	6.3237	58.3077	44.6733	0.0663	5.3964	3.0252	8.4216	2.9247	2.8448	5.7695	0.0000	6,359.749 9	6,359.749 9	1.5727	0.0000	6,399.067 8
2020	0.9127	9.0027	9.4820	0.0147	0.0224	0.4946	0.5170	5.9300e-003	0.4565	0.4624	0.0000	1,402.714 9	1,402.714 9	0.4329	0.0000	1,413.538 0
<b>Maximum</b>	<b>6.3237</b>	<b>58.3077</b>	<b>44.6733</b>	<b>0.0663</b>	<b>5.3964</b>	<b>3.0252</b>	<b>8.4216</b>	<b>2.9247</b>	<b>2.8448</b>	<b>5.7695</b>	<b>0.0000</b>	<b>6,359.749 9</b>	<b>6,359.749 9</b>	<b>1.5727</b>	<b>0.0000</b>	<b>6,399.067 8</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.3000e-004</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.3000e-004</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	1/28/2019	5	20	
2	Site Preparation	Site Preparation	1/15/2019	1/21/2019	5	5	
3	Building Construction	Building Construction	1/20/2019	4/19/2019	5	65	
4	Paving	Paving	1/4/2020	1/10/2020	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cement and Mortar Mixers	1	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Cranes	1	2.00	226	0.29
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	98	0.37
Demolition	Welders	1	8.00	46	0.45
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	98	0.37
Site Preparation	Trenchers	1	8.00	81	0.50
Building Construction	Aerial Lifts	1	8.00	63	0.31
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	98	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Paving Equipment	1	8.00	131	0.36
Paving	Plate Compactors	1	6.00	8	0.43
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	98	0.37

**Trips and VMT**

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	2.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	2.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	2.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	2.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0492	0.0000	0.0492	7.4500e-003	0.0000	7.4500e-003			0.0000			0.0000
Off-Road	2.2936	20.4634	17.2377	0.0230		1.0722	1.0722		1.0139	1.0139		2,183.2691	2,183.2691	0.5033		2,195.8508
<b>Total</b>	<b>2.2936</b>	<b>20.4634</b>	<b>17.2377</b>	<b>0.0230</b>	<b>0.0492</b>	<b>1.0722</b>	<b>1.1214</b>	<b>7.4500e-003</b>	<b>1.0139</b>	<b>1.0214</b>		<b>2,183.2691</b>	<b>2,183.2691</b>	<b>0.5033</b>		<b>2,195.8508</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**3.2 Demolition - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.0500e-003	0.0728	0.0139	2.0000e-004	4.3700e-003	2.7000e-004	4.6400e-003	1.2000e-003	2.6000e-004	1.4600e-003		21.1704	21.1704	1.4400e-003		21.2065
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.7900e-003	6.8200e-003	0.0899	2.4000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		23.6198	23.6198	7.4000e-004		23.6383
<b>Total</b>	<b>0.0118</b>	<b>0.0796</b>	<b>0.1038</b>	<b>4.4000e-004</b>	<b>0.0267</b>	<b>4.4000e-004</b>	<b>0.0272</b>	<b>7.1300e-003</b>	<b>4.2000e-004</b>	<b>7.5500e-003</b>		<b>44.7902</b>	<b>44.7902</b>	<b>2.1800e-003</b>		<b>44.8448</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0492	0.0000	0.0492	7.4500e-003	0.0000	7.4500e-003			0.0000			0.0000
Off-Road	2.2936	20.4634	17.2377	0.0230		1.0722	1.0722		1.0139	1.0139	0.0000	2,183.2691	2,183.2691	0.5033		2,195,8508
<b>Total</b>	<b>2.2936</b>	<b>20.4634</b>	<b>17.2377</b>	<b>0.0230</b>	<b>0.0492</b>	<b>1.0722</b>	<b>1.1214</b>	<b>7.4500e-003</b>	<b>1.0139</b>	<b>1.0214</b>	<b>0.0000</b>	<b>2,183.2691</b>	<b>2,183.2691</b>	<b>0.5033</b>		<b>2,195,8508</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**3.2 Demolition - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.0500e-003	0.0728	0.0139	2.0000e-004	4.3700e-003	2.7000e-004	4.6400e-003	1.2000e-003	2.6000e-004	1.4600e-003		21.1704	21.1704	1.4400e-003		21.2065
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.7900e-003	6.8200e-003	0.0899	2.4000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		23.6198	23.6198	7.4000e-004		23.6383
<b>Total</b>	<b>0.0118</b>	<b>0.0796</b>	<b>0.1038</b>	<b>4.4000e-004</b>	<b>0.0267</b>	<b>4.4000e-004</b>	<b>0.0272</b>	<b>7.1300e-003</b>	<b>4.2000e-004</b>	<b>7.5500e-003</b>		<b>44.7902</b>	<b>44.7902</b>	<b>2.1800e-003</b>		<b>44.8448</b>

**3.3 Site Preparation - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.2693	0.0000	5.2693	2.8965	0.0000	2.8965			0.0000			0.0000
Off-Road	2.0735	22.6793	14.3712	0.0211		1.1215	1.1215		1.0318	1.0318		2,086.9458	2,086.9458	0.6603		2,103.4529
<b>Total</b>	<b>2.0735</b>	<b>22.6793</b>	<b>14.3712</b>	<b>0.0211</b>	<b>5.2693</b>	<b>1.1215</b>	<b>6.3909</b>	<b>2.8965</b>	<b>1.0318</b>	<b>3.9283</b>		<b>2,086.9458</b>	<b>2,086.9458</b>	<b>0.6603</b>		<b>2,103.4529</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**3.3 Site Preparation - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.7900e-003	6.8200e-003	0.0899	2.4000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		23.6198	23.6198	7.4000e-004		23.6383
<b>Total</b>	<b>9.7900e-003</b>	<b>6.8200e-003</b>	<b>0.0899</b>	<b>2.4000e-004</b>	<b>0.0224</b>	<b>1.7000e-004</b>	<b>0.0225</b>	<b>5.9300e-003</b>	<b>1.6000e-004</b>	<b>6.0900e-003</b>		<b>23.6198</b>	<b>23.6198</b>	<b>7.4000e-004</b>		<b>23.6383</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.2693	0.0000	5.2693	2.8965	0.0000	2.8965			0.0000			0.0000
Off-Road	2.0735	22.6793	14.3712	0.0211		1.1215	1.1215		1.0318	1.0318	0.0000	2,086.9457	2,086.9457	0.6603		2,103.4529
<b>Total</b>	<b>2.0735</b>	<b>22.6793</b>	<b>14.3712</b>	<b>0.0211</b>	<b>5.2693</b>	<b>1.1215</b>	<b>6.3909</b>	<b>2.8965</b>	<b>1.0318</b>	<b>3.9283</b>	<b>0.0000</b>	<b>2,086.9457</b>	<b>2,086.9457</b>	<b>0.6603</b>		<b>2,103.4529</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**3.3 Site Preparation - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.7900e-003	6.8200e-003	0.0899	2.4000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		23.6198	23.6198	7.4000e-004		23.6383
<b>Total</b>	<b>9.7900e-003</b>	<b>6.8200e-003</b>	<b>0.0899</b>	<b>2.4000e-004</b>	<b>0.0224</b>	<b>1.7000e-004</b>	<b>0.0225</b>	<b>5.9300e-003</b>	<b>1.6000e-004</b>	<b>6.0900e-003</b>		<b>23.6198</b>	<b>23.6198</b>	<b>7.4000e-004</b>		<b>23.6383</b>

**3.4 Building Construction - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9213	14.9573	12.7532	0.0211		0.8300	0.8300		0.7976	0.7976		1,969.8833	1,969.8833	0.4037		1,979.9752
<b>Total</b>	<b>1.9213</b>	<b>14.9573</b>	<b>12.7532</b>	<b>0.0211</b>		<b>0.8300</b>	<b>0.8300</b>		<b>0.7976</b>	<b>0.7976</b>		<b>1,969.8833</b>	<b>1,969.8833</b>	<b>0.4037</b>		<b>1,979.9752</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**3.4 Building Construction - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8600e-003	0.1144	0.0277	2.6000e-004	6.4000e-003	7.6000e-004	7.1600e-003	1.8400e-003	7.3000e-004	2.5700e-003		27.6220	27.6220	1.8300e-003		27.6677
Worker	9.7900e-003	6.8200e-003	0.0899	2.4000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		23.6198	23.6198	7.4000e-004		23.6383
<b>Total</b>	<b>0.0137</b>	<b>0.1212</b>	<b>0.1175</b>	<b>5.0000e-004</b>	<b>0.0288</b>	<b>9.3000e-004</b>	<b>0.0297</b>	<b>7.7700e-003</b>	<b>8.9000e-004</b>	<b>8.6600e-003</b>		<b>51.2418</b>	<b>51.2418</b>	<b>2.5700e-003</b>		<b>51.3059</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9213	14.9573	12.7532	0.0211		0.8300	0.8300		0.7976	0.7976	0.0000	1,969.8833	1,969.8833	0.4037		1,979.9752
<b>Total</b>	<b>1.9213</b>	<b>14.9573</b>	<b>12.7532</b>	<b>0.0211</b>		<b>0.8300</b>	<b>0.8300</b>		<b>0.7976</b>	<b>0.7976</b>	<b>0.0000</b>	<b>1,969.8833</b>	<b>1,969.8833</b>	<b>0.4037</b>		<b>1,979.9752</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**3.4 Building Construction - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8600e-003	0.1144	0.0277	2.6000e-004	6.4000e-003	7.6000e-004	7.1600e-003	1.8400e-003	7.3000e-004	2.5700e-003		27.6220	27.6220	1.8300e-003		27.6677
Worker	9.7900e-003	6.8200e-003	0.0899	2.4000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		23.6198	23.6198	7.4000e-004		23.6383
<b>Total</b>	<b>0.0137</b>	<b>0.1212</b>	<b>0.1175</b>	<b>5.0000e-004</b>	<b>0.0288</b>	<b>9.3000e-004</b>	<b>0.0297</b>	<b>7.7700e-003</b>	<b>8.9000e-004</b>	<b>8.6600e-003</b>		<b>51.2418</b>	<b>51.2418</b>	<b>2.5700e-003</b>		<b>51.3059</b>

**3.5 Paving - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9037	8.9966	9.4003	0.0145		0.4945	0.4945		0.4564	0.4564		1,379.8266	1,379.8266	0.4323		1,390.6332
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9037</b>	<b>8.9966</b>	<b>9.4003</b>	<b>0.0145</b>		<b>0.4945</b>	<b>0.4945</b>		<b>0.4564</b>	<b>0.4564</b>		<b>1,379.8266</b>	<b>1,379.8266</b>	<b>0.4323</b>		<b>1,390.6332</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**3.5 Paving - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.0500e-003	6.0800e-003	0.0818	2.3000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0800e-003		22.8884	22.8884	6.6000e-004		22.9048
<b>Total</b>	<b>9.0500e-003</b>	<b>6.0800e-003</b>	<b>0.0818</b>	<b>2.3000e-004</b>	<b>0.0224</b>	<b>1.7000e-004</b>	<b>0.0225</b>	<b>5.9300e-003</b>	<b>1.6000e-004</b>	<b>6.0800e-003</b>		<b>22.8884</b>	<b>22.8884</b>	<b>6.6000e-004</b>		<b>22.9048</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9037	8.9966	9.4003	0.0145		0.4945	0.4945		0.4564	0.4564	0.0000	1,379.8266	1,379.8266	0.4323		1,390.6332
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9037</b>	<b>8.9966</b>	<b>9.4003</b>	<b>0.0145</b>		<b>0.4945</b>	<b>0.4945</b>		<b>0.4564</b>	<b>0.4564</b>	<b>0.0000</b>	<b>1,379.8266</b>	<b>1,379.8266</b>	<b>0.4323</b>		<b>1,390.6332</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**3.5 Paving - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.0500e-003	6.0800e-003	0.0818	2.3000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0800e-003		22.8884	22.8884	6.6000e-004		22.9048
<b>Total</b>	<b>9.0500e-003</b>	<b>6.0800e-003</b>	<b>0.0818</b>	<b>2.3000e-004</b>	<b>0.0224</b>	<b>1.7000e-004</b>	<b>0.0225</b>	<b>5.9300e-003</b>	<b>1.6000e-004</b>	<b>6.0800e-003</b>		<b>22.8884</b>	<b>22.8884</b>	<b>6.6000e-004</b>		<b>22.9048</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991

5.0 Energy Detail

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**5.2 Energy by Land Use - Natural Gas**

**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>2.3000e-004</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>2.3000e-004</b>

**7.0 Water Detail**

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Summer

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**7.1 Mitigation Measures Water**

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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**CalEEMod Files and Assumptions – Construction Emissions**

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**Construction for a Boiler Replacement (Winter)**

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**PAR 1146 series Large Boiler Replacement**  
**South Coast AQMD Air District, Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	9			<b>Operational Year</b>	2019
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	702.44	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

Project Characteristics -

Land Use - User Defined Industrial

Construction Phase - SCR: Demolition: 20 days; Site Preparation: 5 days; Building Construction: 60 days; Paving: 5 days

Off-road Equipment - No Arch. Coating

Off-road Equipment - Cranes (1): 6 hours per day; Forklifts (1): 6 hours per day; Generator Sets (1): 8 hours per day; Tractors/Loaders/Backhoes (1): 6 hours per day; Welders (2): 8 hours per day; Aerial Lifts (1): 8 hours per day

Off-road Equipment - Concrete/Industrial Saws (1): 8 hours per day; Rubber Tired Dozers (1): 8 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day; Cranes (1): 2 hours per day; Welders (1): 8 hours per day; Cement and Mortar Mixers (1): 8 hours per day

Off-road Equipment - Cement and Mortar Mixers (1): 6 hours per day; Paving Equipment (1): 8 hours per day; Plate Compactors (1): 6 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day

Off-road Equipment - Rubber Tired Dozers (1): 7 hours per day; Tractors/Loaders/Backhoes (1): 8 hours per day; Trenchers (1): 8 hours per day

Trips and VMT - Demolition: 2 Worker Trips, 0 Vendor Trips, 5 Hauling Trips

Site Preparation: 2 Work Trips, 0 Vendor Trips, 0 Hauling Trips

Building Construction: 2 Worker Trips, 1 Vendor Trips, 0 Hauling Trips

Paving: 2 Worker Trips, 0 Vendor Trips, 0 Hauling Trips

Demolition - Assume 1,000 square feet would be demo from existing pad

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	65.00
tblConstructionPhase	NumDays	0.00	20.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	5.00
tblGrading	AcresOfGrading	2.50	0.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	97.00	98.00

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	132.00	131.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	78.00	81.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	15.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	2.00
tblTripsAndVMT	WorkerTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	15.00	2.00

## 2.0 Emissions Summary

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PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	6.3265	58.3107	44.6512	0.0662	5.3964	3.0253	8.4217	2.9247	2.8448	5.7695	0.0000	6,353.9953	6,353.9953	1.5728	0.0000	6,393.3147
2020	0.9135	9.0033	9.4739	0.0147	0.0224	0.4946	0.5170	5.9300e-003	0.4565	0.4624	0.0000	1,401.2339	1,401.2339	0.4329	0.0000	1,412.0558
<b>Maximum</b>	<b>6.3265</b>	<b>58.3107</b>	<b>44.6512</b>	<b>0.0662</b>	<b>5.3964</b>	<b>3.0253</b>	<b>8.4217</b>	<b>2.9247</b>	<b>2.8448</b>	<b>5.7695</b>	<b>0.0000</b>	<b>6,353.9953</b>	<b>6,353.9953</b>	<b>1.5728</b>	<b>0.0000</b>	<b>6,393.3147</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	6.3265	58.3107	44.6512	0.0662	5.3964	3.0253	8.4217	2.9247	2.8448	5.7695	0.0000	6,353.9953	6,353.9953	1.5728	0.0000	6,393.3147
2020	0.9135	9.0033	9.4739	0.0147	0.0224	0.4946	0.5170	5.9300e-003	0.4565	0.4624	0.0000	1,401.2339	1,401.2339	0.4329	0.0000	1,412.0558
<b>Maximum</b>	<b>6.3265</b>	<b>58.3107</b>	<b>44.6512</b>	<b>0.0662</b>	<b>5.3964</b>	<b>3.0253</b>	<b>8.4217</b>	<b>2.9247</b>	<b>2.8448</b>	<b>5.7695</b>	<b>0.0000</b>	<b>6,353.9953</b>	<b>6,353.9953</b>	<b>1.5728</b>	<b>0.0000</b>	<b>6,393.3147</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.3000e-004</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.3000e-004</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	1/28/2019	5	20	
2	Site Preparation	Site Preparation	1/15/2019	1/21/2019	5	5	
3	Building Construction	Building Construction	1/20/2019	4/19/2019	5	65	
4	Paving	Paving	1/4/2020	1/10/2020	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cement and Mortar Mixers	1	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Cranes	1	2.00	226	0.29
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	98	0.37
Demolition	Welders	1	8.00	46	0.45
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	98	0.37
Site Preparation	Trenchers	1	8.00	81	0.50
Building Construction	Aerial Lifts	1	8.00	63	0.31
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	98	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Paving Equipment	1	8.00	131	0.36
Paving	Plate Compactors	1	6.00	8	0.43
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	98	0.37

**Trips and VMT**

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	2.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	2.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	2.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	2.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Demolition - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0492	0.0000	0.0492	7.4500e-003	0.0000	7.4500e-003			0.0000			0.0000
Off-Road	2.2936	20.4634	17.2377	0.0230		1.0722	1.0722		1.0139	1.0139		2,183.2691	2,183.2691	0.5033		2,195.8508
<b>Total</b>	<b>2.2936</b>	<b>20.4634</b>	<b>17.2377</b>	<b>0.0230</b>	<b>0.0492</b>	<b>1.0722</b>	<b>1.1214</b>	<b>7.4500e-003</b>	<b>1.0139</b>	<b>1.0214</b>		<b>2,183.2691</b>	<b>2,183.2691</b>	<b>0.5033</b>		<b>2,195.8508</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**3.2 Demolition - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.1100e-003	0.0738	0.0151	1.9000e-004	4.3700e-003	2.8000e-004	4.6400e-003	1.2000e-003	2.6000e-004	1.4600e-003		20.7863	20.7863	1.5100e-003		20.8240
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0107	7.4700e-003	0.0811	2.2000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		22.0931	22.0931	6.9000e-004		22.1104
<b>Total</b>	<b>0.0128</b>	<b>0.0812</b>	<b>0.0962</b>	<b>4.1000e-004</b>	<b>0.0267</b>	<b>4.5000e-004</b>	<b>0.0272</b>	<b>7.1300e-003</b>	<b>4.2000e-004</b>	<b>7.5500e-003</b>		<b>42.8794</b>	<b>42.8794</b>	<b>2.2000e-003</b>		<b>42.9344</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0492	0.0000	0.0492	7.4500e-003	0.0000	7.4500e-003			0.0000			0.0000
Off-Road	2.2936	20.4634	17.2377	0.0230		1.0722	1.0722		1.0139	1.0139	0.0000	2,183.2691	2,183.2691	0.5033		2,195.8508
<b>Total</b>	<b>2.2936</b>	<b>20.4634</b>	<b>17.2377</b>	<b>0.0230</b>	<b>0.0492</b>	<b>1.0722</b>	<b>1.1214</b>	<b>7.4500e-003</b>	<b>1.0139</b>	<b>1.0214</b>	<b>0.0000</b>	<b>2,183.2691</b>	<b>2,183.2691</b>	<b>0.5033</b>		<b>2,195.8508</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**3.2 Demolition - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.1100e-003	0.0738	0.0151	1.9000e-004	4.3700e-003	2.8000e-004	4.6400e-003	1.2000e-003	2.6000e-004	1.4600e-003		20.7863	20.7863	1.5100e-003		20.8240
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0107	7.4700e-003	0.0811	2.2000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		22.0931	22.0931	6.9000e-004		22.1104
<b>Total</b>	<b>0.0128</b>	<b>0.0812</b>	<b>0.0962</b>	<b>4.1000e-004</b>	<b>0.0267</b>	<b>4.5000e-004</b>	<b>0.0272</b>	<b>7.1300e-003</b>	<b>4.2000e-004</b>	<b>7.5500e-003</b>		<b>42.8794</b>	<b>42.8794</b>	<b>2.2000e-003</b>		<b>42.9344</b>

**3.3 Site Preparation - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.2693	0.0000	5.2693	2.8965	0.0000	2.8965			0.0000			0.0000
Off-Road	2.0735	22.6793	14.3712	0.0211		1.1215	1.1215		1.0318	1.0318		2,086.9458	2,086.9458	0.6603		2,103.4529
<b>Total</b>	<b>2.0735</b>	<b>22.6793</b>	<b>14.3712</b>	<b>0.0211</b>	<b>5.2693</b>	<b>1.1215</b>	<b>6.3909</b>	<b>2.8965</b>	<b>1.0318</b>	<b>3.9283</b>		<b>2,086.9458</b>	<b>2,086.9458</b>	<b>0.6603</b>		<b>2,103.4529</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**3.3 Site Preparation - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0107	7.4700e-003	0.0811	2.2000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		22.0931	22.0931	6.9000e-004		22.1104
<b>Total</b>	<b>0.0107</b>	<b>7.4700e-003</b>	<b>0.0811</b>	<b>2.2000e-004</b>	<b>0.0224</b>	<b>1.7000e-004</b>	<b>0.0225</b>	<b>5.9300e-003</b>	<b>1.6000e-004</b>	<b>6.0900e-003</b>		<b>22.0931</b>	<b>22.0931</b>	<b>6.9000e-004</b>		<b>22.1104</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.2693	0.0000	5.2693	2.8965	0.0000	2.8965			0.0000			0.0000
Off-Road	2.0735	22.6793	14.3712	0.0211		1.1215	1.1215		1.0318	1.0318	0.0000	2,086.9457	2,086.9457	0.6603		2,103.4529
<b>Total</b>	<b>2.0735</b>	<b>22.6793</b>	<b>14.3712</b>	<b>0.0211</b>	<b>5.2693</b>	<b>1.1215</b>	<b>6.3909</b>	<b>2.8965</b>	<b>1.0318</b>	<b>3.9283</b>	<b>0.0000</b>	<b>2,086.9457</b>	<b>2,086.9457</b>	<b>0.6603</b>		<b>2,103.4529</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**3.3 Site Preparation - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0107	7.4700e-003	0.0811	2.2000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		22.0931	22.0931	6.9000e-004		22.1104
<b>Total</b>	<b>0.0107</b>	<b>7.4700e-003</b>	<b>0.0811</b>	<b>2.2000e-004</b>	<b>0.0224</b>	<b>1.7000e-004</b>	<b>0.0225</b>	<b>5.9300e-003</b>	<b>1.6000e-004</b>	<b>6.0900e-003</b>		<b>22.0931</b>	<b>22.0931</b>	<b>6.9000e-004</b>		<b>22.1104</b>

**3.4 Building Construction - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9213	14.9573	12.7532	0.0211		0.8300	0.8300		0.7976	0.7976		1,969.8833	1,969.8833	0.4037		1,979.9752
<b>Total</b>	<b>1.9213</b>	<b>14.9573</b>	<b>12.7532</b>	<b>0.0211</b>		<b>0.8300</b>	<b>0.8300</b>		<b>0.7976</b>	<b>0.7976</b>		<b>1,969.8833</b>	<b>1,969.8833</b>	<b>0.4037</b>		<b>1,979.9752</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**3.4 Building Construction - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.0300e-003	0.1145	0.0308	2.5000e-004	6.4000e-003	7.7000e-004	7.1700e-003	1.8400e-003	7.4000e-004	2.5800e-003		26.8316	26.8316	1.9600e-003		26.8807
Worker	0.0107	7.4700e-003	0.0811	2.2000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		22.0931	22.0931	6.9000e-004		22.1104
<b>Total</b>	<b>0.0147</b>	<b>0.1220</b>	<b>0.1119</b>	<b>4.7000e-004</b>	<b>0.0288</b>	<b>9.4000e-004</b>	<b>0.0297</b>	<b>7.7700e-003</b>	<b>9.0000e-004</b>	<b>8.6700e-003</b>		<b>48.9247</b>	<b>48.9247</b>	<b>2.6500e-003</b>		<b>48.9911</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9213	14.9573	12.7532	0.0211		0.8300	0.8300		0.7976	0.7976	0.0000	1,969.8833	1,969.8833	0.4037		1,979.9752
<b>Total</b>	<b>1.9213</b>	<b>14.9573</b>	<b>12.7532</b>	<b>0.0211</b>		<b>0.8300</b>	<b>0.8300</b>		<b>0.7976</b>	<b>0.7976</b>	<b>0.0000</b>	<b>1,969.8833</b>	<b>1,969.8833</b>	<b>0.4037</b>		<b>1,979.9752</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**3.4 Building Construction - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.0300e-003	0.1145	0.0308	2.5000e-004	6.4000e-003	7.7000e-004	7.1700e-003	1.8400e-003	7.4000e-004	2.5800e-003		26.8316	26.8316	1.9600e-003		26.8807
Worker	0.0107	7.4700e-003	0.0811	2.2000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0900e-003		22.0931	22.0931	6.9000e-004		22.1104
<b>Total</b>	<b>0.0147</b>	<b>0.1220</b>	<b>0.1119</b>	<b>4.7000e-004</b>	<b>0.0288</b>	<b>9.4000e-004</b>	<b>0.0297</b>	<b>7.7700e-003</b>	<b>9.0000e-004</b>	<b>8.6700e-003</b>		<b>48.9247</b>	<b>48.9247</b>	<b>2.6500e-003</b>		<b>48.9911</b>

**3.5 Paving - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9037	8.9966	9.4003	0.0145		0.4945	0.4945		0.4564	0.4564		1,379.8266	1,379.8266	0.4323		1,390.6332
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9037</b>	<b>8.9966</b>	<b>9.4003</b>	<b>0.0145</b>		<b>0.4945</b>	<b>0.4945</b>		<b>0.4564</b>	<b>0.4564</b>		<b>1,379.8266</b>	<b>1,379.8266</b>	<b>0.4323</b>		<b>1,390.6332</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**3.5 Paving - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.8700e-003	6.6600e-003	0.0736	2.1000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0800e-003		21.4073	21.4073	6.1000e-004		21.4227
<b>Total</b>	<b>9.8700e-003</b>	<b>6.6600e-003</b>	<b>0.0736</b>	<b>2.1000e-004</b>	<b>0.0224</b>	<b>1.7000e-004</b>	<b>0.0225</b>	<b>5.9300e-003</b>	<b>1.6000e-004</b>	<b>6.0800e-003</b>		<b>21.4073</b>	<b>21.4073</b>	<b>6.1000e-004</b>		<b>21.4227</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9037	8.9966	9.4003	0.0145		0.4945	0.4945		0.4564	0.4564	0.0000	1,379.8266	1,379.8266	0.4323		1,390.6332
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9037</b>	<b>8.9966</b>	<b>9.4003</b>	<b>0.0145</b>		<b>0.4945</b>	<b>0.4945</b>		<b>0.4564</b>	<b>0.4564</b>	<b>0.0000</b>	<b>1,379.8266</b>	<b>1,379.8266</b>	<b>0.4323</b>		<b>1,390.6332</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**3.5 Paving - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.8700e-003	6.6600e-003	0.0736	2.1000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0800e-003		21.4073	21.4073	6.1000e-004		21.4227
<b>Total</b>	<b>9.8700e-003</b>	<b>6.6600e-003</b>	<b>0.0736</b>	<b>2.1000e-004</b>	<b>0.0224</b>	<b>1.7000e-004</b>	<b>0.0225</b>	<b>5.9300e-003</b>	<b>1.6000e-004</b>	<b>6.0800e-003</b>		<b>21.4073</b>	<b>21.4073</b>	<b>6.1000e-004</b>		<b>21.4227</b>

**4.0 Operational Detail - Mobile**

**4.1 Mitigation Measures Mobile**

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.546418	0.044132	0.199182	0.124467	0.017484	0.005870	0.020172	0.031831	0.001999	0.002027	0.004724	0.000704	0.000991

5.0 Energy Detail

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**5.2 Energy by Land Use - Natural Gas**

**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>2.3000e-004</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>2.3000e-004</b>

**7.0 Water Detail**

PAR 1146 series Large Boiler Replacement - South Coast AQMD Air District, Winter

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**7.1 Mitigation Measures Water**

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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## **APPENDIX B-4**

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### **Operational Emissions**

**Appendix B-4**

**CEQA Impact Evaluations - Assumptions and Calculations**

(2018/08/28 rev)

**Emissions Summary**

PARs 1146 series and PR 1100	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day
Increased Delivery Trucks	19.25	30.43	2.18	1.22	4.54	0.12
<b>Total</b>	<b>19.25</b>	<b>30.43</b>	<b>2.18</b>	<b>1.22</b>	<b>4.54</b>	<b>0.12</b>

By Vehicle Class	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Diesel Delivery Trucks (T6 Construction Truck)	19.25	30.43	2.18	1.22	4.54	0.12	39.53	0.001	-	39.55
<b>Total</b>	<b>19.25</b>	<b>30.43</b>	<b>2.18</b>	<b>1.22</b>	<b>4.54</b>	<b>0.12</b>	<b>39.53</b>	<b>0.001</b>	<b>-</b>	<b>39.55</b>

All sites	
Max. # used/day	Max. # day used/yr
65	452

*Note:*

1. It is conservatively assumed that there will be 56 units at 32 facilities affected by PARs 1146 series and PR 1100.
2. Peak daily trips assume one ammonia/urea delivery occurs at each facility, except for Facility 6 in which there will be two ammonia truck deliveries. Truck trip distances to deliver ammonia are assumed to be 100 miles round-trip.
3. No additional employees are anticipated to be needed to operate the new SCR systems; the existing work force per affected facility is expected to be sufficient. As such, no workers' travel emissions are anticipated from the operation of the new SCR systems.
4. It is assumed heavy duty trucks would be used to deliver ammonia/urea and catalyst.
5. Values in table may differ due to rounding.

**Delivery Trucks (Ammonia and Catalyst) - T6 instate construction heavy (T6) - each**

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
lb/mile	0.0030	0.0047	0.0003	0.0002	0.0007	0.00002	1.93	0.000042	-	1.93
lb/day, MT/day for GHG	0.30	0.47	0.03	0.02	0.07	0.002	0.09	0.000002	-	0.09

VMT, mile/day
100.0

EF: from EMFAC2017 - Year 2019

**PARs 1146 series and PR 1100 Operation Emissions**

(11/08/18 rev.)

**Summary**

Key Requirements: Operation Phase	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day
Source Testing	5.12	0.43	0.13	0.06	0.54	0.002
<b>Total</b>	<b>5.12</b>	<b>0.43</b>	<b>0.13</b>	<b>0.06</b>	<b>0.54</b>	<b>0.002</b>

By Vehicle Class	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Source Testing (LDT)	5.12	0.43	0.13	0.06	0.54	0.002	3.30	0.00	-	3.30
<b>Total</b>	<b>5.12</b>	<b>0.43</b>	<b>0.13</b>	<b>0.06</b>	<b>0.54</b>	<b>0.002</b>	<b>3.30</b>	<b>0.00</b>	<b>-</b>	<b>3.30</b>

All facilities	
Max. # used/day	Max. # used/yr
32	224

Notes and Assumptions:

- 32 facilities would be subject to source testing for ammonia emissions limits. Each facility would only conduct one source test at a time even with multiple units at a facility.
- 56 SCR systems would be required to conduct the necessary ammonia emissions testing four times a year; thus, in one year the maximum number of source testing truck trips would be 224.
- It was assumed (1) source testing truck (LDT) would be used to complete source testing at each facility.
- It was assumed every on-road vehicle used during operation would travel a distance of 40 miles round trip.
- Values in table may differ due to rounding.

**Light-Duty Truck (LDT) - each**

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
lb/mile	0.0040	0.0003	0.0001	0.00004	0.0004	0.000002	0.8	0.00004	-	0.81246
lb/day, MT/day for GHG	0.16	0.01	0.00	0.00	0.02	0.00	0.01	0.000001	-	0.01

VMT, mile/day
40.0

EF: from EMFAC2017, EPA AP-42

## **APPENDIX C**

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### **Tier III Risk Assessment Calculations of Diesel PM**



**TIER 3 SCREEN INPUT & CANCER BURDEN CALCULATION**  
 (Version 8.0 & Attachment M, Revision Mar 2016) - RiskTool (V1.03)

A/N: PAR 1146 series/PR 1100

Fac: R 1146 series/PR 1100

Screening program used	AERSCREEN
Convert 1-hr to Annual Conc. Factor	0.1

Instructions: Run a screening program at 1 lb/hr rate to get the max 1-hr concentrations at residential & commercial receptors. Enter values into the yellow highlighted cells in the table below.

Modeling emissions rate	0.1260	g/sec
Modeling emissions rate	1.00	lbs/hr
Modeling emissions rate	4.38	tons/yr
Max Hours per day	24	hr/day
Days per week	7	dy/wk
Weeks per year	52	wk/yr

**MODELING RESULTS - MAX ONE HOUR**

Distance residential	25	meters
Max. 1-hr Conc. at Residential receptor	247.9	µg/m <sup>3</sup>
Annualized Conc. Residential	24.79	µg/m <sup>3</sup>
Distance Commercial	25	meters
Max. 1-hr Conc. at Comm. receptor	247.9	µg/m <sup>3</sup>
Annualized Conc. Commercial	24.79	µg/m <sup>3</sup>

**Annualized X/Q**

X/Q Residential	5.665	(µg/m <sup>3</sup> )/(tons/yr)
X/Q Commercial	5.665	(µg/m <sup>3</sup> )/(tons/yr)

**Hourly X/Q (X/Q Max)**

X/Q Residential	248.119	(µg/m <sup>3</sup> )/(lbs/hr)
X/Q Commercial	248.119	(µg/m <sup>3</sup> )/(lbs/hr)

SCREEN INPUT DATA - BRITISH UNITS

Actual exhaust rate	10000.00	acfm
Temperature	68.00	°F
Stack diameter	24.00	in
Stack height	13.50	ft
Modeling emissions rate	1.00	lb/hr

SCREEN INPUT DATA - METRIC UNITS

Temperature	293.000	K
Stack diameter	0.610	meters
Stack area	0.292	m <sup>2</sup>
Stack height	4.115	meters
Stack velocity	16.179	m/s
Modeling emissions rate	0.12611	g/s

**TIER 3 SCREENING RISK ASSESSMENT REPORT**  
 (Version 8.0 & Attachment M, Revision Mar 2016) - RiskTool (V1.03)

**A/N:** ‡ 1146 series/PR 1100  
**Fac:** ‡ 1146 series/PR 1100

**Application deemed complete date:** 2/28/2018

**2. Tier 3 Data**

Equipment Type Other No T-BACT  
 Operation Schedule 24 hours/day; 7 days/week; 52 weeks/year  
 Stack Height 10 ft  
 Distance - Residential 25 m  
 Distance - Commercial 25 m  
 Meteorological Station Redlands

Dispersion Factors tables	Point Source
For Chronic X/Q	Table 3
For Acute X/Q max	Table 6

Receptor	X/Q (µg/m³)/(tons/yr)	X/Qmax (µg/m³)/(lbs/hr)
Residential	5.665	248.119
Commercial - Worker	5.665	248.119

Adjustment and Intake Factors

	Residential	Worker
Year of Exposure	30	
Combined Exposure Factor (CEF) - Table 9.1 & 9.2	676.63	56.26
Worker Adjustment Factor (WAF) - Table 10	1	1.00





**TIER 3 RESULTS**

A/N: 1146 series/PR 1100

Application deemed complete date:

02/28/18

**5a. MICR**

MICR Resident = CP (mg/(kg-day))<sup>-1</sup> \* Q (ton/yr) \* (X/Q) Resident \* CEF Resident \* MP Resident \* 1e-6 \* MWAF

MICR Worker = CP (mg/(kg-day))<sup>-1</sup> \* Q (ton/yr) \* (X/Q) Worker \* CEF Worker \* MP Worker \* WAF Worker \* 1e-6 \* MWAF

Compound	Residential	Commercial
Particulate Emissions from Diesel-Fueled Engine	5.22E-08	4.34E-09
<b>Total</b>	<b>5.22E-08</b>	<b>4.34E-09</b>
	<b>PASS</b>	<b>PASS</b>

No Cancer Burden, MICR<1.0E-6

<b>5b. Cancer Burden Calculation?</b>	<b>NO</b>
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**6. Hazard Index**

HIA = [Q(lb/hr) \* (X/Q)max \* MWAF] / Acute REL  
 HIC = [Q(ton/yr) \* (X/Q) \* MP \* MWAF] / Chronic REL  
 HIC 8-hr= [Q(ton/yr) \* (X/Q) \* WAF \* MWAF] / 8-hr Chronic REL

Target Organs	Acute	Chronic	8-hr Chronic	Acute Pass/Fail	Chronic Pass/Fail	8-hr Chronic Pass/Fail
Alimentary system (liver) - AL				Pass	Pass	Pass
Bones and teeth - BN				Pass	Pass	Pass
Cardiovascular system - CV				Pass	Pass	Pass
Developmental - DEV				Pass	Pass	Pass
Endocrine system - END				Pass	Pass	Pass
Eye				Pass	Pass	Pass
Hematopoietic system - HEM				Pass	Pass	Pass
Immune system - IMM				Pass	Pass	Pass
Kidney - KID				Pass	Pass	Pass
Nervous system - NS				Pass	Pass	Pass
Reproductive system - REP				Pass	Pass	Pass
Respiratory system - RES		1.40E-05		Pass	Pass	Pass
Skin				Pass	Pass	Pass

**6a. Hazard Index Acute - Resident**

$HIA = [Q(\text{lb/hr}) * (X/Q)_{\text{max resident}} * MWAF] / \text{Acute REL}$

Compound	HIA - Residential									
	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Particulate Emissions from Diesel-Fueled Engine										
<b>Total</b>										

6a. Hazard Index Acute - Worker

A/N: 1146 series/PR 1

Application deemed complete date: 02/28/18

$HIA = [Q(\text{lb/hr}) * (X/Q)\text{max Worker} * MWAF] / \text{Acute REL}$

Compound	HIA - Commercial									
	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Particulate Emissions from Diesel-Fueled Engine										
<b>Total</b>										

**6b. Hazard Index Chronic - Resident**

HIC = [Q(ton/yr) \* (X/Q) Resident \* MP Chronic Resident \* MWF] / Chronic REL

Compound	HIC - Residential												
	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Particulate Emissions from Diesel-Fueled Engine												1.40E-05	
<b>Total</b>												1.40E-05	

**6b. Hazard Index Chronic - Worker**

HIC = [Q(ton/yr) \* (X/Q) \* MP Chronic Worker \* MWAF] / Chronic REL

Compound	HIC - Commercial												
	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Particulate Emissions from Diesel-Fueled Engine												1.40E-05	
<b>Total</b>												1.40E-05	

6c. 8-hour Hazard Index Chronic - Resident

A/N: 1146 series/PR 1

Application deemed complete date: 02/28/18

$HIC\ 8\text{-hr} = [Q(\text{ton/yr}) * (X/Q)\ \text{Resident} * WAF\ \text{Resident} * MWF] / 8\text{-hr}\ \text{Chronic}\ \text{REL}$

Compound	HIC - Residential												
	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Particulate Emissions from Diesel-Fueled Engine													
<b>Total</b>													

**6c. 8-hour Hazard Index Chronic - Worker**

HIC 8-hr = [Q(ton/yr) \* (X/Q) Worker \* WAF Worker \* MWAF] / 8-hr Chronic REL

Compound	HIC - Commercial												
	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Particulate Emissions from Diesel-Fueled Engine													
<b>Total</b>													

## **APPENDIX D**

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### **List of Affected Facilities**

## Appendix D - List of Affected Facilities

Facility ID	NAICS	Facility Name	Address	On List per Government Code 65962.5 (Envirostor)?	Distance from School (meters)	Distance from Sensitive Receptor (meters)	Airport within 2 miles (code)
1744	339991	KIRKHILL - TA COMPANY	300 E CYPRESS ST BREA 92821	No	227	227	No
2946	332111	PACIFIC FORGE INC	10641 S ETIWANDA AVE FONTANA 92337	No	2613	979	No
3029	313310	MATCHMASTER DYEING & FINISHING INC	3700 S BROADWAY LOS ANGELES 90007	No	185	185	No
3721	326140	DART CONTAINER CORP OF CALIFORNIA	150 S MAPLE ST CORONA 92880	No	1080	553	AJO
7416	325120	PRAXAIR INC	2300 E Pacific Coast Hwy Wilmington 90744	No	663	487	No
9053	221330	VEOLIA ENERGY LA INC	715 W 3RD ST LOS ANGELES 90071	No	91	91	No
11435	325180	PQ CORPORATION	8401 QUARTZ AVE SOUTH GATE 90280	No	702	268	No
11716	324122	FONTANA PAPER MILLS INC	13733 VALLEY BLVD FONTANA 92335	No	2268	171	No
12155	327120	ARMSTRONG FLOORING INC	5037 PATATA ST SOUTH GATE 90280	Yes	507	131	No
14871	322130	SONOCO PRODUCTS CO	166 N BALDWIN PARK BLVD CITY OF INDUSTRY 91746	No	994	211	No
16642	312120	ANHEUSER-BUSCH LLC., (LA BREWERY)	15800 ROSCOE BLVD VAN NUYS 91406	Yes	835	68	VNY
16978	311611	CLOUGHERTY PACKING LLC/HORMEL FOODS CORP	3049 E VERNON AVE VERNON 90058	No	1088	953	No
18294	336411	NORTHROP GRUMMAN SYSTEMS CORP	1 HORNET WAY EL SEGUNDO 90245	No	159	220	LAX
20604	445110	RALPHS GROCERY CO	1100 W ARTESIA BLVD COMPTON 90220	No	840	582	CPM
21887	322121	KIMBERLY-CLARK WORLDWIDE INC.-FULT. MILL	2001 E ORANGETHORPE AVE FULLERTON 92831	No	789	789	No
22607	311511	CALIFORNIA DAIRIES, INC	11709 ARTESIA BLVD ARTESIA 90701	No	391	29	No
35302	324122	OWENS CORNING ROOFING AND ASPHALT, LLC	1501 N TAMARIND AVE COMPTON 90222	No	463	125	CPM
40034	314110	BENTLEY PRINCE STREET INC	14641 DON JULIAN RD CITY OF INDUSTRY 91746	No	1123	548	No
42775	211120	WEST NEWPORT OIL CO	1080 W 17TH ST COSTA MESA 92627	No	428	428	No
45746	322130	PABCO BLDG PRODUCTS LLC,PABCO PAPER, DBA	4460 PACIFIC BLVD VERNON 90058	Yes	150	266	No
46268	332996	CALIFORNIA STEEL INDUSTRIES INC	14000 SAN BERNARDINO AVE FONTANA 92335	No	1241	302	No
47781	221112	OLS ENERGY-CHINO	5601 EUCALYPTUS AVE CHINO 91710	No	1548	546	No
51620	221112	WHEELABRATOR NORWALK ENERGY CO INC	11500 BALSAM ST NORWALK 90650	No	801	278	No
59618	313310	PACIFIC CONTINENTAL TEXTILES, INC.	2880 E ANA ST COMPTON 90221	No	899	778	No
74424	812331	ANGELICA TEXTILE SERVICES	451 SAN FERNANDO RD LOS ANGELES 90031	No	738	185	No
85943	331315	SIERRA ALUMINUM COMPANY	11806 PACIFIC AVE FONTANA 92337	Yes	1776	721	No
94872	332431	METAL CONTAINER CORP	10980 INLAND AVE MIRA LOMA 91752	No	2353	611	No
94930	325411	CARGILL INC	566 N GILBERT ST FULLERTON 92833	No	861	834	FUL
95212	314110	FABRICA	3201 S SUSAN ST SANTA ANA 92704	No	431	568	No
96587	313310	TEXOLLINI INC	2575 EL PRESIDIO ST CARSON 90810	No	848	370	No
126498	332812	STEELSCAPE, INC	11200 ARROW ROUTE RANCHO CUCAMONGA 91730	Yes	955	600	No
129816	221112	INLAND EMPIRE ENERGY CENTER, LLC	26226 Antelope Rd Menifee 92585	No	561	380	No
131732	334413	NEWPORT FAB, LLC	4321 JAMBOREE RD NEWPORT BEACH 92660	No	1960	175	SNA
131850	314110	SHAW DIVERSIFIED SERVICES INC	15305 VALLEY VIEW AVE SANTA FE SPRINGS 90670	No	715	532	No
132068	311812	BIMBO BAKERIES USA INC	480 S VAIL AVE MONTEBELLO 90640	No	203	98	No
143741	211120	DCOR LLC	OFFSHORE PLATFORM EDITH OCS P-0296 HUNTINGTON BEACH 92649	No	3337	3337	No
153199	445110	THE KROGER CO/RALPHS GROCERY CO	850 S CYPRESS ST LA HABRA 90631	No	585	585	No
155877	312120	MILLERCOORS, LLC	15801 E 1ST ST IRWINDALE 91706	No	1705	1537	No
157363	322211	INTERNATIONAL PAPER CO	601 E BALL RD ANAHEIM 92805	No	407	160	No
165192	336411	TRIUMPH AEROSTRUCTURES, LLC	3901 JACK NORTHROP AVE HAWTHORNE 90250	No	566	256	HHR
168088	561110	POLYNT COMPOSITES USA INC	2801 LYNWOOD RD LYNWOOD 90262	Yes	457	234	No
172005	322121	NEW- INDY ONTARIO, LLC	5100 E. JURUPA ST ONTARIO 91761	No	3465	2589	No
173290	812332	MEDICLEAN	4500 DUNHAM ST COMMERCE 90040	No	521	60	No

Facility ID	NAICS	Facility Name	Address	On List per Government Code 65962.5 (Envirostor)?	Distance from School (meters)	Distance from Sensitive Receptor (meters)	Airport within 2 miles (code)
175154	211120	FREEPOR-MCMORAN OIL & GAS	1400 N MONTEBELLO BLVD MONTEBELLO 90640	No	1059	425	No
175191	211120	FREEPOR-MCMORAN OIL & GAS	5640 S FAIRFAX AVE LOS ANGELES 90056	No	803	25	No
180367	211111	LINN OPERATING, INC.	25121 N SIERRA HWY SANTA CLARITA 91321	No	1112	1040	No
180410	325211	REICHHOLD LLC 2	237 S MOTOR AVE AZUSA 91702	No	1721	1327	No
182049	486910	TORRANCE VALLEY PIPELINE CO LLC	8044 WOODLEY AVE VAN NUYS 91406	No	1019	498	VNY
182050	221210	TORRANCE VALLEY PIPELINE CO LLC	25500 MAGIC MOUNTAIN PKY VALENCIA 91355	No	1878	724	No
182051	486210	TORRANCE VALLEY PIPELINE CO LLC	5800 SEPULVEDA BLVD CULVER CITY 90230	No	306	364	No
183832	313210	AST Textile	12537 CERISE AVE HAWTHORNE 90250	No	303	204	HHR
800003	336413	HONEYWELL INTERNATIONAL INC	2525 W 190TH ST TORRANCE 90504	No	266	218	No
800066	336419	HITCO CARBON COMPOSITES INC	1551 W 139TH ST GARDENA 90249	No	1256	219	No
800113	336412	ROHR, INC.	8200 ARLINGTON AVE RIVERSIDE 92503	Yes	712	157	RAL
800128	486210	SO CAL GAS CO	12801 TAMPA AVE NORTHRIDGE 91326	No	385	99	No
800129	486910	SPPP, L.P.	2359 RIVERSIDE AVE BLOOMINGTON 92316	Yes	1586	576	No
800149	325180	US BORAX INC	300 FALCON ST WILMINGTON 90744	No	1813	1653	No
800189	713110	DISNEYLAND RESORT	1313 S HARBOR BLVD ANAHEIM 92802	Yes	1142	568	No
800205	522120	BANK OF AMERICA NT & SA, BREA CENTER	275 VALENCIA AVE BREA 92823	No	376	1258	No
800371	541511	RAYTHEON SYSTEMS COMPANY - FULLERTON OPS	1801 HUGHES DR FULLERTON 92833	No	112	112	FUL
800408	336411	NORTHROP GRUMMAN SYSTEMS	3301 AVIATION Blvd Lawndale 90260	No	611	247	No
800409	336411	NORTHROP GRUMMAN SYSTEMS CORPORATION	1 SPACE PARK BLVD REDONDO BEACH 90278	Yes	594	247	No
800416	486110	PLAINS WEST COAST TERMINALS LLC	692 STUDEBAKER RD LONG BEACH 90803	Yes	193	81	No
800417	486110	PLAINS WEST COAST TERMINALS LLC	2500 E VICTORIA ST COMPTON 90220	No	1620	412	No
800419	486110	PLAINS WEST COAST TERMINALS LLC	21652 NEWLAND ST HUNTINGTON BEACH 92646	Yes	1046	668	No
800420	486110	PLAINS WEST COAST TERMINALS LLC	2685 PIER S LN LONG BEACH 90802	Yes	2631	1378	No
56	611310	UNIVERSITY SO CALIFORNIA,HEALTH SCIENCES	2011 ZONAL AVENUE LOS ANGELES 90033	No	134	134	No
918	622110	QUEEN OF THE VALLEY HOSPITAL	1115 S SUNSET AV WEST COVINA 91790	No	652	29	No
958	611110	LA UNI SCH DIST, WOODROW WILSON HIGH	4500 MULTNOMAH ST LOS ANGELES 90032	No	277	11	No
1179	221320	INLAND EMPIRE UTL AGEN, A MUN WATER DIS	16400 EL PRADO CHINO 91710	No	1790	898	No
1209	325314	DECCO US POST HARVEST, INC.	1713 S CALIFORNIA AV MONROVIA 91016	No	615	164	No
1440	622110	ST. VINCENT MEDICAL GROUP	2131 W 3RD ST LOS ANGELES 90057	No	761	79	No
1483	311999	ACCESS BUSINESS GROUP LLC, NUTRILITE	5600 BEACH BLVD BUENA PARK 90622	No	658	132	FUL
1912	611210	SADDLEBACK COMMUNITY COLLEGE DISTRICT	28000 MARGUERITE PKY MISSION VIEJO 92692	No	776	2	No
2119	611110	LA UNI SCH DIST, STEVENSON MIDDLE SCHOOL	725 S INDIANA ST LOS ANGELES 90023	No	470	135	No
2124	622110	ADVENTIST HEALTH GLENDALE	1505-1509 WILSON TERRACE GLENDALE 91206	No	655	47	No
2212	221320	LA CITY, LA-GLENDALE WATER RECLAMATION	4600-4610 COLORADO BL LOS ANGELES 90039	No	917	404	No
2261	622110	METROPOLITAN STATE HOSPITAL	11401 S BLOOMFIELD AVE NORWALK 90650	No	1219	307	No
2344	512110	20TH CENTURY FOX FILM CORP	10201 W PICO BL LOS ANGELES 90035	No	718	180	No
2504	444190	ANGELUS BLOCK CO INC	11740 SHELDON ST SUN VALLEY 91352	No	1262	700	No
2537	562213	CORONA CITY, DEPT OF WATER & POWER	1904 W CLEARWATER DR CORONA 92880	No	2155	998	No
2605	325412	3M DRUG DELIVERY SYSTEMS	19901 NORDHOFF ST NORTHRIDGE 91324	No	1146	201	No
2638	611310	OCCIDENTAL COLLEGE	1600 CAMPUS RD LOS ANGELES 90041	No	779	0	No
2680	924110	LA CO., SANITATION DISTRICT	1965 WORKMAN MILL RD WHITTIER 90601	No	1312	148	No
2961	611310	CAL ST UNIV, DOMINGUEZ HILLS	1000 E VICTORIA ST. CARSON 90747	No	87	19	No
3002	811490	ARAMARK CLEANROOM SERVICES, INC.	1405 E 58TH PLACE LOS ANGELES 90001	No	687	47	No
3153	311412	GOLDEN STATE FOODS CORP	640 S 6TH AV CITY OF INDUSTRY 91746	No	565	426	No
3254	312111	AMERIPEC INC	6965 ARAGON CIR BUENA PARK 90620	No	595	126	No

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3424	424430	THRIFTY ICE CREAM	9200 TELSTAR EL MONTE 91731	No	341	227	No
3496	624120	FAIR VIEW DEVELOPMENTAL CENTER	2501 HARBOR BLVD COSTA MESA 92626	No	830	19	No
3550	524113	PACIFIC LIFE INSURANCE	700 NEWPORT CENTER DR NEWPORT BEACH 92660	No	1320	97	No
3578	448190	PRUDENTIAL OVERALL SUPPLY	951 E SANDHILL CARSON 90746	No	526	108	No
3665	622110	METHODIST HOSPITAL OF SO CAL	300 W HUNTINGTON DR ARCADIA 91007	No	455	338	No
3671	622110	EISENHOWER MEDICAL CENTER	39000 BOB HOPE DR RANCHO MIRAGE 92270	No	2359	129	No
3781	327390	OLDCASTLE PRECAST	10650 HEMLOCK AV FONTANA 92335	No	2097	689	No
3885	622110	JERRY L PETTIS MEMORIAL VETERANS HOSP	11201 BENTON ST LOMA LINDA 92357	No	1434	16	No
4297	712110	J. PAUL GETTY TRUST	17985 PACIFIC COAST HWY MALIBU 90265	No	1458	19	No
4311	325412	INTERNATIONAL MEDICATION SYSTEMS LTD	1878-86 SANTA ANITA AVE SOUTH EL MONTE 91733	No	399	69	No
4351	611310	CAL ST. POLYTECHNIC UNIV. POMONA	3801 TEMPLE AV POMONA 91768	Yes	790	10	No
4430	444190	ANGELUS BLOCK CO INC	11374 TUXFORD ST SUN VALLEY 91352	No	1543	476	No
4565	611310	CAL ST UNIV NORTHRIDGE	18111 NORDHOFF ST NORTHRIDGE 91330	No	1172	21	No
4591	221310	ORANGE COUNTY WATER DISTRICT	10500 ELLIS AV FOUNTAIN VALLEY 92708	No	497	35	No
4783	622110	LOS ALAMITOS MEDICAL CENTER	3751 KATELLA AV LOS ALAMITOS 90720	No	710	158	No
5023	611310	CAL ST UNIV LONG BEACH EH&S	1250 BELLFLOWER BL.; SSA-341 LONG BEACH 90840	No	584	29	LGB
5176	611110	LA UNI SCH DIST, VERDUGO HILLS HIGH	10625 PLAINVIEW AV TUJUNGA 91042	No	209	34	No
5254	813410	JONATHAN CLUB	545 S FIGUEROA ST. LOS ANGELES 90071	No	441	360	No
5259	325620	JOHNSON & JOHNSON CONSUMER, INC.	5755-60 W 96TH STREET LOS ANGELES 90045	No	480	480	LAX
5346	611110	ALHAMBRA SCHOOL DIST,ALHAMBRA HIGH SCH	101 S 2ND ST ALHAMBRA 91801	No	521	14	No
5366	921110	PASADENA CITY, CITY HALL	100 N GARFIELD AVE. PASADENA 91109	No	855	557	No
5484	621491	SADDLEBACK MEMORIAL MEDICAL CENTER	24451 HEALTH CENTER DR LAGUNA HILLS 92653	No	943	0	No
5583	611110	ALHAMBRA SCH DIST, SAN GABRIEL HI SCHOOL	801 RAMONA ST SAN GABRIEL 91776	No	163	163	No
5679	621111	US GOVT. VETERANS ADMINISTRATION MED CTR	16111 PLUMMER ST NORTH HILLS 91343	No	394	19	No
5756	921190	REDLANDS CITY, WASTEWATER TREATMENT PLT	1950 NEVADA ST REDLANDS 92373	No	1500	1500	SBD
5903	311511	ALTA DENA CERTIFIED DAIRY INC,UNIT N0.01	17637 E VALLEY BLVD CITY OF INDUSTRY 91744	No	950	130	No
6046	711212	LOS ANGELES TURF CLUB INC	285 W HUNTINGTON DR ARCADIA 91007	No	644	587	No
6069	812331	STEINER CORP	1755 HASTER ST ANAHEIM 92802	No	874	121	No
6321	721110	WESTIN BONAVENTURE HOTEL	404 S FIGUEROA ST LOS ANGELES 90071	No	455	200	No
6324	622110	ST. BERNARDINE MEDICAL CENTER	2101 N WATERMAN AV SAN BERNARDINO 92404	No	797	69	No
6331	622210	PATTON STATE HOSPITAL	3102 E HIGHLAND AV HIGHLAND 92346	No	993	214	No
6358	424490	MARUKAN VINEGAR (USA) INC	7755 MONROE ST. PARAMOUNT 90723	No	744	0	No
6384	622310	LA CO., RANCHO LOS AMIGOS NAT. REHAB CTR	7601 E IMPERIAL HWY DOWNEY 90242	No	816	192	No
6432	221310	METROPOLITAN WATER DISTRICT OF SO CAL	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
6552	519120	LA CITY, CENTRAL PUB LIBRARY	630 W 5TH ST LOS ANGELES 90071	No	235	93	No
6586	488320	VOPAK TERMINAL LOS ANGELES, INC.	401 CANAL ST WILMINGTON 90744	No	1100	970	No
6739	622110	KAISER FOUNDATION HOSPITAL	13652 CANTARA ST PANORAMA CITY 91402	No	792	116	BUR
6897	115310	LONG BEACH CITY, WATER DEPT	2920 REDONDO AVE. LONG BEACH 90806	No	362	6	No
6974	484121	BULK TRANSPORTATION INC	415 LEMON AVE. WALNUT 91789	No	592	172	No
7010	812332	PRUDENTIAL OVERALL SUPPLY	16901 ASTON ST IRVINE 92606	No	1548	209	No
7018	448190	L & N COSTUME SERVICES	1602 E EDINGER SANTA ANA 92705	No	785	674	No
7417	221320	EASTERN MUNICIPAL WATER DIST	26560 WATSON RD & 1301 CASE RD PERRIS 92570	No	1571	82	No
7462	611110	LONG BEACH UNI SCH DIST/JORDAN HIGH	6500 ATLANTIC AV LONG BEACH 90805	No	452	19	No
7730	326150	CARPENTER CO	7809 LINCOLN AVENUE RIVERSIDE 92504	Yes	1427	206	No
7814	311111	STAR MILLING CO	20767 HWY I-215 PERRIS 92570	No	546	546	L65

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8015	332813	ANADITE INC	10647 GARFIELD AV SOUTH GATE 90280	Yes	1054	47	No
8066	325180	US BORAX & CHEM CORP UNIT NO. 9	300 FALCON ST WILMINGTON 90744	No	2000	1700	No
8220	622110	PROVIDENCE ST JOSEPH MED CTR	501 S BUENA VISTA ST BURBANK 91505	No	175	175	No
8254	423990	YAMAHA CORPORATION OF AMERICA	6600 ORANGETHORPE AV BUENA PARK 90620	No	402	171	No
8369	922150	LA CO., PROBATION DEPT/ISD	7285 QUILL DR DOWNEY 90242	No	507	143	No
8488	322211	INTERNATIONAL PAPER CO	1350 E 223RD ST CARSON 90745	No	1263	301	No
8560	812332	PRUDENTIAL OVERALL SUPPLY CO	6920 & 6948 BANDINI BL COMMERCE 90040	No	1183	1024	No
8608	812331	CINTAS CORP	7735 PARAMOUNT BLVD. PICO RIVERA 90660	No	1579	235	No
9163	221320	INLAND EMPIRE UTL AGEN, A MUN WATER DIS	2450 PHILADELPHIA AVE ONTARIO 91761	No	744	716	ONT
9243	622110	TORRANCE MEMORIAL MEDICAL CENTER	3330 LOMITA BL TORRANCE 90505	Yes	695	245	No
9519	311919	SANYO FOODS CORP OF AMERICA	11955 MONARCH ST GARDEN GROVE 92841	No	679	414	No
9784	622310	REDLANDS COMMUNITY HOSPITAL	350 TERRACINA BLVD/LAUREL AV REDLANDS 92373	No	629	142	No
9961	221320	RIVERSIDE CITY, WATER QUALITY CONTROL	5950 ACORN ST RIVERSIDE 92504	No	1468	1064	RAL
10167	922120	SAN BERN. CO, FACILITIES MGMT DEPT	351 N ARROWHEAD SAN BERNARDINO 92410	No	678	398	No
10198	221320	VALLEY SANITARY DIST	45-500 VAN BUREN ST INDIO 92201	No	208	3	No
10245	924110	LA CITY, TERMINAL ISLAND TREATMENT PLANT	445 FERRY ST SAN PEDRO 90731	No	2300	1773	No
10267	621493	SAINT MARY'S MEDICAL CENTER	1050 LINDEN AVE. LONG BEACH 90813	No	343	119	No
10609	611110	PASADENA USD, CHARLES W ELIOT MIDDLE SCH	2184 N LAKE AVE ALTADENA 91001	No	150	43	No
10740	325991	TEKNOR APEX COMPANY, MACLIN DIVISION	420 S 6TH AV CITY OF INDUSTRY 91746	No	925	428	No
11082	441110	DESERT COTTONSEED PRODUCTS INC	86-600 AVENUE 54 COACHELLA 92236	No	2153	597	No
11218	921190	ORANGE CO, CENTRAL UTILITY FACILITY	525 N FLOWER ST SANTA ANA 92703	Yes	628	262	No
11245	622110	HOAG HOSPITAL	301 NEWPORT BLVD NEWPORT BEACH 92658	No	1109	122	No
11301	221320	SAN BERNARDINO CITY MUN WATER DEPT (WRP)	399 CHANDLER PL SAN BERNARDINO 92408	No	660	391	No
11328	611210	RIO HONDO COMMUNITY COLLEGE	3600 WORKMAN MILL RD WHITTIER 90601	No	954	132	No
11428	622110	KAISER FOUNDATION HOSP	6041 CADILLAC AVE LOS ANGELES 90034	Yes	790	89	No
11508	622110	PRESBYTERIAN INTERCOMMUNITY HOSP	12401 E WASHINGTON BL WHITTIER 90602	No	719	156	No
11604	311511	STREMICKS HERITAGE FOODS LLC	4002 W WESTMINSTER AV SANTA ANA 92703	No	723	82	No
11732	622110	KAISER FOUNDATION HOSPITALS	9961 SIERRA AV FONTANA 92335	Yes	776	124	No
11998	336413	GOODRICH CORPORATION	11120 S NORWALK BLVD SANTA FE SPRINGS 90670	Yes	1027	71	No
12129	623311	BEVERLY HOSPITAL	309 W BEVERLY BLVD MONTEBELLO 90640	No	618	113	No
12170	332999	VACCO INDUSTRIES	10350 VACCO ST SOUTH EL MONTE 91733	Yes	444	156	No
12182	531110	PARK LA BREA	530 S BURNSIDE AV LOS ANGELES 90036	No	800	0	No
12319	921110	LA CITY, DEPT OF GEN SERVICES	111 E 1ST ST LOS ANGELES 90012	No	723	251	No
12332	532411	GATX CORPORATION	20878 SLOVER COLTON 92324	No	950	695	No
12505	622110	VALLEY PRESBYTERIAN HOSPITAL	15107 VANOWEN ST VAN NUYS 91405	No	275	0	No
12528	321211	GENERAL VENEER MFG CO	8651-52 OTIS ST SOUTH GATE 90280	No	237	175	No
12732	622110	JOHN F. KENNEDY MEM HOSP	47111 MONROE ST INDIO 92201	No	438	61	No
12820	622110	KAISER FOUNDATION HOSP	9400 E ROSECRANS AV BELLFLOWER 90706	No	863	79	No
12876	326140	FOAM FABRICATORS	1810 S SANTA FE AVE COMPTON 90221	No	829	0	No
12900	424950	ELLIS PAINTS CO/PACIFIC COAST LACQUER	3150 E PICO BL LOS ANGELES 90023	Yes	489	288	No
12923	922160	RIALTO CITY	501 E SANTA ANA AV BLOOMINGTON 92316	No	2297	23	No
13011	326199	THE GILL CORPORATION	4040-76 EASY ST EL MONTE 91731	No	821	32	EMT
13031	621111	ORTHOPAEDIC HOSP	2400 S FLOWER ST LOS ANGELES 90007	No	409	222	No
13041	331492	GEMINI INDUSTRIES INC	2311 S PULLMAN ST SANTA ANA 92705	Yes	713	713	No
13126	311225	COAST PACKING CO	3275 E VERNON AVE VERNON 90058	No	1487	1418	No

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13433	562219	SO ORANGE CO WASTEWATER AUTHORITY-RTP	29200-01 LA PAZ RD LAGUNA NIGUEL 92677	No	668	11	No
13510	621111	HOSPITAL OF THE GOOD SAMARITAN	616 S WITMER ST LOS ANGELES 90017	No	642	151	No
13613	622110	WHITE MEMORIAL MEDICAL CENTER	1720 CESAR CHAVEZ AVE LOS ANGELES 90033	No	201	0	No
13854	611210	EAST LOS ANGELES COLLEGE	1301 AVENIDA CESAR CHAVEZ MONTEREY PARK 91754	No	573	47	No
13920	622110	SAINT JOSEPH HOSPITAL	1100 W STEWART DR ORANGE 92868	No	792	116	No
13990	621491	US GOVT, VETERANS AFFAIRS MEDICAL CENTER	5901 E 7TH ST LONG BEACH 90822	No	1326	24	No
14150	922140	CAL ST, INST FOR WOMEN	16756 CHINO-CORONA RD. CORONA 92880	No	2255	349	CNO
14213	622110	LONG BEACH MEMORIAL MEDICAL CENTER	2801 ATLANTIC AVE. LONG BEACH 90806	No	745	166	No
14277	611110	LA UNI SCH DIST, NIGHTINGALE MIDDLE SCH	3311 N FIGUEROA ST LOS ANGELES 90065	No	319	85	No
14336	611110	LA UNI SCH DIST, PEARY MIDDLE SCHOOL	1415 W GARDENA BLVD GARDENA 90247	No	180	109	64CL
14437	622110	SAN ANTONIO REGIONAL HOSPITAL	999 SAN BERNARDINO RD UPLAND 91786	Yes	723	171	No
14625	322211	INTERNATIONAL PAPER	11211 GREENSTONE AVE SANTA FE SPRINGS 90670	No	1283	422	No
14924	622110	ST. FRANCIS MEDICAL CENTER	3630 E IMPERIAL HWY. LYNWOOD 90262	No	150	150	No
14966	621491	VA GREATER LOS ANGELES HEALTHCARE SYS	WILSHIRE/SAWTELLE LOS ANGELES 90073	No	678	219	No
15031	922140	SAN BERN. CO. EPWA COUNTY JAIL	630 E RIALTO AV SAN BERNARDINO 92415	No	649	101	No
15523	611110	PASADENA UNI SCH DIST, PASADENA HIGH SCH	2925 E SIERRA MADRE BL PASADENA 91107	No	278	47	No
15648	336419	HITCO CARBON COMPOSITES INC	1600 W 135TH STREET GARDENA 90249	No	1000	500	No
15713	813410	THE CALIFORNIA CLUB	538 S FLOWER ST LOS ANGELES 90071	No	216	185	No
15794	311999	NISSIN FOODS (USA) CO., INC.	2001 W ROSECRANS AV GARDENA 90249	No	772	240	No
16070	812331	BRAUN LINEN SERVICE INC	16514 S GARFIELD AV PARAMOUNT 90723	No	306	74	No
16110	611310	LA CITY, HARBOR COLLEGE	1111 FIGUEROA PL WILMINGTON 90744	Yes	679	360	No
16389	622110	CEDARS-SINAI MEDICAL CTR	8700 BEVERLY BLVD & ARDEN DR LOS ANGELES 90048	No	410	0	No
16424	611210	NORTH OR. CO. COMM COL DIST	321 E CHAPMAN AVE & 315 E WLSH FULLERTON 92832	No	311	113	No
16654	812320	BRAUN/A-1 LINEN SERVICE INC	396 S LA MESA ST POMONA 91766	No	613	0	No
16865	325320	AMVAC CHEMICAL CORP	4100 E WASHINGTON BLVD LOS ANGELES 90023	No	780	730	No
16947	311612	SERV-RITE MEAT CO INC	2515 SAN FERNANDO RD LOS ANGELES 90065	No	507	23	No
17069	924110	LA CITY, DEPT OF GEN SERVICES, PIPER TEC	555 RAMIREZ ST. (1/18)SP #200 LOS ANGELES 90012	No	761	383	No
17288	611210	EL CAMINO COLLEGE	16007 S CRENSHAW BL TORRANCE 90506	No	510	325	64CL
17301	221320	ORANGE COUNTY SANITATION DISTRICT	10844 ELLIS AVE. FOUNTAIN VALLEY 92708	No	1098	315	No
17328	541990	US GOVT, FED BLDG GSA	300 N LOS ANGELES ST LOS ANGELES 90012	No	779	472	No
17474	444190	ANGELUS BLOCK CO INC	14515 WHITTRAM AVE. FONTANA 92335	No	341	193	No
17722	622110	COMMUNITY HOSPITAL OF SAN BERNARDINO	1500 W 17TH ST SAN BERNARDINO 92411	No	621	27	No
17749	922140	ST CALIF DEPT CORRECTIONS,CAL REHAB CNTR	5TH ST/WESTERN NORCO 92860	No	649	330	No
17829	611310	L.A. PIERCE COMMUNITY COLLEGE	6201 WINNETKA AV WOODLAND HILLS 91371	Yes	475	37	No
17838	922140	OR CO, SHERIFF DEPT, FAC OPERATIONS	501 CITY DR ORANGE 92868	No	1191	66	No
18451	622110	SAN GORGONIO PASS MEM HOSP DIST	600 N HIGHLAND SPRINGS AV BANNING 92220	Yes	858	146	No
18452	611210	UNIVERSITY OF CALIFORNIA, LOS ANGELES	301 HILGARD AVENUE LOS ANGELES 90095	No	615	16	No
18542	561990	COLLEGE OF THE DESERT	43-500 MONTEREY AV PALM DESERT 92260	No	887	50	No
18606	812331	STEINER CORP, AMERICAN LINEN	900 N HIGHLAND AV LOS ANGELES 90038	No	167	74	No
18636	325180	US BORAX & CHEM CORP UNIT NO. 2	300 FALCON ST WILMINGTON 90744	No	2000	1000	No
18791	324191	LUBRICATING SPECIALTIES CO	8015 PARAMOUNT BLVD PICO RIVERA 90660	No	1326	80	No
18885	622310	CHILDREN'S HOSPITAL OF LOS ANGELES	4650 SUNSET BLVD LOS ANGELES 90027	Yes	423	256	No
18960	611210	PASADENA CITY COLLEGE	1570 E COLORADO BLVD PASADENA 91106	No	116	116	No
19159	221320	EASTERN MUNICIPAL WATER DIST	22251 SANDERSON AVE SAN JACINTO 92582	No	3504	13	No
19185	611210	NO ORANGE CO.,COMM COLLEGE DIST, CYPRESS	9200 VALLEY VIEW CYPRESS 90630	No	678	43	No

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19353	611210	GOLDEN WEST COLLEGE, COMMUNITY COLLEGE	15744 GOLDEN WEST ST HUNTINGTON BEACH 92647	No	203	34	No
19629	311225	LIBERTY VEGETABLE OIL CO	15306 S CARMENITA RD SANTA FE SPRINGS 90670	No	1424	423	No
19848	611310	CAL BAPTIST UNIVERSITY	8432 MAGNOLIA AV RIVERSIDE 92504	No	570	66	No
20197	622110	LAC/USC MEDICAL CENTER	1200 N STATE ST LOS ANGELES 90033	No	460	261	No
20237	221310	SAN CLEMENTE CITY, WASTEWATER DIV	380 AVENIDA PICO SAN CLEMENTE 92672	No	909	26	No
20252	221118	BANNING CITY, WASTEWATER TREATMENT PLAN	2242 E CHARLES ST BANNING 92220	No	2689	134	BNG
20375	812332	PRUDENTIAL OVERALL SUPPLY	6997 JURUPA AV RIVERSIDE 92504	No	1579	502	RAL
20451	622310	INTER-COMMUNITY MEDICAL CENTER	303 N 3RD AV COVINA 91723	No	443	5	No
20782	327331	ANGELUS BLOCK CO INC	1705 N MAIN ST ORANGE 92865	No	1025	803	No
21147	623220	HOLLENBECK PALMS	573 S BOYLE LOS ANGELES 90033	No	449	0	No
21505	611310	LA CITY COLLEGE	855 N VERMONT AV LOS ANGELES 90029	No	333	60	No
21717	712110	LA CO., MUSEUM OF ART	5905 WILSHIRE BLVD LOS ANGELES 90036	No	713	143	No
21858	311511	YOPLAIT USA INC	1055 E SANDHILL AV CARSON 90746	No	480	98	No
22092	331210	WESTERN TUBE & CONDUIT CORP	2001 E DOMINGUEZ ST LONG BEACH 90801	No	843	623	No
22312	721110	LA AIRPORT MARRIOTT HOTEL	5855 W CENTURY BLVD LOS ANGELES 90045	No	925	346	No
22390	923130	LA CO CIVIC CENTER	313 N FIGUEROA ST LOS ANGELES 90012	No	737	414	No
22674	221320	L.A. COUNTY SANITATION DIST VALENCIA PLT	28185 THE OLD ROAD VALENCIA 91355	No	2033	42	No
22962	311511	DRIFTWOOD DAIRY	10724 LOWER AZUSA RD. EL MONTE 91731	No	752	101	EMT
23043	541618	CSU, SAN BERNARDINO	5500 UNIVERSITY PKWY SAN BERNARDINO 92407	No	863	148	No
23106	325211	CARGILL INC	2800 LYNWOOD RD LYNWOOD 90262	No	748	101	No
23194	622310	CITY OF HOPE MEDICAL CENTER	1500 E DUARTE RD DUARTE 91010	No	995	227	No
23303	721110	ANAHEIM MAJESTIC GARDEN HOTEL	1015 W BALL RD ANAHEIM 92802	No	682	220	No
23324	325611	NORMAN, FOX & CO, UNIT NO. 1	5511 S BOYLE AVE VERNON 90058	No	782	549	No
23399	622110	WEST HILLS HOSPITAL AND MEDICAL CENTER	7300 MEDICAL CENTER DR WEST HILLS 91307	No	475	64	No
23411	325612	SANITEK PROD. INC	3959 GOODWIN AV LOS ANGELES 90039	No	853	74	No
23506	611210	WEST LOS ANGELES COLLEGE	4800 FRESHMAN DRIVE CULVER CITY 90230	no	644	34	No
23909	623110	CONGREGATIONAL HOMES, MT SAN ANTONIO GA	900 E HARRISON AV CLAREMONT 91711	No	235	3	POC
23988	484110	VERNON WAREHOUSE CO	2322 E 37TH/38TH ST VERNON 90058	No	690	642	No
24006	611310	CAL ST UNIV LA	5151 STATE UNIVERSITY DR LOS ANGELES 90032	No	126	126	No
24046	327390	ORCO BLOCK CO INC	4510 RUTILE ST RIVERSIDE 92509	No	1178	280	No
24207	522110	WELLS FARGO BANK	3440 FLAIR DR EL MONTE 91731	No	605	163	No
24209	332813	VALMONT GEORGE INDUSTRIES	4116 WHITESIDE ST LOS ANGELES 90063	Yes	752	148	No
24505	622110	BEAR VALLEY COMMUNITY HEALTHCARE DIST.	41870 GARSTIN DR BIG BEAR LAKE 92315	No	1650	100	No
24532	721110	MIRAMAR HOTEL	1132 2ND ST SANTA MONICA 90403	No	386	35	No
24546	622110	ST JUDE MEDICAL CENTER	101 E VALENCIA MESA DR FULLERTON 92835	No	504	169	No
24570	332813	PRECISION ANODIZING & PLATING INC	1601 MILLER ST ANAHEIM 92806	No	835	190	No
24638	332811	NEWTON HEAT TREATING CO, INC	19235 E WALNUT DRIVE CITY OF INDUSTRY 91748	No	187	185	No
24711	531120	ANAHEIM CITY, CONVENTION CTR	800 W KATELLA AV ANAHEIM 92803	No	1036	330	No
25070	562212	LA CNTY SANITATION DISTRICT-PUENTE HILLS	2800 WORKMAN MILL RD CITY OF INDUSTRY 91745	No	1442	452	No
25248	561210	US GOVT. FED CORRECTIONAL INST (FCI)	TERMINAL ISLAND SAN PEDRO 90731	Yes	2116	1580	No
25591	922140	COUNTY OF RIVERSIDE (BA176)	1626 HARGRAVE ST BANNING 92220	No	1341	0	BNG
25786	312111	SEVEN-UP/ROYAL CROWN BOTTLING CO OF SOCA	3220 E 26TH ST LOS ANGELES 90023	No	1333	1165	No
25965	811310	RAINBOW TRANSPORT TANK CLEANERS,C.ALBIN	21119 S. WILMINGTON AVE LONG BEACH 90810	Yes	259	56	No
27497	722511	LA CITY, DEPT OF GEN SERVICES	1201 S FIGUEROA ST LOS ANGELES 90015	No	610	23	No
29110	221320	ORANGE COUNTY SANITATION DISTRICT	22212 BROOKHURST ST HUNTINGTON BEACH 92646	No	1255	55	No

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29411	922140	LA CO., SHERIFFS DEPT	441 BAUCHET ST LOS ANGELES 90012	No	319	274	No
29582	112111	SCOTT BROS DAIRY	12000 S EAST END AVE CHINO 91710	No	417	19	No
30626	322299	F-D-S MANUFACTURING CO INC	2200 S RESERVOIR ST POMONA 91766	No	1173	130	No
32924	611210	CRAFTON HILLS COLLEGE	11711 SAND CANYON RD YUCAIPA 92399	No	1939	10	No
35103	621111	UCI MEDICAL CENTER	101 CITY DR S (ROUTE 104) ORANGE 92868	No	1390	27	No
35161	921190	MONROVIA CITY, DEPT OF PUBLIC WORKS	600 S MOUNTAIN AV MONROVIA 91016	No	251	66	No
35483	512110	WARNER BROTHERS STUDIO FACILITIES	4000 WARNER BLVD BURBANK 91505	No	731	335	No
35485	531120	5757 WILSHIRE LLC	5757 WILSHIRE BLVD, SUITE 380 LOS ANGELES 90036	No	636	124	No
36706	325620	COSMETIC LABORATORIES OF AMERICA	20245 SUNBURST ST CHATSWORTH 91311	No	1345	380	No
37028	532412	TOTAL EQUIP RENTAL INC	2828 S SPRING ST LONG BEACH 90806	No	467	467	No
37768	423110	TOYOTA MOTOR SALES,U.S.A. INC	19001 S WESTERN AV TORRANCE 90501	No	871	438	64CL
37934	524114	BLUE CROSS OF CAL	21555 OXNARD ST WOODLAND HILLS 91367	No	1431	251	No
39855	311941	MIZKAN AMERICA, INC	10037 E 8TH ST RANCHO CUCAMONGA 91730	No	711	151	No
39979	485113	OMNITRANS	1700 W 5TH ST SAN BERNARDINO 92411	No	612	0	No
41223	311812	PURITAN BAKERY INC	1624 E CARSON ST CARSON 90745	No	552	64	No
41229	332813	LUBECO INC	6859 DOWNEY AV LONG BEACH 90805	Yes	383	77	No
42278	Unknown	THE AEROSPACE CORP, UNIT NO.04	300 S DOUGLAS ST EL SEGUNDO 90245	No	329	244	LAX
42357	424490	ROCKVIEW DAIRIES, INC	7011 & 7044 STEWART & GRAY RD DOWNEY 90241	No	705	10	No
42783	922160	PALM SPRINGS CITY, FIRE DEPT 442	300 N EL CIELO #400 PALM SPRINGS 92262	No	1221	214	PSP
42948	921110	LONG BEACH CITY, FLEET SERV	400 W BROADWAY LONG BEACH 90802	No	550	8	No
43023	311999	WALKER FOODS, INC	225-258 N MISSION RD LOS ANGELES 90033	No	208	47	No
43522	621111	KAISER FOUNDATION HOSPITAL	25825 S VERMONT AV HARBOR CITY 90710	Yes	694	206	No
44012	311412	GOODMAN FOOD PROD INC	200 E BEACH AV INGLEWOOD 90302	No	455	106	No
44158	721110	ANAHEIM MARRIOTT HOTEL	700 W CONVENTION WY ANAHEIM 92802	No	613	80	No
44173	721110	LOS ANGELES AIRPORT HILTON	5711 W CENTURY BLVD LOS ANGELES 90045	No	721	417	No
44287	325180	PHIBRO-TECH INC	8851 DICE RD SANTA FE SPRINGS 90670	Yes	642	233	No
44655	336413	REINHOLD INDUSTRIES INC	12827 E IMPERIAL HWY SANTA FE SPRINGS 90670	No	1020	216	No
44790	611210	GLENDALE COMMUNITY COLLEGE	1500 N VERDUGO RD GLENDALE 91208	No	544	119	No
45317	621999	MED CTR GARDEN GROVE	12601 GARDEN GROVE BLVD GARDEN GROVE 92843	No	941	64	No
45489	334510	ABBOTT CARDIOVASCULAR SYSTEMS, INC.	26531 YNEZ RD TEMECULA 92591	No	459	195	No
45973	611310	UNIVERSITY OF REDLANDS	1200 E COLTON AV REDLANDS 92373	No	525	309	REI
47651	928110	US GOVT NAVAL AIR STATION NORTH ISLAND	BLDG 60121-93-96 SAN CLEMENTE 92672	No	#N/A	#N/A	#N/A
47661	922110	SAN BERN. CO, TWIN PEAKS BLDG	26010 HWY 189 TWIN PEAKS 92391	No	1579	14	No
48012	424130	CORRU-KRAFT ALHAMBRA	3201 W MISSION RD ALHAMBRA 91803	No	1083	40	No
49380	721110	MARRIOTT'S DESERT SPRINGS RESORT & SPA	74855 COUNTRY CLUB DR PALM DESERT 92260	No	938	451	No
49381	713910	THE VINTAGE CLUB	75-001 VINTAGE DR W INDIAN WELLS 92210	No	1025	5	No
49387	611310	UNIV CAL, RIVERSIDE	PHYSICAL PLANT DEPT RIVERSIDE 92521	No	647	319	No
49572	622110	KAISER FOUNDATION HOSPITAL	5601 DE SOTO WOODLAND HILLS 91367	No	288	204	No
50134	311513	CACIQUE CHEESE CO	14940 PROCTOR AV CITY OF INDUSTRY 91744	No	1085	367	No
50300	325193	PARALLEL PRODUCTS	12281 ARROW ROUTE RANCHO CUCAMONGA 91739	No	1349	927	No
50865	322211	LIBERTY CONTAINER CO. KEY CONTAINER	4224 SANTA ANA ST SOUTH GATE 90280	No	935	64	No
51304	221310	SANTA MARGARITA WATER DISTRICT	28793 ORTEGA HWY SAN JUAN CAPISTRANO 92675	No	1851	3	No
52742	326140	STOROPACK INC	12007 S WOODRUFF AV DOWNEY 90241	No	690	243	No
53015	325620	COSWAY CO INC	14805 SO MAPLE ST GARDENA 90248	No	993	510	No
54586	622110	KAISER FOUNDATION HOSPITAL	10800 MAGNOLIA AV RIVERSIDE 92505	Yes	758	5	No

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54941	444190	ANGELUS BLOCK CO INC	252 E REDONDO BEACH BL GARDENA 90247	No	872	98	No
55700	562212	WASTE MANAGEMENT OF SAN GABRIEL/POMONA	13940 E LIVE OAK AV BALDWIN PARK 91706	No	892	113	No
58876	336412	INDUSTRIAL MFG CO LLC DBA ARROWHEAD PROD	4411 KATELLA AV LOS ALAMITOS 90720	Yes	834	130	No
59001	313310	TEXLON CORP	555 VAN NESS AV TORRANCE 90501	No	360	134	64CL
59765	812332	ARAMARK UNIFORM SERVICES	4422 & 4440 E DUNHAM ST LOS ANGELES 90023	No	995	113	No
60043	812331	AMERICAN TEXTILE MAINTENANCE, REPUBLIC	1705 S HOOPER AV LOS ANGELES 90021	No	594	280	No
60442	327390	RIALTO CONCRETE PRODUCTS INC	2250 W LOWELL ST RIALTO 92377	No	1220	497	L67
60541	622110	FOUNTAIN VALLEY REGIONAL HOSP.B HANNA ET	17100 EUCLID ST FOUNTAIN VALLEY 92708	No	912	146	No
60812	311412	OVERHILL FARMS INC	3055 E 44TH ST VERNON 90058	No	1606	1524	No
61201	327390	JAMES HARDIE BUILDING PRODUCTS INC	10901 ELM AV FONTANA 92337	No	1297	309	No
61840	324191	LUBRICATING SPECIALTIES CO	3365 E SLAUSON AV VERNON 90058	No	882	349	No
62589	322211	SUNCLIPSE INC,ST HART/CORRU-KRAFT IV DIV	1911 E ROSSLYNN AV FULLERTON 92831	No	753	525	No
62596	611110	REDLANDS UNIFIED SCHOOL DISTRICT	840 E CITRUS AVE REDLANDS 92374	No	51	51	No
62901	812331	DOMESTIC LINEN SUPPLY CO INC	1600-1620 COMPTON AVE LOS ANGELES 90021	No	761	436	No
62903	313310	EXPO DYEING & FINISHING, INC.	1365 & 1385 KNOLLWOOD CIRCLE ANAHEIM 92801	No	1049	47	FUL
63249	445110	THE VONS CO INC SAFEWAY INC	3361 S BOXFORD ST LOS ANGELES 90040	No	1384	1007	No
63462	812331	MORGAN SERVICES INC	905 YALE ST LOS ANGELES 90012	No	526	48	No
63850	311421	SUNNY DELIGHT BEVERAGES CO.	1230 N TUSTIN AV ANAHEIM 92807	No	863	657	No
65108	921120	WEST COVINA CITY, CITY HALL	1444 W GARVEY AV SOUTH WEST COVINA 91790	No	903	235	No
65742	111339	SUN DATE	85-215 AVENUE 50 COACHELLA 92236	No	779	156	No
66463	611310	HARVEY MUD COLLEGE	340 E FOOTHILL BLVD CLAREMONT 91711	No	539	322	POC
66665	531110	GAYLORD APARTMENTS LTD	3355 WILSHIRE BLVD. LOS ANGELES 90010	No	319	230	No
66850	237210	VDA PROPERTY CO	4605 LANKERSHIM BLVD #707 NORTH HOLLYWOOD 91602	No	439	63	No
66906	813990	SANTA MONICA BAY TOWERS	101 CALIFORNIA AVE. SANTA MONICA 90403	No	521	0	No
67630	524210	WESCO FINANCIAL CORPORATION	301 E COLORADO BLVD PASADENA 91101	No	732	642	No
67873	484110	VERNON WAREHOUSE CO	2050 E 38TH ST VERNON 90058	No	734	558	No
68284	721110	LAKE ARROWHEAD RESORT	27984 HWY 189 LAKE ARROWHEAD 92352	No	1567	11	No
68458	721110	IRVINE OFFICE CO, TOWER 4	660 NEWPORT CENTER DR NEWPORT BEACH 92660	No	1231	0	No
69022	531120	THE 3250 WILSHIRE BLVD BUILDING	3250 WILSHIRE BLVD LOS ANGELES 90010	No	369	161	No
69367	531210	PARAMOUNT CONTRACTORS & DEVELOPERS INC	6464 SUNSET BLVD., #700 HOLLYWOOD 90028	No	484	42	No
69586	481111	DISTRIBUTORS UNLIMITED	1205 DATE STREET MONTEBELLO 90640	No	568	31	No
70049	711310	MUSIC CENTER OF LOS ANGELES COUNTY	135 N GRAND AV LOS ANGELES 90012	No	660	558	No
70496	311421	TROPICAL PRESERVING CO INC	1712 NEWTON STREET LOS ANGELES 90021	No	819	740	No
70630	313310	ALMORE DYE HOUSE INC	6850 TUJUNGA AV NORTH HOLLYWOOD 91605	No	858	193	No
70913	311411	LANGER JUICE COMPANY, INC.	16195 STEPHENS ST CITY OF INDUSTRY 91745	No	805	272	No
71051	484121	SYSTEM TRANSPORT	1710 E 29TH ST SIGNAL HILL 90755	No	922	599	No
71074	611110	LONG BEACH UNI SCH DIST; WOODROW WILSON	4400 E 10TH ST LONG BEACH 90804	No	259	16	No
71087	611110	LONG BEACH UNI SCH DIST/STEPHENS JR HIGH	1830 W COLUMBIA ST LONG BEACH 90810	No	502	16	No
71108	921110	LA CO., DEPT OF PUBLIC WORKS	900 S FREMONT AV ALHAMBRA 91803	No	813	299	No
71448	813990	SIERRA TOWERS	9255 DOHENY RD WEST HOLLYWOOD 90069	No	690	0	No
71510	611519	ORANGE, COUNTY OF - JOHN WAYNE AIRPORT	18601 AIRPORT WAY NORTH SANTA ANA 92707	No	1519	700	SNA
71570	611110	LA UNI SCH DIST, HOLLENBECK JUNIOR HIGH	2510 E SIXTH ST LOS ANGELES 90023	No	431	51	No
71573	611110	LA UNI SCH DIST, LINCOLN SENIOR HIGH	3501 N BROADWAY LOS ANGELES 90031	No	327	89	No
71654	812331	KLEEN KRAFT SERVICES INC	632 TOWNE AV LOS ANGELES 90021	No	510	238	No
71791	445110	SAFEWAY INC	12844 EXCELSIOR DRIVE NORWALK 90650	No	586	92	No

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71797	423840	TED LEVINE DRUM CO	1729 CHICO AV SOUTH EL MONTE 91733	No	1572	674	No
71854	443142	INTER-CONTINENTAL HOTEL L A CENTURY CITY	2151 AVENUE OF THE STARS LOS ANGELES 90067	No	950	0	No
71937	812331	DY-DEE SERV OF PASADENA INC.DY-DEE SERV	40 E CALIFORNIA BLVD PASADENA 91105	No	779	232	No
72494	525920	301 N LAKE, LLC	301 N LAKE ST PASADENA 91101	No	1036	211	No
72519	921110	ORANGE CO - COUNTY OPERATIONS CENTER	1300 S GRAND AVE. SANTA ANA 92705	No	195	195	No
72520	624110	ORANGE COUNTY YOUTH GUIDANCE CTR	3030 N HESPERIAN ST SANTA ANA 92706	No	1366	216	No
72664	325411	PHARMAVITE LLC	1150 AVIATION PL SAN FERNANDO 91340	No	291	140	No
72666	722330	LA UNI SCH DIST,NEWMAN NUTRITION CENTER	2310 CHARLOTTE ST LOS ANGELES 90021	No	425	89	No
72672	611110	LA UNI SCH DIST, BRET HARTE JUNIOR HIGH	9301 S HOOVER ST LOS ANGELES 90044	No	542	98	No
72693	611110	LA UNI SCH DIST, CANOGA PARK SENIOR HIGH	6850 TOPANGA CANYON BLVD CANOGA PARK 91303	No	132	51	No
72767	611110	LA UNI SCH DIST, DEARBORN ST ELEMENTARY	9240 WISH AV NORTHRIDGE 91325	No	208	80	No
72768	611110	LA UNI SCH DIST, HOLMES MIDDLE SCHOOL	9351 PASO ROBLES AV NORTHRIDGE 91325	No	116	116	No
72772	611519	LA UNIFIED DIST, FRIEDMAN OCCUPATION CTR	1646 S OLIVE ST LOS ANGELES 90015	No	631	180	No
72776	611110	LA UNI SCH DIST, TWENTY-EIGHTH ST ES	2807 STANFORD AV LOS ANGELES 90011	Yes	90	27	No
72786	238990	LA UNI SCH DIST, HUGHES MIDDLE SCHOOL	5607 CAPISTRANO AV WOODLAND HILLS 91367	Yes	362	16	No
72811	611110	LA UNI SCH DIST, BRAINARD AVE ELEMENTARY	11407 BRAINARD AV LAKE VIEW TERRACE 91342	No	47	47	No
72815	611110	LA UNI SCH DIST, CARSON SENIOR HIGH	22328 S MAIN ST CARSON 90745	No	225	0	No
72827	Unknown	LA UNI SCH DIST,SHERMAN OAKS CTR	18555 ERWIN ST RESEDA 91335	No	163	13	No
72849	611110	LA UNI SCH DIST, SEVENTH ST SCHOOL	1570 W 7TH ST SAN PEDRO 90732	No	71	0	No
72851	611110	LA UNI SCH DIST, NORMANDIE ELEMENTARY	4505 S RAYMOND AV LOS ANGELES 90037	No	16	16	No
72861	611110	LA UNI SCH DIST, EVERGREEN ELEMENTARY	2730 GANAHL ST LOS ANGELES 90033	No	481	71	No
72862	611110	LA UNI SCH DIST, GATES ST ELEMENTARY	3333 MANITOU AV LOS ANGELES 90031	No	140	8	No
72991	238990	VENTURA PETIT EAST BUILDING, ETAL	16633 VENTURA BLVD ENCINO 91436	No	708	92	No
73292	622110	CHILDREN'S HOSPITAL OF ORANGE COUNTY	455 S MAIN ST ORANGE 92868	No	932	61	No
73327	922110	LA CO., LYNWOOD REGIONAL JUSTICE CTR	11711 ALAMEDA ST LYNWOOD 90262	No	578	335	No
74060	325211	ENGINEERED POLYMER SOLUTIONS INC	5501 E SLAUSON AV LOS ANGELES 90040	Yes	1024	301	No
74398	921110	CERRITOS CITY, MAINTENANCE DIV	13150 E 166TH ST CERRITOS 90701	No	538	64	No
74408	332999	ARMEC DEFENSE PROD. CO	85901 AVENUE 53 COACHELLA 92236	No	1233	327	No
74461	453220	PASADENA GATEWAY PLAZA, CB RICHARD ELLIS	300 N LAKE AVENUE PASADENA 91101	No	246	72	No
74723	622110	CALIFORNIA HOSPITAL MEDICAL CENTER	1401 S GRAND AVE. LOS ANGELES 90015	No	444	154	No
74840	311612	POCINO FOODS CO	14250 LOMITAS AVE CITY OF INDUSTRY 91746	No	129	90	No
75306	921190	LONG BEACH CITY, CONVENTION CENTER	300 E OCEAN BLVD LONG BEACH 90802	No	1210	209	No
76635	611110	SAN BERN CITY UNI SCH DIST,KIMBARK ELM S	18021 KENWOOD DR SAN BERNARDINO 92407	No	77	8	No
77266	311999	JSL FOODS INC.	3550 PASADENA AV LOS ANGELES 90031	No	351	98	No
77635	311421	TROPICANA MANUFACTURING COMPANY	14380 NELSON AV CITY OF INDUSTRY 91744	No	589	174	No
78137	311422	JUANITA'S FOODS	645 NO EUBANKS WILMINGTON 90744	No	742	13	No
78504	531120	GLENDALE CITY CIVIC AUDITORIUM	1401 NO VERDUGO RD GLENDALE 91208	No	410	124	No
79065	813990	WILSHIRE HOLMBY TOWER	10433 WILSHIRE BLVD LOS ANGELES 90024	No	183	0	No
79253	531210	8730 SUNSET TOWERS	8730 SUNSET BLVD LOS ANGELES 90069	No	212	0	No
79460	922110	COUNTY OF RIVERSIDE (IN701)	46-209 OASIS ST INDIO 92201	No	436	8	No
79589	812320	SUN HILL PROP.,INC, UNIV HILTON HOTEL	555 UNIVERSAL TERRACE PKWY UNIVERSAL CITY 91608	No	1445	373	No
79621	532490	NATIONWIDE BOILER INC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
79639	611110	PALM SPRINGS UNIFIED SCHOOL DIST	69-250 DINAH SHORE DR CATHEDRAL CITY 92234	No	335	21	No
80246	711310	SEGERSTROM CENTER FOR THE ARTS	600 TOWN CENTER COSTA MESA 92626	No	755	172	SNA
80719	221310	WESTERN MUNICIPAL WATER DIST	16450 LAKEPOINT DR RIVERSIDE 92503	No	1122	8	No

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80826	811192	LA WASH RACK,	4317 DOWNEY RD VERNON 90058	No	1881	1547	No
81233	623110	LA JEWISH HOME FOR THE AGING	7150 TAMPA AV RESEDA 91335	Yes	435	0	No
81234	623110	JEWISH HOME FOR THE AGING	18855 VICTORY BLVD RESEDA 91335	Yes	594	0	No
81270	237310	KIEWIT INFRASTRUCTURE WEST CO	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
82537	Unknown	US GOVT. JUSTICE DEPARTMENT	535 N ALAMEDA LOS ANGELES 90012	No	655	406	No
82542	611110	WALNUT HIGH SCHOOL	400 N PIERRE AV WALNUT 91789	No	134	134	No
82613	484110	ANCON MARINE INC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
82674	322211	SOUTHLAND BOX CO	4955 MAYWOOD AV VERNON 90058	No	1035	958	No
82741	611110	GLENDALE UNI SCH DIST/GLENDALE HIGH SCH	1440 E BROADWAY GLENDALE 91205	No	367	137	No
82742	611110	GLENDALE UNI SCH DIST/HOOVER HIGH SCH	651 GLENWOOD RD GLENDALE 91202	No	196	150	No
83101	611699	THE J PAUL GETTY TRUST	1200 GETTY CENTER DR LOS ANGELES 90049	No	1170	211	No
83485	922120	COUNTY OF RIVERSIDE (MU1307, MU 1313)	30755 AULD RD MURRIETA 92563	No	2263	750	RBK
84108	812320	YEE YUEN LAUNDRY & CLEANERS INC	2575 S NORMANDIE AV LOS ANGELES 90007	No	698	31	No
84273	325412	TEVA PARENTERAL MEDICINES, INC	17-25 HUGHES IRVINE 92618	No	2689	921	No
84456	488490	LA CANADA UNIFIED SCHOOL DISTRICT	1100 FOOTHILL BLVD LA CANADA FLINTRIDGE 91011	No	111	10	No
84516	623110	LITTLE SISTERS OF THE POOR	2100 SOUTH WESTERN AVENUE SAN PEDRO 90732	No	940	0	No
84687	424490	FARMDALE CREAMERY INC	1049 W BASELINE ST SAN BERNARDINO 92411	No	747	98	No
84742	924110	SOUTH COAST AIR QUALITY MANAGEMENT DIST	21865 COPLEY DR DIAMOND BAR 91765	No	1004	185	No
86710	623110	CLAREMONT MANOR	650 W HARRISON CLAREMONT 91711	No	148	137	POC
87651	622110	SAINT JOSEPH HOSPITAL	1140 W LA VETA DR ORANGE 92868	No	1109	172	No
88321	922130	LA CO.,INTERNAL SER DIV, S F VLY JUV HAL	16350 FILBERT ST SYLMAR 91342	No	68	68	No
89186	311930	THE COCA COLA COMPANY	1650 S VINTAGE AV ONTARIO 91761	No	3624	1455	No
89467	622110	MOUNTAINS COMMUNITY HOSPITAL	29101 HOSPITAL RD LAKE ARROWHEAD 92352	No	476	93	No
89974	813990	SHOREHAM TOWERS HOMEOWNERS ASSOCIATION	8787 SHOREHAM DR WEST HOLLYWOOD 90069	No	414	0	No
90447	488210	D & S INGREDIENT TRANSFER CO INC	5112 ALHAMBRA AVE LOS ANGELES 90032	No	1157	56	No
90933	311421	TRIPLE H FOOD PROCESSORS, LLC	5821 WILDERNESS AVE. RIVERSIDE 92504	No	1090	801	RAL
91737	611110	LONG BEACH USD JOHN G WHITTIER SCHOOL	1761 WALNUT AV LONG BEACH 90813	No	483	18	No
92065	561110	TOYOTA MOTOR SALES, USA INC.	19300 GRAMERCY PLACE TORRANCE 90501	Yes	1112	414	64CL
92771	721110	WILSHIRE PLAZA HOTEL	3515 WILSHIRE BOULEVARD LOS ANGELES 90010	No	523	34	No
93246	531120	WILSHIRE TERRACE CORPORATION	10375 WILSHIRE BLVD LOS ANGELES 90024	No	98	0	No
94009	221310	LAS VIRGENES MUNICIPAL WATER DISTRICT	3700 LAS VIRGENES ROAD CALABASAS 91302	No	1302	172	No
94529	811310	DITTY CONTAINER INC	2226 NORTH ROSEMEAD BLVD SOUTH EL MONTE 91733	No	1118	426	No
94961	311941	Q & B FOODS INC	15547 FIRST ST IRWINDALE 91706	No	2208	768	No
95135	812331	AMER TEX MAINT, REPUBLIC MSTR CHEFS RNTL	1664 W WASHINGTON BLVD LOS ANGELES 90007	No	156	95	No
95252	622210	MISSION COMMUNITY HOSPITAL	14850 ROSCOE BLVD PANORAMA CITY 91402	No	356	0	No
95345	622110	KAISER FOUNDATION HOSPITAL	1011 BALDWIN PARK BLVD BALDWIN PARK 91706	No	671	21	No
95371	622110	WEST ANAHEIM MEDICAL CENTER	3033 W ORANGE ANAHEIM 92804	No	813	74	No
95507	324121	EDGINGTON OIL CO	2400 E ARTESIA BLVD LONG BEACH 90805	No	590	227	LGB
95638	623990	CASA DE LOS AMIGOS	123 S CATALINA AVE REDONDO BEACH 90277	No	315	0	No
95952	611110	FONTANA USD A.B. MILLER HIGH SCH	6821 OLEANDER AVE FONTANA 92336	Yes	401	14	No
96326	622110	COUNTY OF RIVERSIDE REGIONAL MEDICAL CTR	26520 CACTUS AVE & NASON ST MORENO VALLEY 92555	No	612	19	No
96369	484110	UNITED PUMPING SERVICE INC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
96470	813990	DESERT ISLAND HOMEOWNERS ASSN BLDG 910	71777 FRANK SINATRA DR RANCHO MIRAGE 92270	No	3121	137	No
96674	813110	SOKA GAKKAI INTERNATIONAL USA	606 WILSHIRE BLVD SANTA MONICA 90401	No	208	53	No
96974	813110	WILSHIRE BLVD TEMPLE	3663 WILSHIRE BLVD LOS ANGELES 90010	No	232	232	No

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97020	811111	HONDA R & D NORTH AMERICAS INC	1900 HARPERS WAY TORRANCE 90501	No	732	497	64CL
97046	812331	MISSION LINEN SUPPLY	5400 ALTON ST CHINO 91710	No	1080	264	No
98134	812332	UNIFIRST CORP, INTERSTATE NUCLEAR SRVCS	700 S ETIWANDA AVE ONTARIO 91761	No	2979	1992	No
98326	325620	LEVLAD, LLC	9200 MASON AVE CHATSWORTH 91311	No	1146	547	No
98409	622110	LAKEWOOD REGIONAL MEDICAL CENTER, INC	3700 E SOUTH ST LAKEWOOD 90712	No	113	113	No
98545	488190	TAC-WEST INC	1156 NORTH FEE ANA ST ANAHEIM 92807	No	1476	641	No
98625	531210	NK BEVERLY HILLS CORP	8500 WILSHIRE BLVD, SUITE 820 BEVERLY HILLS 90211	No	409	13	No
99119	325211	INTERPLASTIC CORP	12335 S VAN NESS HAWTHORNE 90250	No	805	311	No
99265	921190	LONG BEACH UNI SCH DIST	3333 AIRPORT WAY LONG BEACH 90806	No	328	193	No
99616	722511	RENAISSANCE HOTELS & RESORTS	44-400 INDIAN WELLS LN INDIAN WELLS 92210	No	1928	161	No
100542	712110	AUTRY NATIONAL CENTER	4700 WESTERN HERITAGE WAY LOS ANGELES 90027	No	1539	795	No
100808	311824	MARUCHAN INC	15800 LAGUNA CANYON RD IRVINE 92618	No	1951	647	No
101311	423840	BOGGS TOOL PROCESSING & FILE SHARPENING	14100 ORANGE AVE PARAMOUNT 90723	No	438	18	No
102099	611110	MARGARITA MIDDLE SCH, TEMECULA VLY USD	30600 NARGARITA ROAD TEMECULA 92591	Yes	66	66	No
102334	332813	MOOG, INC	20263 S WESTERN AVE TORRANCE 90501	Yes	1337	299	64CL
103083	453998	CALIFORNIA BOILER INC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
103424	611110	WALNUT VALLEY UNIFIED SCHOOL DISTRICT	21400 PATHFINDER ROAD DIAMOND BAR 91765	No	402	21	No
104325	722410	THE CHEESECAKE FACTORY	26950 WEST AGOURA ROAD CALABASAS 91301	No	867	174	No
104641	424130	CORRU-KRAFT BUENA PARK	6600 VALLEY VIEW ST BUENA PARK 90620	No	692	692	No
105064	531120	LUCKMAN MANAGEMENT CO	9200 SUNSET BLVD LOS ANGELES 90069	No	538	0	No
105663	531120	BEVERLY WILSHIRE PROPERTIES, INC	9465 WILSHIRE BL BEVERLY HILLS 90212	No	528	34	No
106355	621999	LA CITY, 77TH ST AREA POLICE FACILITY	7600 BROADWAY LOS ANGELES 90003	No	148	23	No
107149	332813	MARKLAND MANUFACTURING INC	1111 E MCFADDEN AVE SANTA ANA 92705	No	428	74	No
107652	445110	RALPHS GROCERY CO	1500 EASTRIDGE AVENUE RIVERSIDE 92507	No	2356	777	No
107696	813990	EMPIRE WEST HOMEOWNERS ASSOCIATION	1100 N ALTA LOMA ROAD WEST HOLLYWOOD 90069	No	166	0	No
107821	562910	MESA ENVIRONMENTAL INC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
107891	622110	ORANGE COAST MEMORIAL MEDICAL CENTER	9920 TALBERT AV FOUNTAIN VALLEY 92708	No	666	27	No
108169	611110	ONTARIO MONTCLAIR SCHOOL DISTRICT	1525 BONVIEW AVE ONTARIO 91761	No	95	95	No
108214	238990	SANCON ENGINEERING INC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
108278	611310	LOYOLA MARYMOUNT UNIVERSITY	7900 LOYOLA BLVD LOS ANGELES 90045	No	1168	0	LAX
109019	311224	HOUSE FOODS AMERICA CORPORATION	7351 ORANGEWOOD AVE GARDEN GROVE 92841	No	768	307	No
109393	531312	SMG	300 E OCEAN BLVD LONG BEACH 90802	No	1210	209	No
109562	332813	VALLEY PLATING WORKS INC	5900 E SHEILA ST COMMERCE 90040	Yes	937	217	No
109608	562212	CR & R INC	1706 GOETZ RD. PERRIS 92570	No	724	509	L65
109654	531190	TRIYAR COMPANIES LLC	10850 WILSHIRE BLVD LOS ANGELES 90024	No	687	43	No
110096	313310	SWISSTEX CALIFORNIA INC.	13660 S FIGUEROA ST LOS ANGELES 90061	No	755	459	No
110930	561110	CYGNUS WILSHIRE CENTER	2975 WILSHIRE BL LOS ANGELES 90010	No	134	134	No
111176	541611	WESTERN RIVERSIDE CO REG WASTEWATER AUT	14634 RIVER RD CORONA 92880	No	3215	315	CNO
111289	561990	KOOS MANUFACTURING INC	2741 SEMINOLE AVE SOUTH GATE 90280	No	797	6	No
111301	311511	WWF OPERATING COMPANY	18275 ARENTH AV CITY OF INDUSTRY 91748	No	502	143	No
111485	221310	INLAND EMPIRE UTL AGEN, A MUN WATER DIST	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
111958	313310	WASHINGTON GARMENT DYEING & FINISHING	1334 E 18TH ST LOS ANGELES 90021	No	356	146	No
112329	812331	CINTAS CORPORATION	2150 S PROFORMA AVE ONTARIO 91761	No	1046	898	ONT
112509	221310	METROPOLITAN WATER DIST OF SO CAL	700 N ALAMEDA ST LOS ANGELES 90012	No	835	161	No
112547	336411	GULFSTREAM AEROSPACE CORPORATION	3495 LAKEWOOD BLVD LONG BEACH 90808	No	1791	10	No

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112909	622110	DESERT HOSPITAL	1150 N INDIAN CANYON DR PALM SPRINGS 92262	No	797	19	No
112956	339992	FENDER MUSICAL INSTRUMENTS CORP.	311 CESSNA CIR CORONA 92880	No	1764	898	No
112968	332813	COAST PLATING INC	417 W 164 TH ST GARDENA 90248	Yes	513	187	No
113170	621493	SANTA MONICA - UCLA MEDICAL CENTER	1250 16TH ST SANTA MONICA 90404	No	365	63	No
113303	812332	CAITAC GARMENT PROCESSING INC	14725 S BROADWAY GARDENA 90248	No	671	330	No
113329	812930	ONE HUNDRED TOWERS LLC, CENTURY PLAZA	2049 CENTURY PARK EAST LOS ANGELES 90067	No	657	85	No
113436	622110	PACIFICA HOSPITAL OF THE VALLEY	9449 SAN FERNANDO RD SUN VALLEY 91352	No	689	0	BUR
113563	622110	RIVERSIDE COMMUNITY HOSPITAL	4445 MAGNOLIA AV RIVERSIDE 92501	No	473	164	No
113873	221112	MM WEST COVINA LLC	2210 S AZUSA AVE WEST COVINA 91792	Yes	1390	29	No
113936	812320	RADIANT SRVS CORP, EL SEGUNDO CLNRS/LDRY	651 W KNOX ST GARDENA 90248	No	1777	703	64CL
114012	313310	UNIVERSAL DYEING & PRINTING	2303 E 11TH ST LOS ANGELES 90021	No	1260	1197	No
114296	531210	KILROY AIRPORT IMPERIAL COMPANY	909 N SEPULVEDA BLVD EL SEGUNDO 90245	No	1080	217	No
114346	531120	CB RICHARD INVESTORS ITF CAL STRS	9595 WILSHIRE BLVD BEVERLY HILLS 90212	No	340	134	No
114484	922120	CITY OF SANTA ANA POLICE DEPARTMENT	60/62 CIVIC CENTER PLZ SANTA ANA 92702	No	750	71	No
114561	322212	SMURFIT KAPPA NORTH AMERICA LLC	13400 E NELSON AVE CITY OF INDUSTRY 91746	No	1184	179	No
114910	813110	PROVIDENCE HOLY CROSS MEDICAL CTR.	15031 RINALDI STREET MISSION HILLS 91345	No	674	61	No
115117	311612	S & S FOODS, L.L.C.	1120 W FOOTHILL BLVD AZUSA 91702	No	1024	341	No
115987	531110	PACIFIC PLAZA PARTNERS, LLC	1431 OCEAN AV SANTA MONICA 90401	No	483	137	No
116001	812331	AMERIPRIDE UNIFORM SERVICES	5950 ALCOA AVE VERNON 90058	No	761	484	No
116020	311612	GAYTAN FOODS	15430 E PROCTOR AVE CITY OF INDUSTRY 91744	No	1072	354	No
116773	111339	C C GRABER COMPANY	315 E 4TH ST ONTARIO 91764	No	575	0	No
116924	325412	AMPHASTAR PHARMACEUTICAL, INC	11570 SIXTH ST RANCHO CUCAMONGA 91730	No	3051	591	No
117536	313310	SUPER DYEING & FINISHING	8825 MILLERGROVE AVE SANTA FE SPRINGS 90670	No	718	124	No
117851	424710	SHORE TERMINALS LLC	841-901 LA PALOMA AVE WILMINGTON 90744	No	1820	1400	No
117980	325620	THIBIANT INTERNATIONAL INC	20320 PRAIRIE ST CHATSWORTH 91311	No	1040	494	No
118124	713110	CEDAR FAIR LP, KNOTT'S BERRY FARM DBA	8039 BEACH BLVD BUENA PARK 90620	Yes	698	0	No
118217	531110	DOUGLAS EMMETT REALTY FUND DBA WESTSIDE	11845 OLYMPIC BLVD #1260 LOS ANGELES 90064	No	510	124	No
118379	622110	ARROWHEAD REGIONAL MEDICAL CTR	4 COLTON 92324	No	449	11	No
118420	621310	GENERAL SERVICES ADMINISTRATION	411 W 4TH ST SANTA ANA 92701	No	472	55	No
118458	531110	BARRINGTON PLAZA, D EMMETT REALTY FUND	11740 WILSHIRE BLVD STE 240 LOS ANGELES 90025	No	406	5	No
118526	541611	WESTERN MUNICIPAL WATER DISTRICT	22751 NANDINA AVE RIVERSIDE 92518	No	1426	8	No
118628	621111	ALHAMBRA HOSPITAL MEDICAL CENTER	100 S RAYMOND AV ALHAMBRA 91801	No	336	58	No
118648	541611	STAPLES CENTER, L A ARENA COMPANY LLC.	1111 S FIGUEROA ST LOS ANGELES 90015	Yes	702	159	No
118681	561720	LA STATE BLDG AUTHORITY, JUNIPERO SIERRA	320 W 4TH ST LOS ANGELES 90013	No	544	462	No
118984	622110	NORTHRIDGE HOSPITAL MEDICAL CENTER	18300 ROSCOE BLVD. NORTHRIDGE 91325	No	771	89	No
119366	424690	UNIVAR USA INC.	2600 S GARFIELD AVE COMMERCE 90040	No	407	407	No
119386	311511	STREMICKS HERITAGE FOODS LLC	11503 PIERCE ST RIVERSIDE 92505	No	389	63	No
119433	531120	WILSHIRE PARK PLACE LLC	3700 WILSHIRE BLVD LOS ANGELES 90010	No	235	140	No
119664	311919	MARQUEZ MARQUEZ FOOD PRODUCTS	11803 INDUSTRIAL AVE SOUTH GATE 90280	Yes	575	39	No
119681	541618	WILMONT INC	3200 WILSHIRE BLVD LOS ANGELES 90010	No	457	127	No
119710	311411	NOR-CAL BEVERAGE COMPANY, INC.	1226 N OLIVE ST ANAHEIM 92801	No	869	161	No
120651	622110	HUNTINGTON BEACH HOSPITAL	17772 BEACH BLVD. HUNTINGTON BEACH 92647	No	999	0	No
120676	541380	HEMET UNIFIED SCHOOL DIST/NUTRITION CNTR	2075 W ACACIA HEMET 92545	No	224	117	HMT
120748	424480	PACIFIC FRUIT PROCESSORS, INC.	12128 CENTER ST SOUTH GATE 90280	No	739	10	No
121017	311612	SQUARE H BRANDS INC	2731 S SOTO ST LOS ANGELES 90023	Yes	1403	1228	No

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121045	531210	3600 WILSHIRE LLC	3600 WILSHIRE BLVD LOS ANGELES 90010	No	417	124	No
121289	334510	MEDTRONIC MINIMED, INC.	18000 DEVONSHIRE ST NORTHRIDGE 91325	No	690	196	No
121294	623311	BARTLETT CARE CENTER LLC	600 E WASHINGTON AVE SANTA ANA 92701	No	323	0	No
121371	237210	DOUGLAS, EMMETT & CO	15303 VENTURA BLVD SHERMAN OAKS 91403	No	661	117	No
121459	322211	PACKAGING CORPORATION OF AMERICA	4240 BANDINI BLVD LOS ANGELES 90023	No	1067	1067	No
121507	531110	THE SALVATION ARMY (CALIF CORP)	180 E OCEAN BLVD LONG BEACH 90802	No	1138	0	No
121570	322130	C B SHEETS	13901 S CARMENITA RD SANTA FE SPRINGS 90670	No	745	272	No
121671	721110	CROWNE PLAZA LOS ANGELES AIRPORT	5985 W CENTURY BLVD. LOS ANGELES 90045	No	1297	451	No
121872	313210	DAE SHIN USA INC /JAE WEON LEE	610 N GILBERT ST FULLERTON 92833	No	663	122	FUL
121897	531120	EQUITABLE PLAZA, LLC	3435 WILSHIRE BLVD LOS ANGELES 90010	No	394	182	No
121908	311941	VAN LAW FOODS	2325 MOORE AVE FULLERTON 92833	No	980	217	FUL
122083	562219	STERICYCLE, INC.	2775 E 26TH ST LOS ANGELES 90023	No	1215	1003	No
122166	811310	MANLEY'S BOILER REPAIR CO., INC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
122325	424990	RRR REAL ESTATE	5151 ALCOA AVE VERNON 90058	No	1329	946	No
122337	561499	CENTRAL PLAZA LLC	3450 WILSHIRE BLVD, STE #400 LOS ANGELES 90010	No	380	138	No
122412	531210	PARAMOUNT PLAZA, LLC	3550 WILSHIRE BLVD LOS ANGELES 90010	No	496	154	No
122599	325620	GAR LABS	1844 MASSACHUSETTS AVE RIVERSIDE 92507	No	623	293	No
122740	722511	611 W 6TH ST ASSOC LLC/METCOM MGMT LLC	611 W 6TH ST STE 2600 LOS ANGELES 90017	No	80	80	No
123664	311710	AQUAMAR INC	10888 7TH ST RANCHO CUCAMONGA 91730	No	2208	158	No
123788	531210	LOWE ENTERPRISES COMMERCIAL GROUP	16133 VENTURA BLVD ENCINO 91436	No	1141	43	No
123846	531210	JAMISON PROPERTIES	4201 WILSHIRE BLVD LOS ANGELES 90010	No	441	37	No
123880	531120	CENTURY PARK PLAZA, DOUGLAS EMMETT REAL	1801 CENTURY PARK EAST LOS ANGELES 90067	No	323	251	No
124116	311513	SAPUTO CHEESE USA, INC.	5611 E IMPERIAL HWY SOUTH GATE 90280	No	1371	23	No
124275	326299	KMC ACQUISITION CORP	12023 WOODRUFF AVE DOWNEY 90241	No	700	249	No
124868	812332	CINTAS CORPORATION NO 3	1851 S WINEVILLE ONTARIO 91761	No	3397	737	No
125244	813110	WEST ANGELES CHURCH OF GOD IN CHRIST	3600 CRENSHAW BLVD LOS ANGELES 90018	No	175	60	No
125282	325414	GILEAD SCIENCES INC, 502 BLDG	502 COVINA BLVD SAN DIMAS 91773	No	855	356	No
125299	325412	GILEAD SCIENCES INC	650 CLIFFSIDE DRIVE SAN DIMAS 91773	No	573	372	No
125840	313210	WIMATEX, INC.	5801 S SECOND ST VERNON 90058	No	599	409	No
125900	624410	DEPT OF CHILDREN & FAMILY, MACLAREN HALL	4024 N DURFEE AVE EL MONTE 91732	No	343	113	EMT
126214	311520	DONG PHUONG TOFU INC	15022 MORAN ST WESTMINSTER 92683	No	467	0	No
126728	541611	DOUGLAS EMMETT & CO/ONE WESTWOOD	10990 WILSHIRE BLVD, STE #1280 LOS ANGELES 90024	No	1099	87	No
126835	519120	DPSS - EXPOSITION PARK WEST ASSET LEASIN	3833 S VERMONT AVE LOS ANGELES 90037	No	987	23	No
126847	524210	GLENDALE PLAZA	655 N CENTRAL AVE GLENDALE 91203	No	452	0	No
126939	561110	THE ATRIUM IRVINE LLC	19100 VON KARMAN # 260 IRVINE 92612	No	1973	192	SNA
127411	713940	BILTMORE HOTEL	506 S GRAND AVE LOS ANGELES 90071	No	212	146	No
127416	926110	LA CO, VALENCIA CIVIC CENTER	23740 MAGIC MOUNTAIN PKY VALENCIA 91355	No	922	132	No
127861	561450	EXPERIAN INFORMATION SOLUTIONS INC	475 ANTON BLVD COSTA MESA 92626	No	769	146	SNA
128159	238320	KOREAN EDUCATION FOUNDATION IN LA	680 WILSHIRE PL LOS ANGELES 90005	No	290	140	No
128951	313310	HARRY'S DYE & WASH, INC	1015 E ORANGETHORPE ANAHEIM 92801	No	1262	391	No
129376	812320	FINAL TOUCH DYEING & FINISHING	13416 ESTRELLA AVE GARDENA 90248	No	426	166	No
129416	721110	WESTIN SOUTH COAST PLAZA	686 ANTON BOULEVARD COSTA MESA 92626	No	985	306	SNA
129562	561210	3055 WILSHIRE LLC	3055 WILSHIRE BLVD. LOS ANGELES 90010	No	69	69	No
129827	721110	PACIFIC PALMS CONFERENCE RESORT	1 INDUSTRY HILLS PKWY CITY OF INDUSTRY 91744	No	700	517	No
130248	311412	OTASTY FOODS, INC.	160 S HACIENDA BLVD CITY OF INDUSTRY 91745	No	557	63	No

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130254	551112	10100 SANTA MONICA, INC	10100 SANTA MONICA BLVD LOS ANGELES 90067	No	428	349	No
130388	313310	WESTERN YARN DYEING INC.	2011 EAST RAYMER AVENUE FULLERTON 92833	No	716	470	FUL
130646	326299	WEST AMERICAN RUBBER COMPANY, LLC	750 N MAIN ST ORANGE 92868	No	830	259	No
130668	311999	GOLDEN SPECIALTY FOODS. LLC	14605 BEST AV NORWALK 90650	No	1291	206	No
131431	522110	OLYMPIC PLAZA	11500 OLYMPIC BLVD LOS ANGELES 90064	No	348	116	No
131507	551112	WIRETECH, INC.	6440 E CANNING ST COMMERCE 90040	No	1006	1004	No
131864	621999	BRISTOL GROUP LLC/SAMARITAN MED TOWER	1127 WILSHIRE BLVD LOS ANGELES 90017	No	737	156	No
132152	315190	COMPLETE GARMENT, INC.	2101 E 38TH ST VERNON 90058	No	698	694	No
132401	311612	RICE FIELD CORP. / DEREK LEE	14500 E VALLEY BLVD CITY OF INDUSTRY 91746	No	690	459	No
132942	327390	QUIKRETE CORP OF SOUTHERN CALIF	20625 TEMESCAL CYN RD CORONA 92883	No	2926	29	No
132999	531210	BEVERLY HILLS PROPERTY	691 S IROLO ST LOS ANGELES 90005	No	467	51	No
133596	812332	STONE BLUE INC	2501 E 28TH ST VERNON 90058	No	1035	998	No
133975	611210	NORTH ORANGE COUNTY COMM.COLLEGE DIST.	1830 REMNEYA ANAHEIM 92801	No	512	80	No
134102	621511	QUEST DIAGNOSTICS,NICHOLS INST. VALENCIA	27027 TOURNEY RD SANTA CLARITA 91355	No	1175	275	No
134211	721110	MONTAGE RESORTS & SPA	30801 SOUTH COAST HWY LAGUNA BEACH 92651	No	249	103	No
134334	923120	US FOOD AND DRUG ADMINISTRATION	19701 FAIRCHILD AVE IRVINE 92612	No	1600	489	SNA
134426	237210	AMISCOPE PROPERTIES	20525 NORDOFF CHATSWORTH 91311	No	1061	336	No
134847	237210	DOUGLAS EMMETT 2000 LLC	21700 OXNARD STREET WOODLAND HILLS 91367	No	1349	198	No
134985	311412	OVERHILL FARMS, INC	2727 E VERNON AVE VERNON 90058	No	721	652	No
135023	722310	KINGS HAWAIIAN BAKERY	19161 HARBORGATE WAY TORRANCE 90501	No	694	436	64CL
135185	813212	BEACH CITIES HEALTH DISTRICT	514 N PROSPECT AVE REDONDO BEACH 90277	No	447	109	No
135273	424490	ARCHER DANIELS MIDLAND COMPANY	455 N 6TH ST COLTON 92324	No	718	63	No
135425	721110	SHERATON GATEWAY HOTEL- LAX	6101 W CENTURY BLVD LOS ANGELES 90045	No	1464	583	No
135545	334220	NORTHROP GRUMMAN SPACE & MISSION SYSTEM	ONE SPACE PARK REDONDO BEACH CA 90278	Yes	791	357	No
136655	311942	USA FOODS, INC/LEE KUM KEE	14415 & 14455 DON JULIAN RD CITY OF INDUSTRY 91746	No	813	377	No
136953	311710	BUMBLE BEE FOODS, LLC	13100 ARTIC CIRCLE DR SANTA FE SPRINGS 90670	No	1128	370	No
137244	454390	CLEMENT- PAPPAS CA INC	1755 E ACACIA ST ONTARIO 91761	No	2124	1527	ONT
137433	424420	JESSIE LORD BAKERY, LLC	21100 S WESTERN AV TORRANCE 90501	No	1458	66	64CL
137722	493190	VOPAK TERMINAL LONG BEACH INC,A DELAWARE	305 HENRY FORD AV SAN PEDRO 90731	No	2639	2277	No
137966	452111	LA CURACAO BUSINESS CENTER	1605 W OLYMPIC BLVD LOS ANGELES 90015	No	280	98	No
138325	424590	IMPERIAL WESTERN PRODUCTS CO INC	86-600 AVE 54 COACHELLA 92236	No	2153	597	No
138402	444190	ORCO BLOCK CO INC	35100 DILLON RD INDIO 92202	No	8021	1421	No
138514	531210	SHATTO CORPORATION	425 SHATTO PL LOS ANGELES 90020	No	146	146	No
138689	926120	CALTRANS DISTRICT 7 HEADQUARTERS	100 S MAIN ST LOS ANGELES 90012	No	774	288	No
138705	531120	BROADWAY CIVIC CENTER	316 W 2ND ST LOS ANGELES 90012	No	916	591	No
139172	812990	DOWNTOWN CENTER STUDIOS	1201 W 5TH ST LOS ANGELES 90017	No	623	257	No
139193	622110	UHS-CORONA INC/CORONA REGIONAL MED CTR	800 S MAIN ST CORONA 92882	No	340	127	No
139280	621111	KAISER PERMANENTE ONTARIO VINEYARD MED	2295 S VINEYARD AVE ONTARIO 91761	No	1242	431	ONT
139318	531312	811 WILSHIRE, LLC	811 WILSHIRE LOS ANGELES 90017	No	291	291	No
139668	325998	NALCO COMPANY	2111 E DOMINGUEZ ST CARSON 90810	Yes	1030	792	No
139759	611110	LAKESIDE HIGH SCHOOL	32693 RIVERSIDE DR LAKE ELSINORE 92530	No	179	111	No
139800	713940	KAISER PERMANENTE/INDEPENDENCE PARK FAC	12254 BELLFLOWER BLVD DOWNEY 90242	No	573	121	No
140022	325211	HUNTSMAN ADVANCED MATERIALS AMERICAS, I	5121 SAN FERNANDO RD WEST LOS ANGELES 90039	No	565	100	No
140043	611210	WILSHIRE CENTER, INC.	3255 WILSHIRE BLVD LOS ANGELES 90010	No	452	164	No
140423	531120	KAJIMA DEVELOPMENT CORPORATION	250 E FIRST STREET #610 LOS ANGELES 90012	No	488	26	No

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140961	326199	GKN AEROSPACE TRANSPARENCY SYS INC	12122 & 12241 WESTERN AVE GARDEN GROVE 92841	No	599	19	No
141072	424690	BRENTAG PACIFIC INC	10747 PATTERSON PL SANTA FE SPRINGS 90670	No	1284	388	No
141119	721110	DOUBLETREE ANAHEIM/ORANGE CO, DT MGMT	100 THE CITY DR ORANGE 92868	No	1307	0	No
141175	928110	CALIFORNIA NATIONAL GUARD ARMORY	1351 W SIERRA MADRE AVE AZUSA 91702	No	1053	208	No
141473	424410	NONG SHIM AMERICA, INC	12155 6TH ST RANCHO CUCAMONGA 91730	No	2675	1117	No
142065	711310	SEGERSTROM CENTER FOR THE ARTS	615 TOWN CENTER DR COSTA MESA 92626	No	771	183	SNA
142435	921110	CLAREMONT CITY	1616 MONTE VISTA AVE CLAREMONT 91711	No	808	195	No
143929	813110	HARVEST ROCK CHURCH	131 S ST JOHN PASADENA 91105	No	393	335	No
144132	312111	ASEPTIC SOLUTIONS USA, LLC	484 ALCOA CIR CORONA 92880	No	1696	613	No
144422	454390	NESTLE WATERS NORTH AMERICA INC	1925 COMPTON AVENUE LOS ANGELES 90011	No	554	172	No
144539	333241	PURATOS CORPORATION	18831 LAUREL PARK RD RANCHO DOMINGUEZ 90220	No	1745	1403	No
144695	713940	WESTLAKE WELLBEING PROPERTIES, LLC	2 DOLE DR WESTLAKE VILLAGE 91362	No	375	375	No
145071	561499	PASEO COLORADO HOLDINGS LLC	280 E COLORADO BLVD PASADENA 91101	No	756	624	No
145389	311999	SWEET OVATIONS	16911 S NORMANDIE AVE GARDENA 90247	No	813	19	64CL
145747	721110	CROWNE PLAZA HOTEL	300 N HARBOR DR REDONDO BEACH 90277	No	594	37	No
145869	621511	QUEST DIAGNOSTICS INC.	8401 FALLBROOK AVE WEST HILLS 91304	No	1221	212	No
146016	238110	COFFMAN SPECIALTIES, INC.	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
146346	621111	KAISER FOUNDATION HOSPITAL	9353 IMPERIAL HWY DOWNEY 90242	No	338	11	No
146468	237210	DOUGLAS EMMETT REALTY FUND 2002	6320 CANOGA AVE WOODLAND HILLS 91367	No	1323	132	No
146706	424690	TITAN TERMINAL AND TRANSPORT INC	4570 ARDINE ST SOUTH GATE 90280	Yes	562	80	No
146897	922120	LOS ANGELES CO SHERIFF DEPT/LA REGIONAL	1800 PASEO RANCHO CASTILLA LOS ANGELES 90032	No	341	43	No
146903	454390	NESTLE WATERS NORTH AMERICA	5772 JURUPA ST ONTARIO 91761	No	2866	1894	No
146908	621399	PROV HLTH SYS/LITTLE CO MARY MED CTR S.P	1300 W 7TH ST SAN PEDRO 90732	No	650	29	No
147356	622110	CHA HOLLYWOOD MED CTR LP	1300 N VERMONT AVE LOS ANGELES 90027	No	521	51	No
147371	221320	INLAND EMPIRE UTILITIES AGENCY	6063 KIMBALL AVE CHINO 91710	No	1455	761	No
147620	325412	SUNRIDER MANUFACTURING, LP	1461 FRANCISCO ST TORRANCE 90501	No	1215	666	64CL
147669	531210	7080 HOLLYWOOD, LLC	7080 HOLLYWOOD BLVD HOLLYWOOD 90028	No	314	101	No
147943	531210	LBA REALTY	1150 S OLIVE ST LOS ANGELES 90015	No	84	72	No
147971	812331	REPUBLIC MASTER CHEFS	1340 ORIZABA AVE. LONG BEACH 90804	No	401	6	No
148034	721110	THE ISLAND HOTEL	690 NEWPORT CENTER DR NEWPORT BEACH 92660	No	1333	0	No
148094	311111	BREEDERS CHOICE PET FOODS INC	16321 E ARROW HIGHWAY IRWINDALE 91706	No	1036	37	No
148140	445299	THE COCA-COLA COMPANY-ANAHEIM	2121 E WINSTON RD ANAHEIM 92806	No	1363	100	No
148411	621610	KAISER PERMANENTE DOWNEY MED CENTER	9333 IMPERIAL HWY DOWNEY 90242	No	338	11	No
148720	611110	HAWTHORNE SCHOOL DIST, PRARIE VISTA MID	13600 PRAIRIE AVE HAWTHORNE 90250	Yes	398	43	No
148928	313210	TRI-STAR DYEING AND FINISHING, INC..	15125 MARQUARDT SANTA FE SPRINGS 90670	No	1812	978	No
148962	562211	VEOLIA ENVIRONMENTAL SERVICES	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
148983	334510	BOSTON SCIENTIFIC NEUROMODULATION	25155 RYE CANYON LOOP SANTA CLARITA 91355	No	933	488	No
149051	322211	SMURFIT KAPPA NORTH AMERICA LLC	440 N BALDWIN PARK BL CITY OF INDUSTRY 91746	No	930	467	No
149102	811111	2000 AVE OF THE STARS/TRAMMELL CROW CO.	2000 AVENUE OF THE STARS LOS ANGELES 90067	No	684	253	No
149387	311511	REX CREAMERY	5743 SMITHWAY ST COMMERCE 90040	No	779	145	No
149431	424490	BDS NATURAL PRODUCTS	1904 E DOMINGUEZ ST LONG BEACH 90810	No	573	354	No
149455	531210	3780 WILTERN CENTER LLC	3780 WILSHIRE BLVD LOS ANGELES 90010	No	251	138	No
149526	445110	HEALTHERVE FOOD MFG. USA, INC	9083 SANTA ANITA AVE RANCHO CUCAMONGA 91730	No	2351	1439	No
150072	721110	CELEBRITY CASINOS INC	123 E ARTESIA BLVD COMPTON 90220	No	1587	348	No
150397	811219	RF MAC DONALD CO	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A

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150519	928110	CALIFORNIA ARMY NATIONAL GUARD	4255 SARATOGA AVE LOS ALAMITOS 90720	No	1352	309	No
150667	311225	VENTURA FOODS LLC	2900 E JURUPA AVE ONTARIO 91761	No	2694	1527	ONT
151474	311999	MARUKOME USA, INC.	17132 PULLMAN ST IRVINE 92614	No	1350	145	SNA
151843	326140	INSULFOAM	5635 SCHAEFER AVE CHINO 91710	No	1482	378	No
152332	512131	LA LIVE, LLC	777 CHICK HEARN CT LOS ANGELES 90015	No	750	219	No
152494	424490	GOURMET FRESH PASTA	950 N FAIR OAKS AVE PASADENA 91103	No	1099	35	No
152576	448120	ARAMARK UNIFORM & CAREER APPAREL LLC	1135 HALL AVE RIVERSIDE 92509	No	2993	283	No
152641	561990	WATT MINERAL HOLDINGS LLC	E/SIERRA HWY & N/DOCKWEILER NEWHALL 91321	No	1328	16	No
152886	312112	NIAGARA BOTTLING, LLC.	2560 PHILADELPHIA AVE ONTARIO 91761	No	573	552	ONT
153663	424690	1990 WESTWOOD,LLC	2140 W OLYMPIC BLVD LOS ANGELES 90006	No	576	37	No
153702	811490	CM LAUNDRY, LLC	14919 S FIGUEROA ST GARDENA 90248	No	412	39	No
154028	531210	350 FIGUEROA, LLC	350 S FIGUEROA ST LOS ANGELES 90071	No	628	327	No
154030	531312	JAMISON CALIFORNIA MARKET CENTER, LP	110 E 9TH ST LOS ANGELES 90079	No	586	237	No
154034	621999	CENTINELA HOSPITAL MEDICAL CENTER	555 E HARDY ST INGLEWOOD 90301	No	394	164	No
154509	453220	SAN GABRIEL VALLEY MEDICAL CENTER	438 W. LAS TUNAS DR., SAN GABRIEL SAN GABRIEL 91776	No	209	47	No
155134	424310	ROYAL PRINTEX , INC.	1946 E 46TH ST VERNON 90058	No	544	544	No
155368	312111	REFRESCO BEVERAGES US INC.	570 E MILL ST SAN BERNARDINO 92408	Yes	987	463	No
155422	611310	POMONA COLLEGE	609 N COLLEGE WAY CLAREMONT 91711	No	488	232	POC
155452	921190	CITY OF LA, DEPT OF GEN SVCS, LAPD ADM B	100 W 1ST ST LOS ANGELES 90012	No	840	354	No
155521	531312	WILSHIRE CATALINA PLAZA, LLC	3325 WILSHIRE BLVD LOS ANGELES 90010	No	377	175	No
156167	622110	MONTCLAIR HOSPITAL MEDICAL CENTER	5000 SAN BERNARDINO ST MONTCLAIR 91763	No	798	100	No
156294	812331	MEDICO PROFESSIONAL LINEN SERVICE	2201 E CARSON ST LONG BEACH 90807	No	1159	100	No
156298	561110	WASTE MGMT. HEALTHCARE SOLUTIONS OF CA	4280 E BANDINI BLVD VERNON 90058	No	877	877	No
156722	313310	AMERICAN APPAREL KNIT AND DYE	12641 INDUSTRY ST GARDEN GROVE 92841	No	875	298	No
156851	322211	INTERNATIONAL PAPER CO	19615 S SUSANA RD COMPTON 90221	No	1217	631	No
156875	313210	HITEX DYEING & FINISHING, INC	355 N VINELAND AVE CITY OF INDUSTRY 91746	No	885	92	No
156902	622110	PROVIDENCE TARZANA MEDICAL CENTER	18321 CLARK ST TARZANA 91356	No	838	132	No
157418	561499	OVERLAND VENTURE, L.P.	955 OVERLAND CT SAN DIMAS 91773	No	529	187	No
157845	531210	WILSHIRE TOWER APARTMENTS, LLC	701 S PARKER ST ORANGE 92868	No	888	8	No
158151	611110	ROBERT F KENNEDY COMMUNITY OF SCHOOLS	3161 W 8TH ST LOS ANGELES 90005	No	174	42	No
158404	622110	HOAG MEM HOSP PRESBYTERIAN	16200 SAND CANYON AVE IRVINE 92618	No	1175	190	No
158573	721110	TERRANEA RESORT	100 TERRANEA WAY RANCHO PALOS VERDES 90275	No	1181	531	No
158809	622110	GARFIELD MEDICAL CENTER/AHMC	525 N GARFIELD AV MONTEREY PARK 91754	No	584	71	No
159107	622110	LOMA LINDA UNIVERSITY HEALTH BEAUMONT-B	81 HIGHLAND SPRINGS AVE BEAUMONT 92223	No	1464	117	No
159449	622110	KECK HOSPITAL OF USC	1500 SAN PABLO ST LOS ANGELES 90033	No	356	132	No
159634	531210	WILSHIRE SHATTO CENTER	3130 WILSHIRE BLVD LOS ANGELES 90010	No	266	241	No
160367	531120	JAMISON CALIFORNIA MARKET CENTER LP	124 E OLYMPIC BLVD LOS ANGELES 90079	No	480	235	No
160576	311999	FOSTER FARMS, COMPTON PLANT	1805 N SANTA FE AV COMPTON 90221	No	853	0	No
160826	622110	MISSION HOSPITAL LAGUNA BEACH	31872 S COAST HWY LAGUNA BEACH 92651	No	2277	77	No
160853	622110	AHMC ANAHEIM REGIONAL MEDICAL CENTER	1111 W LA PALMA AV ANAHEIM 92801	No	832	71	No
161439	313240	FANTASY DYEING AND FINISHING, INC.	5389 ALCOA AVE VERNON 90058	No	1196	761	No
161754	311511	ALTA DENA CERTIFIED DAIRY, LLC	17851 E RAILROAD ST CITY OF INDUSTRY 91748	No	1572	645	No
161834	424430	LOS ALTOS FOOD PRODUCTS, INC.	450 BALDWIN PARK BLVD CITY OF INDUSTRY 91746	No	821	467	No
161945	811192	QUALAWASH HOLDINGS, LLC	8332 WILCOX AVE SOUTH GATE 90280	No	884	84	No
162430	622110	PHYSICIANS HOSPITAL OF MURRIETA	28070 BAXTER RD MURRIETA 92563	No	1885	272	No

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163088	325180	ARKEMA INC.	19206 HAWTHORNE BL TORRANCE 90503	No	893	34	No
163123	311119	GEORGE VERHOEVEN GRAIN, INC.	5355 E AIRPORT DR ONTARIO 91761	No	3906	1408	No
164081	424430	IMURAYA USA INC.	2502 BARRANCA PKY IRVINE 92606	No	1221	295	No
164459	523991	KAISER PERMANENTE	3424 E LA PALMA AVE ANAHEIM 92806	No	1651	143	No
164522	423220	USA CANNING	201 N SULLIVAN ST SANTA ANA 92703	No	295	92	No
164820	541990	MEDICAL WASTE SERVICES, LLC	7321 QUIMBY ST PARAMOUNT 90723	No	554	208	No
165233	448150	POMONA COURTHOUSE SOUTH, JCC/AOC	400 CIVIC CENTER PLAZA POMONA 91766	No	753	98	No
165524	311421	CLIFFSTAR CALIFORNIA LLC	11751 PACIFIC AVE FONTANA 92337	No	2057	1012	No
165535	453910	LOTUS NATURAL PET FOOD	2727 MARICOPA ST TORRANCE 90503	No	610	63	No
165892	236115	FLATIRON CONSTRUCTION CORP	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
166187	322219	INTERNATIONAL COMPOSITES TECHNOLOGIES IN	1435 S SANTA FE AVE COMPTON 90221	No	671	68	No
166475	622110	HEMET VALLEY MEDICAL CENTER	1117 E DEVONSHIRE AVE HEMET 92543	No	671	126	No
166488	611210	LOS ANGELES MISSION COLLEGE	12890 W HARDING ST SYLMAR 91342	No	641	6	No
166710	531210	REALTY ASSOCIATES FUND IX	1960 E GRAND AVE EL SEGUNDO 90245	No	1154	436	No
167167	311513	SCHREIBER FOODS, INC.	1901 VIA BURTON ST FULLERTON 92831	No	610	338	No
167524	811219	PALM SPRINGS USD RANCHO MIRAGE HS	31001 RATTLER RD RANCHO MIRAGE 92270	No	1963	5	No
167938	424130	ROCKTENN CP, LLC	18021 S VALLEY VIEW AVE CERRITOS 90703	No	760	293	No
167947	322211	ROCKTENN CP, LLC	185 N SMITH AV CORONA 92880	No	814	369	No
167951	334418	CITY OF BUENA PARK	6955 ARAGON CIR BUENA PARK 90620	No	697	200	No
168083	622110	COMMUNITY HOSPITAL LONG BEACH	1720 TERMINO AV LONG BEACH 90804	No	694	0	No
168160	424490	YAKULT U.S.A., INC.	17235 NEWHOPE ST FOUNTAIN VALLEY 92708	No	1062	335	No
168424	424950	BNA COLOR INDUSTRY, INC	5000 DISTRICT BLVD VERNON 90058	No	377	377	No
168523	311999	JSL FOODS INTERNATIONAL	1478 N INDIANA ST LOS ANGELES 90063	No	435	13	No
169893	562219	CARBONLITE INDUSTRIES LLC	875 MICHIGAN AVE RIVERSIDE 92507	No	1223	150	No
169910	335312	ACCESS ENERGY, LLC	16323 SHOEMAKER AVE CERRITOS 90703	No	599	328	No
170075	523999	PACIFIC FINANCIAL EQUITIES, LLC	800 W 6TH ST LOS ANGELES 90017	No	290	290	No
170140	336413	HELICOPTER TECHNOLOGY COMPANY	14610 S BROADWAY GARDENA 90248	No	879	504	No
170253	327120	SAK CONSTRUCTION, LLC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
170890	812990	HOLLYWOOD PRODUCTION CTR	401 N BRAND BLVD GLENDALE 91203	No	591	0	No
171250	333241	JOHN BEAN TECHNOLOGIES CORPORATION	1660 IOWA AVE RIVERSIDE 92507	No	639	377	No
171575	447190	PHILLIPS 66 COMPANY LOS ANGELES LUBRICAN	13707 S BROADWAY LOS ANGELES 90061	No	977	573	No
171914	561720	ENVTECH TANK SERVICES LLC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
172211	311423	INLAND EMPIRE FOODS	5425 WILSON ST RIVERSIDE 92509	No	2121	922	No
172234	321920	IFCO SYSTEMS US., INC	8950 ROCHESTER AVE RANCHO CUCAMONGA 91730	No	2628	1044	No
172272	922120	VAN NUYS COURTHOUSE EAST, JCC/AOC	6230 SYLMAR AV VAN NUYS 91401	No	583	156	No
172387	339112	HAEMONETICS MANUFACTURING INC	1630-1665 INDUSTRIAL PARK ST COVINA 91722	No	491	56	No
172630	311999	PROPORTION FOODS, LLC	3501 E VERNON VERNON 90058	No	1854	1463	No
172641	561720	SHANNON DIVERSIFIED INC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
172781	622110	TEMECULA VALLEY HOSPITAL	31700 TEMECULA PKY TEMECULA 92592	No	655	108	No
173258	322211	INTERNATIONAL PAPER	9211 NORWALK BLVD SANTA FE SPRINGS 90670	No	877	369	No
173418	424480	EVOLUTION FRESH	11655 JERSEY BLVD RANCHO CUCAMONGA 91730	No	2391	734	No
173420	621999	EQUINOX	1835 S SEPULVEDA BLVD LOS ANGELES 90025	No	473	87	No
173647	721110	MIX RESTAURANT, HILTON ANAHEIM, HHC HA T	777 CONVENTION WAY ANAHEIM 92802	No	731	216	No
173739	327390	OLDCASTLE PRECAST INC	2020 GOETZ RD PERRIS 92570	No	785	729	L65
174183	424480	IMT CAPITAL II SHERMAN OAKS LLC	14130 RIVERSIDE DR SHERMAN OAKS 91423	No	1022	39	No

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175030	921110	CITY OF CHINO HILLS	15091 LA PALMA DR CHINO 91710	No	880	406	No
175080	531210	BERINGIA CENTRAL, LLC	633 W 5TH ST LOS ANGELES 90071	No	328	26	No
175126	325110	AEROJET ROCKETDYNE OF DE, INC.	8900 DE SOTO AV CANOGA PARK 91304	No	766	85	No
175261	339999	OSI RIVERSIDE	1155 MOUNT VERNON AVE RIVERSIDE 92507	No	2002	332	No
175552	237210	DOUGLAS EMMETT MANAGEMENT, LLC	8484 WILSHIRE BLVD BEVERLY HILLS 90211	No	315	63	No
176198	811111	RINCON TRUCK CENTER, INC	114 RINCON CT SAN CLEMENTE 92672	No	713	130	No
176295	237210	HINES GLOBAL REIT 2300 MAIN ST LP	2300 MAIN ST IRVINE 92614	No	396	396	SNA
176369	541990	TESORO LOGISTICS MARINE TERMINAL 3	MARINE TERMINAL 3 PORT OF LB LONG BEACH 90813	Yes	216	0	No
176480	488210	TMG TRANSPORTATION INC	1435 N HARBOR FULLERTON 92835	No	1131	40	No
176489	238220	MANLEYS BOILER, INC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
176566	622110	PIH HEALTH DOWNEY	11500 BROOKSHIRE AV DOWNEY 90241	No	558	129	No
176762	622210	COLLEGE MEDICAL CENTER	2776 PACIFIC AV LONG BEACH 90806	No	282	19	No
176788	311811	BIMBO BAKERIES USA, INC.	500 S PLACENTIA AV PLACENTIA 92870	No	1061	415	No
176803	325180	CLEAN HARBORS	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
177039	541380	NATIONAL TECHNICAL SYSTEMS	3505 E THIRD ST SAN BERNARDINO 92408	No	1032	116	SBD
177042	236220	SOLVAY USA, INC	20851 S SANTA FE AVE LONG BEACH 90810	Yes	929	433	No
177422	311111	AMERICAN JERKY COMPANY	2400 E FRANCIS ST ONTARIO 91761	No	1577	1452	ONT
177551	721110	NREA-TRC 700 LLC	700 S FLOWER ST. LOS ANGELES 90017	No	375	298	No
177942	327390	RIALTO CONCRETE PRODUCTS	23200 TEMESCAL CYN RD CORONA 92883	No	1186	45	No
178029	Unknown	350 SOUTH GRAND AVENUE (LA) OWNER, LLC	350 S GRAND AV LOS ANGELES 90071	No	489	251	No
178181	424910	MARTIN FEED LLC	8755 CHINO-CORONA RD CORONA 92880	No	2358	264	CNO
178261	Unknown	RICH PRODUCTS CORPORATION	3401 W SEGERSTROM AVE SANTA ANA 92704	No	1349	655	No
178416	Unknown	CALIFORNIA DEPT OF VETERANS AFFAIRS	11500 NIMITZ AVE LOS ANGELES 90049	No	1143	179	No
178423	531210	BROOKFIELD OFFICE PROPERTIES	333 & 355 SO GRAND AVE LOS ANGELES 90071	No	488	238	No
178726	423920	LOS ANGELES DISTILLERY	8650 HAYDEN PL CULVER CITY 90232	No	473	145	No
179052	423720	BOILER DYNAMICS INC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
179104	813990	GREAT WOLF LODGE	12681 HARBOR BLVD GARDEN GROVE 92840	No	999	5	No
179129	322211	INTERNATIONAL PAPER	5991 BANDINI BLVD LOS ANGELES 90040	No	1511	150	No
179134	336411	NORTHROP GRUMMAN SYSTEMS CORPORATION	5500 CANOGA AV WOODLAND HILLS 91367	No	1019	18	No
179265	531110	PROLOGIS, L.P.	20704 S FORDYCE AVE LONG BEACH 90810	No	1297	491	No
179310	531210	ONYX TOWER, LLC	6100 WILSHIRE BLVD LOS ANGELES 90048	No	373	74	No
179514	327331	SIERRA BUILDING PRODUCTS, OLDCASTLE APG	10774 POPLAR AVE FONTANA 92337	No	1318	430	No
179547	722511	US CORRUGATED OF LOS ANGELES	13820 MICA ST SANTA FE SPRINGS 90670	No	1788	948	No
179811	327213	ASEPTIC TECHNOLOGY LLC	24855 CORBIT PL YORBA LINDA 92887	No	729	92	No
180116	326130	REPET INC.	14207 MONTE VISTA AVE CHINO 91710	No	1674	430	No
180258	622110	INLAND EMPIRE SATELLITE REGIONAL REFEREN	13000 PEYTON DR CHINO HILLS 91709	No	969	148	No
180375	622110	UNIVERSITY OF SOUTHERN CALIFORNIA ON BEH	1812 VERDUGO BL GLENDALE 91208	No	679	51	No
180392	722513	CURCI IRVINE LLC C/O NEWPORT REAL ESTATE	1 GLEN BELL WAY IRVINE 92618	No	3595	58	No
180426	561990	HERITAGE DISTRIBUTING	425 9TH AVE CITY OF INDUSTRY 91746	No	1141	509	No
180538	312112	NIAGARA BOTTLING, LLC	1401 N ALDER AVE RIALTO 92376	No	858	415	L67
180672	334413	INFINEON TECHNOLOGIES AMERICAS CORP.	41915 BUSINESS PARK DR TEMECULA 92590	Yes	185	185	No
180889	541330	523 WEST 6TH STREET PROPERTY OWNER, LLC	523 W 6TH ST LOS ANGELES 90014	No	76	76	No
180908	325998	ECO SERVICES OPERATIONS CORP.	20720 S WILMINGTON AVE CARSON 90810	Yes	1019	381	No
180945	238210	ALLTECH, INC.	1702 S CUCAMONGA AVE ONTARIO 91761	No	406	406	No
181040	221310	SANTA MARGARITA WATER DISTRICT	26801 CAMINO CAPISTRANO LAGUNA NIGUEL 92677	No	782	346	No

Facility ID	NAICS	Facility Name	Address	On List per Government Code 65962.5 (Envirostor)?	Distance from School (meters)	Distance from Sensitive Receptor (meters)	Airport within 2 miles (code)
181041	812331	CINTAS - WHITTIER, CINTAS CORP.	2829 WORKMAN MILL RD WHITTIER 90601	No	1569	415	No
181084	531120	W/GL OCEAN AVENUE LB HOLDINGS VII, LLC	1 WORLD TRADE CENTER, #1820 LONG BEACH 90831	No	570	8	No
181182	424470	KING MEAT SERVICE, INC.	4215 EXCHANGE AV VERNON 90058	No	1490	1468	No
181225	322211	MONTEBELLO CONTAINER COMPANY, LLC	5150 INDUSTRY AV PICO RIVERA 90660	No	938	327	No
181257	322211	MONTEBELLO CONTAINER COMPANY, LLC	14333 MACAW ST LA MIRADA 90638	No	1643	480	No
181291	812331	HONG KONG DENIM DESIGN ONC	9725 FACTORIAL WAY SOUTH EL MONTE 91733	No	948	254	No
181347	722310	PREFERRED MEALS	5469 FERGUSON DR COMMERCE 90022	No	729	249	No
181526	531210	STATE OF CALIFORNIA	3737 MAIN ST RIVERSIDE 92501	No	554	554	No
181542	812331	LEMON TREE WASHHOUSE SERVICES, INC.	717 JUNIPERO SERRA DRIVE SAN GABRIEL 91776	No	246	14	No
181609	541711	GILEAD SCIENCES, INC	1800 WHEELER AVE LA VERNE 91750	No	980	240	No
181660	454390	NEW AVON LLC	2940 E FOOTHILL BLVD. PASADENA 91121	No	385	79	No
181946	531210	COLLIERS INTERNATIONAL	6053 W CENTURY BLVD LOS ANGELES 90045	No	1469	623	No
181947	531210	COLLIERS INTERNATIONAL	6033 W CENTURY BLVD LOS ANGELES 90045	No	1403	576	No
181966	236220	SYNEAR FOODS USA, LLC	9601 CANOGA AVE CHATSWORTH 91311	Yes	695	618	No
182093	561110	ONNI 800 WILSHIRE LIMITED PARTNERSHIP	800 WILSHIRE BLVD LOS ANGELES 90017	No	304	304	No
182102	334412	EMD SPECIALTY MATERIALS, LLC ARLON EMD	9433 HYSOP DR RANCHO CUCAMONGA 91730	No	3259	549	No
182157	325412	BAXALTA US INC	4501 COLORADO BLVD LOS ANGELES 90039	No	600	68	No
182187	561499	DEDEAUX PROPERTIES	4000 NOAKES ST COMMERCE 90023	No	697	378	No
182210	611110	MCKINLEY K-8 SCHOOL	325 S OAK KNOLL AVE PASADENA 91101	No	327	293	No
182214	311422	COMAN	3305 E VERNON AVE VERNON 90058	No	1703	1595	No
182599	237110	INSITUFORM TECHNOLOGIES, LLC	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
182601	531210	THE KOLL COMPANY	18000 STUDEBAKER RD CERRITOS 90703	No	605	219	No
182603	311930	AMERICAN FRUITS AND FLAVORS LLC.	10725 SUTTER ST PACOIMA 91331	No	581	13	No
182752	488999	TORRANCE LOGISTICS COMPANY LLC	2619 E 37TH ST VERNON 90058	No	921	859	No
182774	812310	MELIK DYE WORKS	710 W 58TH STREET LOS ANGELES 90037	No	444	14	No
182957	811198	VALVOLINE, LLC	9520 JOHN ST SANTA FE SPRINGS 90670	No	959	922	No
183134	333414	CANSECO BOILER SERVICES, INC.	VARIOUS LOCATIONS	No	#N/A	#N/A	#N/A
183368	522310	FORTERRA BUILDING PRODUCTS	26380 PALOMAR RD. ROMOLAND 92585	No	1078	58	No
183465	311411	ASEPTIC INNOVATIONS, INC	4940 E LANDON DR ANAHEIM 92807	No	821	385	No
183581	311412	DEL REAL LLC	11041 INLAND AVE MIRA LOMA 91752	No	2710	801	No
183736	322211	GEORGIA-PACIFIC CORRUGATED LLC	15500 VALLEY VIEW AVE LA MIRADA 90638	No	1923	710	No
183737	621111	ORANGE COUNTY GLOBAL MEDICAL CENTER	1001 N TUSTIN AV SANTA ANA 92705	No	89	66	No
183926	325998	EVONIK CORPORATION	3305 E 26TH ST LOS ANGELES 90058	No	1088	863	No
184003	722511	FRANZ BAKERY LOS ANGELES	457 E MARTIN LUTHER KING BLVD LOS ANGELES 90011	No	229	39	No
184249	326199	RPLANET EARTH LOS ANGELES, LLC	5300 S BOYLE AVE VERNON 90058	No	1112	744	No
184321	531120	CVFI-444 S FLOWER, LP	444 SOUTH FLOWER ST, STE #1750 LOS ANGELES 90071	No	399	135	No
185034	322211	JELCO CONTAINER	1265 N VAN BUREN ST ANAHEIM 92807	No	1048	435	No
185143	812331	9W HALO WESTERN OPCP L.P. D/B/A ANGELICA	300 E COMMERCIAL ST POMONA 91766	No	745	5	No
185144	812331	9W HALO WESTER OPCP L.P. D/B/A ANGELICA	925 S 8TH ST COLTON 92324	No	249	113	No
185145	812331	9W HALO WESTERN OPCP LP DBA ANGELICA	1575 N CASE ST ORANGE 92867	No	735	299	No
185146	812331	9W HALO WESTERN OPCP L.P. D/B/A ANGELICA	451 SAN FERNANDO RD LOS ANGELES 90031	No	826	560	No
185282	238990	BKEP MATERIALS LLC - FONTANA	14929 SLOVER AV FONTANA 92337	No	2039	845	No
185504	333318	UNIFIRST CORP	13123 ROSECRANS AVE SANTA FE SPRINGS 90670	No	451	24	No
185509	622110	GLENDALE MEMORIAL HOSPITAL & HEALTH CTR	1420 S CENTRAL AV GLENDALE 91204	No	462	21	No
185630	424480	AVALON PACKING,AMERICAN FOOD PROCESSING	2501 W ROSECRANS AVE LOS ANGELES 90059	No	246	13	No
185801	211111	BERRY PETROLEUM COMPANY, LLC	25121 N SIERRA HWY SANTA CLARITA 91321	No	1384	6	No
186226	312111	REYES COCA-COLA BOTTLING, LLC	1338 E 14TH ST LOS ANGELES 90021	No	235	235	No

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186255	312111	REYES COCA-COLA BOTTLING, LLC	1321 E 14TH ST LOS ANGELES 90021	No	232	232	No
186291	312111	REYES COCA-COLA BOTTLING, LLC	11536 PATTON RD. DOWNEY 90241	No	568	137	No
186424	333318	SUEZ WTS SERVICES USA, INC	11689 PACIFIC AV FONTANA 92335	No	2110	1098	No
186621	722513	MODU FOOD SERVICE INC	5050 EVERETT CT VERNON 90058	No	761	761	No
186836	Unknown	GAMBOL PET USA	20343 HARVILL AVE PERRIS 92570	No	1167	319	No
187119	Unknown	MERIDIAN PARKWAY CAMPUS	14950 INNOVATION DR RIVERSIDE 92518	No	1455	903	RIV
187165	Unknown	ALTAIR PARAMOUNT, LLC	14700-14708 DOWNEY AV PARAMOUNT 90723	No	298	3	No
187180	Unknown	KIRKHILL MANUFACTURING COMPANY	2500,2525 THOMPSON ST LONG BEACH 90805	No	425	106	No
187258	Unknown	LEE KUM KEE	14515 DON JULIAN RD CITY OF INDUSTRY 91746	No	869	570	No
187272	Unknown	MCGUFF PHARMACEUTICALS INC	4040 W CARRIAGE DR SANTA ANA 92704	No	1521	164	No
187354	Unknown	CAPTEK PHARMA	14535 INDUSTRY CIR LA MIRADA 90638	No	1864	497	No
187823	Unknown	KIRKHILL INC	300 E CYPRESS ST BREA 92821	No	689	140	No
187872	Unknown	T.I. COMMERCE LLC	19001 S WESTERN AVE TORRANCE 90501	No	681	393	64CL
187885	Unknown	SMITHFIELD PACKAGED MEATS CORP	3049 E VERNON AVE VERNON 90058	No	1157	1088	No
187888	Unknown	SMITHFIELD PACKAGED MEATS CORP	3883 S SOTO ST VERNON 90058	No	1144	1075	No
187890	Unknown	SMITHFIELD PACKAGED MEATS CORP	2750 E 37TH ST VERNON 90058	No	1130	1064	No
188010	Unknown	MEDICO PROFESSIONAL LINEN SERVICE	2654 SEQUOIA DR SOUTH GATE 90280	No	439	5	No
188064	Unknown	HOLLYWOOD PARK LAND COMPANY LLC	1050 S PRAIRIE AVE INGLEWOOD CA 90301	No	972	185	LAX
188199	Unknown	SMG	4000 E ONTARIO CENTER PKY ONTARIO CA 91764	No	669	325	ONT
188265	Unknown	CJ FOODS MANUFACTURING BEAUMONT CORP	415 NICHOLAS ROAD BEAUMONT CA 92223	No	1170	821	No
188437	Unknown	CHAI FIVE LAUNDRY SERVICES LLC	640 E WARDLOW RD LONG BEACH CA 90807	No	204	64	LGB
188487	Unknown	505 NORTH BRAND OWNER LLC.	505 N BRAND BLVD GLENDALE CA 91203	No	594	164	GJC
800202	512110	UNIVERSAL CITY STUDIOS, LLC.	3900 LANKERSHIM/100 UNI CTY PL UNIVERSAL CITY 91608	Yes	1440	375	No
800212	622110	POMONA VALLEY COMM HOSP (EIS USE)	1798 N GAREY AV POMONA 91767	Yes	684	0	POC
800214	221320	LA CITY, SANITATION BUREAU (HTP)	12000 VISTA DEL MAR PLAYA DEL REY 90293	No	2047	700	No
800234	611310	LOMA LINDA UNIV	10935 PARKLAND AV LOMA LINDA 92350	No	546	126	No
800236	221320	LA CO. SANITATION DIST	24501 S FIGUEROA ST CARSON 90745	Yes	1109	407	No
800265	611310	UNIV OF SO CAL (EIS & NSR USE ONLY)	MCLINTOCK ST, W 34TH, CHILD'S LOS ANGELES 90089	No	161	0	No
800288	611310	UNIV CAL IRVINE (NSR USE ONLY)	JAMBOREE, CAMPUS, BRIDGE ETC. IRVINE 92697	No	922	312	No
800289	325412	ALLERGAN INC	18600 VON KARMAN & 2525 DUPONT IRVINE 92612	No	1709	146	SNA
800312	622110	LA CO HARBOR-UCLA MEDICAL CENTER	1000 W CARSON & 1124 W CARSON TORRANCE 90502	No	438	21	No
800353	622110	HUNTINGTON MEMORIAL HOSPITAL	160 CONGRESS, 100 W CALIF, 720 F PASADENA 91105	No	694	84	No
800386	922140	LA CO., SHERIFF DEPT	29300 THE OLD RD SAUGUS 91384	No	850	418	No
800387	611310	CAL INST OF TECH	650 S WILSON PASADENA 91106	No	127	127	No
800429	622110	KAISER FOUNDATION HOSPITAL	1550 N EDGEMONT ST LOS ANGELES 90027	No	238	35	No
550	921190	LA CO., INTERNAL SERVICE DEPT	301 N BROADWAY LOS ANGELES 90012	No	541	388	No
2418	322211	FRUIT GROWERS SUPPLY CO	225 S WINEVILLE ROAD ONTARIO 91761	No	4067	1088	No
2825	311421	MCP FOODS INC	424,425 S ATCHISON ST ANAHEIM 92805	No	777	0	No
3704	324121	ALL AMERICAN ASPHALT, UNIT NO.01	1776 ALL AMERICAN WAY CORONA 92879	No	998	404	No
5973	486210	SO CAL GAS CO	25205 W RYE CANYON ROAD VALENCIA 91355	No	882	724	No
7411	331222	DAVIS WIRE CORP	5555 IRWINDALE AV IRWINDALE 91706	No	1910	682	No
8582	221210	SO CAL GAS CO/PLAYA DEL REY STORAGE FAC	8141 GULANA AV PLAYA DEL REY 90293	No	726	0	LAX
14049	311824	MARUCHAN INC	1902 DEERE AV IRVINE 92606	No	1456	496	No
16660	336414	THE BOEING COMPANY	5301 BOLSA AVE HUNTINGTON BEACH 92647	Yes	1371	502	No
21598	812331	ANGELICA TEXTILE SERVICES	1575 N CASE ST ORANGE 92867	No	687	332	No
38872	311111	MARS PETCARE U.S., INC.	2765 LEXINGTON WY SAN BERNARDINO 92407	No	1371	182	No
40483	326130	NELCO PROD. INC	1411 E ORANGETHORPE AV FULLERTON 92831	No	1382	629	No
42630	325120	PRAXAIR INC	5705 AIRPORT DR ONTARIO 91761	No	3568	1746	No
50098	311613	D&D DISPOSAL INC, WEST COAST RENDERING CO	4105 BANDINI BL VERNON 90023	No	1419	1365	No

Facility ID	NAICS	Facility Name	Address	On List per Government Code 65962.5 (Envirostor)?	Distance from School (meters)	Distance from Sensitive Receptor (meters)	Airport within 2 miles (code)
62548	322130	THE NEWARK GROUP, INC.	6001 S EASTERN AV COMMERCE 90040	No	1053	369	No
63180	311613	DARLING INGREDIENTS INC.	2626,2643 E 25TH ST LOS ANGELES 90058	No	1432	1144	No
107654	212321	CALMAT CO	16005 FOOTHILL BLVD IRWINDALE 91706	No	1812	945	No
107656	324121	CALMAT CO	11447 TUXFORD ST SUN VALLEY 91352	No	1437	637	No
115241	334220	THE BOEING COMPANY	2260,2060,2030,2010,2012,2030,2060 IMP H EL SEGUNDO 90245	No	1072	188	No
115563	332812	NCI GROUP INC., DBA, METAL COATERS OF CA	9133 CENTER AVE RANCHO CUCAMONGA 91730	Yes	1382	484	No
117227	722511	SHCI SM BCH HOTEL LLC, LOEWS SM BCH HOTE	1700 OCEAN AV SANTA MONICA 90401	No	747	60	No
117290	325412	B BRAUN MEDICAL, INC	2525 MCGAW AVE. IRVINE 92614	No	715	267	No
122666	313310	A'S MATCH DYEING & FINISHING	2522 E 37TH ST VERNON 90058	No	658	600	No
123774	331492	HERAEUS PRECIOUS METALS NO. AMERICA, LLC	13429 ALONDRA BL. SANTA FE SPRINGS 90670	No	1118	425	No
130211	322121	PAPER-PAK INDUSTRIES	1941 WHITE AV LA VERNE 91750	No	1165	0	POC
137471	325414	GRIFOLS BIOLOGICALS INC	5555 VALLEY BLVD LOS ANGELES 90032	No	1120	97	No
138568	332111	CALIFORNIA DROP FORGE, INC	1033 ALHAMBRA AV LOS ANGELES 90012	No	307	140	No
141295	313310	LEKOS DYE AND FINISHING, INC	3131 HARCOURT ST COMPTON 90221	No	591	121	No
142267	331512	FS PRECISION TECH LLC	3025 E VICTORIA ST COMPTON 90221	No	478	224	No
144455	326113	LIFOAM INDUSTRIES, LLC	2340 E 52ND ST VERNON 90058	No	739	669	No
169754	211111	SO CAL HOLDING, LLC	20101 GOLDENWEST ST HUNTINGTON BEACH 92648	No	771	6	No
171960	322211	TIN, INC. DBA INTERNATIONAL PAPER	5110 JURUPA ONTARIO 91761	No	4004	1508	No
183564	531210	ONNI TIMES SQUARE LP	202 W 1ST ST, LOS ANGELES 90012	No	938	460	No
800037	324191	DEMENNO/KERDOON	2000 N ALAMEDA ST COMPTON 90222	Yes	480	108	No
800067	334220	THE BOEING COMPANY	IMPERIAL, MAPLE,NASH,& SELBY EL SEGUNDO 90245	No	631	444	No
800335	488111	LA CITY, DEPT OF AIRPORTS	275 CENTER WAY LOS ANGELES 90045	No	1559	1453	No
800338	322211	SPECIALTY PAPER MILLS INC	8834 & 8844 S MILLERGORVE DR SANTA FE SPRINGS 90670	No	660	103	No

## **APPENDIX E**

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### **Ammonia Storage Calculations**

## Hazards Assessment for PARs 1146 series and PR 1100 - SCR's

Summary						
Facility	Monthly Aq. NH3 Needed (gal/month)	Sized for Tank	Typical Tank Sizes to Hold NH3 (gallons)	RMP Value (in miles)	Distance (feet)	Significant?
1	401.98	603	1,000	0.2	1056	No
2	214.19	321	500	0.1	528	Yes
3	981.89	1,473	2,000	0.2	1056	No
4	955.22	1,433	2,000	0.2	1056	No
5	1370.37	2,056	3,900	0.3	1584	Yes
6	6455.27	9,683	10,000	0.6	3168	Yes
7	339.99	510	1,000	0.2	1056	No
8	1860.51	2,791	3,900	0.3	1584	No
9	565.23	848	1,000	0.2	1056	Yes
10	1217.88	1,827	2,000	0.2	1056	No
11	1042.07	1,563	2,000	0.2	1056	Yes
12	934.97	1,402	2,000	0.2	1056	Yes
13	566.42	850	1,000	0.2	1056	No
14	1011.43	1,517	2,000	0.2	1056	Yes
15	119.00	178	250	0.1	528	No
16	296.07	444	500	0.1	528	No
17	297.49	446	500	0.1	528	No
18	486.47	730	1,000	0.2	1056	No
19	177.93	267	500	0.1	528	No
20	355.71	534	1,000	0.2	1056	Yes
21	1130.47	1,696	2,000	0.2	1056	No
22	3138.28	4,707	6,565	0.4	2112	No
23	340.33	510	1,000	0.2	1056	Yes
24	420.40	631	1,000	0.2	1056	No
25	690.67	1,036	2,000	0.2	1056	Yes
26	2487.31	3,731	3,900	0.3	1584	No
27	942.90	1,414	2,000	0.2	1056	Yes
28	652.78	979	1,000	0.2	1056	No
29	935.65	1,403	2,000	0.2	1056	Yes
30	1334.57	2,002	3,900	0.3	1584	Yes
31	451.51	677	1,000	0.2	1056	No
32	1211.27	1,817	2,000	0.2	1056	No

**Notes:**

- Storage tanks should be sized to hold at least 1.5 times (<https://www.tannerind.com/sto-aqua-ammonia.html>)
- Tank Size Dimensions (Typical): <https://ammoniatanks.com/>; <https://www.epa.gov/sites/production/files/2013-11/documents/appendix-f1.pdf>
- RMP\*Comp run at 77 degrees F
- Assume square footage of building enclosure is twice the size of the O.D. and length of the tank

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
1	20.9816	0.0105

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	20.9816	2	0.4561	-	-	-
Aqueous Ammonia	NH3	17	-	4	0.9122	15.5082	1.05	16.2836

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	2.11	770.17	64.18
Water	H2O	18	81%	4.5	0.80	8.345	11.11	4053.53	337.79
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>13.22</b>	<b>4823.70</b>	<b>401.98</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
2	11.1801	0.0056

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	11.1801	2	0.2430	-	-	-
Aqueous Ammonia	NH3	17	-	4	0.4861	8.2636	1.05	8.6767

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	1.12	410.39	34.20
Water	H2O	18	81%	4.5	0.80	8.345	5.92	2159.93	179.99
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>7.04</b>	<b>2570.32</b>	<b>214.19</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
3	51.2510	0.0256

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	51.2510	2	1.1142	-	-	-
Aqueous Ammonia	NH3	17	-	4	2.2283	37.8812	1.05	39.7753

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	5.15	1881.27	156.77
Water	H2O	18	81%	4.5	0.80	8.345	27.13	9901.41	825.12
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>32.28</b>	<b>11782.68</b>	<b>981.89</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
4	49.8591	0.0249

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	49.8591	2	1.0839	-	-	-
Aqueous Ammonia	NH3	17	-	4	2.1678	36.8524	1.05	38.6950

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	5.01	1830.17	152.51
Water	H2O	18	81%	4.5	0.80	8.345	26.39	9632.50	802.71
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>31.40</b>	<b>11462.67</b>	<b>955.22</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
5	71.5283	0.0358

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	71.5283	2	1.5550	-	-	-
Aqueous Ammonia	NH3	17	-	4	3.1099	52.8687	1.05	55.5122

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	7.19	2625.58	218.80
Water	H2O	18	81%	4.5	0.80	8.345	37.86	13818.86	1151.57
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>45.05</b>	<b>16444.44</b>	<b>1370.37</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
6	336.9413	0.1685

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	336.9413	2	7.3248	-	-	-
Aqueous Ammonia	NH3	17	-	4	14.6496	249.0436	1.05	261.4958

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	33.89	12368.08	1030.67
Water	H2O	18	81%	4.5	0.80	8.345	178.34	65095.13	5424.59
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>212.23</b>	<b>77463.21</b>	<b>6455.27</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
7	17.7462	0.0089

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	17.7462	2	0.3858	-	-	-
Aqueous Ammonia	NH3	17	-	4	0.7716	13.1168	1.05	13.7726

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	1.78	651.41	54.28
Water	H2O	18	81%	4.5	0.80	8.345	9.39	3428.47	285.71
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>11.18</b>	<b>4079.87</b>	<b>339.99</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
8	97.1120	0.0486

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	97.1120	2	2.1111	-	-	-
Aqueous Ammonia	NH3	17	-	4	4.2223	71.7784	1.05	75.3673

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	9.77	3564.68	297.06
Water	H2O	18	81%	4.5	0.80	8.345	51.40	18761.48	1563.46
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>61.17</b>	<b>22326.16</b>	<b>1860.51</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
9	29.5031	0.0148

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	29.5031	2	0.6414	-	-	-
Aqueous Ammonia	NH3	17	-	4	1.2827	21.8066	1.05	22.8969

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	2.97	1082.97	90.25
Water	H2O	18	81%	4.5	0.80	8.345	15.62	5699.82	474.99
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>18.58</b>	<b>6782.79</b>	<b>565.23</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
10	63.5686	0.0318

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	63.5686	2	1.3819	-	-	-
Aqueous Ammonia	NH3	17	-	4	2.7639	46.9855	1.05	49.3348

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	6.39	2333.41	194.45
Water	H2O	18	81%	4.5	0.80	8.345	33.65	12281.10	1023.42
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>40.04</b>	<b>14614.51</b>	<b>1217.88</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
11	54.3921	0.0272

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	54.3921	2	1.1824	-	-	-
Aqueous Ammonia	NH3	17	-	4	2.3649	40.2029	1.05	42.2130

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	5.47	1996.57	166.38
Water	H2O	18	81%	4.5	0.80	8.345	28.79	10508.25	875.69
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>34.26</b>	<b>12504.81</b>	<b>1042.07</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
12	48.8021	0.0244

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	48.8021	2	1.0609	-	-	-
Aqueous Ammonia	NH3	17	-	4	2.1218	36.0711	1.05	37.8746

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	4.91	1791.37	149.28
Water	H2O	18	81%	4.5	0.80	8.345	25.83	9428.28	785.69
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>30.74</b>	<b>11219.65</b>	<b>934.97</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
13	29.5650	0.0148

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	29.5650	2	0.6427	-	-	-
Aqueous Ammonia	NH3	17	-	4	1.2854	21.8524	1.05	22.9450

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	2.97	1085.24	90.44
Water	H2O	18	81%	4.5	0.80	8.345	15.65	5711.80	475.98
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>18.62</b>	<b>6797.04</b>	<b>566.42</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
14	52.7930	0.0264

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	52.7930	2	1.1477	-	-	-
Aqueous Ammonia	NH3	17	-	4	2.2953	39.0209	1.05	40.9719

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	5.31	1937.87	161.49
Water	H2O	18	81%	4.5	0.80	8.345	27.94	10199.30	849.94
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>33.25</b>	<b>12137.16</b>	<b>1011.43</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
15	6.2112	0.0031

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	6.2112	2	0.1350	-	-	-
Aqueous Ammonia	NH3	17	-	4	0.2701	4.5909	1.05	4.8204

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	0.62	227.99	19.00
Water	H2O	18	81%	4.5	0.80	8.345	3.29	1199.96	100.00
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>3.91</b>	<b>1427.96</b>	<b>119.00</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
16	15.4540	0.0077

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	15.4540	2	0.3360	-	-	-
Aqueous Ammonia	NH3	17	-	4	0.6719	11.4225	1.05	11.9936

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	1.55	567.27	47.27
Water	H2O	18	81%	4.5	0.80	8.345	8.18	2985.62	248.80
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>9.73</b>	<b>3552.89</b>	<b>296.07</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
17	15.5279	0.0078

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	15.5279	2	0.3376	-	-	-
Aqueous Ammonia	NH3	17	-	4	0.6751	11.4772	1.05	12.0510

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	1.56	569.98	47.50
Water	H2O	18	81%	4.5	0.80	8.345	8.22	2999.91	249.99
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>9.78</b>	<b>3569.89</b>	<b>297.49</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
18	25.3919	0.0127

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	25.3919	2	0.5520	-	-	-
Aqueous Ammonia	NH3	17	-	4	1.1040	18.7679	1.05	19.7063

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	2.55	932.06	77.67
Water	H2O	18	81%	4.5	0.80	8.345	13.44	4905.56	408.80
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>15.99</b>	<b>5837.62</b>	<b>486.47</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
19	9.2872	0.0046

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	9.2872	2	0.2019	-	-	-
Aqueous Ammonia	NH3	17	-	4	0.4038	6.8644	1.05	7.2077

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	0.93	340.90	28.41
Water	H2O	18	81%	4.5	0.80	8.345	4.92	1794.23	149.52
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>5.85</b>	<b>2135.13</b>	<b>177.93</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
20	18.5670	0.0093

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	18.5670	2	0.4036	-	-	-
Aqueous Ammonia	NH3	17	-	4	0.8073	13.7234	1.05	14.4096

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	1.87	681.54	56.79
Water	H2O	18	81%	4.5	0.80	8.345	9.83	3587.03	298.92
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>11.69</b>	<b>4268.57</b>	<b>355.71</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
21	59.0061	0.0295

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	59.0061	2	1.2827	-	-	-
Aqueous Ammonia	NH3	17	-	4	2.5655	43.6132	1.05	45.7939

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	5.93	2165.93	180.49
Water	H2O	18	81%	4.5	0.80	8.345	31.23	11399.65	949.97
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>37.17</b>	<b>13565.58</b>	<b>1130.47</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
22	163.8066	0.0819

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	163.8066	2	3.5610	-	-	-
Aqueous Ammonia	NH3	17	-	4	7.1220	121.0745	1.05	127.1282

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	16.47	6012.84	501.07
Water	H2O	18	81%	4.5	0.80	8.345	86.70	31646.50	2637.21
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>103.18</b>	<b>37659.34</b>	<b>3138.28</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
23	17.7640	0.0089

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	17.7640	2	0.3862	-	-	-
Aqueous Ammonia	NH3	17	-	4	0.7723	13.1299	1.05	13.7864

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	1.79	652.06	54.34
Water	H2O	18	81%	4.5	0.80	8.345	9.40	3431.89	285.99
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>11.19</b>	<b>4083.95</b>	<b>340.33</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
24	21.9432	0.0110

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	21.9432	2	0.4770	-	-	-
Aqueous Ammonia	NH3	17	-	4	0.9541	16.2189	1.05	17.0298

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	2.21	805.47	67.12
Water	H2O	18	81%	4.5	0.80	8.345	11.61	4239.30	353.27
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>13.82</b>	<b>5044.76</b>	<b>420.40</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
25	36.0503	0.0180

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	36.0503	2	0.7837	-	-	-
Aqueous Ammonia	NH3	17	-	4	1.5674	26.6458	1.05	27.9781

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	3.63	1323.29	110.27
Water	H2O	18	81%	4.5	0.80	8.345	19.08	6964.71	580.39
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>22.71</b>	<b>8288.00</b>	<b>690.67</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
26	129.8283	0.0649

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	129.8283	2	2.8224	-	-	-
Aqueous Ammonia	NH3	17	-	4	5.6447	95.9600	1.05	100.7580

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	13.06	4765.60	397.13
Water	H2O	18	81%	4.5	0.80	8.345	68.72	25082.08	2090.17
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>81.77</b>	<b>29847.68</b>	<b>2487.31</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
27	49.2161	0.0246

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	49.2161	2	1.0699	-	-	-
Aqueous Ammonia	NH3	17	-	4	2.1398	36.3772	1.05	38.1960

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	4.95	1806.57	150.55
Water	H2O	18	81%	4.5	0.80	8.345	26.05	9508.28	792.36
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>31.00</b>	<b>11314.85</b>	<b>942.90</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
28	34.0727	0.0170

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	34.0727	2	0.7407	-	-	-
Aqueous Ammonia	NH3	17	-	4	1.4814	25.1842	1.05	26.4434

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	3.43	1250.70	104.23
Water	H2O	18	81%	4.5	0.80	8.345	18.03	6582.65	548.55
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>21.46</b>	<b>7833.36</b>	<b>652.78</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
29	48.8376	0.0244

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	48.8376	2	1.0617	-	-	-
Aqueous Ammonia	NH3	17	-	4	2.1234	36.0973	1.05	37.9022

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	4.91	1792.68	149.39
Water	H2O	18	81%	4.5	0.80	8.345	25.85	9435.14	786.26
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>30.76</b>	<b>11227.81</b>	<b>935.65</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
30	69.6598	0.0348

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	69.6598	2	1.5143	-	-	-
Aqueous Ammonia	NH3	17	-	4	3.0287	51.4877	1.05	54.0620

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	7.01	2557.00	213.08
Water	H2O	18	81%	4.5	0.80	8.345	36.87	13457.87	1121.49
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>43.88</b>	<b>16014.87</b>	<b>1334.57</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
31	23.5670	0.0118

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	23.5670	2	0.5123	-	-	-
Aqueous Ammonia	NH3	17	-	4	1.0247	17.4191	1.05	18.2900

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	2.37	865.07	72.09
Water	H2O	18	81%	4.5	0.80	8.345	12.47	4553.00	379.42
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>14.84</b>	<b>5418.07</b>	<b>451.51</b>

**Estimated Ammonia Use & Ammonia Tank Sizing**

**Amount of NOx Reductions Needed**

Facility	NOx Reductions (lb/day)	NOx Reductions (ton/day)
32	63.2238	0.0316

**Stoichiometric Equation**



**Amount of NH3 Needed (lb/day)**

Compound	Formula	Molecular Weight (MW)	NOx Reductions (lb/day)	Mole Ratio	Moles	NH3 Needed (lb/day)	Ammonia Slip Factor	Total NH3 Needed for Ammonia Slip (lb/day)
NOx	NO2	46	63.2238	2	1.3744	-	-	-
Aqueous Ammonia	NH3	17	-	4	2.7489	46.7306	1.05	49.0672

**Gallons Needed of NH3 (19% solution)**

Compound	Formula	Molecular Weight (MW)	Molecular Weight (MW)	Moles (%/MW)	Mole Fraction	Density (lb/gal)	Daily Solution Needed (gal/day)	Annual Solution Needed (gal/yr)	Monthly Solution Needed (gal/month)
Aqueous Ammonia	NH3	17	19%	1.12	0.20	7.72	6.36	2320.75	193.40
Water	H2O	18	81%	4.5	0.80	8.345	33.46	12214.48	1017.87
<b>Total</b>	-	-	<b>100%</b>	<b>5.62</b>	<b>1.00</b>	-	<b>39.82</b>	<b>14535.23</b>	<b>1211.27</b>

## **APPENDIX F**

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### **CEQA Scoping Comments and Responses to Comments**

**Introduction**

A CEQA scoping meeting was required for the proposed project pursuant to Public Resources Code Section 21083.9(a)(2) and was held at the SCAQMD’s Headquarters in conjunction with the Public Workshop on February 14, 2018. One oral, CEQA-related comment was made during the scoping meeting.

**Comment #1**

Mr. Shawn Tieu from Andeavor inquired about whether the CEQA document will analyze particulate emissions from the ammonia slip that may result from using ammonia in SCR systems to control NOx emissions.

**Response to Comment #1**

The analysis of ammonia slip can be found in Chapter 4, page 4-~~1946~~ of this Revised Draft SEA.

**APPENDIX G**

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**Comment Letters Received on the Original Draft SEA (comment period from April 3, 2018 to May 18, 2018) and Responses to Comments**

**Comment Letter #1: Shasta Gaughen, Ph.D./Pala Environmental Department**

**Comment Letter #2: Ray Teran/Viejas Band of Kumeyaay Indians**

**Comment Letter #3: Richard Vuong/OC Public Works**

**Comment Letter #4: Oyango A. Snell/Western States Petroleum Association**

## Comment Letter #1



**PALA ENVIRONMENTAL DEPARTMENT**  
PALA BAND OF MISSION INDIANS  
PMB 50, 35008 Pala Temecula Road | Pala, CA 92059  
Phone 760-891-3510 | Fax 760-742-3189

April 9, 2018

South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178  
Attention: Ms. Diana Thai (c/o CEQA)

Re: Recipient of CEQA Notices/Documents

Dear Ms. Thai,

The Pala Band of Mission Indians would like to thank you for the opportunity to review and comment on the SDAPCD's notices related to the California Environmental Quality Act (CEQA). According to your letter the SDAPCD participating as a lead agency on projects is very valuable information for us and we wish to continue receiving more communication from SCAQMD pertaining to CEQA. This letter therefore is to inform you that Pala currently has no objections to receiving more information from SCAQMD. Please keep us on your contacts list.

If you have any questions or comments, please contact Darold Wallick, Air Technician for the Pala Environmental Department, at [dwallick@palatribe.com](mailto:dwallick@palatribe.com) or 760-891-3540.

Sincerely,

A handwritten signature in black ink that reads "Shasta C. Gaughen". The signature is fluid and cursive.

Shasta C. Gaughen, PhD  
Environmental Director

**Response to Comment Letter #1 – Pala Environmental Department**

Thank you for your comment. No further response is required under CEQA.

## Comment Letter #2



P.O. Box 908  
Alpine, CA 91903  
#1 Viejas Grade Road  
Alpine, CA 91901

Phone: 6194453810  
Fax: 6194455337  
viejas.com

April 9, 2018

Barbara Radlein  
Program Supervisor  
South Coast AQMD  
21865 Copley Drive  
Diamond Bar, CA 91765

**Re: Emissions of Oxides of Nitrogen**

Dear Ms. Radlein,

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site has little cultural significance or ties to Viejas. We further recommend that you contact the tribe(s) closest to the cultural resources. We, however, request to be informed of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains in order for us to reevaluate our participation in the government-to-government consultation process.

Please do not hesitate to contact me if you have further questions. Please call Ernest Pingleton at 619-659-2314 or me at 619-659-2312, or email, epingleton@viejas-nsn.gov or rteran@viejas-nsn.gov. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Ray Tejan", is written over a horizontal line.

Ray Tejan, Resource Management  
VIEJAS BAND OF KUMEYAAY INDIANS

## **Response to Comment Letter #2 – Viejas Band of Kumeyaay Indians**

The comment received from Mr. Ray Teran indicates the proposed project would have little cultural significance or ties to the Viejas Band of Kumeyaay Indians. Mr. Teran has suggested staff contact the Tribe(s) closest to cultural resources about the proposed project and asked to be informed of any new developments. Staff notified all of the tribes on the Tribal Consultation List as provided by the Native American Heritage Commission of the availability of the original Draft SEA. After the comment period for the original Draft SEA ended, SCAQMD staff revised the project description and environmental analysis and prepared this Revised Draft SEA to reflect these changes. The Revised Draft SEA has been released for a 45-day public comment and review period. As part of the recirculation process, the staff has also notified all of the tribes on the list of the availability of the Revised Draft SEA.

### Comment Letter #3



April 26, 2018

NCL-18-021

Diana Thai  
c/o CEQA  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

**Subject:** Proposed Amended Rules 1146 Series and Adoption of Rule 1100

Dear Ms. Thai:

The County of Orange has reviewed the Draft Subsequent Environmental Assessment (SEA) for the Proposed Amended Rules 1146 Series and Adoption of Rule 1100 and has no comments at this time. We would like to be advised of any further developments on the project. Please continue to keep us on the distribution list for future notifications related to the project.

If you have any questions, please contact John Fyne-Nsofor in Development Services at (714) 667-8870.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Richard Vuong', is written over a faint blue circular stamp.

Richard Vuong, Manager, Planning Division  
OC Public Works Service Area/OC Development Services  
300 North Flower Street  
Santa Ana, California 92702-4048  
Richard.Vuong@ocpw.ocgov.com

### **Response to Comment Letter #3 – OC Public Works**

Thank you for your comment. Staff has also sent a notification regarding the availability of the Revised Draft SEA. Staff will continue to keep OC Public Works on the distribution list for future notifications related to the project. No further response is required under CEQA.

## Comment Letter #4



Western States Petroleum Association  
Credible Solutions • Responsive Service • Since 1907

**Oyango A. Snell, Esq.**  
General Counsel

May 1, 2018

Dr. Philip Fine  
Deputy Executive Officer, Planning and Rules  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Via e-mail at: [pfine@aqmd.gov](mailto:pfine@aqmd.gov)

Re: WSPA concerns with Proposed Amended Rules 1146, 1146.1 and 1146.2 and RECLAIM Landing Rules

Dear Dr. Fine:

Western States Petroleum Association (WSPA) appreciates the ability to participate in working groups related to the transition of the Regional Clean Air Incentives Market (RECLAIM) program and Proposed Amended Rules (PAR) 1146, 1146.1 and 1146.2 and the opportunity to make comments. WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in five western states including California. WSPA has been an active participant in air quality planning issues for over 30 years. WSPA-member companies operate petroleum refineries and other facilities in the South Coast Air Basin that are within the purview of the RECLAIM Program administered by the South Coast Air Quality Management District (AQMD or District).

PAR 1146, 1146.1 and 1146.2 represent essential "landing rules" which, if adopted, would apply to many WSPA member and non-member facilities which stand to be transitioned from RECLAIM's market-based structure into new command-and-control Best Available Retrofit Control Technology (BARCT) requirements. We have several comments and concerns with the District's current proposals for these PARs.

1. Staff has not conducted a BARCT assessment for the boilers, steam generators, or process heaters at facilities that would be transitioning from RECLAIM under PAR 1146, 1146.1 and 1146.2.

State law defines BARCT as "an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source." (Health & Saf. Code § 40406). Under the current proposal, District Staff has not conducted a BARCT assessment for boilers, steam generators, or process heaters located at facilities transitioning from RECLAIM to command and control. Rather, the current Staff proposal would simply extend the requirements of existing Rules 1146, 1146.1 and 1146.2 to this large number of facilities. These RECLAIM facilities were not part of the universe of facilities or equipment considered when the District adopted the BARCT requirements currently found in Rules 1146, 1146.1, or 1146.2. Therefore, the District has not analyzed the environmental, energy, and economic impacts for the entire class or category of source. The District cannot simply extend existing requirements to a new universe of facilities and equipment without first conducting new (or supplementary)

4-1

1415 L Street, Suite 900 Sacramento, CA 95814  
(916) 325-3115 (916) 716-8056 (mobile)  
[osnell@wspa.org](mailto:osnell@wspa.org) [www.wspa.org](http://www.wspa.org)

## Comment Letter #4 (continued)

Dr. Philip Fine  
May 1, 2018  
Page 2

BARCT determinations to demonstrate that proposed emission limitations and/or other requirements are both technically feasible and cost effective. Such a demonstration is required under California Health & Safety Code Section 40406.

RECLAIM facilities have been subject to market-based emissions control requirements since 1994. For this reason, the boilers, steam generators, and process heaters at these facilities will widely vary in terms of their physical configurations (e.g., basic equipment, emissions controls) and their emissions performance. Furthermore, many of the compliance requirements (e.g., averaging periods) in these rules differ from RECLAIM and cannot readily be applied to RECLAIM equipment and facilities. It is inappropriate to assume that the BARCT requirements, and supporting technical feasibility and cost effectiveness analyses, can apply equally and equitably to facility equipment that was not part of the original BARCT analysis. The District needs to demonstrate that those requirements or alternative BARCT requirements are both technically feasible and cost effective for this new group of facilities being transitioned from RECLAIM where they have operated for two plus decades.

4-1  
cont.

### 2. The environmental and socioeconomic impacts for PAR 1146, 1146.1 and 1146.2 should be considered in CEQA and Socioeconomic Assessments for the entire RECLAIM Transition Project.

Under the California Environmental Quality Act (CEQA), CEQA Guidelines and SCAQMD Rule 110, the SCAQMD Governing Board (as the lead agency under its certified regulatory program) is required to identify and evaluate environmental impacts of its rulemaking activities, as well as feasible means and alternatives to reduce, avoid or eliminate significant impacts. More specifically, “an accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR.” (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 193.) The entire project being proposed must be described in the EIR, and the project description must not minimize project impacts. (*City of Santee v. County of San Diego* (1989) 214 Cal.App.3d 1438, 1450.) Furthermore, CEQA forbids piecemealing<sup>1</sup> and the Court has explicitly found that it is inappropriate to divide a project into small segments in order to avoid preparing an EIR. (*Bozung v. Local Agency Formation Com.* (1975) 13 Cal.3d 263, 283-284.)

4-2

The California Supreme Court has also held that EIRs may need to address future environmental effects of a proposed project. In *Laurel Heights I*, the court set forth the standards for determining whether reasonably foreseeable future activities must be included in an EIR project description and for determining whether the impacts of those activities must be analyzed in the EIR:

“We hold that an EIR must include an analysis of the environmental effects of future expansion or other action if: (1) it is a reasonably foreseeable consequence of the initial project; and (2) the future expansion or action will be significant in that it will likely change the scope or nature of the initial project or its environmental effects.” (*Laurel Heights Improvement Assn. v. Regents of the University of California* (“*Laurel Heights I*”) (1988) 47 Cal.3d 376, 396.)

<sup>1</sup> “Piecemealing” or “segmenting” means dividing a project into two or more pieces and evaluating each piece in a separate environmental document. The rule of forbidding piecemealing arises from the definition of “project” under CEQA, where “project” is defined as “the whole of an action.” (14 Cal. Code Regs. § 15378(a).)

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## Comment Letter #4 (continued)

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As previously noted, PAR 1146, 1146.1 and 1146.2 are part of the District's larger effort to transition RECLAIM program facilities from RECLAIM's market-based design to a command-and-control design. This has been described to the Working Group, and documented in the District's staff report:

"The proposed amendments in Rules 1146, 1146.1 and 1146.2 initiate the transition of the NOx RECLAIM program to a command-and-control regulatory structure."<sup>2</sup>

This transition is also noted in the District's preliminary environmental assessment, which was drafted for compliance with the California Environmental Quality Act (CEQA):

"As a result of control measure CMB-05 from the 2016 AQMP and ABs 617 and 398, SCAQMD staff has been directed by the Governing Board to begin the process of transitioning equipment at NOx RECLAIM facilities from a facility permit structure to an equipment-based command-and-control regulatory structure per SCAQMD Regulation XI – Source Specific Standards. SCAQMD has begun this transition process by proposing amendments to Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; and Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters. Proposed Amended Rules (PAR) 1146, 1146.1, and 1146.2 (collectively referred to herein as the PAR 1146 series) will be the first set of rules to be amended to initiate the transition of equipment from the NOx RECLAIM program to a command-and-control regulatory structure while achieving BARCT."<sup>3</sup>

4-2  
cont.

We believe the District needs to prepare an environmental assessment that considers the entire RECLAIM Transition Project, its rulemakings and its other associated components, across impacted facilities and equipment. While the District prepared a Final Program Environmental Impact Report (Final Program EIR) regarding the 2016 AQMP (certified in March 2017), the analysis focused solely on the implementation of CMB-05. CMB-05 was a general directive from the 2016 AQMP, requiring an assessment of further NOx reductions from the RECLAIM program. (Final Program EIR for the 2016 Air Quality Management Plan (January 2017) p. 2-17.) More specifically, the Final Program EIR describes CMB-05 as "identif[y]ing a series of approaches, assessments, and analyses *that can be explored* to make the program more effective..." (Emphasis added. Final Program EIR at p. 2-17.) The Final Program EIR lists the control methodology of CMB-05 as "re-examination of the RECLAIM program, including voluntary opt-out and the additional control equipment and SCR/SNCR equipment." (Final Program EIR at p. 4.1-2.) Additionally, the Final Program EIR also sets forth the air quality impact, as it relates to CMB-05, as "potential emissions as a result of construction to install new equipment, generation of ammonia emissions from the operations of SCR/SNCR equipment, and potential air quality and GHG emissions from electricity to operate equipment." (Final Program EIR at p. 4.1-2.) The Final Program EIR never addresses the concept of, much less the impacts related to, sunsetting the RECLAIM program.

As shown above, CMB-05 lacks the specifications set forth in the RECLAIM Transition Project and its rulemakings. More importantly, the RECLAIM Transition Project had not yet even been created when CMB-05 was conceived or evaluated under the Final Program EIR. In fact, the RECLAIM Transition Project is still

<sup>2</sup> SCAQMD Preliminary Draft Staff Report for Proposed Amended Rule (PAR) 1146, PAR 1146.1, PAR 1146.2 and Proposed Rule 1100, January 2018, see page 3.

<sup>3</sup> SCAQMD Draft Subsequent Environmental Assessment for PAR 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and PR 1100 – Implementation Schedule for NOx Facilities, March 2018, page 1-2.

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currently under development on an ongoing basis, as District Staff continues to determine how to approach the applicability of several landing rules and whether some rules will even be included in the Project. Given the Final Program EIR's reliance on general directives like CMB-05 and the RECLAIM Transition Project not yet existing at the time of assessment, the Final Program EIR fails to properly evaluate the potential environmental impacts specifically related to the RECLAIM Transition Project and its rulemakings.

4-2  
cont.

As prior amendments to the Regulation XX program were considered under CEQA, we believe the overall group of RECLAIM Transition rulemakings<sup>4</sup> needs to be collectively considered under CEQA, as well. Rules to advance the RECLAIM Transition Project, including these proposed amendments to the 1146 series rules, should not be adopted and facilities should not be removed from RECLAIM until the District has completed and certified a CEQA assessment that evaluates the entire Project. Undertaking these RECLAIM Transition Project rulemakings in a fragmented manner constitutes a piecemealing of the project, which is explicitly forbidden by CEQA as described above. Given that the 1146 series rules are clearly part of the larger RECLAIM Transition Project, we believe the District's current draft CEQA document is improperly scoped.

Additionally, Health & Safety Code Section 40440.8 requires that “[w]henver the south coast district intends to propose the adoption, amendment, or repeal of a rule or regulation that will significantly affect air quality or emissions limitations, the district . . . shall perform an assessment of the socioeconomic impacts of the adoption, amendment, or repeal of the rule or regulation.” (Health & Saf. Code § 40440.8(a)). One of the specific factors that the Board is to take into consideration is the “availability and cost-effectiveness of alternatives to the rule or regulation . . .” (Health & Saf. Code § 40440.8(b)(4)). Health & Safety Code Section 40728.5 sets forth substantively identical requirements for all air districts. Similarly, Health & Safety Code Section 40440.5(c)(3) requires that if an environmental assessment is prepared in connection with a proposal to adopt, amend or repeal any rule or regulation, “the staff report shall also include social, economic, and public health analyses.” Stakeholders have not yet seen the District's draft socioeconomic assessment for these proposed rules, but we similarly recommend that the District conduct a program-level socioeconomic assessment that considers the socioeconomic effects of the overall RECLAIM Transition Project, including all associated Regulation XI rulemakings, and the 1146 series rules. This should be completed to support related Governing Board rule adoptions prior to the District transitioning individual RECLAIM facilities out of the program.

4-3

WSPA continues to be concerned that the RECLAIM transition could cause significant negative impacts to Southern California businesses, air quality and the regional economy. Similar to the Final Program EIR described above, the Final Socioeconomic Report for the 2016 AQMP analyzed the socioeconomic impacts for the 2016 AQMP, which focused solely on CMB-05. As discussed above, CMB-05 did not include a transition of the RECLAIM program to a command-and-control scheme like that described in the RECLAIM Transition Project or in the Project's associated rulemakings. Given that fact, the RECLAIM Transition rulemaking proposals cannot rely on the 2016 AQMP's Socioeconomic Assessment to cover the RECLAIM Transition Project.

### 3. The District needs to resolve critical questions about New Source Review (NSR) requirements and Federal NSR equivalency before transitioning individual RECLAIM facilities out of the program.

Under PAR 1146, 1146.1 and 1146.2, Staff has proposed that RECLAIM facilities covered by these rules would begin to be transitioned out of the RECLAIM program after the rules' adoption. This raises a number of serious concerns due to the lack of transition framework, particularly on the topic of NSR. There remain a number of complex questions (legal and otherwise) over how the District will satisfy EPA requirements to demonstrate equivalency with the Federal NSR program. Since a transition model has not been agreed upon between EPA and

4-4

<sup>4</sup> At this time, RECLAIM Transition project includes proposed amendments to Regulation XX rules, as well as PAR 301, PAR 1109 and/or PR 1109.1, PAR 1110.2, PAR 1118.1, PAR 1134, PAR 1135, PAR 1146, 1146.1, and 1146.2, and PAR 1147, 1147.1, and 1147.2.

### Comment Letter #4 (concluded)

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the District, facilities are left with uncertainty regarding their permit transition requirements and how future permit changes will impact their operations. RECLAIM facilities should not be transitioned from the program until SCAQMD has resolved these key NSR issues with EPA.

In light of these important issues, PAR 1146, 1146.1 and 1146.2 are not ready for the Governing Board's consideration. Any scheduled or proposed hearing should be delayed until these issues have been adequately addressed.

Thank you for considering these comments. We look forward to continuing to work with you and your Staff on this rulemaking which is critically important to stakeholders, as well as the regional air quality and economy.

If you have any questions, please contact me at (916) 325-3115, or by email at [osnell@wspa.org](mailto:osnell@wspa.org).

Sincerely,



cc: Cathy Reheis-Boyd, WSPA  
Patty Senecal, WSPA  
Bridget McCann, WSPA  
Wayne Nastri, SCAQMD  
Clerk of the Board, SCAQMD

4-4  
cont.

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## Response to Comment Letter #4 – Western States Petroleum Association

### *Response to Comment 4-1:*

Based on the feedback received on the prior analysis, staff conducted a new BARCT assessment for the boilers, steam generators, and process heaters that took into account equipment at both RECLAIM and non-RECLAIM facilities that will be subject to PAR 1146 and 1146.1. Based on those findings, staff has determined new BARCT recommendations for both RECLAIM and non-RECLAIM equipment. Results of the BARCT assessment, which includes a technology assessment, along with supporting cost-effectiveness analysis and incremental cost-effectiveness played a key role in the BARCT NOx emission level recommendations that were presented Working Group Meeting #5 on August 2, 2018 and updated rule language was presented at Working Group #6 on August 29, 2018 meeting on updated rule language on August 29<sup>th</sup>. The recommendations were also presented at a Public Workshop on September 20, 2018. Staff has encouraged facility operators to meet with staff regarding unique facility operations and, to the extent possible, were included in the staff recommendations.

### *Response to Comment 4-2:*

The commentator's suggestion that only one programmatic CEQA document should be prepared because future rule amendments to landing rules, or NSR (Regulation XIII) are related to PARs 1146 series and PR 1100 is incorrect and inconsistent with SCAQMD past practice. SCAQMD past practice in conducting CEQA analyses for rule projects such as PARs 1146 series and PR 1100 is that the project being contemplated undergoes its own CEQA analysis. All SCAQMD rules and regulations are related to each other in that they are adopted and/or amended to meet the clean air goals outlined in the 2016 AQMP. The CEQA document for the 2016 AQMP, the March 2017 Final Program EIR, contains the programmatic analyses of the overall effects of SCAQMD's clean air goals. However, CEQA neither requires the SCAQMD to simultaneously amend every rule that may be affected by a control measure in the 2016 AQMP nor requires one programmatic CEQA document to be prepared that encompasses every rule.

The decision to transition from NOx RECLAIM into a source-specific command-and-control regulatory structure was approved by the SCAQMD Governing Board as control measure CMB-05 in the 2016 AQMP. CMB-05 is required by the California Health and Safety Code to implement BARCT in the RECLAIM program as well as other stationary sources, which will be completed upon rule amendment or adoption of various landing rules. CMB-05 identifies a series of approaches that can be explored to make the RECLAIM program more effective in ensuring equivalency with command-and-control regulations implementing BARCT and to generate further NOx emissions reductions at RECLAIM facilities.

CMB-05 specifically contemplates the unwinding of the RECLAIM program (see Appendix IV-A, pp. IV-A-67 to IV-A-71 - <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/appendix-iv-a.pdf>).

Furthermore, the potential environmental impacts associated with the 2016 AQMP, including CMB-05, were specifically analyzed in the March 2017 Final Program EIR. In particular, the March 2017 Final Program EIR addressed the environmental effects of future expansion and other actions of reasonably foreseeable consequences for the RECLAIM Transition project and determined that the overall implementation has the potential to generate adverse environmental

impacts to seven topic areas: air quality; energy; hazards and hazardous materials; hydrology and water quality; noise; solid and hazardous waste; and transportation. More specifically the March 2017 Final Program EIR evaluated and identified the impacts from the installation and operation of additional control equipment, such as selective catalytic reduction (SCR) equipment, potentially resulting in construction emissions, increased electricity demand, hazards from the additional ammonia transport and use, increase in water use and wastewater discharge, changes in noise volume, generation of solid waste from construction and disposal of old equipment and catalyst replacements, as well as changes in traffic patterns and volume. The commentator has not identified any additional impact areas, mitigation, or project alternatives from the RECLAIM Transition project that were excluded from the analysis in the March 2017 Final Program EIR for the 2016 AQMP. In any event, the time to challenge the assessments for the analyses of March 2017 Final Program EIR for the 2016 AQMP relied upon has passed (see Public Resources Code Sections 21167 and 21167.2).

The environmental impacts of the entire RECLAIM Transition project were analyzed in the 2016 AQMP and the associated March 2017 Final Program EIR was a program level analysis. The SCAQMD has and will continue to evaluate each individual RECLAIM Transition rule that is developed pursuant to the 2016 AQMP, to determine if any additional CEQA review is required. This has been consistent with SCAQMD's past practice and is not considered piecemealing.

While PARs 1146 series and PR 1100 are part of SCAQMD's Regulation XX - Regional Clean Air Incentives Market (RECLAIM) and that other landing rules are scheduled to be amended in the future, separate CEQA analyses will be conducted for these future rule amendments. Table G-1 identifies several source-specific landing rules as identified by the SCAQMD in its monthly rule forecast report as scheduled to be undergoing separate, future rule amendments<sup>23</sup> from PARs 1146 series and PR 1100.

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<sup>23</sup> SCAQMD, Final Subsequent Environmental Assessment for PARs 2001 and 2002, September 2018, p. 1-6.

**Table G-1**  
**Rule Development Forecast for Source-Specific Rules**  
**Affected by NOx RECLAIM Transition**

<b>Rule Number</b>	<b>Rule Title</b>	<b>Rule Development Forecast (subject to change)</b>
1109.1	Emissions of Oxides of Nitrogen from Boilers and Process Heaters in Refineries	December 2019
1110.2	Emissions from Gaseous- and Liquid-Fueled Engines	1 <sup>st</sup> Quarter 2019
1118.1	Control of Emissions from Non-Refinery Flares	December 2018
1134	Emissions of Oxides of Nitrogen from Stationary Gas Turbines	1 <sup>st</sup> Quarter 2019
1135	Emissions of Oxides of Nitrogen from Electric Power Generating Systems	November 2018
1146	Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters	December 2018
1146.1	Emissions of Oxides of Nitrogen from Small Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters	
1146.2	Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters	
1147	NOx Reductions from Miscellaneous Sources	TBD 2019
1147.1	NOx Reductions from Metal Operations Facilities	TBD 2019
1147.2	NOx Reductions from Aggregate Facilities	TBD 2019
1153.1	Emissions of Oxides of Nitrogen from Commercial Food Ovens	TBD 2019

Key: TBD = to be determined

Pursuant to the SCAQMD’s Certified Regulatory Program (CEQA Guidelines Section 15251(l); codified in SCAQMD Rule 110 - the rule which implements the SCAQMD’s certified regulatory program), the SCAQMD typically prepares an Environmental Assessment (EA) to evaluate the environmental impacts for rule projects proposed for adoption or amendment. PARs 1146 series and PR 1100, are considered a “rule” project that is subject to CEQA under the SCAQMD’s Certified Regulatory Program.

The original and Revised Draft SEA for PARs 1146 series and PR 1100 rely on the previous CEQA analyses in: 1) the Final EAs that were certified for the September 2008 amendments to Rules 1146 and 1146.1 (referred to herein as the September 2008 Final EAs for Rules 1146 and 1146.1); 2) the Final EA that was certified for the May 2006 amendments to Rule 1146.2 (referred to herein as the May 2006 Final EA); and 3) the Final Program EIR that was certified for the March 2017 adoption of the 2016 AQMP (referred to herein as the March 2017 Final Program EIR), which is specifically allowed per CEQA Guidelines Section 15162. The preparation of the original and Revised Draft SEA for PARs 1146 series and PR 1100 in this manner in no way chops up the project into “bite-sized pieces” to avoid CEQA or obscure the effects of the project. To the contrary, both the original and Revised Draft SEA for PARs 1146 series and PR 1100 identify the previous CEQA analyses conducted, which already identified and analyzed significant adverse impacts, so as to not repeat or duplicate the information previously provided. The original and

Revised Draft SEA instead focus on the changes proposed in PARs 1146 series and PR 1100, which transition NO<sub>x</sub> RECLAIM facilities with applicable equipment units to a command-and-control regulatory structure because BARCT analyses have been conducted for these landing rules.

Also, the March 2017 Final Program EIR for the 2016 AQMP evaluated and identified the impacts from the installation and operation of additional control equipment, which would be the same type of equipment and impacts that would occur under the RECLAIM Transition. Furthermore, the December 2015 Final Program EA for NO<sub>x</sub> RECLAIM also evaluated and identified the impacts from the installation and operation of additional control equipment to comply with BARCT, which is equivalent to command-and-control requirements. Thus, the environmental impacts analysis of complying with BARCT would be the same whether NO<sub>x</sub> RECLAIM continued in its present form or if NO<sub>x</sub> RECLAIM facilities transition to a command-and-control regulatory structure. Thus, even though the RECLAIM transition language was added to the 2016 AQMP, no changes were required to the March 2017 Final Program EIR since the impacts associated with implementing BARCT were already evaluated.

***Response to Comment 4-3:***

Based on past practice, SCAQMD staff evaluates socioeconomic impacts for all command-and-control rules identified as landing rules, including impacts for the installation and operation of controls, as well as impacts for monitoring, reporting, and recordkeeping requirements. To be published in the forthcoming 30-day package (available October 2018) for the November 2, 2018 Governing Board Set Hearing will be the most recent PAR 1146 Series staff report and draft socioeconomic impact analysis. The Final Socioeconomic Report in the 2016 AQMP includes program-level benefit-cost and macroeconomic impact assessment of proposed and amended rules involving RECLAIM transition, and the socioeconomic impact assessment for all such rules undergo a project-level cost assessment that the Governing Board considers before the proposed rule or amendment is adopted.

***Response to Comment 4-4:***

Staff has given priority to resolve the NSR issues and are committed to working with the U.S. EPA to ensure a whole and functional NSR program. However, staff disagrees that the BARCT rulemakings that are currently underway in several categories should cease until amendments to the NSR program are adopted. Staff believes that the development and implementation of BARCT NO<sub>x</sub> emission requirement development and implementation can proceed on a parallel path, because it is possible for facilities to go through NSR permitting under current RECLAIM rules. Furthermore, many emission reduction projects as a result of implementing BARCT would not necessarily trigger NSR. RECLAIM transition framework has been outlined in PARs 2001 and 2002. PAR 2002 will provide an option for facilities to remain in RECLAIM for a limited time until future provisions in Regulation XIII pertaining to NSR are adopted. A facility that elects to remain in RECLAIM can offset NO<sub>x</sub> emission increases with RTCs, while obtaining offset exemptions for other pollutants, if eligible under Rule 1304 requirements. A facility that elects to exit RECLAIM would temporarily not be allowed access to the internal bank for NO<sub>x</sub> offsets. There are some RECLAIM facilities that have expressed interest in exiting RECLAIM and these facilities are primarily those that have shut down all of their equipment, but are still considered active facilities. Staff has initiated efforts to resolve NSR (Regulation XIII) and related permitting issue, any future amendments that are proposed to Regulation XIII will be accompanied by a CEQA and socioeconomic analysis.

Proposed Amended Rules 1146,  
1146.1, 1146.2 &  
Proposed Rule 1100

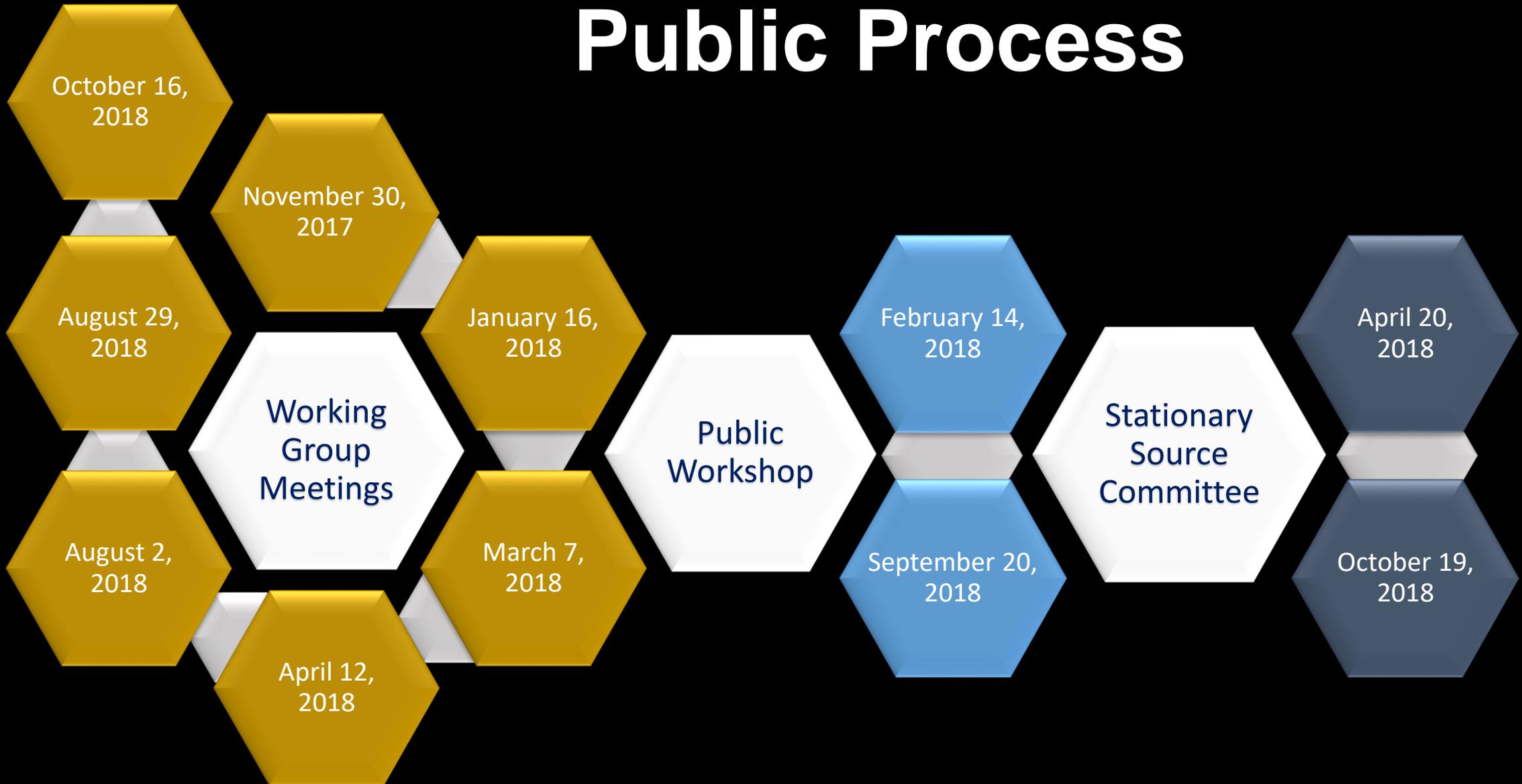
Governing Board Meeting  
December 7, 2018

# Background

- Proposed Amended Rules 1146, 1146.1, and 1146.2 apply to boilers, process heaters, and steam generators
- Implements 2016 AQMP CMB-05 and AB 617 Best Available Retrofit Control Requirements (BARCT) requirements
- Excludes units located at refineries and electricity generating facilities

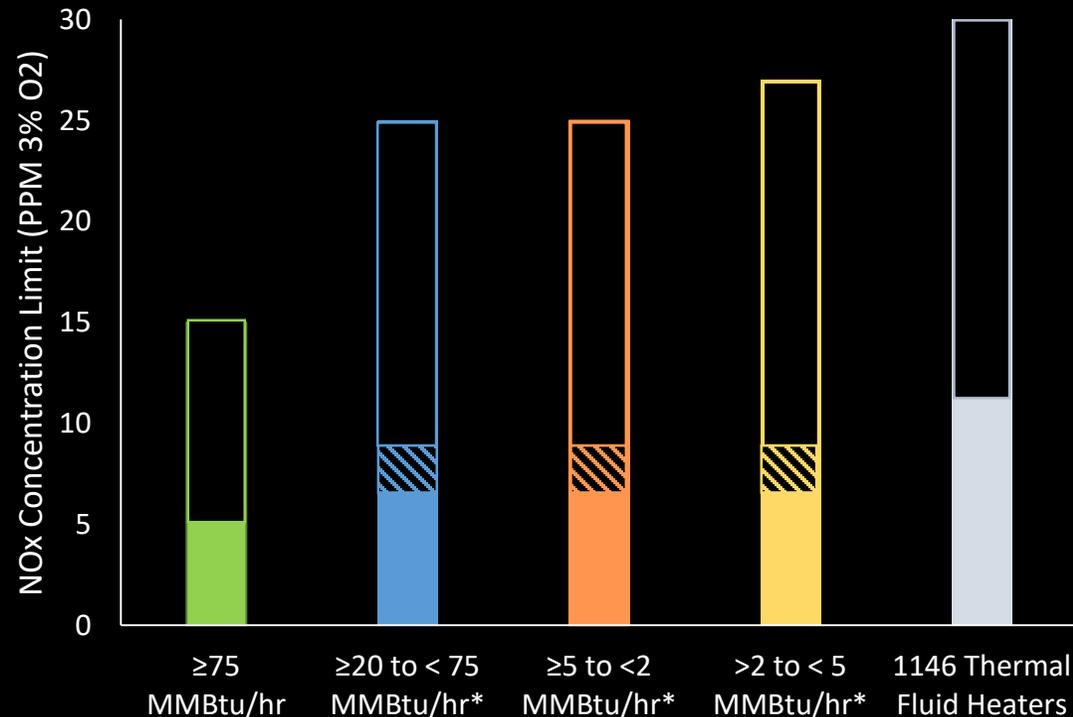


# Public Process



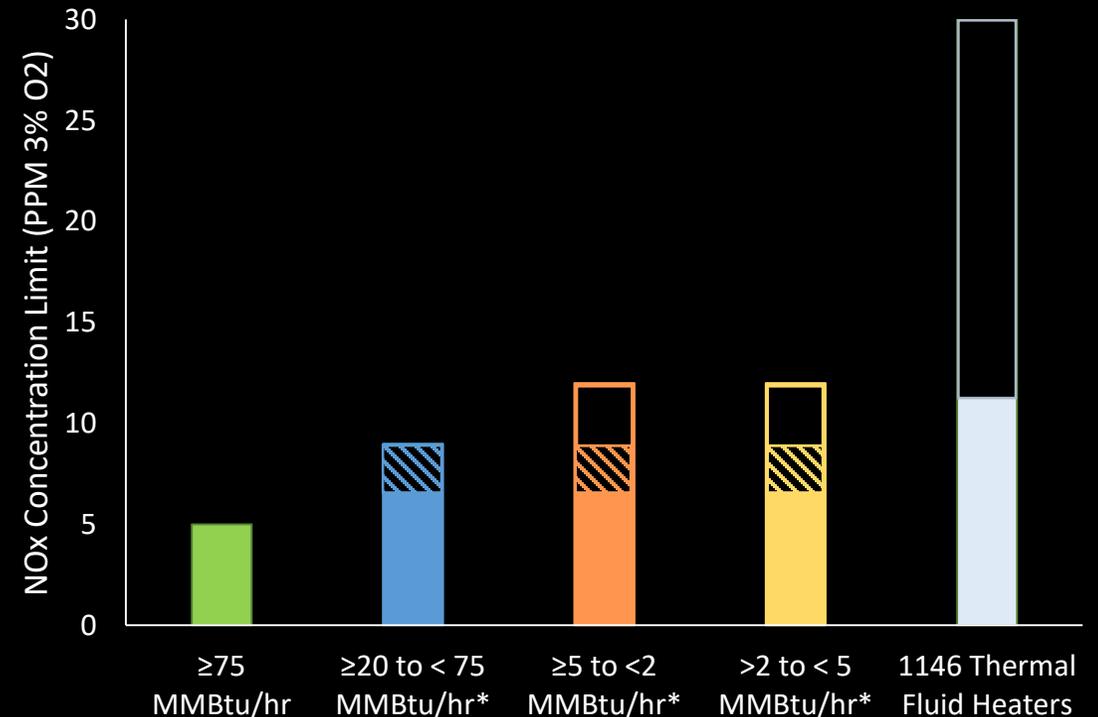
# PAR 1146 and 1146.1 Proposed NOx Emission Limits+ and Emission Reductions

RECLAIM\*\*



**Emission Reductions: 0.27 Tons per Day**

Non-RECLAIM



**Emission Reductions: 0.04 Tons per Day**

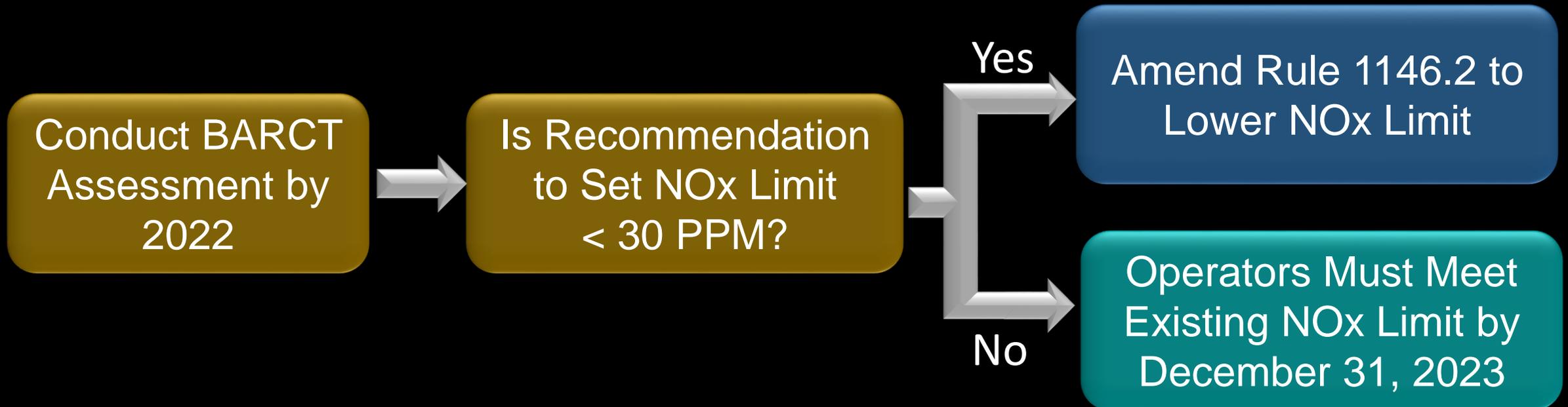
+ Add Ammonia Slip limit of 5 ppm for units with pollution control devices with ammonia emissions (such as SCR)

\* NOx limits depending if units baseline emissions and lower limits are for fire-tube boilers

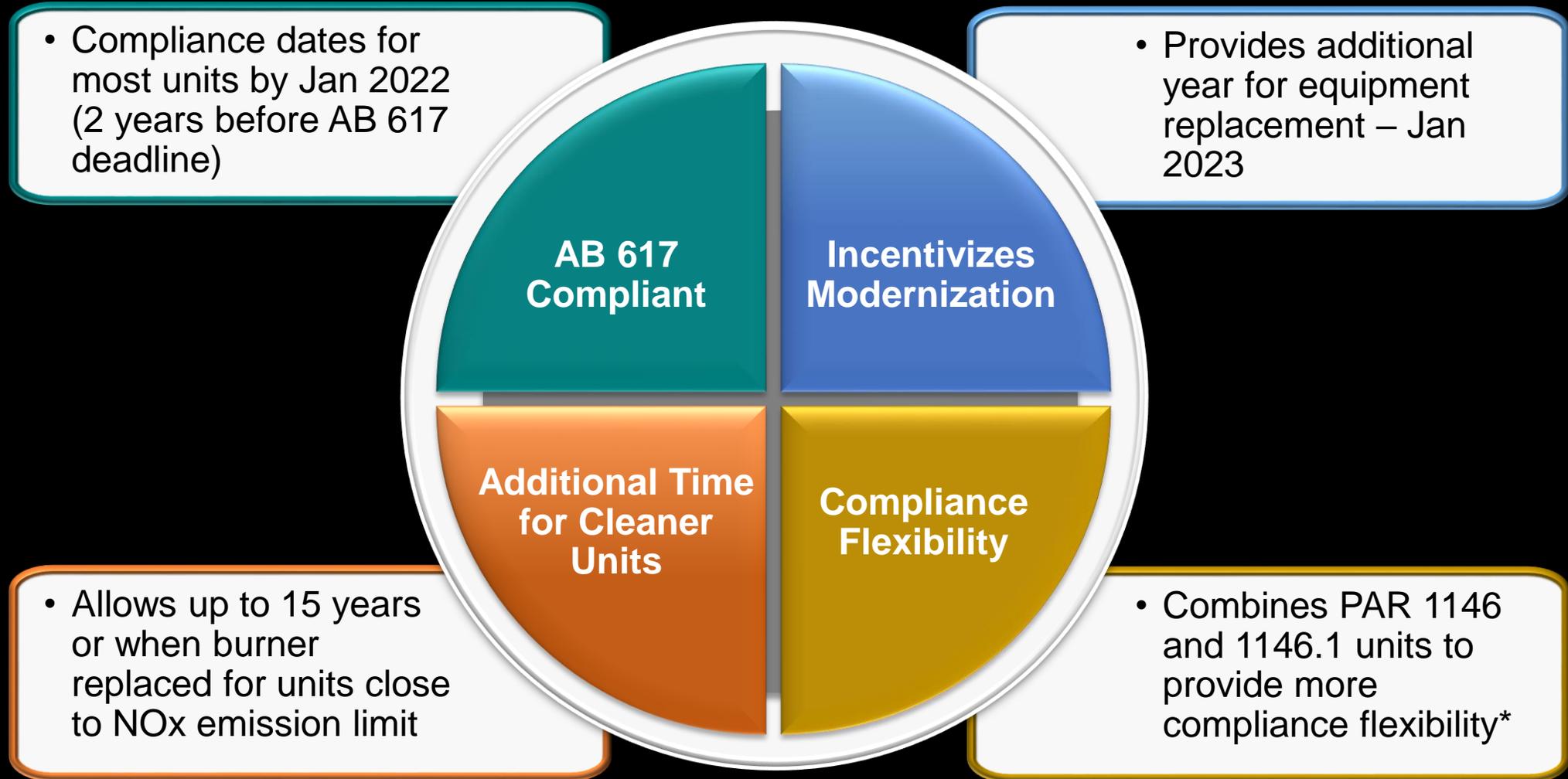
\*\* Average baseline NOx concentration levels

# Proposed Amended Rule 1146.2

- No changes to NOx concentration limit of 30 ppm at this time
- Commitment to conduct a technology assessment by January 1, 2022



# Key Elements of Proposed Rule 1100



\* Conducted analysis for facilities with multiple devices with other landing rules

# Monitoring, Reporting and Recordkeeping (MRR) Requirements

## Interim MRR Requirements in Proposed Rule 1100

Title V  
Facilities



Follow MRR  
requirements in  
Rule 2012

Non-Title V  
Facilities\*



Follow MRR  
requirements in  
PAR 1146/1146.1

## Proposed Rule 113

Will address MRRs for all  
RECLAIM facilities  
*Scheduled for late 2019*

\*Once becoming a former RECLAIM facility

# Key Remaining Issues – New Source Review

- **Comment:** Transition rules should not proceed without resolution of new source review (NSR) issues
- **Response:**
  - State law (AB 617) requires implementation of BARCT for facilities in the state greenhouse gas cap and trade program by December 31, 2023
  - RECLAIM facilities can begin implementing BARCT requirements while in RECLAIM
  - Rule 2002 provides an option for facilities to remain in RECLAIM for a limited time until future provisions in Regulation XIII pertaining to NSR are adopted
  - Staff is making progress on NSR issues with EPA

# Key Remaining Issues – 7 ppm Burner Retrofits

- **Comment:** Stakeholders expressed doubt that 7 ppm burner retrofits are commercially available in the market
- **Response:**
  - Three vendors stated that 7 ppm burner retrofits are available
  - 708 units (between 5 to 300 MMBtu/hr) in SJVAPCD are able to comply with 7 ppm limit using ultra low-NOx burners
  - More than 740 source test results from both SCAQMD and SJVAPCD support a 7 ppm NOx emission limit

# Key Remaining Issues – Cost Analysis

- **Comment:** One stakeholder expressed that their cost estimate is higher than staff's estimates
- **Response:**
  - Staff cost estimates are averages provided by five equipment vendors based on conventional equipment and standard installations
  - Facilities that might experience higher than average costs:
    - Operators that decide to stay with one specific vendor
    - Units that are highly specialized requiring specific engineering

# Recommended Actions

- Adopt Resolution:
  - Certifying Final Subsequent Environmental Assessment;
  - Amending Rules 1146, 1146.1 and 1146.2; and
  - Adopting Rule 1100

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 29

**PROPOSAL:** Determine that Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations Is Exempt from CEQA and Adopt Rule 1407.1 (*Continued from November 2, 2018 Board Meeting*)

**SYNOPSIS:** Proposed Rule 1407.1 is an information gathering rule that will require a one-time source test and submittal of information to quantify arsenic, cadmium, chromium, hexavalent chromium and nickel emissions from chromium alloy melting operations. Information obtained will be used to establish emission standards and other provisions. Proposed Rule 1407.1 also includes requirements for metals composition testing, recordkeeping, and reporting.

**COMMITTEE:** Stationary Source, September 21 and November 16, 2018, Reviewed

**RECOMMENDED ACTIONS:**

Adopt the attached Resolution:

1. Determining that Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations is exempt from the requirements of the California Environmental Quality Act; and
2. Adopting Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations.

Wayne Natri  
Executive Officer

## **Background**

Metal melting operations, such as smelting, tinning, galvanizing, and other miscellaneous processes where metals are processed in molten form, emit particulate matter, some of which are toxic air contaminants, including hexavalent chromium. Existing Rule 1407 – Emissions of Arsenic, Cadmium and Nickel from Non-Ferrous Metal Melting Operations, and Rule 1420 – Emissions Standard for Lead, currently address toxic air contaminant emissions from aluminum, aluminum alloys, brass, bronze, and lead melting operations. However, these rules do not regulate chromium alloys such as alloy steel, stainless steel, and super alloys. Proposed Rule (PR) 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations, fills a regulatory gap by addressing metal melting of chromium alloys at 14 facilities. PR 1407.1 is a source-specific rule that gathers information to quantify hexavalent chromium, arsenic, cadmium, and nickel emissions from chromium alloy melting operations such as foundries and other metal melting facilities. This information gathered is needed to identify the appropriate level of pollution control for a future rule amendment proposal.

## **Public Process**

Development of PR 1407.1 was conducted through a public process. SCAQMD has held seven working group meetings to discuss the provisions of the proposed rule. The Working Group originally met under Proposed Amended Rule (PAR) 1407 and had four Meetings. Based on industry stakeholder input, PAR 1407 was separated into two rulemakings: PAR 1407 and PR 1407.1. Staff has held three additional working group meetings since PR 1407.1 was separated. The seven working group meetings were held at the SCAQMD Headquarters in Diamond Bar on the following dates: September 5, 2017, November 9, 2017, January 30, 2018, April 25, 2018, June 6, 2018, July 10, 2018, and August 9, 2018. A Public Workshop was held on August 30, 2018. In addition, staff has also met individually with numerous facility operators.

## **Proposed Amendments**

PR 1407.1 applies to facilities that melt chromium alloys, which is defined as a metal that is an alloy steel, stainless steel, superalloy, or any metal that is at least 0.5% chromium by weight. One of the main provisions in PR 1407.1 is the requirement of a one-time source test. Source testing of different furnaces is needed to fully capture the emissions that occur during the metal melting process so staff can develop an appropriate proposed emission standard. It is typical when developing a rule for an unregulated source category where there are very few source tests available, for staff to conduct source tests at facilities to establish an appropriate emission standard. Multiple requests to the working group, industry association, and to individual facilities have been made for staff to conduct source tests at no expense to the facility; however, no operators have agreed to SCAQMD conducted source tests. PR 1407.1 includes an optional provision where the SCAQMD will conduct source tests for up to three facilities at no cost to the facility.

PR 1407.1 requires submittal of a source test protocol that will include identification of the test methods that will be used during the source test. The proposed rule specifies the accepted test methods for the various toxic air contaminants and particulate matter, and also allows the operator to submit an alternative test method, provided it is approved by the Executive Officer. PR 1407.1 also requires submittal of information regarding facility operations, number and type of furnaces, composition of metals melted, and recordkeeping for a 12-month period.

### **Key Issues**

Staff has worked with the Working Group, the California Metals Coalition, and the individual facilities to resolve key issues. At the request of industry representatives, the rulemaking was bifurcated for amendments to Rule 1407 and PR 1407.1. Staff agreed to collect additional emissions information for PR 1407.1 before proposing requirements for chromium alloy melting operations. There still remain two key issues: 1) Need and timing for PR 1407.1 and 2) Applicability of the Test Method 425 for testing hexavalent chromium from metal melting furnaces.

#### *Need and Timing for Proposed Rule 1407.1*

The California Metals Coalition and other industry stakeholders have commented that PR 1407.1 is not needed because staff has not shown that hexavalent chromium is formed during melting of chromium alloys and that staff should conduct testing at Cal Poly Pomona before proceeding with PR 1407.1. Staff has presented two SCAQMD source tests of metal melting furnaces and ten screening tests on metal heat treating and forging furnaces demonstrating that high-energy processes involving chromium alloys can generate hexavalent chromium emissions. Over the past month, staff has been working on a contract with Cal Poly Pomona to conduct emissions testing to provide additional information regarding the amount of hexavalent chromium generated during the melting process. PR 1407.1 is still needed to require source tests to quantify emissions on full scale production furnaces for the different types (electric or gas induction, vacuum induction, electric arc, crucible), and sizes of furnaces (up to 18,000 pounds as compared to Cal Poly Pomona's furnace which is a 48 pound electric induction furnace). Studies at Cal Poly Pomona could provide supplementary data and can be conducted in parallel with PR 1407.1. Waiting for the research to be completed would delay installation of pollution controls.

#### *Applicability of the Test Method 425*

The California Metals Coalition and other industry stakeholders have commented that CARB Method 425 – Determination of Total Chromium and Hexavalent Chromium Emissions from Stationary Sources has not been demonstrated to be applicable or appropriate for metal melting operations, and test method development should occur at Cal Poly Pomona. CARB Method 425 is CARB and U.S. EPA approved for determining hexavalent chromium and total chromium emissions from stationary sources. There is no evidence that CARB Method 425 is not an appropriate source test

method for metal melting operations. PR 1407.1 includes a provision for alternative sampling and analytical test methods with Executive Officer approval.

### **California Environmental Quality Act**

Pursuant to the California Environmental Quality Act (CEQA) and SCAQMD Rule 110, the SCAQMD, as lead agency for the proposed project, has reviewed PR 1407.1 pursuant to: 1) CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA. As provided in CEQA Guidelines Section 15306 - Information Collection, the proposed project is exempt because it will consist of basic data collection, research and resource evaluation activities and will not result in a serious or major disturbance to an environmental resource. CEQA Guidelines Section 15306 exempts such a project for information-gathering purposes, or as part of a study leading to future action which the agency has not yet taken. Staff has determined that it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is also considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule. Furthermore, the proposed project is considered categorically exempt because it contains requirements designed to protect or enhance the environment pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment. A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062 - Notice of Exemption. If the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

### **Socioeconomic Analysis**

The majority of the affected facilities are in the primary metal manufacturing sector (94%), including iron and steel mills and ferroalloy manufacturing, steel investment foundries, and steel foundries (except investment). The remaining facility is in fabricated metal product manufacturing. Of the 14 facilities identified, eight would be required to conduct source testing and all 14 facilities will be required to conduct Materials Composition Testing. Testing conducted in 2019 is expected to cost \$20,000 to \$30,000 per facility, based on vendor estimates. The total cost of Materials Composition Testing (nine materials across 14 facilities) is expected to be \$37,800. Additional recordkeeping requirements are expected to cost \$3,000 to \$5,000 per facility in 2019 only. In total, costs for all affected facilities are expected to range from \$240,000 to \$350,000, while the average cost per facility ranges from \$17,100 to \$25,000. Based on the relatively low cost of compliance, implementation of PR 1407.1 is expected to result in minimal jobs impact in the regional economy.

### **AQMP and Legal Mandates**

Pursuant to Health & Safety Code Section 40460 (a), the SCAQMD is required to adopt an AQMP demonstrating compliance with all federal regulations and standards. The SCAQMD is required to adopt rules and regulations that carry out the objectives of the AQMP. PR 1407.1 is an air toxics control measure (TXM-06) in the 2016 AQMP, but is not a control measure for attainment of state or federal regulations and standards. PR 1407.1 is needed to quantify toxic air contaminant emissions from chromium alloy melting operations, in preparation for potential future rulemaking to establish emission standards and other requirements.

### **Implementation and Resource Impacts**

Existing staff resources are adequate to implement the proposed amendments.

### **Attachments**

- A. Summary of Proposal
- B. Key Issues and Responses
- C. Rule Development Process
- D. Key Contacts List
- E. Resolution
- F. Proposed Rule 1407.1
- G. Final Staff Report for Proposed Rule 1407.1
- H. Notice of Exemption
- I. Board Meeting Presentation

## ATTACHMENT A

### SUMMARY OF PROPOSAL

#### Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations

##### Purpose

- Gather information and quantify hexavalent chromium, arsenic, cadmium, chromium, and nickel emissions from chromium alloy melting operations

##### Applicability

- Chromium alloy melting operations where chromium alloy is defined as a metal that is an alloy steel, stainless steel, superalloy, or any metal that is at least 0.5% chromium by weight

##### Requirements

- Submittal of a survey which identifies a facility's types of operations and processes performed, collect detailed furnace information and, if applicable, identify pollution controls and specify existing housekeeping procedures
- One-time source test for facilities that currently vent exhaust from chromium alloy melting operations to a control device
  - SCAQMD will conduct source test for three facilities at no cost to them
- One-time materials composition testing of raw materials, molten material, final product, slag, and dross, and if applicable, baghouse catch
- One year of keeping records of run hours and type and amount of materials processed for each furnace that processes chromium alloys; list of materials vendors; and baghouse catch information

##### Exemptions

- Equipment and operations subject to Rules 1420, 1420.1, or 1420.2
- Facilities that melt less than one ton per year of chromium alloys
- Furnaces with a capacity of 25 pounds or less

## ATTACHMENT B

### KEY ISSUES AND RESPONSES

#### Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations

The California Metals Coalition and some industry stakeholders have commented that Proposed Rule 1407.1 is not needed because staff has not shown that hexavalent chromium is formed during melting of chromium alloys and staff should conduct testing at Cal Poly Pomona before proceeding with Proposed Rule 1407.1.

- Two SCAQMD source tests of metal melting furnaces and ten screening tests on heat treating and forging furnaces indicate that hexavalent chromium emissions occur
- Proposed Rule 1407.1 is still needed to require source tests to quantify emissions on full scale production furnaces for the different types (electric or gas induction, vacuum induction, electric arc, crucible), that captures the full production and process of the melting and casting process, and representative sizes of furnaces (up to 18,000 pounds)
  - Cal Poly Pomona's furnace is a 48 pound electric induction furnace
- SCAQMD has initiated contracting with Cal Poly Pomona to conduct a parallel study to provide supplementary data
  - Waiting for the research to be completed would delay installation of pollution controls by years

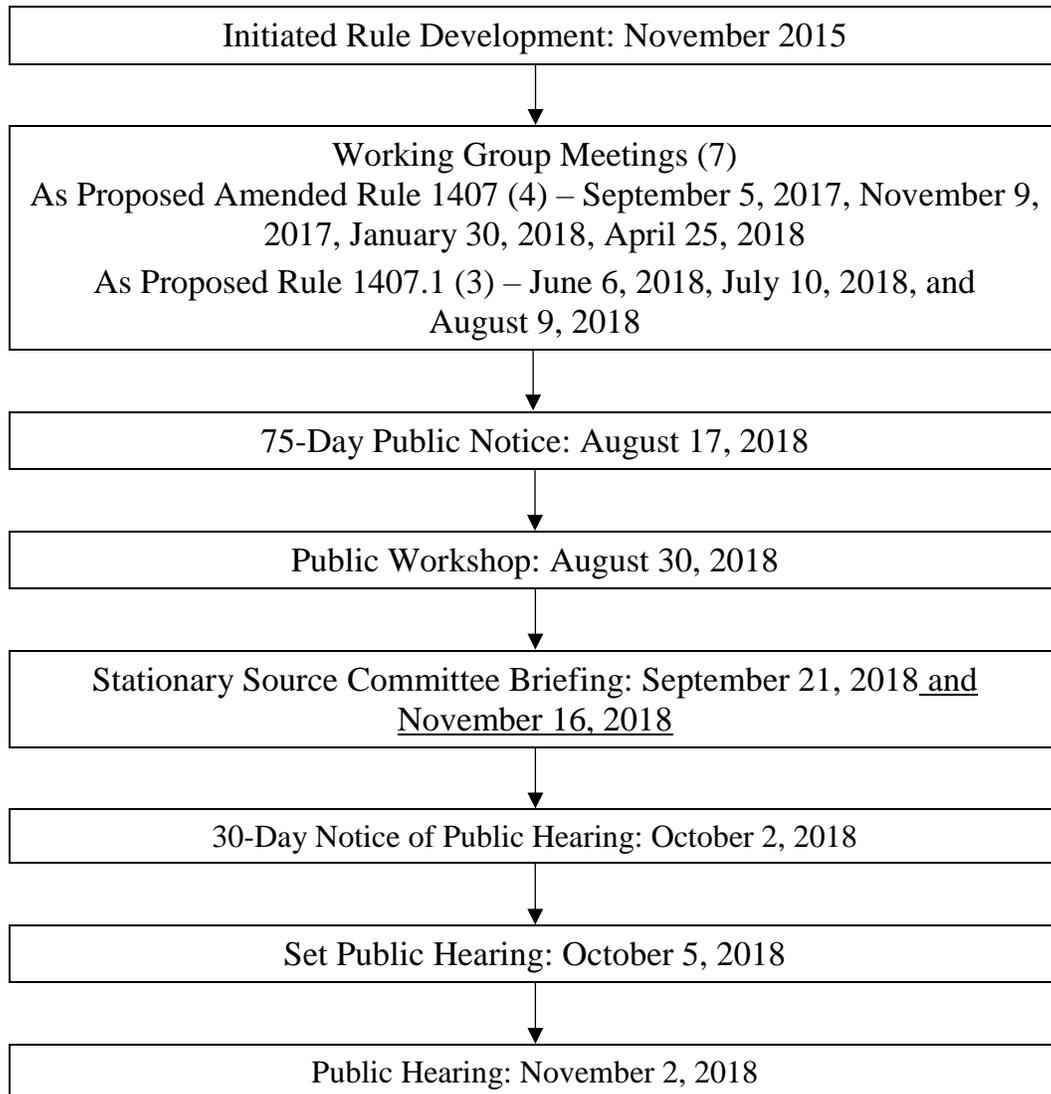
The California Metals Coalition and some industry representatives have commented that CARB Method 425 (source test for hexavalent chromium) has not been demonstrated to be applicable or appropriate for metal melting operations and test method development should occur at Cal Poly Pomona.

- CARB Method 425 is CARB and EPA approved for determining hexavalent chromium and total chromium emissions from stationary sources
- There is no evidence that CARB Method 425 is not the appropriate source test method for metal melting operations
- Proposed Rule 1407.1 includes a provision for alternative sampling and analytical test methods with Executive Officer approval

## ATTACHMENT C

### RULE DEVELOPMENT PROCESS

Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations



**Three (3) years spent in rule development.**

**One (1) Public Workshop.**

**One (1) Stationary Source Committee Meeting.**

**Seven (7) Working Group Meetings.**

**ATTACHMENT D**  
**KEY CONTACTS LIST**

Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy  
Melting Operations

AB & I Foundry	CM Metals	Magnesium Alloy Products
ACE Clearwater	Commercial Casting	Company
ACME Castings	Company	Mattco Forge
ADC	Commercial Metal	Miller Castings
Advanced Environmental	Forming	Modern Pattern and
Control	Consolidated Precision	Foundry
AECOM	Products	Montrose Air Quality
Almega Environmental	Cundiff Steel	Services
Alta Environmental	Custom Alloy Light Metals	Pacific Alloy Casting
Allan Company	E4 Strategic Solutions	Company
The Alpert Group	Ekco Metals	Pacific Die Casting
Advanced Geo	Exponent	Porter Warner Industries
Environmental	Fenico Precision Castings	Pro Cast Industries
Arrowhead Brass &	Fontana Foundry	Ramboll Environ
Plumbing	Corporation	RT&D
Associates Environmental	Gerdau	SA Recycling
Atlas Pacific Corporation	Globe Iron Foundry	Scott Sales Company
Basic Fibres	Green Environmental	Sierra Aluminum
Bell Foundry Company	Management	Company
BizFed	Griswold Industries	SLR International
BlueScape Environmental	HBA	Corporation
Bodycote	Heraeus	Solutions 4 Blast
The Boeing Company	HWC	Standard Metals Recycling
C & M Metals	Hyatt Die Cast	Strategic Materials
California Amforge	IMS Recycling	Corporation
Corporation	Institute of Scrap	Techni-Cast Corporation
California Metals Coalition	Recycling Industries	Total Clean
California Metal-X	Jack Engle and Company	TST
California Steel and Tube	JE Compliance Services	U.S.R.
Cast Metal Services	Kaiser Aluminum	Upper Room Consulting
Cast-Rite Corporation	Keramida	Vista Metals Corporation
CCC	Los Angeles Pump and	Whittingham Public
Certified Alloy Products	Valve Products	Affairs Advisors
Cla-Val	Lynwood Pattern &	Yorke Engineering
Clow Valve	Foundry	

**ATTACHMENT E**

**RESOLUTION NO. 18-\_\_\_\_**

**A Resolution of the Governing Board of the South Coast Air Quality Management District (SCAQMD) determining that Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations is exempt from the requirements of the California Environmental Quality Act (CEQA).**

**A Resolution of the SCAQMD Governing Board adopting Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations.**

**WHEREAS**, the SCAQMD Governing Board finds and determines that Proposed Rule 1407.1 is considered a "project" pursuant to CEQA per CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and

**WHEREAS**, the SCAQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l), and has conducted a CEQA review and analysis of Proposed Rule 1407.1 pursuant to such program (SCAQMD Rule 110); and

**WHEREAS**, the SCAQMD Governing Board finds and determines that after conducting a review of the proposed project in accordance with CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA, and CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA, that Proposed Rule 1407.1 is determined to be exempt from CEQA; and

**WHEREAS**, the SCAQMD Governing Board finds and determines that it can be seen with certainty that there is no possibility that the proposed project may have any significant adverse effects on the environment, and is therefore, exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered By General Rule; and

**WHEREAS**, the SCAQMD Governing Board finds and determines that the proposed project is also categorically exempt from CEQA pursuant to CEQA Guidelines Section 15306 – Information Collection because Proposed Rule 1407.1 will require basic data collection, research and resource evaluation activities which will not result in a serious or major disturbance to an environmental resource; and

**WHEREAS**, the SCAQMD Governing Board finds and determines that the proposed project is also categorically exempt from CEQA requirements pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for the Protection of the Environment, because Proposed Rule 1407.1 is designed to further protect or enhance the environment; and

**WHEREAS**, SCAQMD staff has prepared a Notice of Exemption for the proposed project, that is completed in compliance with CEQA Guidelines Section 15062 – Notice of Exemption; and

**WHEREAS**, Proposed Rule 1407.1 and supporting documentation, including but not limited to, the Notice of Exemption, the Final Staff Report, and the Socioeconomic Impact Assessment, were presented to the SCAQMD Governing Board and the SCAQMD Governing Board has reviewed and considered this information, as well as has taken and considered staff testimony and public comment prior to approving the project; and

**WHEREAS**, the SCAQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (codified as Section 30.5(4)(D)(i) of the Administrative Code), that the modifications to Proposed Rule 1407.1 since the notice of public hearing was published add clarity that meets the same air quality objective and are not so substantial as to significantly affect the meaning of the proposed amended rule within the meaning of Health and Safety Code Section 40726 because: (a) the changes do not impact emission reductions, (b) the changes do not affect the number or type of sources regulated by the rules, (c) the changes are consistent with the information contained in the notice of public hearing, and (d) the consideration of the range of CEQA alternatives is not applicable because Proposed Rule 1407.1 is exempt from CEQA; and

**WHEREAS**, Proposed Rule 1407.1 will be not be submitted for inclusion into the State Implementation Plan; and

**WHEREAS**, the SCAQMD staff conducted a Public Workshop regarding Proposed Rule 1407.1 on August 30, 2018; and

**WHEREAS**, Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Rule 1407.1 is needed to gather information and quantify arsenic, cadmium, chromium, hexavalent chromium, and nickel emissions from chromium alloy melting operations, and source testing on production furnaces is needed to develop emission standards to control toxic air contaminant emissions; and

**WHEREAS**, the SCAQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from Sections 39002, 39650 et. seq., 40000, 40440, 40441, 40702, 40725 through 40728, 41508, and 41511 of the Health and Safety Code; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Rule 1407.1 is written or displayed so that the meaning can be easily understood by the persons directly affected by it; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Rule 1407.1 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Rule 1407.1 will not impose the same requirements as any existing state or federal regulations. The amendments are necessary and proper to execute the powers and duties granted to, and imposed upon, SCAQMD; and

**WHEREAS**, the SCAQMD Governing Board, in adoption Rule 1407.1, references the following statutes which the SCAQMD hereby implements, interprets, or makes specific: Health and Safety Code Sections 39002, 40001, 40702, 40440(a), 40725 through 40728.5, and 41511; and

**WHEREAS**, the SCAQMD Governing Board finds that Proposed Rule 1407.1 fall within one or more of the categories specified in Health and Safety Code Section 40727.2(g) and, therefore, comply with Health and Safety Code Section 40727.2(a); and

**WHEREAS**, the SCAQMD Governing Board finds that the Proposed Rule 1407.1 does not significantly affect air quality or emissions limitations, and does not impose new controls, and therefore a socioeconomic analysis pursuant to Health and Safety Code Section 40440.8, 40728.5, or 40920.6 is not required; and

**WHEREAS**, the SCAQMD specifies that the Planning and Rules Manager of Rule 1407.1 is the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of these proposed amendments is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

**WHEREAS**, a public hearing has been properly noticed in accordance with the provisions of Health and Safety Code Section 40725 and 40440.5; and

**WHEREAS**, the SCAQMD Governing Board has held a public hearing in accordance with all applicable provisions of state and federal law; and

**NOW, THEREFORE BE IT RESOLVED**, that the SCAQMD Governing Board does hereby determine, pursuant to the authority granted by law, that Proposed Rule 1407.1 is exempt from CEQA pursuant to CEQA Guidelines Section 15061 (b)(3) – Activities Covered By the General Rule, CEQA Guidelines Section 15306 – Information Collection, and CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment. This information was presented to the SCAQMD Governing Board, whose members reviewed, considered, and approved the information therein prior to acting on Proposed Rule 1407.1; and

**BE IT FURTHER RESOLVED**, that the SCAQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Rule 1407.1 as set forth in the attached, and incorporated herein by reference.

DATE: \_\_\_\_\_

\_\_\_\_\_  
CLERK OF THE BOARDS

**ATTACHMENT F**

**PROPOSED RULE 1407.1. EMISSIONS OF TOXIC AIR CONTAMINANTS FROM CHROMIUM ALLOY MELTING OPERATIONS**

(a) Purpose

The purpose of this rule is to gather information and quantify arsenic, cadmium, chromium, hexavalent chromium, and nickel emissions from chromium alloy melting operations.

(b) Applicability

This rule shall apply to the owner and operator of any facility conducting chromium alloy melting operation(s) including, but not limited to, smelters (primary and secondary), foundries, die-casters, and other miscellaneous melting processes.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

- (1) ALLOY STEEL is a steel that is alloyed with a variety of elements, in addition to carbon, in total amounts between 1.0% and 50% by weight.
- (2) CASTING is the formation of metallic parts or casts by pouring molten metal into a mold and core assembly or into a mold for ingots, sows, or cylinders.
- (3) CHROMIUM ALLOY is any alloy steel, stainless steel, superalloy, or any metal that is at least 0.5% chromium by weight.
- (4) DIE-CASTER is any facility, operation, or process where molten metal is forced under pressure into a mold cavity.
- (5) DROSS is the impurities discharged, in solid state, from the metal melting process.
- (6) DUCT SECTION is any length of duct, including angles and bends, which is contiguous between processes, emission collection systems, emission control devices, or ventilation inlets or outlets. Examples include ducting between a furnace and heat exchanger; baghouse and scrubber; and scrubber and blower, or the exhaust stack itself.
- (7) EMISSION COLLECTION SYSTEM is any equipment, including the associated ducting, installed for the purpose of directing, taking in, confining, and conveying toxic metal air contaminants and dust emissions.

- (8) EMISSION CONTROL DEVICE is any equipment installed in the ventilation system of a point source or after the emission collection system designed to reduce toxic metal air contaminants and dust emissions from metal melting operations.
- (9) EMISSION POINT is any location where molten metal is or can be exposed to air, including, but not limited to, furnaces, crucibles, refining kettles, ladles, tap holes, pouring spouts, and slag channels.
- (10) FACILITY is any real or personal property which is located on one or more contiguous or adjacent parcels of property in actual contact or separated solely by a public roadway or other public right-of-way and is owned or operated by the same person or person(s), corporation, government agency, public district, public officer, association, joint venture, partnership, or any combination of such entities.
- (11) FOUNDRY is any facility, operation, or process where metal or a metal alloy is melted and cast.
- (12) FUGITIVE METAL EMISSIONS are emissions of metal-containing material from locations other than emission point sources including, but not limited to, foot and vehicular traffic and storage piles where the dust forming material at the emission source contains metals.
- (13) MECHANICAL FINISHING is a metal removal or reshaping process including, but not limited to, abrasive blasting, burnishing, grinding, polishing, and sawing.
- (14) METAL is any ferrous (iron-based) metals and alloys and non-ferrous (non-iron-based) metals and alloys. Examples of metals include, but are not limited to, iron, stainless steel, and their iron-based alloys and aluminum, brass, bronze, cadmium chromium, copper, gold, lead, manganese, mercury, nickel, platinum, silver, tin, titanium, tungsten, and zinc, and their non-ferrous alloys.
- (15) METAL MELTING FURNACE is any apparatus in which metal is brought to a liquid state including, but not limited to, blast, crucible, cupola, direct arc, electric arc, hearth, induction, pot, and sweat furnaces, and refining kettles, regardless of the heating mechanism.
- (16) MOLTEN METAL is metal or metal alloy in a liquid state, in which a cohesive mass of metal will flow under atmospheric pressure and take the shape of the container in which it is placed.
- (17) POINT SOURCE is any process or equipment used for melting operations to process chromium alloys.
- (18) RERUN SCRAP is any material that has been generated at the facility as a consequence of casting or forming process, but has not been coated or surfaced with any material containing arsenic, cadmium, chromium, or nickel, intended for re-

melting including, but not limited to, sprues, gates, risers, foundry returns, and similar material.

- (19) SCRAP is any metal or metal-containing material that has been discarded or removed from the use for which it was produced or manufactured and which is intended for reprocessing. SCRAP does not include rerun scrap.
- (20) SLAG is the by-product material discharged, in melted state, from the metal melting process.
- (21) SMELTER is any facility, operation, or process where heat is applied to ore in order to melt out a base metal.
- (22) STAINLESS STEEL is a steel alloy with a minimum of 10.5% chromium content by mass.
- (23) STEEL is a metal alloy of iron and carbon and other elements.
- (24) SUPERALLOY is a heat-resistant metal alloy based on nickel, nickel-iron, or cobalt.

(d) Operational Information Survey Requirements

Within [60 Days After Date of Adoption], the owner or operator of a facility conducting chromium alloy melting operation(s) shall submit a completed survey that includes:

- (1) Casting techniques performed on chromium alloys;
- (2) Mechanical finishing activities performed on chromium alloys;
- (3) For each metal melting furnace melting chromium alloys:
  - (A) South Coast Air Quality Management District (SCAQMD) application or permit number and device identification number, if applicable;
  - (B) The equipment make, model, serial number, date of manufacture, and date of installation;
  - (C) Furnace type;
  - (D) Size and capacity;
  - (E) Range of operating temperatures;
  - (F) Minimum, average, and maximum weight of metal processed per batch and per day, based on data from calendar year 2018;
  - (G) Fuel type, if gas-fired, include British Thermal Unit (BTU) gas rating and burner age;
  - (H) Refractory information, including, but not limited to, type of refractory brick and refractory coating, chromium content, frequency of refractory brick replacement and refractory coating application, based on data from calendar year 2018, if applicable;

- (I) Minimum, average, and maximum operating temperatures, based on data from calendar year 2018;
  - (J) The equipment make, model, serial number, date of manufacture, and date of installation of associated Emission Collection System(s) and/or Emission Control Device(s), and corresponding SCAQMD application or permit number and device identification number, if applicable; and
  - (K) Metals and alloys melted, based on data from calendar year 2018; and
  - (4) Housekeeping activities routinely performed, including schedule, method(s) used, and location(s) of activities.
- (e) Source Test Requirements
- (1) The owner or operator of a facility conducting chromium alloy melting operation(s) shall submit a Source Test Protocol to the Executive Officer for approval no later than *[60 Days After Date of Adoption]* or as required by a SCAQMD permit.
  - (2) The Source Test Protocol shall include the source test criteria of the end user and all assumptions, required data, calculated targets and the following:
    - (A) All proposed pollutant and capture efficiency test methods;
    - (B) Proposed analytical detection limits;
    - (C) Planned sampling parameters; and
    - (D) Information on equipment, logistics, personnel, and other resources necessary.
  - (3) The Executive Officer will approve or reject the Source Test Protocol and notify the owner or operator. Approval or rejection will be based on whether the Source Test Protocol was prepared consistent with this subdivision and material deviation from source test protocol guidelines. If the Source Test Protocol is rejected:
    - (A) Within 30 days of the date of notification by the Executive Officer of Source Test Protocol rejection, an owner or operator shall revise and resubmit a Source Test Protocol that corrects all identified deficiencies.
    - (B) The Executive Officer will either approve the revised and resubmitted Source Test Protocol or modify the revised Source Test Protocol and approve it as modified.
  - (4) No later than 90 days after approval of the Source Test Protocol, the owner or operator of a facility conducting chromium alloy melting operation(s) shall perform the following source tests for mass emissions and concentration on the metal melting furnace pursuant to this subdivision at the inlet and the outlet to the

associated emissions control device pursuant to the approved source test protocol for the following pollutants:

- (A) Particulate matter;
  - (B) Arsenic, cadmium, chromium and nickel; and
  - (C) Hexavalent chromium.
- (5) The owner or operator of a facility conducting chromium alloy melting operation(s) shall conduct source tests pursuant to this subdivision and in accordance with ~~one~~ ~~of~~ the following applicable test methods as approved by the Executive Officer:
- (A) Particulate matter by:
    - (i) SCAQMD Method 5.1 – *Determination of Particulate Matter Emissions from Stationary Sources Using a Wet Impingement Train*;
    - (ii) SCAQMD Method 5.2 – *Determination of Particulate Matter Emissions from Stationary Sources Using Heated Probe and Filter*;
    - or
    - (iii) SCAQMD Method 5.3 – *Determination of Particulate Matter Emissions from Stationary Sources Using an In-Stack Filter*;
  - (B) Arsenic, cadmium, chromium, and nickel by CARB Method 436 – *Determination of Multiple Metal Emissions from Stationary Sources*; and
  - (C) Chromium and hexavalent chromium by CARB Method 425 – *Determination of Total Chromium and Hexavalent Chromium Emissions from Stationary Sources*.
- (6) The owner or operator of a facility conducting chromium alloy melting operation(s) shall source test the metal melting furnace melting chromium alloy:
- (A) With an emissions control device;
  - (B) Melting the alloy with the highest chromium concentration in the final product processed in the facility; and
  - (C) Operating with the highest throughput, if there are multiple furnaces that meet subparagraphs (e)(6)(A) and (e)(6)(B).
- (7) The owner or operator of a facility conducting chromium alloy melting operation(s) may use an alternative furnace in the facility and/or final product processed in the facility pursuant to (e)(6), if the Executive Officer approves a request in writing. Approval or rejection will be based on the furnace, final product processed, schedule, and throughput.
- (8) At the time the source tests are conducted, the owner or operator of a facility conducting chromium alloy melting operation(s) shall perform capture efficiency testing that includes:

- (A) Quantitative velocity measurements using a hot-wire anemometer, a vane anemometer, or an alternative or equivalent device or method as defined in 40 CFR Part 60.2, if approved in writing by the Executive Officer; and
  - (B) Qualitative visual demonstration using smoke generators.
- (9) The owner or operator of a facility conducting chromium alloy melting operation(s) shall perform materials composition testing pursuant to paragraphs (f)(2) and (f)(3) of the following materials from one batch processed during the chromium and hexavalent chromium source test:
- (A) All raw material(s). Facilities melting scrap shall test, at a minimum, three different pieces from each batch of scrap;
  - (B) Molten material;
  - (C) Final product;
  - (D) Slag;
  - (E) Dross; and
  - (F) Baghouse catch.
- If the slag, dross, or baghouse catch is not accessible immediately during or after the source test, then it shall be tested immediately after it becomes accessible.
- (10) The owner or operator of a facility conducting chromium alloy melting operation(s) may use alternative or equivalent source test methods and materials composition tests as defined in 40 CFR Part 60.2, if approved in writing by the Executive Officer.
- (11) The owner or operator of a facility conducting chromium alloy melting operation(s) shall use a test laboratory approved under the SCAQMD Laboratory Approval Program for the source test, capture efficiency testing, and materials composition testing. If there is no approved laboratory, then the testing procedures used by the unapproved laboratory may be used, if approved by the Executive Officer in writing.
- (12) The owner or operator conducting chromium alloy melting operation(s) shall notify the Executive Officer in writing at least 10 calendar days prior to conducting any test required by this subdivision.
- (13) No later than 60 days after the completion of the source tests, the owner or operator of a facility conducting chromium alloy melting operation(s) shall submit to the Executive Officer, using a format approved by the Executive Officer, reports from source tests, capture efficiency, and materials composition testing conducted.
- (14) Beginning [*Date of Adoption*], the owner or operator of a facility conducting chromium alloy melting operation(s) required to source test pursuant to this

subdivision may submit to the Executive Officer, a request for SCAQMD to conduct the source tests. The Executive Officer will accept the first three submittals.

- (15) In lieu of complying with paragraphs (e)(1) through (e)(13), the owner or operator of a facility conducting chromium alloy melting operation(s) may submit, no later than *[60 Days After Date of Adoption]*, a completed SCAQMD-approved source test report conducted up to twelve months prior to *[Date of Adoption]* that meets the requirements of paragraphs (e)(4) through (e)(11).
- (f) Materials Composition Testing
- (1) No later than *[180 Days After Date of Adoption]*, the owner or operator of a facility conducting chromium alloy melting operation(s) not required to source test pursuant to subdivision (e) shall perform materials composition testing for one batch representative of melting the alloy with the highest chromium concentration in the final product processed in the facility pursuant this subdivision of the following materials:
- (A) All raw material(s). Facilities melting scrap shall test, at a minimum, three different pieces from each batch of scrap;
  - (B) Molten material;
  - (C) Final product;
  - (D) Slag; and
  - (E) Dross.
- If the slag or dross is not accessible immediately during or after the batch is processed, then it shall be tested immediately after it becomes accessible.
- (2) Materials composition testing shall determine the content of arsenic, cadmium, chromium, hexavalent chromium, and nickel in percent by weight.
- (3) Materials composition testing shall be in accordance with the following test methods most applicable to the sample matrix and as approved by the Executive Officer:
- (A) U.S. EPA 200.7 – *Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry*;
  - (B) U.S. EPA 6010D – *Inductively Coupled Plasma-Optical Emissions Spectrometry*;
  - (C) U.S. EPA 6020B – *Inductively Coupled Plasma-Mass Spectrometry*;
  - (D) U.S. EPA 6200 – *Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment*;

- (E) U.S. EPA 7196A – *Chromium, Hexavalent (Chelation/Extraction/Colorimetric)*; and/or
  - (F) U.S. EPA 7199 – *Determination of Hexavalent Chromium in Drinking Water, Groundwater and Industrial Wastewater Effluents by Ion Chromatography.*
  - (4) The owner or operator of a facility performing materials composition testing may use alternative materials composition tests methods, if approved in writing by the Executive Officer.
- (g) Recordkeeping Requirements
- (1) Between January 1, 2019 and January 1, 2020, the owner or operator of a facility conducting chromium alloy melting operation(s) shall make records of the following:
    - (A) For each metal melting furnace melting chromium alloys, monthly records of run hours and weight and type of raw materials processed including, but not limited to, additives, alloys, ingots, scrap, and reruns;
    - (B) Raw material vendor information for chromium alloys; and
    - (C) For each baghouse venting furnace melting operations of chromium alloys, records of weight of the baghouse catch per container and date collected.
  - (2) The owner or operator of a facility conducting chromium alloy melting operation(s) shall maintain records for a period of not less than three years and make such records available to the Executive Officer upon request.
  - (3) No later than February 1, 2020, the owner or operator of a facility conducting chromium alloy melting operation(s) shall submit to the Executive Officer, using a format approved by the Executive Officer, records pursuant to paragraph (g)(1).
- (h) Exemptions
- (1) Equipment and operations subject to the requirements of Rules 1420 – Emissions Standard for Lead, 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities, or 1420.2 – Emission Standards for Lead from Metal Melting Facilities, shall be exempt from the requirements of this rule.
  - (2) A facility that produces a total of no more than one ton per year of all chromium alloys from melting operations shall be exempt from the requirements of this rule.
  - (3) Furnaces with a capacity of 25 pounds or less shall be exempt from the requirements of this rule.

## ATTACHMENT G

# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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### Final Staff Report

### Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations

November 2018

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## **CHAPTER 1: BACKGROUND**

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**INTRODUCTION**

**REGULATORY HISTORY**

**HEXAVALENT CHROMIUM EMISSIONS DATA**

**METAL TOXIC AIR CONTAMINANTS AND HEALTH EFFECTS**

**NEED FOR PROPOSED RULE 1407.1**

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## INTRODUCTION

Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations (Proposed Rule 1407.1) is a source-specific rule that gathers information and quantifies arsenic, cadmium, chromium, hexavalent chromium, and nickel emissions from melting operations of metals that contain greater than 0.5% chromium content, including, but not limited to alloy steel, stainless steel, and superalloys. Metal melting operations, such as smelting, tinning, galvanizing, and other miscellaneous processes where metals are processed in molten form, have the potential to emit toxic air contaminants and particulate matter. Proposed Rule 1407.1 will focus on obtaining information regarding facility operations, furnaces, composition of metals, recordkeeping, and emissions testing. The provisions in Proposed Rule 1407.1 include requirements for submittal of an operational information survey, emissions testing, metals composition testing, and recordkeeping.

In March 2017, the SCAQMD adopted the Final 2016 Air Quality Management Plan (2016 AQMP). Control of Toxic Emissions from Metal Melting Facilities (TXM-06) is a control measure in the 2016 AQMP that seeks to further reduce arsenic, cadmium, nickel, other toxic metals, and particulates from foundry operations. This stationary source air toxic control strategy is not required by state or federal law, and thus is not a commitment under the State Implementation Plan.

## REGULATORY HISTORY

Proposed Rule 1407.1 is a new rule and is associated with a similar rule, Rule 1407 – Control of Emissions of Arsenic, Cadmium, and Nickel from Non-Ferrous Metal Melting Operations. Rule 1407 was adopted in July 1994 to implement the non-ferrous metal melting Air Toxics Control Measure (ATCM) adopted by the California Air Resource Board (CARB) in October 1992. The ATCM and Rule 1407 require the reduction of emissions of arsenic, cadmium, and nickel by the installation of air pollution control equipment, parametric monitoring, and housekeeping practices to minimize fugitive particulate emissions. Non-ferrous metal melting operations were focused on due to known presence of arsenic and cadmium in these operations. Rule 1407 and the ATCM did not include ferrous metals since it was beyond the scope of the investigation. CARB intended to evaluate the need for proposed controls for ferrous metal melting operations in the future.

In 2015, to fill a regulatory gap, staff initiated the rule development process to amend Rule 1407 to address toxic air contaminant emissions from ferrous metal melting operations and update existing requirements for non-ferrous metal melting operations currently regulated under Rule 1407. After several working group meetings, industry stakeholders recommended that the proposed rule be separated into non-ferrous (Proposed Amended Rule 1407) and ferrous (Proposed Rule 1407.1) metal melting rules. Industry stakeholders had commented that there was insufficient evidence that hexavalent chromium was emitted from metal melting operations and were concerned about a one-size fits all approach since the type of toxic air contaminants emitted from non-ferrous and ferrous metal melting operations would differ. Additionally, although implementation of Rule 1407 would concurrently reduce hexavalent chromium emission reductions from ferrous metal melting operations, the level of control is probably not sufficient since hexavalent chromium is a more potent toxic air contaminant than arsenic, cadmium, and nickel which are the focus of Rule 1407. In April 2018, staff decided to bifurcate the two rules into non-chromium alloy (Rule 1407) and chromium alloy (Rule 1407.1) metal melting.

Staff bifurcated the two rules into non-chromium and chromium instead of non-ferrous and ferrous because certain ferrous alloys do not contain chromium and some non-ferrous alloys contain chromium. For example, superalloys, a non-ferrous metal, are alloyed with chromium and carbon steel, a ferrous metal, does not have a minimum specification or requirement for chromium. Therefore, the rules were divided on the potential to emit hexavalent chromium. It is expected that the level of pollution controls will be driven by the toxicity of the metal particulate. As discussed below under “Hexavalent Chromium Emissions Data”, emissions data has shown that during the heating process, metals containing chromium can emit hexavalent chromium emissions. Since hexavalent chromium has a significantly higher cancer potency factor than other metal toxic air contaminants, staff separated the two rules based on chromium content of the alloys.

Currently, superalloys are regulated by Rule 1407, but are exempt due to their low arsenic and cadmium content. Melting operations of metals containing chromium, such as alloy steel and stainless steel are currently not regulated under a source-specific rule to address toxic air contaminant emissions. As a result, information regarding these metal melting operations is not readily available, housekeeping operations are not regulated, and a number of these furnaces may not be permitted. Proposed Rule 1407.1 is needed to fill a regulatory gap to address toxic air contaminant emissions from melting operations of metals containing chromium.

## **HEXAVALENT CHROMIUM EMISSIONS DATA**

Ambient monitoring conducted in Paramount in 2016 and 2017 indicated that hexavalent chromium was being emitted by high-temperature metalworking operations. In October 2016, the SCAQMD deployed several ambient monitors in the mostly industrial areas of the City of Paramount. After an intensive investigation, in November 2016, SCAQMD determined that Aerocraft and a nearby facility was one of the sources of elevated levels of hexavalent chromium emissions. At Aerocraft, SCAQMD inspectors found hexavalent chromium in the dust collected in several different locations within the facility. Finding elevated levels of hexavalent chromium at Aerocraft was surprising, since the processes conducted at this facility were not previously known to generate large amounts of hexavalent chromium emissions. The carcinogenic substance was also found within Aerocraft’s equipment for cooling its metal heat treating operations. In addition, a screening source test showed that hexavalent chromium emissions were being generated from the furnace that contained an alloy with a high percentage of chromium.

### **Hexavalent Chromium Screening Tests for Heat Treating and Forging Furnaces**

SCAQMD conducted screening source tests on several heat treating and forging furnaces processing metals or using materials that contained chromium. During source testing, the furnaces operated between 1,725 to 2,100°F and the results showed hexavalent chromium exhaust concentrations between 376 to 24,500 ng/m<sup>3</sup>. Table 1.1 summarizes the results of the screening source tests of heat treating and forging furnaces.

**Table 1.1: Screening Source Test of Heat Treating and Forging Furnaces**

Source Test	Temperature (°F)	Material	Hexavalent Chromium Concentration (ng/m <sup>3</sup> )
Aerocraft Heat Treating Furnace <sup>1</sup>	2100	Inconel (14 to 30% chromium)	376
Mattco Forge Heat Treating Furnace <sup>2</sup>	2050	Metal parts with 15.53% chromium	2080
Weber Metals Heat Treating Furnace <sup>3</sup>	1725 to 1746	Titanium billets and potentially furnace components (refractory or stainless steel table)	24,500

These heat treating and forging furnaces were processing materials similar to the metals that are applicable to Proposed Rule 1407.1, but at lower temperatures. For metal forging operations, metals are heated to a soft and workable temperature, but not to a molten stage. Heat treating operations such as Aerocraft includes a number of controlled heating and cooling operations to bring about a desired change in the physical properties of the metal such as hardening, case hardening, annealing, normalizing, and tempering. Metal melting operations occur at higher temperatures than heat treating and forging operations. With the higher temperature required for chromium alloy melting, it is expected that hexavalent chromium emissions from melting operation will be similar or possibly higher. The source testing required in Proposed Rule 1407.1 is needed to quantify emissions to identify the appropriate level of pollution control.

#### **Hexavalent Chromium Source Tests from Metal Melting Operations**

Additionally, staff reviewed source test reports of metal melting operations. Most of these source tests only tested for elemental chromium and did not test for hexavalent chromium because it is a separate test and those operations were not expected to be a source of hexavalent chromium. Staff did find a source test, however, that tested for hexavalent chromium and found that there were hexavalent chromium emissions. The source test was conducted in December 1993 for Total Chromium and Hexavalent Chromium using CARB Method 425. Three 192-minute runs were conducted while the furnace melted low carbon steel and grade B wrought carbon steel alloyed with low carbon ferro manganese, ferro silicon, and sorrel pig iron. Table 1.2 summarizes the alloying element content of low carbon steel and wrought carbon steel.

<sup>1</sup> SCAQMD, <http://www.aqmd.gov/docs/default-source/compliance/Carlton-Forge-Works/aerocraft-16-334.pdf?sfvrsn=6>

<sup>2</sup> SCAQMD, <http://www.aqmd.gov/docs/default-source/compliance/Paramount/source-test-mattco.pdf?sfvrsn=6>

<sup>3</sup> SCAQMD, <http://www.aqmd.gov/docs/default-source/compliance/Paramount/source-test-weber.pdf?sfvrsn=6>

**Table 1.2: Alloying Element Content of Carbon Steel**

Material	Carbon (%)	Manganese (%)	Phosphorous (%)	Sulfur (%)	Aluminum (%)	Titanium (%)	Silicon (%)
Low Carbon Steel* <sup>4</sup>	0.02 – 0.12	0.40 – 0.60	0.025 – 0.040	0.020 – 0.050	0.0 – 0.020	0.0 – 0.3	No specification
Wrought Carbon Steel – Grade B** <sup>5</sup>	0.30	1.00	0.035	0.035	No specification	No specification	0.60

\* Residual amount of copper, nickel, molybdenum, and chromium.

\*\* Up to 1.00% total of copper, nickel, molybdenum, chromium, and vanadium.

The three runs ranged from 2,711 to 4,064 pounds per melt. The source test report did not record the furnace temperatures, but carbon steel melts at 2,600 to 2,800°F. Table 1.3 summarizes the results of the source test.

**Table 1.3: Source Test Results**

Run Number	Amount Processed (lbs)	Total Chromium Emissions (lbs)	Hexavalent Chromium Emissions (lbs)
1	2,810	0.00012	0.00004
2	4,064	0.00021	0.00016
3	2,711	0.00052	0.00038

Staff calculated the percentage of hexavalent chromium to total chromium from the source tests; Table 1.4 summarizes the results.

<sup>4</sup> Armco, [http://www.armco.com.br/wp/wp-content/uploads/2011/08/BaixoCarbono\\_especificacaotecnica.pdf](http://www.armco.com.br/wp/wp-content/uploads/2011/08/BaixoCarbono_especificacaotecnica.pdf)

<sup>5</sup> Steel Founders' Association of America, <https://www.sfsa.org/publications/hbk/s2.pdf>

**Table 1.4: Percent of Hexavalent Chromium Emissions Relative to Total Chromium**

Source Test	Total Chromium Emissions (lbs)	Hexavalent Chromium Emissions (lbs)	Percent of Hexavalent Chromium*
Run 1	0.00012	0.00004	33%
Run 2	0.00021	0.00016	76%
Run 3	0.00052	0.00038	73%

\* Percent of Hexavalent Chromium to Total Chromium (Hexavalent Chromium / Chromium)

The source test showed that some chromium is converted to hexavalent chromium during carbon steel metal melting operations. The alloys melted during this source test contained less than 1 percent chromium; other chromium alloys can have as high as 28 percent chromium. Higher percentages of chromium in the alloy is expected to result in higher hexavalent chromium emissions. Additional emissions data is needed to quantify the amount of hexavalent chromium emissions occur from metal melting operations.

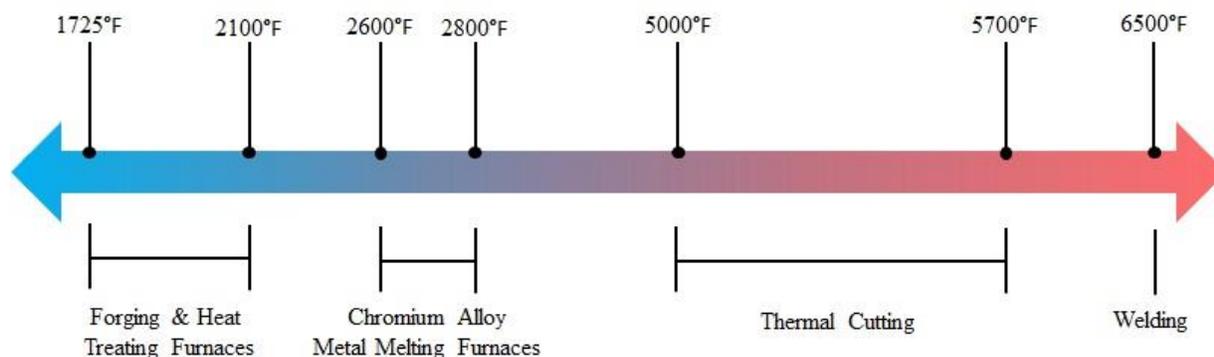
#### **Hexavalent Chromium Emissions from Grinding and Plasma Arc Cutting**

Welding and plasma arc cutting of metals were found to oxidize elemental chromium into the hexavalent state. U.S. Department of Labor Occupation Safety and Health Administration states that worker exposure to hexavalent chromium can occur during “hot work” such as welding of steels containing chromium metal.<sup>6</sup> The Department of Health and Human Services, Centers for Disease Control and Prevention, and National Institute for Occupational Safety and Health<sup>7</sup> noted that hexavalent chromium is formed as a by-product when metals containing metallic chromium are used, such as welding and the thermal cutting of metals and operations at steel mills, iron foundries, and steel foundries. These operations and processes use extremely high temperatures which result in the oxidation of the metallic forms of chromium to hexavalent chromium. Thermal cutting temperatures can reach as high as 5,700°F while welding can produce temperatures as high as 6,500°F. These activities utilize some of the highest temperatures amongst metal working processes.

Figure 1.1 below depicts the spectrum of operating temperatures for forging and heat treating furnaces, chromium alloy metal melting furnaces, thermal cutting, and welding. Throughout this temperature spectrum, testing results from SCAQMD or literature developed by other regulatory agencies indicated conversion of chromium to hexavalent chromium.

<sup>6</sup> U.S. Department of Labor Occupation Safety and Health Administration, <https://www.osha.gov/SLTC/hexavalentchromium/>

<sup>7</sup> Department of Health and Human Services, Centers for Disease Control and Prevention, and National Institute for Occupational Safety and Health, [https://www.cdc.gov/niosh/docs/2013-128/pdfs/2013\\_128.pdf](https://www.cdc.gov/niosh/docs/2013-128/pdfs/2013_128.pdf)

**Figure 1.1: Operating Temperatures of Metal Working Processes**

## METAL TOXIC AIR CONTAMINANTS AND HEALTH EFFECTS

Metal melting operations with chromium alloys, such as alloy steel, stainless steel, and superalloys can result in toxic air contaminant emissions of arsenic, cadmium, hexavalent chromium, and nickel. Table 1.5 provides a brief overview of the toxicity of these metals and potential health effects:

**Table 1.5: Toxicity of Metals**

Metal	US EPA Carcinogenic Classification <sup>8</sup>	Chronic Target Organs <sup>9</sup>
Arsenic	Carcinogenic to Humans	Inhalation & oral: Development; cardiovascular system; nervous system; respiratory system; skin
Cadmium	Likely to be Carcinogenic to Humans	Inhalation: Kidney; respiratory system Oral: kidney
Chromium (hexavalent)	Carcinogenic to Humans	Inhalation: Respiratory system Oral: Hematologic system
Nickel	Carcinogenic to Humans	Inhalation: Respiratory system; hematologic system Oral: Development

## NEED FOR PROPOSED RULE 1407.1

Currently, superalloys are regulated by Rule 1407, but are exempt due to their low arsenic and cadmium content. Melting operations of ferrous metals containing chromium, such as alloy steel and stainless steel are currently not regulated under a source-specific rule to address toxic air

<sup>8</sup> California Office of Environmental Health Hazard Assessment, <https://oehha.ca.gov/media/downloads/crn/appendixa.pdf>

<sup>9</sup> California Office of Environmental Health Hazard Assessment, <https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary>

contaminant emissions. Testing done at heat treating and forging operations, SCAQMD source tests of metal melting furnaces, and worker safety regulations in very high temperature welding and cutting operations bracket the temperature range for chromium metal melting operations and all indicate that hexavalent chromium emissions are occurring during chromium metal melting operations. Hexavalent chromium, and potentially other toxic air contaminants including arsenic, cadmium, and nickel, are being emitted from chromium metal melting operations that may be uncontrolled and are not regulated by a source-specific SCAQMD rule.

The source test of the carbon steel metal melting furnace showed that some chromium is converted to hexavalent chromium at a~~The rate of conversion from chromium to hexavalent chromium from Table 1.4 ranged~~ranging from 33 to 76% (Table 1.4). There is a wide range of conversion rates and data directly from chromium metal melting operations is limited, therefore, additional source tests are needed to quantify the amount of toxic air contaminant emissions. SCAQMD staff initially offered to conduct source tests at certain facilities at no charge, however facilities were non-responsive or declined. Staff then offered at subsequent working group meetings to conduct a free source test for any stakeholder subject to the proposed rule. At this time, no facility has agreed. The purpose of the rule is to require facilities to conduct those needed source tests. The tests will quantify arsenic, cadmium, hexavalent chromium, and nickel emissions by furnace types, sizes, and configurations and by various alloys. With that information, the appropriate pollution controls necessary to protect public health from arsenic, cadmium, hexavalent chromium, and nickel emissions from chromium metal melting operations can be identified.

## **AFFECTED INDUSTRIES**

Approximately 14 facilities are expected to be impacted by Proposed Rule 1407.1. The facilities are foundries or metal casting businesses generally classified under the NAICS code 331XXX and 332XXX, including:

- 331110 Iron and Steel Mills and Ferroalloy Manufacturing;
- 331512 Steel Investment Foundries;
- 331513 Steel Foundries (except Investment); and
- 332XXX Metal Operations.

Iron and steel mills subject to Proposed Rule 1407.1 make alloy steel, stainless steel, and superalloy ingots or shapes including bars, plates, rods, sheets, strips, or wire. Steel foundries manufacture castings, including investment castings that leave a seamless mold providing a highly detailed and consistent casting. Steel foundries also make castings in which the molten metal is poured into a mold and allowed to solidify. Operations that cast molten metal into various parts and products are classified by the type of part they manufacture. Often these facilities cast parts for a wide variety of industries.

Mills and foundries melt and cast metals and their alloys. The alloys are a combination of metals and elements that provide qualities such as corrosion resistance or strength. Common alloy materials include chromium and nickel. Even when a pure metal is melted, it often contains trace contamination of other metals or elements. The metal, alloy, or contamination can consist of toxic air contaminants. Chromium, arsenic, and cadmium may be found as contaminants. Metal emissions may occur during metal melting, transfer, pouring, and sand reclamation. Emissions may also occur during casting shakeout when the casting is freed from the mold. Mechanical

finishing operations, including abrasive blasting, burnishing, grinding, polishing and sawing, may emit particulates possibly containing toxic air contaminants. Fugitive emissions may result from crushing, grinding, and handling of materials. Other potential sources of emissions are re-entrainment of surface dust by foot and vehicle traffic in areas of the facility where metal-containing particulate matter has been deposited. Lastly, emissions may occur from the collection points of an emission control device or from the exhaust of an emission control device.

The 14 facilities subject to Proposed Rule 1407.1 were identified by reviewing SCAQMD permits for furnaces, reviewing SCAQMD inspector reports for metal operations facilities, searching websites for facilities that offer metal melting services, and site visits to 11 of the 14 affected facilities. Facilities that conduct heat treating or other metalworking operation but do not melt the metal were excluded. Additionally, facilities that melt metals but do not melt alloy steel, stainless steel, or superalloys were excluded.

## **PUBLIC PROCESS**

Proposed Rule 1407.1 is being conducted through a public process. A working group was formed to provide the public and stakeholders an opportunity to discuss the proposed rule and to provide the SCAQMD staff with input during the rule development process. The Working Group is comprised of representatives from industry, consultants, agency representatives, environmental groups, and community groups. The Working Group originally met under Proposed Amended Rule 1407 and had four Working Group Meetings. Based on industry stakeholder input, Proposed Amended Rule 1407 was separated into two rulemakings: Proposed Amended Rule 1407 and Proposed Rule 1407.1. Staff has held three additional Working Group Meetings since Proposed Rule 1407.1 was separated. The seven working group meetings were held at the SCAQMD Headquarters in Diamond Bar on the following dates: September 5, 2017, November 9, 2017, January 30, 2018, April 25, 2018, June 6, 2018, July 10, 2018, and August 9, 2018. A Public Workshop was held on August 30, 2018.

## **CHAPTER 2: SUMMARY OF PROPOSAL**

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**INTRODUCTION**

**PROPOSED RULE 1407.1**

## INTRODUCTION

The primary objective of Proposed Rule 1407.1 is to gather information and to quantify the toxic air contaminant emissions from alloy steel, stainless steel, superalloys, or any chromium alloy containing greater than 0.5% chromium melting operations. The information obtained will be assessed to determine the appropriate pollution controls needed to reduce toxic air contaminant emissions from those operations.

### PROPOSED RULE 1407.1

#### **Purpose (Subdivision (a))**

The purpose of Proposed Rule 1407.1 is to gather information to quantify arsenic, cadmium, chromium, hexavalent chromium, and nickel emissions from facilities conducting chromium alloy melting operations. Chromium alloys contain toxic air contaminants, such as arsenic, cadmium, and nickel, which have the potential to be emitted during metal melting operations. Additionally, these metals contain chromium, which has the potential to emit hexavalent chromium. A source test of a steel furnace showed that some chromium is converted to hexavalent chromium. However, additional emissions data is needed to quantify the type and amount of toxic air contaminant emissions that occurs during the melting process. The emissions data from testing and process data from operational information surveys will provide the necessary information to assess the need for future requirements.

The proposed purpose is as follows:

*The purpose of this rule is to gather information and quantify arsenic, cadmium, chromium, hexavalent chromium, and nickel emissions from chromium alloy melting operations.*

#### **Applicability (Subdivision (b))**

Rule 1407 currently applies only to non-ferrous metal melting applications. Ferrous metal melting operations are not subject to an industry or equipment specific regulation to address toxic air contaminant emissions. Initially, during the rule development process one approach was to expand Rule 1407 to apply to all metal melting operations (non-ferrous and ferrous). Industry requested separating the rules because there was insufficient evidence that hexavalent chromium was emitted from metal melting operations and that the type of toxic air contaminants emitted from non-ferrous and ferrous metal melting operations could differ significantly.

Staff agreed to bifurcate the proposed rules but did so based on the chromium content in the metal or alloy. Hexavalent chromium has a cancer potency factor that is one or more orders of magnitude higher than arsenic, cadmium, or nickel. Thus emissions of hexavalent chromium would likely need more stringent controls than other metal toxic air contaminants. Separating the proposed rules based on iron content (ferrous and non-ferrous) is not an indicator of chromium content, as superalloys are non-ferrous alloys with high levels of chromium, while iron and carbon steel have high iron content, but are expected to have only trace chromium content as impurities.

Staff reviewed the composition of metal alloys. Staff determined that aluminum alloys have less than 0.4% chromium content with Aluminum 6066 being the aluminum alloy with the highest chromium content. Brass, bronze, and lead alloys are expected to have only trace contaminant quantities of chromium. Carbon steel and iron have no minimum specifications for chromium, but

are also expected to have only trace contaminants. Alloy steel, stainless steel, and superalloys are expected to have a chromium content greater than 0.4%. Therefore, Proposed Rule 1407.1 will apply to chromium alloys, which is defined as a metal that is an alloy steel, stainless steel, superalloy, or any metal that is at least 0.5% chromium by weight.

With the adoption of Proposed Rule 1407.1 and Proposed Amended Rule 1407, metal melting operations will be regulated by metal or alloy as depicted in Figure 2-1 below.

**Figure 2.1: SCAQMD Rules by Metal Type**



The proposed applicability is as follows:

*This rule shall apply to the owner or operator of any facility conducting chromium alloy melting operation(s) including, but not limited to, smelters (primary and secondary), foundries, die-casters, and other miscellaneous melting processes.*

#### **Definitions (Subdivision (c))**

Proposed Rule 1407.1 includes definitions to clarify and explain key concepts. Please refer to Proposed Rule 1407.1 subdivision (c) for each definition.

Proposed Definitions:

- Alloy Steel
- Casting
- Chromium Alloy
- Die-Caster
- Dross
- Duct Section
- Emission Collection System
- Emission Control Device
- Emission Point
- Facility
- Foundry
- Fugitive Metal Emissions
- Mechanical Finishing
- Metal
- Metal Melting Furnace
- Molten Metal
- Point Source
- Rerun Scrap
- Scrap
- Slag
- Smelter

Stainless Steel  
Steel  
Superalloy

The applicability of Proposed Rule 1407.1 specifies chromium alloys which is defined as any metal that is an alloy steel, stainless steel, superalloy, or any metal that is at least 0.5% chromium by weight. Alloy steel, stainless steel, and superalloys are standard definitions. Chromium alloy is defined to include any metal with has a chromium content greater or equal to 0.5%, including alloy steel, stainless steel, and superalloys.

These proposed definitions are as follows:

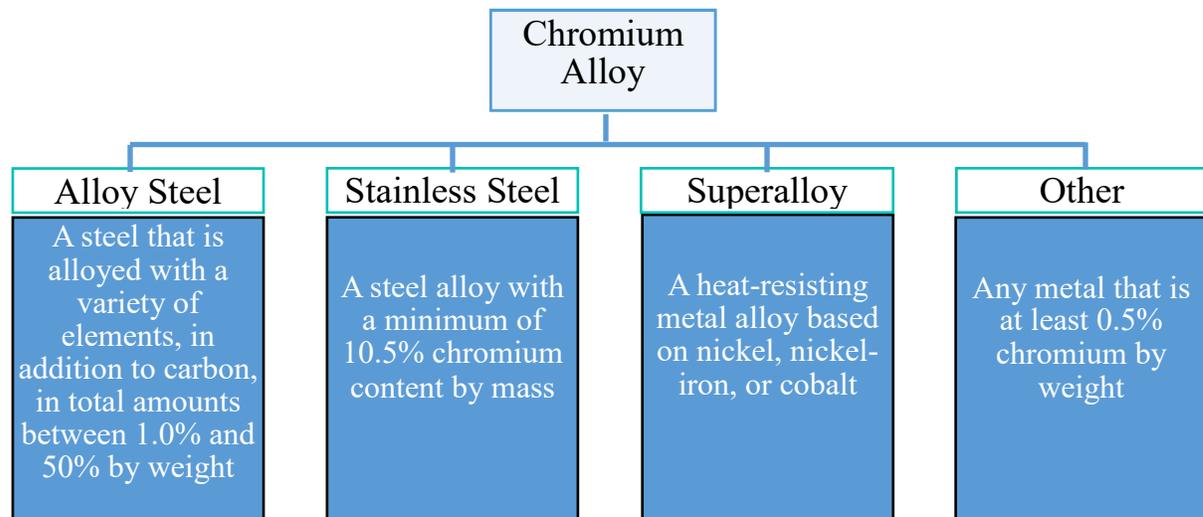
**ALLOY STEEL** is a steel that is alloyed with a variety of elements, in addition to carbon, in total amounts between 1.0% and 50% by weight.

**CHROMIUM ALLOY** is any alloy steel, stainless steel, superalloy, or any metal that is at least 0.5% chromium by weight.

**STAINLESS STEEL** is a steel alloy with a minimum of 10.5% chromium content by mass.

**SUPERALLOY** is a heat-resisting metal alloy based on nickel, nickel-iron, or cobalt.

**Figure 2.2: Chromium Alloy**



#### **Operational Information Survey Requirements (Subdivision (d))**

Many of the processes subject to Proposed Rule 1407.1 are not regulated by an industry-specific or source-specific rule to control toxic air contaminants. Additionally, in many cases the equipment does not require a permit because of throughput and/or burner size. As a result, detailed information of the metals processed, mechanical finishing activities, equipment parameters, and housekeeping is not known by SCAQMD. An operational information survey will identify types of operations and processes performed, collect detailed furnace information and, if applicable, identify pollution controls and specify existing housekeeping procedures. The survey will be required to be completed and submitted to the SCAQMD within 60 days of the adoption of Proposed Rule 1407.1.

Casting techniques performed are required to assist in further delineating potential requirements if significant differences in emissions are noted by technique or process. Information regarding mechanical finishing activities will help identify other potential emission sources. Information regarding metal melting furnaces and associated pollution controls will create an inventory of non-permitted and permitted chromium alloy metal melting furnaces. Refractory information is being requested to assess if the refractory brick or coating contains toxic air contaminants. Current housekeeping activities will provide details on current housekeeping practices that are implemented at the facility. Volume and metals melted will be used along with emissions data to calculate annual emissions.

The proposed requirements for the Operational Information Survey are listed below.

*Within [60 Days After Date of Adoption], the owner or operator of a facility conducting chromium alloy melting operation(s) shall submit a completed survey that includes:*

- (1) Casting techniques or melting processes performed on chromium alloys;*
- (2) Mechanical finishing activities or operations performed on chromium alloys;*
- (3) For each metal melting furnace melting chromium alloy:*
  - (A) South Coast Air Quality Management District (SCAQMD) application or permit number and device identification number, if applicable;*
  - (B) The equipment make, model, serial number, date of manufacture, and date of installation;*
  - (C) Furnace type;*
  - (D) Size and capacity;*
  - (E) Range of operating temperatures;*
  - (F) Minimum, average, and maximum weight of metal processed per batch and per day, based on data from calendar year 2018;*
  - (G) Fuel type, if gas fired, include British Thermal Unit (BTU) gas rating and burner age;*
  - (H) Refractory information, including, but not limited to, type of refractory brick and refractory coating, chromium content, frequency of refractory brick replacement and refractory coating application, based on data from calendar year 2018, if applicable;*
  - (I) Minimum, average, and maximum operating temperatures, based on data from calendar year 2018;*
  - (J) The equipment make, model, serial number, date of manufacture, and date of installation of associated Emission Collection System(s) and/or Emission Control Device(s), and corresponding SCAQMD application or permit number and device identification number, if applicable; and*
  - (K) Metals and alloys melted, based on data from calendar year 2018; and*
- (4) Housekeeping activities routinely performed, including schedule, method(s) used, and location(s) of activities.*

#### **Source Test Requirements (Subdivision (e))**

SCAQMD currently has one hexavalent chromium source test for a steel metal melting furnace. Hexavalent chromium was detected during the source test. Stakeholders and staff agree that further testing is necessary to assess toxic air contaminant emissions during chromium alloy melting operations. During the rule development process, staff offered to conduct source tests at certain facilities to obtain additional information about toxic air contaminant emissions from

chromium alloy melting operations. However, facilities were non-responsive or declined to allow the SCAQMD to conduct source testing. Therefore, Proposed Rule 1407.1 will require source testing at facilities that currently vent exhaust from chromium alloy melting operations to a control device. An owner or operator with chromium alloy melting operations that are not vented to a control device will not be required to source test these operations. Equipment that is vented to a control device has exhaust ducting that typically has sample ports that meet the minimum upstream and downstream duct diameter requirements, which is more conducive for source testing. Whereas, equipment without a control device may not have similar ducting and may need to be modified.

***Source Test Protocol (Paragraphs (e)(1),(e)(2), and (e)(3))***

Proposed Rule 1407.1 proposes to require the owner or operator of a facility to submit to the Executive Office a Source Test Protocol within 60 days of the adoption of the proposed rule. Appendix 1 of the Proposed Rule 1407.1 Staff Report – *SCAQMD Guidelines for the Preparation of Rule 1407.1 Source Test Protocols* is a guidance document which lays out the process for developing a Source Test Protocol. The Source Test Protocol shall include the source test criteria and all assumptions, required data, and calculated targets. Additionally information on proposed pollutant and capture efficiency test methods, analytical detection limits, sampling parameters, equipment, logistics, personnel, and other resources necessary is required in the Source Test Protocol.

The Executive Officer may approve or reject the Source Test Protocol. The basis for approval or rejection will be whether or not the owner or operator selected a furnace in accordance with the provisions in this subdivision and material deviations from source test protocol guidelines. If rejected, the owner or operator shall revise and resubmit the Source Test Protocol to correct all deficiencies within 30 days of the date of notification of rejection. This revised and resubmitted Source Test Protocol will either be approved by the Executive Officer or modified and approved as modified by the Executive Officer.

***Conducting the Source Test (Paragraphs (e)(4) and (e)(5))***

Within 90 days of the approval of the Source Test Protocol, the owner or operator shall conduct the source tests. The source test shall measure mass emissions and concentration for particulate matter; arsenic, cadmium, chromium, and nickel; and hexavalent chromium emissions at the inlet and outlet to the control device. The source test shall be conducted according to the Source Test Protocol and using the following test methods:

- For particulate matter,
  - SCAQMD Method 5.1 – *Determination of Particulate Matter Emissions from Stationary Sources Using a Wet Impingement Train;*
  - SCAQMD Method 5.2 – *Determination of Particulate Matter Emissions from Stationary Sources Using Heated Probe and Filter;* or
  - SCAQMD Method 5.3 – *Determination of Particulate Matter Emissions from Stationary Sources Using an In-Stack Filter;*
- For chromium and hexavalent chromium, CARB Method 425 – *Determination of Total Chromium and Hexavalent Chromium Emissions from Stationary Sources;* and/or
- For arsenic, cadmium, chromium, and nickel, CARB Method 436 – *Determination of Multiple Metal Emissions from Stationary Sources.*

SCAQMD Methods 5.1, 5.2, and 5.3 all test for particulate matter but have a specific applicability. All three methods are listed so that the owner or operator can select the applicable method, which will be approved through the Source Test Protocol by the Executive Officer.

SCAQMD Method 5.1 measures particulate emissions from stationary sources, except when determining compliance with New Source Performance Standards. In SCAQMD Method 5.1, stack gas is isokinetically withdrawn from the source through a sample train. Particulate matter is collected in chilled impingers and on a non-heated backup filter.

SCAQMD Method 5.2 measures particulate emissions from stationary sources. In SCAQMD Method 5.2, the sample is withdrawn isokinetically from the source through a sample train by a metering system. Filterable particulate matter is collected on a heated glass fiber filter. Condensables and particulate passing through the filter are collected in chilled impingers. SCAQMD Method 5.2 may require a separate train for sulfuric acid mist.

SCAQMD Method 5.3 measures particulate emissions from stationary sources, except when determining compliance with New Source Performance Standards. It does not apply to stacks that contain liquid droplets, or saturated with water vapor, where the temperature is greater than 400°F, or if the projected cross sectional area of the probe extension-filter holder assembly covers more than 5 percent of the stack cross sectional area. This method is recommended for testing cement plants and other sources emitting highly hygroscopic particulate matter. In SCAQMD Method 5.3, the sample is withdrawn isokinetically from the source through a sample train by a metering system. Filterable particulate matter is collected on a glass fiber filter kept inside the stack. Condensables and particulates passing through the filter are collected in chilled impingers. SCAQMD may require a separate train for sulfuric acid mist.

CARB Method 436 measures aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, phosphorus, selenium, silver, thallium, vanadium, and zinc stack emissions from stationary sources. In CARB Method 436, the stack sample is withdrawn isokinetically from the source, with particulate emissions collected in the probe and on a heated filter and gaseous emissions collected in a series of chilled impingers.

CARB Method 425 measures hexavalent chromium and total chromium emissions from stationary sources. Applicability has been demonstrated for the metal finishing and glass industries, but has not been demonstrated for sources with high particulate mass emission rates. In CARB Method 425, particulate emissions are withdrawn isokinetically from the source and collected in a series of chilled impingers followed by a glass fiber backup filter. Although CARB Method 425 has not been demonstrated for the metal melting industry, it is the only available reference method applicable to measure hexavalent chromium emissions from this category of stationary sources. CARB Method 425 is widely used and has been used successfully by the SCAQMD for determination of hexavalent chromium emissions from metal melting, chrome plating/anodizing, heated dichromate sealing, cement kilns, heat treating furnaces, and forging operations. Other air districts have used CARB Method 425 similarly. EPA Method 0061 – Determination of Hexavalent Chromium Emissions from Stationary Sources measures hexavalent chromium emissions from hazardous waste incinerators, municipal waste incinerators, municipal waste combustors, and sewage sludge incinerators. This method has been evaluated for sampling train temperatures below 300°F, which may not be the case for Proposed Rule 1407.1 sources. For the most part, EPA Method 0061 has not been used in the past two decades as it is more expensive

and difficult than CARB Method 425 and has potential contamination issues from the required recirculation system.

For all the source tests, paragraph (e)(10) allows for alternative methods to be used provided they are approved in writing by the Executive Officer.

***Furnace Selection (Paragraphs (e)(6) and (e)(7))***

Under Proposed Rule 1407.1, an owner or operator is required to select the furnace to be source tested using the following parameters: the furnace is vented to a control device, produces the final product with the highest chromium concentration, and has the highest throughput in the facility. If approved by the Executive Officer, the owner or operator may select an alternative furnace and/or final product for source testing. Approval or rejection will be based on the furnace, final product processed, schedule, and throughput.

***Capture Efficiency Testing (Paragraph (e)(8))***

At the time of the source tests, the owner or operator shall also perform capture efficiency testing to determine the efficacy of the collection system. A hot-wire anemometer, a vane anemometer, or device approved by the Executive Officer, shall quantitatively measure velocity across a pre-determined matrix of parts. Additionally, a qualitative demonstration using smoke tubes or smoke sticks shall be conducted. Proposed Rule 1407.1 has a requirement to measure capture efficiency, but does not have a limit for capture efficiency. Capture efficiency will indicate whether the emission collection system adequately captures the emissions.

***Materials Composition Testing (Paragraph (e)(9))***

Under Proposed Rule 1407.1, the owner or operator is required to conduct Materials Composition Testing of the raw materials, molten material, final product, slag, dross, and baghouse catch. The materials composition testing should be from one batch processed during the chromium and hexavalent chromium source test. Facilities that melt scrap material do not need to test each piece of scrap in a melt, but must test, at a minimum, three different pieces from each batch of scrap. If the slag, dross, or baghouse catch is not accessible during the source test, then the samples must be tested as soon as they become accessible. Materials Composition Testing will allow an assessment of the materials added to the furnace and the substances created during the melting process which staff can correlate with the source test results.

***Alternative Test Methods (Paragraph (e)(10))***

A facility may request to use an alternative or equivalent source test method if approved in writing by the Executive Officer.

***Testing Laboratories (Paragraph (e)(11))***

All testing shall be conducted at a laboratory approved under the SCAQMD Laboratory Approval Program. If there is no approved laboratory for the test, then a laboratory may submit their procedures to the Executive Officer for approval. This ensures that quality assurance and quality control measures are adequate.

***Notification of Source Testing (Paragraph (e)(12))***

Proposed Rule 1407.1 requires that the owner or operator notify the Executive Officer in writing 10 calendar days prior to conducting the source test. This gives the opportunity for SCAQMD staff to be available to observe the source tests.

***Submittal of Reports (Paragraph (e)(13))***

Proposed Rule 1407.1 requires that no later than 60 days after the completion of the source test, the owner or operator submit reports from source tests, capture efficiency, and Materials Composition Testing.

***SCAQMD Source Testing (Paragraph (e)(14))***

SCAQMD will conduct source testing for the first three facilities that submit requests for SCAQMD to conduct source tests to the Executive Officer. Initially, SCAQMD offered to conduct source testing at certain facilities, but facilities were either non-responsive or declined. At subsequent working group meetings, staff offered to conduct source tests for any stakeholder subject to the proposed rule. Currently, no facility has agreed. Further testing is needed to assess toxic air contaminant emissions during chromium alloy melting operations. The proposed rule will require source testing, but SCAQMD wants to maintain its offer to conduct source testing. The source testing required by this rule is for informational purposes and not compliance testing.

***Previous Source Tests (Paragraph (e)(15))***

Facilities that have conducted source tests up to 12 months prior to the adoption of Proposed Rule 1407.1 will not be required to conduct this source test if the prior source tests meets the requirements of paragraphs (e)(4) through (e)(11).

***Materials Composition Testing (Subdivision (f))***

Facilities that were not required to conduct source testing because their furnaces did not have control devices must conduct Materials Composition Testing of the raw materials, molten material, final product, slag, and dross within 180 days of the adoption of Proposed Rule 1407.1. Facilities that melt scrap material do not need to test each piece of scrap in a melt, but must test, at a minimum, three different pieces from each batch of scrap. If the slag or dross is not accessible during or after the melt, then the samples must be tested as soon as they become accessible. Collecting materials composition data will provide information of the type and amount of toxic air contaminants throughout the metal melting process.

Materials Composition Testing will determine the weight percent of arsenic, chromium, hexavalent chromium, and nickel using the following test methods that are most applicable to the sample matrix and approved by Executive Officer:

- U.S. EPA 200.7 – *Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry*;
- U.S. EPA 6010D – *Inductively Coupled Plasma-Optical Emissions Spectrometry*;
- U.S. EPA 6020B – *Inductively Coupled Plasma-Mass Spectrometry*;
- U.S. EPA 6200 – *Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment*;
- U.S. EPA 7196A – *Chromium, Hexavalent (Chelation/Extraction Colorimetric)*; and/or
- U.S. EPA 7199 – *Determination of Hexavalent Chromium in Drinking Water, Groundwater and Industrial Wastewater Effluents by Ion Chromatography*.

For all the materials composition testing, paragraphs (e)(10) and (f)(4) allows for alternative methods to be used provided they are approved in writing by the Executive Officer.

**Recordkeeping Requirements (Subdivision (g))**

For a one year period beginning January 1, 2019 and ending January 1, 2020, the owner or operator must keep monthly records of run hours and type and amount of materials processed for each furnace that processes chromium alloys. This information provides a better understanding of the on-going daily activities and supplements the data received from conducting the source test. Vendor information is also to be provided to follow up on questions regarding consistency of products supplied. The vendor information may be provided as a list of vendors for all metals, additives, alloys, and scrap. For each baghouse venting furnace melting operations of chromium alloys, records shall be kept of baghouse catch weight per container and the date collected. The records shall be submitted to the Executive Officer by February 1, 2020 and shall be maintained for at least three years.

**Exemptions (Subdivision (h))**

The requirements of the proposed rule do not apply to equipment and operations that are subject to the lead series rules; Rules 1420, 1420.1, or 1420.2. These operations are already subject to point source controls, parametric monitoring, periodic source testing, and housekeeping provisions. Operations or equipment not subject to Rules 1420, 1420.1, or 1420.2, but located at a facility subject to those rule may be subject to Proposed Rule 1407.1 if they are melting chromium alloy. In order to exclude small operations, the requirements of the rule also do not apply to facilities that melt one ton per year or less of chromium alloys or to small furnaces with a capacity of 25 pounds or less, such as jewelers and testing laboratories.

## **CHAPTER 3: IMPACT ASSESSMENT**

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**INTRODUCTION**

**RULE ADOPTION RELATIVE TO COST-EFFECTIVENESS**

**COMPLIANCE COSTS**

**SOCIOECONOMIC ASSESSMENT**

**CALIFORNIA ENVIRONMENTAL QUALITY ACT ANALYSIS**

**DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE  
SECTION 40727**

**COMPARATIVE ANALYSIS**

## **INTRODUCTION**

Proposed Rule 1407.1 will gather information and quantify the toxic air contaminant emissions from chromium alloy melting operations, including alloy steel, stainless steel, and superalloy melting operations. Cost information is provided though cost-effectiveness is not applicable for a rule controlling toxic air contaminants. Information pursuant to California Environmental Quality Act Analysis, required findings, and a comparative analysis of federal and SCAQMD rules applicable to the same source are provided below.

## **RULE ADOPTION RELATIVE TO COST-EFFECTIVENESS**

On October 14, 1994, the Governing Board adopted a resolution that requires staff to address whether rules being proposed for amendment are considered in the order of cost-effectiveness. The 2016 Air Quality Management Plan (AQMP) ranked, in the order of cost-effectiveness, all of the control measures for which costs were quantified. It is generally recommended that the most cost-effective actions be taken first. However, cost-effectiveness defined as cost per ton of emission reductions is not meaningful for toxic risk since risk depends on several factors in addition to emission numbers such as geography, meteorology, and location of receptors.

## **COMPLIANCE COSTS**

Proposed Rule 1407.1 is expected to affect 14 facilities. Five of the facilities will be required to conduct source testing at an estimated cost between \$20,000 and \$30,000 per facility based on vendor estimates. Three facilities may request that SCAQMD conduct the source testing at no charge to the facility. All 14 facilities will be required to do Materials Composition Testing. For a single material, an outside laboratory provided an estimate of \$300 which includes hexavalent chromium testing. Staff is assuming that five raw materials will be tested along with a single test each of the final material, slag, dross, and baghouse catch for a total of nine materials tested. The total cost for nine materials tested at 14 facilities is \$37,800. Lastly, industry estimates the additional recordkeeping associated with Proposed Rule 1407.1 will cost between \$3,000 and \$5,000 per facility. The total costs of Proposed Rule 1407.1 is a one-time cost of approximately \$240,000 to \$350,000. The one-time cost per facility is shown in Table 3.1 below.

**Table 3.1: Estimated One-Time Costs per Facility**

Facility Type	Source Testing	Materials Composition Testing	Recordkeeping	Total Cost
Chromium Metal Melting Facility with No Controls (6 facilities)	\$0	\$2,700	\$3,000 - \$5,000	\$5,700 - \$7,700
Chromium Metal Melting Facility with Controls (5 facilities)	\$20,000 - \$30,000	\$2,700	\$3,000 - \$5,000	\$25,700 - \$37,700
Chromium Metal Melting Facility with Controls; SCAQMD Conducts Testing (3 facilities)	\$0	\$2,700	\$3,000 - \$5,000	\$5,700 - \$7,700

## SOCIOECONOMIC ASSESSMENT

The proposed rule does not directly affect air quality or establish emissions limitations, therefore, a socioeconomic impact assessment pursuant to California Health and Safety Code Section 40440.8 is not necessary or required. Nonetheless, staff conducted an alternative cost analysis so that the potential cost impacts to the affected industries may be considered. The majority of the affected facilities are in the primary metal manufacturing sector (94%), including iron and steel mills and ferroalloy manufacturing (NAICS 331110), steel investment foundries (NAICS 331512), and steel foundries (except investment) (NAICS 331513). The remaining facility is in fabricated metal product manufacturing (NAICS 332).

Of the 14 facilities identified, eight are required to conduct source testing and all 14 facilities will be required to conduct Materials Composition Testing. Staff expects source testing conducted in 2019 to cost \$20,000 to \$30,000 per facility based on vendor estimates. SCAQMD has provided the option for three facilities to request that SCAQMD conduct the source testing at no cost to the facility. The total cost of Materials Composition Testing (nine materials across 14 facilities) is expected to be \$37,800 based on vendor estimates. Lastly, additional recordkeeping requirements are expected to cost \$3,000 to \$5,000 per facility in 2019 only.<sup>10</sup> In total, costs for all affected

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<sup>10</sup> Cost estimate from California Metals Coalition.

facilities are expected to range from \$240,000 to \$350,000, while the average cost per facility ranges from \$17,100 to \$25,000.

It has been a standard practice for SCAQMD's socioeconomic impact assessments that, when the annual compliance cost is less than one million current U.S. dollars, the Regional Economic Models Inc. (REMI)'s Policy Insight Plus Model is not used to simulate jobs and macroeconomic impacts, as is the case here. This is because the resultant impacts would be diminutive relative to the baseline regional economy.

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT ANALYSIS**

Pursuant to the California Environmental Quality Act (CEQA) and SCAQMD Rule 110, the SCAQMD, as lead agency for the proposed project, has reviewed Proposed Rule 1407.1 pursuant to: 1) CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA. As provided in CEQA Guidelines Section 15306 - Information Collection, the proposed project is exempt because it will consist of basic data collection, research and resource evaluation activities and will not result in a serious or major disturbance to an environmental resource. CEQA Guidelines Section 15306 exempts such a project for information-gathering purposes, or as part of a study leading to future action which the agency has not yet taken. Furthermore, SCAQMD staff has determined that it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is also considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) - Activities Covered by General Rule. Finally, the proposed project is also considered categorically exempt because it contains requirements designed to protect or enhance the environment pursuant to CEQA Guidelines section 15308 – Actions by Regulatory Agencies for Protection of the Environment. A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062 - Notice of Exemption. If the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

## **DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727**

### **Requirements to Make Findings**

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report.

### **Necessity**

Proposed Rule 1407.1 is needed to gather information and quantify toxic air contaminant emissions data from melting operations of chromium alloys, including alloy steel, stainless steel, and superalloy melting operations. Data from these operations are limited because many melting furnaces do not require SCAQMD permits and these operations are not regulated by a source specific regulation for toxic air contaminants. Proposed Rule 1407.1 proposes an operation information survey to be conducted by applicable facilities to collect detailed furnace information, mechanical finishing activities, casting techniques, and understand current housekeeping practices. Proposed Rule 1407.1 also requires source testing that is needed to quantify emissions to identify

the appropriate level of pollution control. Metals composition testing requirements included in Proposed Rule 1407.1 will provide information on the type and amount of toxic air contaminants in alloys.

### Authority

The SCAQMD obtains its authority to adopt, amend, or repeal rules and regulations pursuant to California Health and Safety Code Sections 39002, 39650 et. seq., 40000, 40440, 40441, 40702, 40725 through 40728, 41508, and 41511.

### Clarity

Proposed Rule 1407.1 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

### Consistency

Proposed Rule 1407.1 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

### Non-Duplication

Proposed Rule 1407.1 will not impose the same requirements as any existing state or federal regulations. The proposed amended rules is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD.

### Reference

In amending this rule, the following statutes which the SCAQMD hereby implements, interprets or makes specific are referenced: Health and Safety Code sections 39002, 40001, 40702, 40440(a), 40725 through 40728.5, and 41511.

## COMPARATIVE ANALYSIS

Health and Safety Code Section 40727.2 requires a comparative analysis of the proposed amended rule with any Federal or SCAQMD rules and regulations applicable to the same source. See Table 3.2 below.

**Table 3.2: Comparative Analysis**

Rule Element	PR 1407.1	Rule 1407	40 CFR Part 63 ZZZZZ	40 CFR Part 63 EEEEE	CARB Non-Ferrous Metal Melting ATCM
<b>Applicability</b>	Smelters (primary and secondary), foundries, die-casters, and other miscellaneous melting processes conducting chromium alloy (>0.5% chromium by weight) melting operations	Non-ferrous smelters (primary and secondary), foundries, die-casters, coating processes (galvanizing and tinning) and other miscellaneous processes such as dip soldering, brazing and aluminum powder production conducting non-ferrous metal melting	Area source iron and steel foundries emitting less than 10 tons per year of any single hazardous air pollutant or less than 25 tons of any single hazardous air pollutant constructed after September 17, 2007	Major source iron and steel foundries emitting 10 tons per year or more of any single hazardous air pollutant or 25 tons or more of any single hazardous air pollutant	Non-ferrous smelters (primary and secondary), foundries, die-casters, coating processes (galvanizing and tinning) and other miscellaneous processes such as dip soldering, brazing and aluminum powder production conducting non-ferrous metal melting

Rule Element	PR 1407.1	Rule 1407	40 CFR Part 63 ZZZZZ	40 CFR Part 63 EEEEE	CARB Non-Ferrous Metal Melting ATCM
<b>Requirements</b>	<ul style="list-style-type: none"> <li>• Source test on one chromium alloy furnace if vented to control device</li> <li>• Materials composition testing on one alloy</li> <li>• Informational survey</li> </ul>	<ul style="list-style-type: none"> <li>• Control particulate emissions from emission collection system by 99%</li> <li>• Temperature in exhaust stream may not exceed 360F</li> <li>• Maintenance program for emission control device monitoring</li> <li>• Housekeeping</li> <li>• Visible emission standards</li> </ul>	<ul style="list-style-type: none"> <li>• New foundries control particulate emissions to 0.1 lb/ton and hazardous air pollutant emissions to 0.008 lb/ton</li> <li>• Pollution prevention management practices for metallic scrap and mercury switches</li> <li>• Maintenance program for emission control device monitoring</li> <li>• Housekeeping</li> <li>• Visible emission standards</li> </ul>	<ul style="list-style-type: none"> <li>• Existing electric arc furnaces control particulate emissions to 0.005 gr/dscf and hazardous air pollutant emissions to 0.0004 gr/dscf</li> <li>• Existing cupolas control particulate emissions to 0.006 gr/dscf and hazardous air pollutant emissions to 0.0005 gr/dscf</li> <li>• New electric induction furnaces control particulate emissions to 0.001 gr/dscf and hazardous air pollutant emissions to 0.00008 gr/dscf</li> <li>• New electric arc furnaces and cupolas control particulate emissions to 0.002 gr/dscf and hazardous air pollutant emissions to 0.0002 gr/dscf</li> <li>• Plan or certification to minimize hazardous air pollutants from scrap</li> <li>• Maintenance program for emission control device monitoring</li> <li>• Housekeeping</li> <li>• Visible emission standards</li> </ul>	<ul style="list-style-type: none"> <li>• Control particulate emissions from emission collection system by 99%</li> <li>• Temperature in exhaust stream may not exceed 360F</li> <li>• Maintenance program for emission control device monitoring</li> <li>• Housekeeping</li> <li>• Visible emission standards</li> </ul>
<b>Reporting</b>	Source test results, materials composition testing results, process records	None	Semiannual compliance reports for exceedances, parametric monitor downtime, deviations from pollution prevention practices	Semiannual compliance reports for exceedances, parametric monitor downtime, deviations from pollution prevention practices	None
<b>Monitoring</b>	One time source test on a chromium alloy furnace that is vented to a control device	<ul style="list-style-type: none"> <li>• One time source test on a furnace that is vented to a control device</li> <li>• Parametric monitoring</li> <li>• Bag leak detection system</li> </ul>	<ul style="list-style-type: none"> <li>• Source test on a furnace that is vented to a control device every five years</li> <li>• Parametric monitoring</li> <li>• Bag leak detection system</li> </ul>	<ul style="list-style-type: none"> <li>• Source test on a furnace that is vented to a control device every five years</li> <li>• Parametric monitoring</li> <li>• Bag leak detection system</li> </ul>	<ul style="list-style-type: none"> <li>• One time source test on a furnace that is vented to a control device</li> <li>• Parametric monitoring</li> <li>• Bag leak detection system</li> </ul>
<b>Recordkeeping</b>	One year of process records for chromium alloy metal melting	Source testing results made available for two years	Test reports, notifications, semiannual reports	Test reports, notifications, semiannual reports	Source testing results made

Rule Element	PR 1407.1	Rule 1407	40 CFR Part 63 ZZZZZ	40 CFR Part 63 EEEEE	CARB Non-Ferrous Metal Melting ATCM
	furnaces, vendors of raw materials, and baghouse catch weights		made available for five years		available for two years

**APPENDIX 1: SCAQMD GUIDELINES FOR THE PREPARATION OF  
RULE 1407.1 SOURCE TEST PROTOCOLS**

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**INTRODUCTION**

**PREPARING A SOURCE TEST PROTOCOL**

## **INTRODUCTION**

A Rule 1407.1 source test protocol specifies which source will be tested and how emissions and samples will be sampled, analyzed, and reported. Source test protocols establish procedures to ensure results are accurate and representative of a source's emissions. Once SCAQMD evaluates and approves a test protocol, the owner or operator of a facility conducting chromium alloy melting operation(s) can be reasonably assured that test results will be accepted if the source test protocol is followed.

## **PREPARING A SOURCE TEST PROTOCOL**

The source test protocol shall include the following sections: Cover Page; Table of Contents; Introduction; Equipment, Process, and Operation Description; Testing Methodology; Quality Assurance/Quality Control (QA/QC) Procedures; Calculations Procedures; and Report Information and Format.

### **Cover Page**

The Cover Page shall include the following:

- 1.) The facility name and facility identification number;
- 2.) The metal melting furnace and associated emissions collection system and emissions control device to be tested pursuant to Rule 1407.1 paragraph (e)(6) or (e)(7);.
- 3.) The principal author's company, name, job title, address, phone number, and e-mail address;
- 4.) The date of the protocol submittal, given in a month, day, and year format (mm/dd/yy); and
- 5.) The signature of the principal author.

### **Table of Contents**

The Table of Contents shall identify each section with their commencing page numbers. Each page of the source test protocol (including, but not limited to, sample forms, copies of SCAQMD permits, and third party reports) must have a unique and sequential page number.

### **Introduction**

The Introduction shall include the following:

- 1.) The name of facility, facility identification number, mailing address, and equipment address, if different from the mailing address;
- 2.) The facility contact's name, job title, phone number, and e-mail address;
- 3.) The name of the source testing laboratory, mailing address, contact name, phone number, and e-mail address;
- 4.) The name of the analytical laboratory, mailing address, contact name, phone number, and e-mail address; and
- 5.) The number of testing days and the estimated test date(s).

### **Equipment, Process, and Operation Description**

The Equipment, Process, and Operation Description shall include the following information for the source to be tested:

- 1.) Justification for selection of the metal melting furnace and associated emissions collection system and emissions control device to be tested pursuant to Rule 1407.1 paragraphs (e)(6) and (e)(7);
- 2.) Information requested in Rule 1407.1 paragraph (d)(3);
- 3.) Copy of the SCAQMD permit(s), if applicable;
- 4.) Description of how fuel usage or energy consumption will be monitored;
- 5.) Typical operating conditions of the device;
- 6.) Operating conditions of the device at the time of the test and validation that these conditions are representative of normal operations;
- 7.) Description of what and how products are produced at the facility, including, but not limited to, the final specifications of those products;
- 8.) Description of material produced during the test, details of the melt, final specifications of the product, and validation the alloy has the highest chromium concentration in the final product processed or justification for processing an alternative product;
- 9.) Control parameters for the control device, if applicable;
- 10.) Schematic diagram of the exhaust stack showing the stack location with regard to the number of duct diameters to the nearest upstream/downstream flow disturbances;
- 11.) Description of access to the sampling ports, and availability of a platform and room for testing equipment at the sampling port;
- 12.) Flow diagram and a stepwise description explaining the equipment's operation with respect to the facility's process. Include a schematic of the equipment, fuel lines, instruments, control device, and other major ancillary equipment. Also include all emission points (or potential emission points), and bypass stacks in the schematic;
- 13.) Location and specifications of process monitoring instruments. Information for process monitoring instruments shall include:
  - Dates the process monitoring instruments were last calibrated;
  - Documentation which can verify the process monitoring instrument's accuracy; and
  - Whether or not the instruments that report output need to be corrected to standard conditions and, if so, how the output is to be corrected, and what other calibrated instruments are needed to adjust the raw measurement;
- 14.) Configuration of the exhaust stream, including the positioning of dampers, the presence of dilution flow, or whether flow is partially emitted through bypass stacks; and
- 15.) Special safety considerations when collecting samples or performing the laboratory analysis.

### **Testing Methodology**

The Testing Methodology shall include the following:

- 1.) Test methods that will be employed to determine emissions, capture efficiency, and materials composition;
- 2.) General description which summarizes each proposed method. List and justify all proposed deviations from the standard test method. For instrumental methods, submit a detailed description of the sampling and analytical system. This description shall include specifics, such as the sampling procedures, sample preparation, analytical principle of each instrument, the available analytical ranges,

- detection limits, sample conditioning equipment, materials for construction of sample lines, a sampling flow schematic, the instrument stripchart manufacturer, frequency of data recording, etc;
- 3.) Ambient parameters that will be monitored during the test, a description of how the parameters will be monitored, and frequency of the readings;
  - 4.) Equipment parameters that will be recorded during the test, a description of how the parameters will be monitored, and frequency of the readings;
  - 5.) Whether the process monitoring instruments are calibrated and whether there are records to confirm the accuracy and precision of the instrument;
  - 6.) Whether the sampling equipment requires a special set-up and/or warm-up period with pre-test and post-test diagnostics;
  - 7.) Parameters that will be monitored to assure the proper or timely operation of the sampling equipment, such as the conditioning temperature, orifice pressures, instrument response time, etc;
  - 8.) How exhaust flow conditions, such as stratification or cyclonic flow, will be addressed during the test. If these conditions have been addressed in previous testing, include detailed results;
  - 9.) Problems unique to specific equipment and how they will be addressed;
  - 10.) Proposed sampling time. The total sample volume for each sample must be sufficient to achieve analytical results at least three (3) times greater than the method detection limit. Alternatively, collect a minimum sample volume of 150 dry standard cubic feet (dscf) for each sample, assuming the following method detection limits from CARB Methods 425 and 436:
    - Arsenic  $\leq 2.1 \mu\text{g/l}$ ,
    - Cadmium  $\leq 0.01 \mu\text{g/l}$ ,
    - Chromium  $\leq 0.4 \mu\text{g/l}$ ,
    - Hexavalent Chromium  $\leq 0.02 \mu\text{g/l}$ , and
    - Nickel  $\leq 0.07 \mu\text{g/l}$ ;
  - 11.) Any special sampling considerations due to the nature of the emissions or stack configuration requiring accommodations for lengthy heated lines, saturated moisture content, interferences, toxic emissions, hygroscopic particles, or other non-routine sampling conditions;
  - 12.) How the samples are to be analyzed once the collection at the source is completed:
    - Identify the analytical procedures that will be performed. These methods and procedures shall provide the sensitivity to detect the anticipated emission concentrations, be recognized by the SCAQMD, and represent the most current and reliable means for analysis;
    - Identify the analytical laboratories that will perform the analysis and if these laboratories are SCAQMD approved, if applicable;
    - Identify the laboratory's detection limits for the proposed analysis;
    - Describe how blank analyses will be handled; and
    - Identify any deviations to the recognized analytical test procedure;
  - 13.) Signed statement confirming that the test laboratory qualifies as an independent laboratory, per SCAQMD Rule 304(k) definitions; and
  - 14.) Current approval letter that the testing lab is a SCAQMD Laboratory Approval Program (LAP) testing lab or proof of Executive Officer approval.

### **Quality Assurance/Quality Control (QA/QC) Procedures**

The QA/QC Procedures shall include:

- 1.) Sample field data sheets, calibration forms, and equipment maintenance records. Where possible, standardized forms shall be used (see the SCAQMD Source Test Manual for standard data sheets and forms);
- 2.) Calibration procedures of the field and laboratory instruments. Indicate whether calibration and maintenance schedules comply with the Chapter III procedures of the SCAQMD Source Test Manual. If not, justify the reason for deviating from the SCAQMD procedures;
- 3.) Sampling handling, chain-of-custody, and sample storage procedures employed by the testing laboratory. Provide assurances that the samples will be properly stored at the required environmental conditions in a tamper-proof and secure container;
- 4.) Sample forms for verifying that the sampling equipment (including glassware, filters, canisters, bags, tubing, etc.) will be properly cleaned and stored prior to field and laboratory use;
- 5.) QA/QC procedures employed by the analytical laboratory. Example QA/QC topics for analytical laboratories include: instrument calibration procedures, matrix spiking, duplicate injections, blank analyses, control samples, and interference checks;
- 6.) For low level analyte measurements, include a discussion of:
  - Special cleaning procedures, such as acid washing of equipment;
  - The purity level of analytical reagents;
  - Low level calibrations, especially if close to the detection limit;
  - A limited storage time prior to analysis;
  - Handling of field blanks; and,
  - Replicate analyses; and
- 7.) Calibration data of instruments.

### **Calculations Procedures**

Calculations Procedures shall include:

- 1.) The proposed formulas to calculate gaseous concentrations, exhaust flow, mass emissions, etc., based on measurements of the raw data;
- 2.) Sample forms showing how intermediate calculations will be used to arrive at the final result. If constants are used, provide derivations showing how the constants were determined. If the calculation form is formatted as a spreadsheet, include cell formulas so that the calculations may be reviewed. In order to demonstrate the use of the calculation form or spreadsheet, provide a numerical example using hypothetical realistic data set;
- 3.) How the bias or drift correction factors will be determined and applied, if applicable; and
- 4.) How low concentrations will be expressed.

### **Report Information and Format**

Report Information and Format shall include:

- 1.) Description of how the report will be organized. Whether it follows the general outline of the source test report described in Chapter II of the SCAQMD Source Test Manual. If not, explain how the proposed format differs;

- 2.) Identification of each section of the report in the order that they will be presented and an explanation of what topics will be discussed in each section. Indicate which section(s) will contain the raw field data, analytical results, calculations, calibration results, facility data, copy of the SCAQMD permit(s), etc.;
- 3.) Items to be submitted with the full laboratory package, which, at a minimum, shall include: sample preparation, raw analytical data, instrument calibrations, QA/QC checks, and calculations;
- 4.) A description of how digitized media will be presented, (e.g. digitized pictures, DVD videos, scanned images, or computer spreadsheets); and
- 5.) A confirmation that the report will include all elements from the Source Test Protocol, as discussed in these guidelines.

## **APPENDIX 2: COMMENTS AND RESPONSES**

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**Comment Letter #1: California Metals Coalition September 13, 2018**

September 13, 2018

Susan Nakamura, Assistant Deputy Executive Officer  
South Coast Air Quality Management District  
21865 East Copley Drive  
Diamond Bar, California 91765

Dear Ms. Nakamura:

The California Metals Coalition appreciates the opportunity to comment on the South Coast Air Quality Management District ("District" or "SCAQMD") workshop proceedings and possible creation of SCAQMD Rule 1407.1.

These comments are divided into the following sections: Summary; Background on CMC; Previously Asserted and Unaddressed Questions and Concerns; Additional Comments on August 30, 2018 Public Workshop; and Conclusion.

SUMMARY

This comment letter addresses concerns held by CMC members regarding the SCAQMD rulemaking process in connection with proposed Rule 1407.1. CMC and other industry members have been involved in the rule making process for Proposed Rule 1407.1 since it was proposed and have been involved in the rulemaking process for Proposed Rule 1407 and other rules prior to that. Throughout its involvement, CMC has made comments regarding Proposed Rule 1407.1 and SCAQMD's improper approach to rule making in regards to Rule 1407.1, including its efforts to rush through the process without developing a proper scientific and data-driven basis for the proposed rule. CMC submitted written comments on March 30, 2018, May 4, 2018, and June 25, 2018. To date, CMC's comments have largely gone ignored and its questions remain unanswered. This letter restates CMC's concerns and requests, once again, that SCAQMD staff address in writing CMC's stakeholder questions.

Finally, this letter also addresses issues that arise from the 1407.1 slides presented at the SCAQMD Proposed Rule 1407.1 Public Workshop on August 30, 2018. On August 30, the SCAQMD staff addressed plans to establish source testing, and broad data and informational gathering requirements for facilities that melt metals with a certain percentage of chromium content. Staff's stated goal is to bring Proposed Rule 1407.1 to the SCAQMD Board for a vote on November 2, 2018.

#### BACKGROUND ON CMC

California is home to approximately 4,000 metalworking facilities, employing over 350,000 Californians. The average industry salary is \$66,400/year in wages and benefits.

8 out of 10 employees in the metalworking sector are considered ethnic minorities or reside in disadvantaged communities throughout Southern California. A job in the metals sector is often the only path to the middle class for many of these Californians.

Here is a breakdown of the metalworking industry's impact on the 4 counties within SCAQMD jurisdiction:

- Los Angeles County: 54,290 Direct Jobs | 52,741 Indirect Jobs | \$7 billion wages | \$26 billion economic activity
- Orange County: 25,448 Direct Jobs | 18,912 Indirect Jobs | \$2.9 billion wages | \$10.8 billion economic activity
- San Bernardino: 9,778 Direct Jobs | 8,378 Indirect Jobs | \$1.2 billion wages | \$4.5 billion economic activity
- Riverside: 6,971 Direct Jobs | 7,712 Indirect Jobs | \$957 million wages | \$3.2 billion economic activities
- Total: 96,487 Direct Jobs | 87,743 Indirect Jobs | \$12 billion wages | \$33.8 billion economic activity

California metal manufacturers use recycled metal (ex: aluminum, brass, iron and steel) to make parts for the aerospace industry, clean energy technologies, electric cars, biotech apparatuses, medical devices, national defense items, agriculture, infrastructure, construction machinery, household appliances, food processing and storage, movement of water, and millions of other products demanded by society.

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CMC'S PREVIOUSLY ASSERTED AND UNADDRESSED QUESTIONS AND CONCERNSItem #1: Rushed Rulemaking for New Rule 1407.1 Without Metal Melting Science and Data

In a letter concerning the April 25, 2018, Group Meeting # 4 on Rule 1407.1, CMC addressed its concerns with 1407.1. In that letter and again in a letter dated June 25, 2018, CMC objected to SCAQMD's rush to quickly push through rule making for Proposed Rule 1407.1. CMC reiterates its strong disagreement that this rulemaking should be rushed prior to gathering the proper data and science for metal melting. There is no evidence in the record to support material aspects of Proposed Rule 1407.1. The addition of hexavalent chromium requires a thorough and complete investigation to fully develop an appropriate rule. A typical development stage could take over two years to properly complete and is supported by peer reviewed literature, data relevant to metal melting, and science relevant to metal melting. With respect to Proposed Rule 1407.1, which was first proposed on April 25, 2018, SCAQMD is attempting to complete the rule making process in half a year without consideration of a full and complete analysis of all relevant information.

1-1

Health & Safety Code section 40727 requires that "[b]efore adopting, amending, or repealing a rule or regulation, the district board shall make findings of necessity, authority, clarity, consistency, nonduplication and reference ... based upon information developed pursuant to Section 40727.2, information in the rulemaking record ..., and relevant information presented at the hearing." (See Health & Safety Code § 40727(a)). Section 40727.2 requires that the District prepare a comprehensive written analysis of the proposed rule or rule amendment, including its relation to other existing federal air pollution requirements, as well as an analysis of the impact of the proposed regulations. (See Health & Safety Code § 40727.2). CMC is unaware of any effort by the District to complete such an analysis. The proposed change to include hexavalent chromium in Rule 1407.1 is material and the significance of its inclusion should not be an afterthought.

Item #2: Ignoring and Misrepresenting Temperature in New Rule 1407.1

SCAQMD staff have not conducted research nor provided any science on how temperature impacts the potential conversion of chromium to hexavalent chromium during the metal melting process. When CMC asked SCAQMD staff to provide literature on the issue of temperature, staff presented a study from India at the January 30, 2018 working group meeting.

1-2

On slide 14 of the January 30, 2018, presentation, SCAQMD staff represented that "[t]rivalent chromium in chromium(III) oxide (Cr<sub>2</sub>O<sub>3</sub>) could be converted to hexavalent chromium at a temperature range of 200-300°C (392-572°F)." In support of this statement, the presentation cited an article entitled "Extent of oxidation of Cr(III) to Cr(VI) under various conditions pertaining to natural environment," from the Journal

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of Hazardous Materials, February 6, 2006. The study contained in this article concerns an investigation of chromium-contaminated tannery sludge at a dumping site in Kanpur, India. The study's conclusions are completely unreliable as they are based on limited information derived from a questionable source and have not been properly subjected to peer-review. Moreover, the tannery processes at issue in the study differ drastically from processes involved in metal melting operations, the subject of Rule 1407.1.

Differing processes in different industries will subject chromium compounds to factors other than temperature that could potentially contribute to and alter the conversion process. As such, the study upon which SCAQMD staff relies fails to establish a scientifically reliable basis in support of staff's assertions regarding the conversion temperatures of chromium compounds. CMC also commented that presenting the India study in a public meeting is potentially misleading to the public. With only 5 bullet points, and a single footnote on Slide 14, the public could conclude that this study supports the conversion of hexavalent chromium at temperatures as low as 392 °F for the metal melting industry. Many households and restaurants use stainless steel cookware, ovens, and oven racks. These items contain chromium that, based on staff's January 30, 2018 presentation, is converted to hexavalent chromium at very low temperatures. Slide 14 could lead the public to believe that hexavalent chromium is released when the cooking temperature exceeds 392 °F.

1-2

#### Item #3: Failed Bifurcation in New Rule 1407.1

CMC also expressed concerns in writing, and at the working group meetings, that placing non-ferrous and ferrous metals in a single rule further ignored the issue of temperature in metal melting. Chromium has a melting point of 3465 °F. Non-ferrous metals melt at a temperature far below the melting point of chromium (ex: aluminum has a melting point of 1200 °F). And ferrous metals also melt at a temperature below the melting point of chromium (ex: steel has a melting point of 2600 °F). In December 2017, CMC asked staff to acknowledge the issue of temperature, respond to the fact that chromium doesn't reach its melting point in many alloys, and bifurcate the rules into ferrous and non-ferrous rules.

1-3

Staff appeared to have agreed with CMC and stated in the April 25, 2018 presentation, on Slide 18, that "As a result, staff has decided to bifurcate the rulemaking; Rule 1407 will address non-ferrous metal melting; Rule 1407.1 will address ferrous metal melting."

But staff quickly changed its position and in the August 2018 staff report, stated on Page 1-2 that "Staff bifurcated the two rules into non-chromium and chromium instead of non-ferrous and ferrous because certain ferrous alloys do not contain chromium and some non-ferrous alloys contain chromium." It is clear to CMC that the bifurcation was a complete failure. Staff's comments also further demonstrate that staff does not have information, understanding, or insight on why CMC requested a bifurcation based on

temperature and how temperature impacts the potential conversion of chromium to hexavalent chromium in metal melting. 1-3

**Item #4: Improper Application of CARB Test Method 425 for Metal Melting**

CMC has previously objected to the use of CARB Test Method 425 for Proposed Rule 1407.1. The metal melting sector has voiced many concerns with using CARB 425 as the preferred or sole solution for chromium and hexavalent chromium testing for metal melting. On August 9, 2018, Slide 26, staff has even gone as far as to label CARB 425 as the "Gold Standard for Cr+6 Testing." This is an arbitrary comment, based on opinion and not on any standard. In fact, CMC is unaware of a single government agency that has approved CARB 425 for metal melting. CARB Test Method 425 has not been approved by CARB, or any other entity, for use in connection with metal melting operations.

The applicability of CARB Test Method 425 is made very clear by CARB. As amended on July 28, 1997, the "Applicability" of the CARB 425 test method is described by CARB on Page 1 as: 1-4

*1.1 Applicability: This method (CARB 425) applies to the determination of hexavalent chromium (Cr6) and total chromium (Cr) emissions from stationary sources. Applicability has been demonstrated for the metal finishing and glass industries. Its applicability has not been demonstrated for sources with high particulate mass emission rates.*

SCAQMD staff argues that CARB Method 425 is appropriate because it was used once for a source test at a metal melting facility in 1993. However, CARB Method 425 was revised in 1997 and its applicability to metal melting has never been tested in its revised state. One instance of prior use twenty-five years ago is not an appropriate basis for applying the method to an entire industry. For Proposed Rule 1407.1, CARB 425 provides an unguided path that can result in the collection of bad data.

**Item #5: Staff Dismissing the Benefit and Need for Academic Research and Data Collection for Metal Melting**

At the April 25, 2018 working group meeting CMC, and numerous industry stakeholders, expressed their support for the collection of metal melting data at Cal Poly Pomona's metal melting facility. It is hard to argue against the pursuit of good science, and collection of relevant data, at a California university. 1-5

But at the August 30, 2018 public workshop, SCAQMD staff dismissed Cal Poly Pomona and stated it was not suitable for research because of the the size of the furnace. This position holds no merit as there is no evidence that furnace size has any impact on the potential conversion of chromium to hexavalent chromium in the metal melting processes.

This position is also contradictory to SCAQMD's definition of a "metal melting furnace," which is defined as "any apparatus in which metal in a container is brought to a liquid state including, but not limited to, reverberatory, cupola, induction, direct arc furnaces, sweat furnaces, and refining kettles, regardless of the heating mechanism. METAL MELTING FURNACE does not include any apparatus in which the metal is heated but does not reach a molten state, such as a sintering furnace or an annealing furnace." There is no reference to size in this definition. As such, SCAQMD's refusal to engage Cal Poly Pomona for academic research based on the size of its furnace lacks credibility.

At the August 30, 2018 public workshop, SCAQMD staff also rejected academic research by alleging that such academic research cannot provide real world data. This blanket statement is contrary to years of research conducted by the SCAQMD, as well as a precedent previously set by the SCAQMD Board for metal heat treating. The SCAQMD funded research, and on June 28, 2018 executed a contract for heat treating research at UC Riverside, prior to doing a rule for that sector. SCAQMD staff says that the UC Riverside study has no bearing on the rulemaking status for heat treating because it has data on this sector. However, the October 2017 proposal that the Board authorized states otherwise. On page 5 of the October 6, 2017 SCAQMD Board Meeting Agenda No. 9, it outlines many unknowns and states as follows:

1-5

*Several mechanisms **may be** causing increased production of Cr6+ at heat-treating furnaces. These include: conversion of chromium by heat in the furnace insulating refractory materials, conversion of stainless steel type chromium-containing materials used in the construction of the furnaces, conversion of stainless steel type chromium containing-parts and parts racks placed in the furnaces, conversion in the accumulated metal and refractory dust on the furnace floors, conversion of airborne chromium laden dusts in the facility pulled into the furnaces, and exacerbation of the conversion dependent on oxygen or other combustion conditions in the furnaces. **The relative impact of each mechanism to the overall Cr6+ emissions is not yet fully understood.** This action is to authorize the Chairman to execute a contract with CE-CERT in an amount not to exceed \$174,000 to fully characterize and quantify the specific mechanisms that lead to Cr6+ production from forging and heat treating furnaces.*

Many questions being researched at UC Riverside are the same issues unresolved for metal melting. The influence of temperature on chromium—not the process at which the heat is being applied—is useful and could create universally acceptable data. Any perceived inadequacy of Cal Poly Pomona's capacity, or value of the required research, is unfounded and does not negate the need to complete the research.

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ADDITIONAL COMMENTS ON AUGUST 30, 2018 GROUP MEETING

Item #1, Slide # 4, SCAQMD’s Inaccurate Statements Regarding Regulated Operations

On Slide 4 of the August 30, 2018 presentation, the SCAQMD claims that alloy steel and stainless steel facilities are “not regulated.” This is inaccurate. Eight out of fourteen CMC facilities that will be impacted by Proposed Rule 1407.1 have permits and pollution control systems. The other six are very small facilities that have SCAQMD permits. CMC requests that this language be omitted as it is misleading to the SCAQMD Board.

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Item #2, Slide # 4, SCAQMD’s Unsupported Statements Regarding the Correlation Between High Temperatures and Hexavalent Chromium Emissions

On Slide 4 of the August 30, 2018 presentation, SCAQMD makes the conclusion that “it is expected that at higher temperatures and higher chromium concentrations, more hex chrome emissions will occur.” SCAQMD has not provided any data in support of this statement. It is just a hypothesis, at best. Either data supporting this statement should be presented or the statement should be removed.

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Item #3, Slide # 5, SCAQMD’s Improper Reliance on Irrelevant Studies

On Slide 5 of the August 30, 2018 presentation, SCAQMD reference an OSHA study as support for Proposed Rule 1407.1. The OSHA study is asserted to support the statement that “[w]orker exposure can occur during ‘hot work’ of steels containing chromium.” The OSHA study is referring to welding, which can operate at temperatures up to 30x higher than metal melting. The term “hot work” is defined by OSHA as “riveting, welding, flame cutting or other fire or spark-producing operation.” This definition does not include metal melting operations and, as such, does not support Proposed Rule 1407.1.

1-8

Item #4, Slide # 5, SCAQMD’s Improper Reliance on Irrelevant Studies

The same slide also references a 2013 CDC study as support for statement that [a]t high temperatures, hexavalent chromium is formed as a by-product when metals containing chromium are processed. The bulk of this study references welding uses data was collected using NIOSH Test Method 7703, which includes a portable personal pump clipped to a worker’s collar for 8 hours. The worker is mobile throughout the facility. As such, this study also fails to provide support for Proposed Rule 1407.1.

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Item #5, Slide # 5, SCAQMD's Improper Reliance on Irrelevant Studies

Slide 5 also references "Screening Tests on Heat Treating Furnaces" as evidence that metal melting converts chromium to hexavalent chromium, as well as the 2016-2017 ambient air monitoring in Paramount, California as evidence that metal melting converts chromium to hexavalent chromium. This is improper because heat treating and metal melting are different. Also, CMC is unaware of any ambient air monitoring results from the Paramount ambient air monitoring being traced back to metal melting facilities.

1-10

Conclusion

As a stakeholder, CMC continues to outline numerous comments, questions and concerns that the metals industry has about 1407.1 and a rushed rulemaking process leaves little or no time for discussion and review. This is made even more important by the fact that SCAQMD has failed to respond to several of CMC's letters in writing.

It has been nearly 5 months since CMC offered to fund research at Cal Poly Pomona that will provide currently unavailable data on the potential conversion of chromium to hexavalent chromium during the metal melting process. There are enormous benefits to conducting this research since:

- (1) The SCAQMD does not have any literature supporting the conversion of chromium to hexavalent chromium during the metal melting process;
- (2) The SCAQMD does not have any research to refer to that demonstrates the conversion of chromium to hexavalent chromium during the metal melting process;
- (3) The SCAQMD does not have any acceptable data from metal melting facilities that demonstrates the conversion of chromium to hexavalent chromium during the metal melting process;
- (4) The SCAQMD does not have an approved test method for metal melting to measure the potential conversion of chromium to hexavalent chromium during the metal melting process; and
- (5) The SCAQMD has no answers to the impact of temperature during the metal melting process and no information detailing the chemical reaction where heat may convert chromium to hexavalent chromium during the metal melting process.

And since hexavalent chromium is very unstable (the half-life is 12 hours in the atmosphere) and wants to grab electrons from any surface to change to chrome 3 which is not toxic, unknowns also include the

duration of heat needed to create the conversion, and how cooling impacts the change of hexavalent chromium back to chromium.

According to Cal Poly Pomona's College of Engineering website, "Cal Poly Pomona is the home of the largest and best equipped university foundry in the West...Melting is accomplished using an induction furnace as well as a gas-fired unit." The time is now to take a positive step forward and engage California's finest university for metal melting before making any unfounded conclusions through Proposed Rule 1407.1.

Sincerely,



James Simonelli  
CMC Executive Director

Cc: Mike Morris, SCAQMD  
Uyen Uyen Vo, SCAQMD  
SCAQMD Stationary Source Committee

### Response to Comment 1-1

Staff disagrees that the rulemaking has been rushed. Site visits to gather information began in 2015. The first working group meeting was held on September 5, 2017 and there have been seven working group meetings in total and a public workshop. The reference to the April 25, 2018 date is when Proposed Amended Rule 1407 was bifurcated into Proposed Amended Rule 1407 and Proposed Rule 1407.1, as requested by industry stakeholders. The first four working group meetings, held as Proposed Amended Rule 1407, addressed toxic air contaminants (in particular, arsenic, cadmium, hexavalent chromium, and nickel) from ferrous and non-ferrous metal melting operations. Describing the rulemaking process timeframe as “half a year” is misleading as it discounts all the visits, meetings, and discussions that led to the formation of Proposed Rule 1407.1 as meaningless.

Staff agrees with California Metals Coalition (CMC) that the addition of hexavalent chromium requires a thorough investigation. This is precisely the foundation of Proposed Rule 1407.1 as an information gathering rule. Typically this is done as part of the development of the rule, but facilities have declined to allow SCAQMD to conduct the needed source testing as part of the investigation.

Health and Safety Code 40727.2 requires a comparative analysis to be completed 30 days before the adoption of Proposed Rule 1407.1. This comparative analysis is included in the Draft Staff Report for Proposed Rule 1407.1.

### Response to Comment 1-2

Staff provided evidence during Working Group Meeting #3 on January 30, 2018 from two source tests of metal melting furnaces indicating that hexavalent chromium is emitted. The source tests showed hexavalent chromium conversion rates of between 3% and 76%. Staff also referenced a tannery sludge study which, as working group members correctly pointed out, is not directly related to metal melting. It was included as background information only and is not used to make any conclusions.

### Response to Comment 1-3

At the recommendation of CMC, staff bifurcated the rule so that more information could be gathered regarding hexavalent chromium emissions. At Working Group Meeting #4 on April 25, 2018, staff's initial concepts were to bifurcate the rules into ferrous and non-ferrous metal melting. Staff noted that not all ferrous metals contain chromium (i.e. steel and iron) and that some non-ferrous alloys (superalloys) contain chromium. To better address the potential sources of hexavalent chromium emissions, staff chose not to bifurcate between ferrous and non-ferrous, and instead chose to bifurcate between chromium containing (> 0.5% by weight) and non-chromium alloys; this concept was presented at Working Group Meeting #5 on June 6, 2018. CMC's assertion that non-ferrous metals have lower melting points is incorrect as nickel alloys and superalloys have melting temperatures above 2,000°F.

### Response to Comment 1-4

CARB Test Method 425 is the appropriate method to determine hexavalent chromium emissions from stationary sources. CMC's assertion that it has not been approved by CARB, or any other entity, for use in connection with metal melting operations is incorrect. While the method

description notes that it has been “demonstrated for the metal finishing and glass industries”, that does not mean that it isn’t applicable to other stationary sources. CARB Test Method 425 has been used by SCAQMD and other air districts for testing the exhaust of boilers<sup>11</sup>, testing emissions from a cement plant<sup>12</sup>, ash handling systems<sup>13</sup>, steel casting<sup>14</sup>, and heat treating operations<sup>15</sup>, among others. If facilities wish to use an alternative method, they may do so with approval of the Executive Officer.

#### Response to Comment 1-5

CMC mischaracterizes SCAQMD’s position regarding laboratory testing in a university setting. Staff does not reject academic research or data generated in a laboratory setting. The letter fails to mention CMC’s verbally stated position during the meeting and public workshop that the laboratory testing should be conducted *instead* of Proposed Rule 1407.1. Staff welcomes the data that would be generated by such a study and is pursuing funding laboratory testing in parallel with the required facility source testing. The laboratory testing could provide relevant supplementary information.

However, staff does not feel that the information generated by the laboratory testing alone would be sufficient to quantify emissions from the variety and scale of equipment used in industrial applications. The 48 pound electric induction furnace at Cal Poly Pomona would not provide suitable emission factors for different types of furnaces (vacuum induction, electric arc, crucible), different refractory types and ages, or much larger furnaces that have up to 360 times greater capacity and greater surface area. Source testing in real-world applications with various capacities and configurations is essential in developing emission factors.

#### Response to Comment 1-6

Staff has not said that alloy steel and stainless steel facilities are “not regulated”. All stationary sources that generate air pollution emissions are subject to SCAQMD rules. However, alloy steel and stainless steel facilities are not subject to a source-specific regulation for toxic air contaminants. Source-specific regulations include provisions for a particular industry or type of equipment to reduce emissions. Rule 1407 is the source-specific rule for non-ferrous metal melting applications. There is no such rule currently for ferrous metal melting applications.

#### Response to Comment 1-7

Staff provided information of two source tests during the PAR 1407 working group meeting. The first test was an aluminum furnace with an approximate melting temperature of 1,200°F while the second test was a steel furnace with an approximate melting temperature of 2,500°F. The

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<sup>11</sup>[https://rma.org/sites/default/files/TDF-023\\_-\\_Evaluation\\_Test\\_Report,\\_Emissions\\_Tests\\_of\\_the\\_Wheelabrator\\_Shasta\\_Energy\\_Company.pdf](https://rma.org/sites/default/files/TDF-023_-_Evaluation_Test_Report,_Emissions_Tests_of_the_Wheelabrator_Shasta_Energy_Company.pdf)

<sup>12</sup> [https://rma.org/sites/default/files/TDF-016\\_.pdf](https://rma.org/sites/default/files/TDF-016_.pdf)

<sup>13</sup> [http://www.deq.state.mi.us/aps/downloads/SRN/N1604/N1604\\_TEST\\_20170626.pdf](http://www.deq.state.mi.us/aps/downloads/SRN/N1604/N1604_TEST_20170626.pdf)

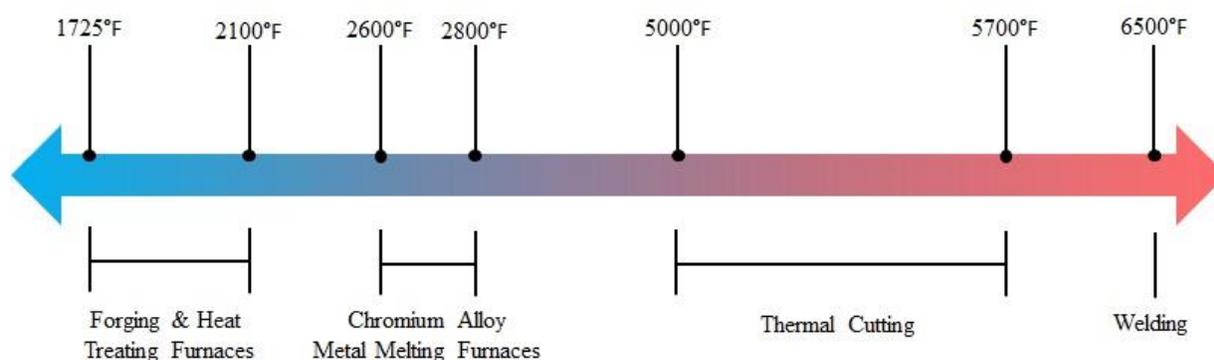
<sup>14</sup> [http://www.baaqmd.gov/~media/files/engineering/title-v-permits/e2605-smop/e2605\\_06\\_25\\_18\\_revision\\_smop\\_final\\_eval\\_clean\\_14029-pdf.pdf?la=en](http://www.baaqmd.gov/~media/files/engineering/title-v-permits/e2605-smop/e2605_06_25_18_revision_smop_final_eval_clean_14029-pdf.pdf?la=en)

<sup>15</sup> <http://www.aqmd.gov/docs/default-source/compliance/Paramount/source-test-mattco.pdf>

conversion rate from the lower temperature test ranged from 3-18 percent while the conversion rate from the higher temperature test ranged from 31-76 percent. This indicates that higher temperatures likely increases the conversion rate.

The figure below (Figure 1.1) depicts the spectrum of operating temperatures for various metalworking operations. Throughout this temperature spectrum, testing results from SCAQMD or literature developed by other regulatory agencies indicated conversion of chromium to hexavalent chromium.

**Figure 1.1: Operating Temperatures of Metal Working Processes**



Response to Comment 1-8

SCAQMD has provided source test results on metal melting furnaces, screening test results for heat treating and forging furnaces, and references to other agency data all indicating that high temperatures can lead to the conversion of chromium to hexavalent chromium. CMC has rejected all of the data without providing any evidence that emissions do not occur.

Response to Comment 1-9

See Response to Comment 1-8

Response to Comment 1-10

See Response to Comment 1-8

Comments received verbally from the August 30, 2018 Public Workshop with no corresponding written comments are presented and responded to below.

**Comment #2 – Mr. Ryan Pickett, Griswold Industries**

Comment 2-1

It is unclear how hexavalent chromium is forming and an academic setting is more appropriate for the type of testing SCAQMD is pursuing.

Comment 2-2

Please better define what finishing activities means.

Comment 2-3

Are there enough companies to do all the testing required in this rule?

Comment 2-4

How will the SCAQMD handle non-detect readings?

Comment 2-5:

What methods are available to test dross and slag?

Response to Comment 2-1

See Response to Comment 1-5

Response to Comment 2-2

A definition has been included in paragraph (c)(13) for mechanical finishing which is defined as a metal removal or reshaping process and includes, abrasive blasting, burnishing, grinding, polishing, and sawing.

Response to Comment 2-3

There are at least nine companies that do the required testing in the SCAQMD Laboratory Approval Program. Only five to eight tests are required over a one-year period.

Response to Comment 2-4

Provisions for non-detection are included in the Testing Methodologies section of SCAQMD Guidelines for the Preparation of Rule 1407.1 Source Test Protocols included in this document in Appendix 1.

Response to Comment 2-5

Test methods for dross and slag are included in paragraph (f)(3).

**Comment #3 – Mr. Jim Bonny, Certified Alloyed Products**Comment 3-1

Heat treating is not indicative of our process and information from that type of operation is not applicable to metal melting.

Comment 3-2

Testing scrap, slag, and dross is not necessary. The metal melt and baghouse provide all the relevant information.

Response to Comment 3-1

See Response to Comment 1-7. Heat treating furnaces process materials similar to the metals that are applicable to Proposed Rule 1407.1, but at lower temperatures. For metal forging operations, metals are heated to a soft and workable temperature, but not to a molten stage. Hexavalent chromium emissions were detected at those temperatures. Metal melting operations occur at higher temperatures than heat treating operations. With the higher temperature required for chromium alloy melting, it is expected that hexavalent chromium emissions from melting

operation will be similar or possibly higher. Testing of activities conducted at higher temperatures such as welding also detected emissions of hexavalent chromium.

Response to Comment 3-2

SCAQMD is requiring scrap, slag, and dross to be tested to do a mass balance of materials entering the furnace and exiting the furnace. This will help indicate the fate of materials as they are processed in the furnace.

**Comment #4 – Mr. Albert Chung, Keramida**

Comment 4-1

Maintaining the pH during the source testing for CARB Method 425 introduces more source test error.

Comment 4-2

Has CARB Method 425 been tested in highly acidic or basic conditions?

Comment 4-3

A university setting is needed to examine an appropriate source test method.

Response to Comment 4-1

The sodium bicarbonate used in the CARB Method 425 keeps the chromium in its current state and does not change its state. The pH of the sample is checked and it must remain within test specification to be a valid source test.

Response to Comment 4-2

Yes. Even in those conditions the sample must remain within test specifications for a valid source test.

Response to Comment 4-3

See Response to Comment 1-5

**Comment #5 – Mr. Charles Figueroa, Almega Environmental**

Comment 5-1

There are recommended changes to source test provision in subdivision (e) to clarify requirements.

Comment 5-2

The source test protocols for the proposed rule should be presented prior to rule adoption so that the testing requirements can be reviewed.

Response to Comment 5-1

The provisions of subdivision (e) have been clarified as requested.

Response to Comment 5-2

The protocols for source testing have been included in Appendix 1 of this document.

**Comment #6 – Mr. James Gutierrez, Strategic Materials Corporation**Comment 6-1

When will the list of approved labs be made available?

Comment 6-2

Stakeholders have requested that a socioeconomic analysis be provided for the proposed rule. There may be some economic impacts.

Comment 6-3

Supports California Metal Coalitions position that testing should be conducted at Cal Poly Pomona.

Response to Comment 6-1

The list is available on the SCAQMD website at: <http://www.aqmd.gov/docs/default-source/laboratory-procedures/lap-list-by-method.pdf?sfvrsn=4>.

Response to Comment 6-2

Costs and a socioeconomic analysis are included in this report. However, it has been a standard practice for SCAQMD's socioeconomic impact assessments that, when the annual compliance cost is less than one million current U.S. dollars, the Regional Economic Models Inc. (REMI)'s Policy Insight Plus Model is not used to simulate jobs and macroeconomic impacts, as is the case here. This is because the resultant impacts would be diminutive relative to the baseline regional economy.

Response to Comment 6-3

See Response to Comment 1-5

**Comment #7 – Mr. Ron Hayes, Keramida**Comment 7-1

A source specific test method for metal melting is needed and Cal Poly Pomona is the proper setting for test method development.

Response to Comment 7-1

See Response to Comments 1-4 and 1-5



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • www.aqmd.gov

**SUBJECT: NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT**

**PROJECT TITLE: PROPOSED RULE 1407.1 – EMISSIONS OF TOXIC AIR CONTAMINANTS FROM CHROMIUM ALLOY MELTING OPERATIONS**

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the South Coast Air Quality Management District (SCAQMD) is the Lead Agency and has prepared a Notice of Exemption for the project identified above.

SCAQMD staff has reviewed Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations, pursuant to: 1) CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA.

As provided in CEQA Guidelines Section 15306 - Information Collection, the proposed project is exempt because it will consist of basic data collection, research and resource evaluation activities and will not result in a serious or major disturbance to an environmental resource. CEQA Guidelines Section 15306 exempts such a project for information-gathering purposes, or as part of a study leading to future action which the agency has not yet taken. Furthermore, SCAQMD staff has determined that it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is also considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule. Finally, the proposed project is also considered categorically exempt because it contains requirements designed to protect or enhance the environment pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment.

A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062 - Notice of Exemption. If the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

Any questions regarding this Notice of Exemption should be sent to Diana Thai (c/o Planning, Rule Development and Area Sources) at the above address. Ms. Thai can also be reached at (909) 396-3443. Ms. Uyen-Uyen Vo is also available at (909) 396-2238 to answer any questions regarding the proposed rule.

**Date:** November 30, 2018

**Signature:**   
Barbara Radlein  
Program Supervisor, CEQA Section  
Planning, Rules, and Area Sources

## NOTICE OF EXEMPTION

**To:** County Clerks  
Counties of Los Angeles, Orange,  
Riverside, and San Bernardino

**From:** South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

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**Project Title:** Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations

**Project Location:** The SCAQMD has jurisdiction over the four-county South Coast Air Basin (all of Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). The SCAQMD’s jurisdiction includes the federal nonattainment area known as the Coachella Valley Planning Area, which is a sub-region of Riverside County and the SSAB.

**Description of Nature, Purpose, and Beneficiaries of Project:** The purpose of Proposed Rule (PR) 1407.1 is to gather information and quantify toxic air contaminant emissions of arsenic, cadmium, hexavalent chromium, and nickel from chromium alloy melting operations such as foundries and other metal melting facilities in order to identify the appropriate level of air pollution control. If adopted, PR 1407.1 will: 1) require the submittal of information regarding facility operations including the number and type of furnaces, and the composition of metals melted; 2) require the facility owner/operator to keep records for a 12-month period; 3) require the facility owner/operator to submit a source test protocol, including the identification of the test methods that will be used during the source test; 4) specify the accepted source test methods for the various toxic air contaminants and particulate matter; and 5) allow the facility owner/operator to submit an alternative test method, provided it is approved by the Executive Officer.

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**Public Agency Approving Project:**  
South Coast Air Quality Management District

**Agency Carrying Out Project:**  
South Coast Air Quality Management District

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**Exempt Status:**

CEQA Guidelines Section 15306 – Information Collection

CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule

CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment

**Reasons why project is exempt:** SCAQMD staff has reviewed PR 1407.1 pursuant to: 1) CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA. As provided in CEQA Guidelines Section 15306 - Information Collection, the proposed project is exempt because it will consist of basic data collection, research and resource evaluation activities and will not result in a serious or major disturbance to an environmental resource. CEQA Guidelines Section 15306 exempts such a project for information-gathering purposes, or as part of a study leading to future action which the agency has not yet taken. Furthermore, SCAQMD staff has determined that it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is also considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule. Furthermore, the proposed project is considered categorically exempt because it contains requirements designed to protect or enhance the environment pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment.

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**Date When Project Will Be Considered for Approval (subject to change):**

SCAQMD Governing Board Hearing: December 7, 2018; SCAQMD Headquarters - Auditorium

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**CEQA Contact Person:**

Ms. Diana Thai

**Phone Number:**

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**Date Received for Filing:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

*(Signed Upon Board Approval)*

Barbara Radlein

Program Supervisor, CEQA Section

Planning, Rule Development & Area Sources

# **Proposed Rule 1407.1**

## **Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations**

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Governing Board Meeting

November 2, 2018



# Regulatory Background

- Existing toxics rules for metal melting cover variety of alloys
  - Rule 1407: Aluminum, Carbon Steel, Brass, and Bronze
  - Rule 1420: Lead, Brass, and Bronze
- A source test has shown 70% conversion of chromium to hexavalent chromium during melting operations
- Proposed Rule 1407.1 begins addressing metal melting of chromium alloys to fill a regulatory gap

Rule 1407 and/or Rule 1420					Proposed Rule 1407.1		
Al & Al Alloys	Carbon Steel	Brass	Bronze	Lead	Stainless Steel	Alloy Steel	Super Alloys

# Need for Source Testing

- Source testing is needed to quantify the amount and type of toxic air contaminants
- Typical to conduct source tests at facilities when regulating a new source category
  - Staff has conducted facility source tests for over 15 separate rulemakings
- Throughout the rulemaking process staff has offered to conduct source tests - facilities either declined or were non-responsive
- Some operators have expressed potential risk communication concerns
  - Offers to conduct tests anonymously and/or with alloys not used at the facility still declined

# Proposed Rule 1407.1 Approach

Objective of Proposed Rule 1407.1 is to collect emissions data from chromium metal melting

- Requires 8 of the 14 facilities to conduct a source test (6 facilities have no controls or stack)
  - Includes provision to conduct source tests for 3 facilities<sup>1</sup>
- Source tests cost \$20,000 to \$30,000
- Data will be used to propose future emissions standards and pollution controls for hexavalent chromium, arsenic, cadmium, and nickel



<sup>1</sup> Testing is done for rule development purposes, not rule compliance

# Key Requirements

## Source Testing

- One-time source test on one furnace

## Materials Composition Testing

- One-time testing of materials

## Operational Information Survey

- One-time survey on facility's operations, equipment, and practices

## Recordkeeping

- Collect process records for one year



# Key Issue #1 – Cal Poly Study

## Comment

- Conduct emissions testing at Cal Poly Pomona before proceeding with Proposed Rule 1407.1
- Conduct a study to determine if, how, and ways to stop the conversion of chromium to hexavalent chromium



## Response

- Staff initiated contracting with Cal Poly Pomona to conduct emissions tests
- Source testing at facilities is still needed to quantify emissions
  - Actual operations can be significantly larger, diverse, different configurations
  - More representative of actual process— charging, melting, pouring, and casting



# Key Issue #2 – CARB Method 425

## Comment

- CARB Method 425 (source test for hexavalent chromium) has not been demonstrated to be applicable or appropriate for metal melting operations
- Test method development should occur at Cal Poly Pomona

## Response

- CARB Method 425 is CARB and EPA approved for determining hexavalent chromium and total chromium emissions from stationary sources\*
  - There is no evidence that CARB Method 425 is not the appropriate source test method for metal melting operations
- Proposed Rule 1407.1 includes a provision for alternative sampling and analytical test methods with Executive Officer approval

\* [https://www.arb.ca.gov/testmeth/vol3/M\\_425.pdf](https://www.arb.ca.gov/testmeth/vol3/M_425.pdf)



# Recommended Actions

- Adopt the Resolution to:
  - Determine that Proposed Rule 1407.1 is exempt from CEQA
  - Adopt Rule 1407.1

